AGRICULTURE AND FARMERS WELFARE DEPARTMENT

POLICY NOTE 2022 - 2023

DEMAND No. 5

Thiru. M.R.K. PANNEERSELVAM

Hon'ble Minister for Agriculture and Farmers Welfare

Policy Note 2022-2023

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INTRODUCTION

"உழுதுண்டு வாழ்வாரே வாழ்வார்மற் றெல்லாம்
தொழுதுண்டு பின்செல் பவர்"

(திருக்குறள் : 1033)

உழுதுண்டு வாழ்பவர்களே உயர்ந்த வாழ்வினர்; ஏனென்றால் மற்றவர்கள் அவர்களைத் தொழுதுண்டு வாழ வேண்டியிருக்கிறது.

(கலைஞர் மு. கருணாநிதி அவர்களின் உரை)

Agriculture plays a vital role in the overall Socio-economic development of the Nation. Besides being the livelihood and providing of food to the People, Agriculture is of paramount importance in providing employment opportunities, industrial growth, international trade and poverty elimination.

Agriculture is the livelihood for around 70% of the rural people in Tamil Nadu. Any minor intervention in this sector creates a major impact in the economic development of the State. This Government of Tamil Nadu bestows its paramount importance to Agriculture.

Predominance of Marginal landholdings, conversion of cultivable lands for purposes other than Agriculture, unpredictable climate, paucity of agricultural labour, marketing of Agricultural produces are the biggest challenges in Agriculture.

The Government of Tamil Nadu is taking various efforts to develop Agriculture sector thereby facilitating overall upliftment of farmers considering the challenges in Agriculture. Varieties of various crops based on the prevailing climate, rainfall and soil fertility along with usage of latest technologies are being recommended to increase production.

Integrated farming system is being implemented to sustain the income of the farmers by adopting a gamut of related activities like Cattle/Sheep rearing, Fish Ponds, Agro Forestry and Apiary.

Paddy production scheme, nutrient rich Millet Mission, Pulses production scheme and Oilseeds production scheme are being implemented with an objective to enhance food grain production.

The extension services are formalized and monitored continuously to ensure the reach of scheme benefits to the farmers.

Efforts of Government for Agricultural Development

The Honourable Chief Minister of Tamil Nadu has opened the Mettur Dam on 12.06.2021 for irrigation and the Kuruvai Package Scheme has been implemented with a financial allocation of Rs.61.09 crore. Due to this, an additional area of 1.69 lakh acre has been cultivated besides the normal Kuruvai cultivation of 3.21 lakh acre making a total achievement of 4.9 lakh acre. This is the Greatest Historical Achievement in the last 46 years.

The total cultivated area has increased to 116.63 lakh acre compared to the cultivated area of last year by 6.32 lakh acre due to the special attention given to the implementation of schemes announced in the first Agricultural Budget, in consonance with the Visionary plan of Honourable Chief Minister in increasing Net Cultivated area from 60% to 75%.

The food grain production of 118.01 lakh Metric Tonnes has been recorded in the Third Advance Estimate (as on 07.04.2022). Increased area in Kuruvai Season and favourable rainfall during the year 2021-22 has contributed to the increased food grain production. It is also anticipated to get increased food production over last year in the Final Estimate. Moreover, the farmers were provided with subsidy to increase production and productivity of Coconut and Cotton crops.

The Government, for the welfare of farmers, encourages Organic farming to reduce input cost and pave way for toxin free environment through integrated nutrient management and plant protection.

An amount of Rs.2,082 crore has been sanctioned and released under Pradhan Mantri Fasal Bima Yojana (PMFBY), to 9.65 lakh farmers as compensation during the year 2020-21 to overcome the miseries due to natural disasters.

An amount of Rs.155.02 crore has been provided as relief amount by way of inputs to

ensure cultivation again by 3,37,043 farmers in an area of 4,44,988 acre damaged due to North East Monsoon rainfall last year.

The various noble schemes announced in the first Agricultural Budget are being implemented to encourage the farmers who are taking up Agriculture relentlessly.

The second Agricultural Budget has been introduced with focus towards Digital Agriculture and emerging technologies in order to cope up with the advancement in technology.

"Tamil Man Valam" Portal is to be introduced to facilitate the farmers to know the soil fertility status of their cultivable lands and obtain Soil Health Card.

The transactions that started with barter system have now become cashless. In this era, cashless transaction will be implemented to facilitate the farmers to get inputs with ease.

The list of beneficiaries in various Schemes will be exhibited in the Grama Sabha Meetings of the village panchayats for ensuring transparency in selection.

NITI Aayog has been entrusted with the role to co-ordinate 'Transforming Our World' the 2030 Agenda for Sustainable Development. Sustainable Development Goals have been evolved through a long inclusive process for achievement and covers 17 goals.

The Department of Agriculture has four Goals Viz., No Poverty, Zero Hunger, Responsible Consumption and Production Pattern and Life below Water. Earnest efforts are being pursued to achieve the goals.

The Honourable Minister for Agriculture and Farmers Welfare has presented the second Agricultural Budget on 19.03.2022 in the Legislative Assembly based on report prepared by analysing the opinions of farmers, Representatives of Farmers Associations, Exporters, Agricultural Researchers, Traders, Officers of Agriculture and other allied departments directly, through video conference and representations.

Evolution of Agriculture Department

The Famine Commission of India in 1880 recommended the formation of the Department of Agriculture and the same was established in 1882. Later, it was started in 1904 as the Directorate of Agriculture with the required staff.

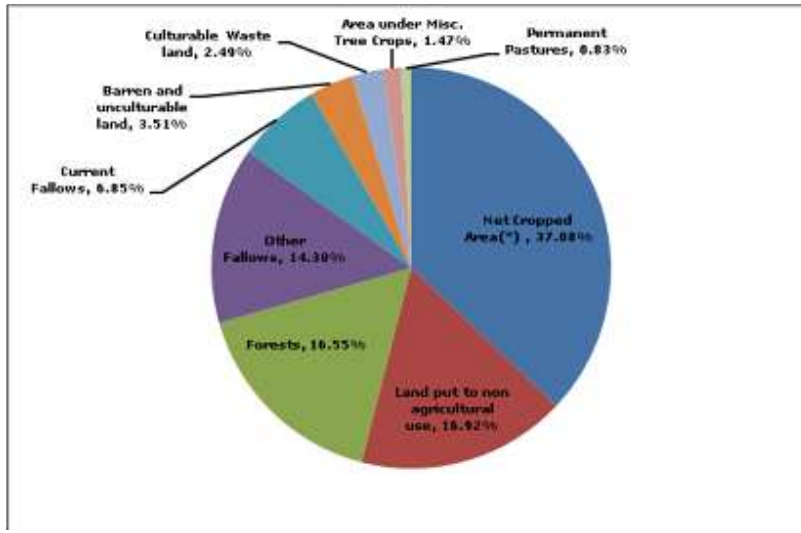
Agriculture in Tamil Nadu

Tamil Nadu is classified under semi-dry sub-humid to dry humid tropics in the geographical system. It is the 11th largest State in India (with an area of 1.30 lakh Sq.Km) and the seventh most populous State (7,21,47,000 according to the 2011 census). It comprises four percent of the total area, six percent of the population and three percent of the water resources at all India level.

Tamil Nadu has 79.38 lakh land holders cultivating an area of 59.71 lakh Ha (According to 10th Agricultural Census of Government of India). 93% of total land holdings are Marginal and Small farmers, operating 62 % of the total cultivable lands. Remaining seven percent of land holdings are medium and large farmers

operating 38% of the total culturable lands. Although the average land area of India is 1.08 Ha, the average land area of Tamil Nadu is only 0.75 hectare.

Fig.1 Land Use Pattern of Tamil Nadu 2020-21.



Total Geographical Area – 130.33 lakh Ha

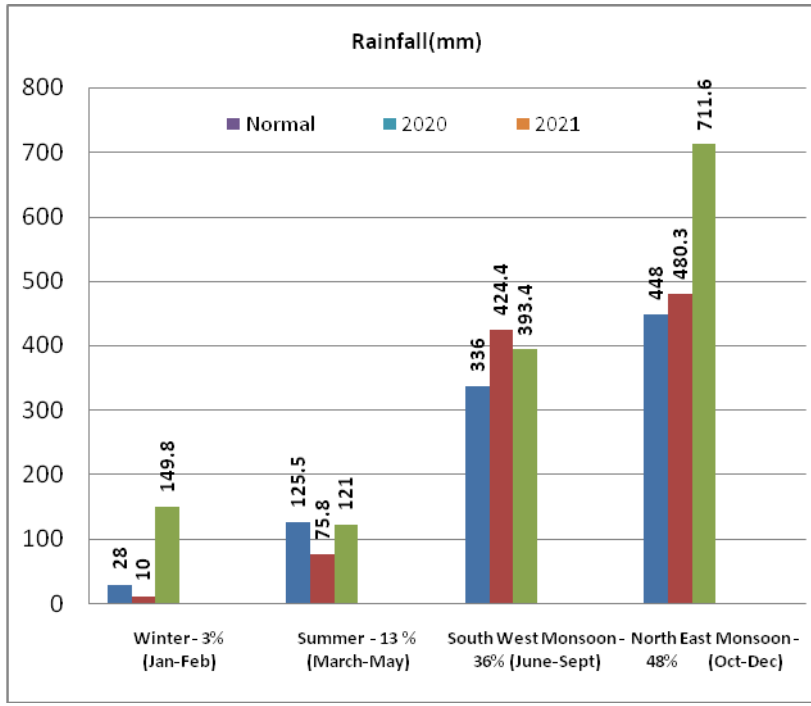
Cropping Intensity (%) – 127.35 (Gross cropped Area/Net cropped Area*100)

Source: Department of Economics and Statistics, Government of Tamil Nadu.

Average Rainfall of Tamil Nadu

The State receives an average annual rainfall of 937.5 mm which is 28% less than the National Average annual rainfall of 1,200 mm.

Fig.2 Season wise Rainfall- 2021



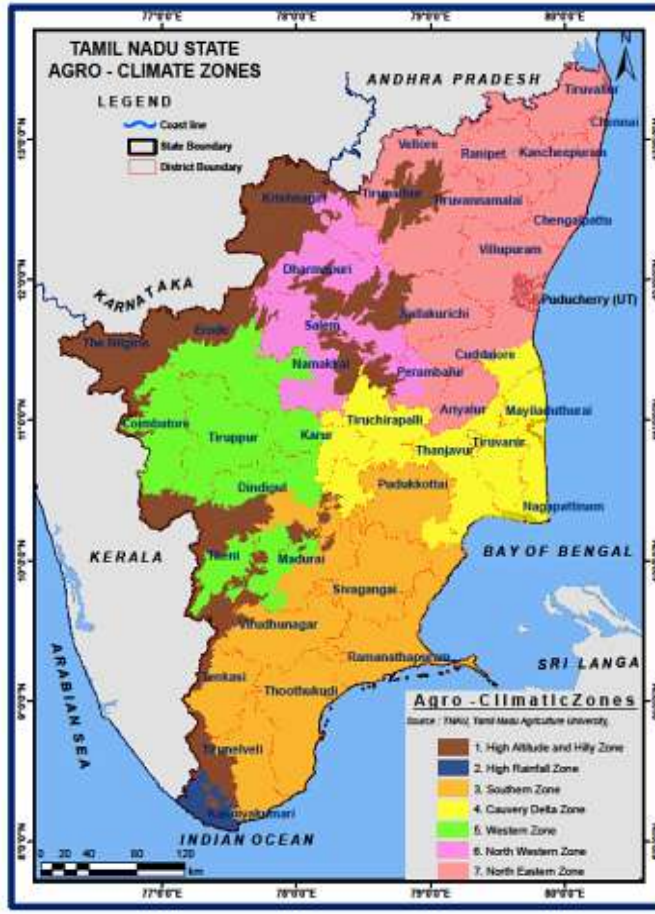
Source: Indian Metrological Department (IMD)

Sources of Irrigation

Table 1.1: Water Source wise Net Area Irrigated 2020-21

Source	Availability (Nos)	Net Area Irrigated (Lakh Ha.)	% with reference to Net Area Irrigated
Canals	2,241	6.68	24.16
Tanks	41,123	3.72	13.47
Wells and Bore wells	18,80,126	17.20	62.22
Others		0.04	0.15
Total		**27.64**	**100.00**
Source: Department of Economics and Statistics, Government of Tamil Nadu			

Fig.3 Seven Agro Climatic Zones of Tamil Nadu



Source: AgriTech Portal of Tamil Nadu Agricultural University

1. AGRICULTURE

1.1. Increasing the Area, Production & Productivity of Crops

In Tamil Nadu, the production of Paddy and other Agricultural Crops has recorded 118.01 lakh Metric Tonnes during the year 2021-22 as per Third Advance Estimate (as on 07.04.2022) which is nine percent more the last year production of 108.24 lakh Metric Tonnes and is a remarkable achievement in the last six years. Dissemination of Advanced Technologies by implementing various State and Central Schemes has paved way for this achievement.

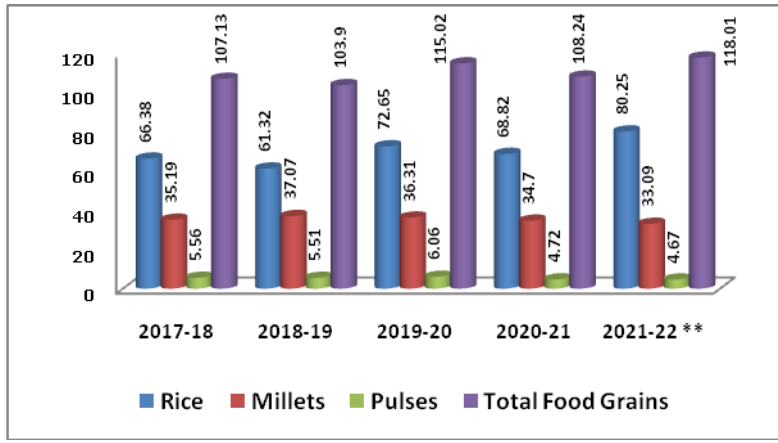


Figure.4 Food Grain Production in the Past Five Years (lakh Metric Tonnes)

Table 1.2: Programme for 2022-23

Sl.No	Crop	Area (lakh Ha)	Production (lakh MT)	Productivity (Kg/Ha)
1	Rice	19.00	75.50	3,973
2	Millets	9.67	42.75	4,421
3	Pulses	9.48	7.90	833
	Total food grains	**38.16**	**126.15**	
4	Oilseeds	5.50	14.30	2,603
5	Cotton	1.74	4.40*	430**
6	Sugarcane	1.60	200.00	125***
	Total	**47.00**		

(*) Production in lakh Bales; 170 Kg of lint for each bale;

***(**)*Productivity in terms of lint ;**

(***) Production (Metric Tonne /Ha)

1.2. Priority Schemes in Agriculture

1.2.1. Kalaignarin All Village Integrated Agricultural Development Programme (KAVIADP)

"Kalaignarin All Village Integrated Agricultural Development Programme" (KAVIADP)

is being implemented in 1,997 Village Panchayat at an outlay of Rs.227.059 crore from 2021-22 with an objective of attaining overall agricultural development and self sufficiency of the village in a period of five years. During 2021-22, bore well, tube well points were identified and works are being carried out.

In 2022-23, this scheme will be converged and implemented in 3,204 of 'Anaithu Grama Anna Marumalarchi Thittam' village panchayats with a Project Cost of Rs.300 crore.

1.2.2. Chief Minister's Dry land Development Mission

Chief Minister's Dry land Development Mission was implemented at a total outlay of Rs.146.64 crore during 2021-22 for the development of 7.5 lakh acre of dryland area and 3.15 lakh Small and Marginal Farmers have been benefitted.

This scheme will be continued in 2022-23 under which 3,000 Dryland Clusters will be formed covering an area of 7.5 lakh acre with a financial outlay of Rs.132 crore.

1.2.3. Tamil Nadu Mission for Sustainable Green cover in Farm Lands

During 2021-22, a budget of Rs.11.14 crore has been allocated and 73 lakh tree saplings are being distributed at 100% subsidy to farmers of all districts with Central and State fund.

Under the scheme, high value tree species like Teak, Red Sandal, Vengai, Sandal tree, Manjal Kadambu, Rose wood, Malai Vembu, Etti, Neermaruthu, Mahogany and Medicinal value trees like Jamun and Tamarind trees have been distributed to the farmers, after obtaining requisition through online mode / Uzhavan app.

During 2022-23, 80 lakh Tree saplings will be distributed at 100% subsidy to Farmers at a Project cost of Rs.12 crore.

1.2.4. Additional 20% Subsidy for Small and Marginal Farmers of Scheduled Caste and Scheduled Tribe.

In order to support Small/Marginal Farmers under SC and ST Categories in High value Schemes, an additional subsidy of 20% will be provided in the existing schemes from

the State Fund. Corresponding funding has been allocated for the financial year 2022-23.

1.3. Promotion of Crop Diversification

The Government encourages cultivating less water demanding crops like Pulses, Millets and Oilseeds rather than paddy to enhance soil fertility and ensure sustainable farming. During 2022-23, it is programmed to cover 66,000 acre of area under Pulses, Millets and Oilseeds with an allocation of Rs.10 crore.

1.4 Area Coverage Details

1.4.1 Paddy

Paddy is extensively cultivated in all the districts of the State in a unique three-season pattern viz., Kar, Kuruvai, Sornavari (April to July), Samba/ Thaladi, Pishanam (August to November) and Navarai, Kodai (December to March).

Paddy is normally cultivated in an area of 19.00 lakh Ha with an average production of 68.66 lakh Metric Tonnes of rice.

During 2021-22, an area of 13.21 lakh Ha and 4.3 lakh Ha area were covered respectively

under System of Rice intensification and Direct Sowing of paddy.

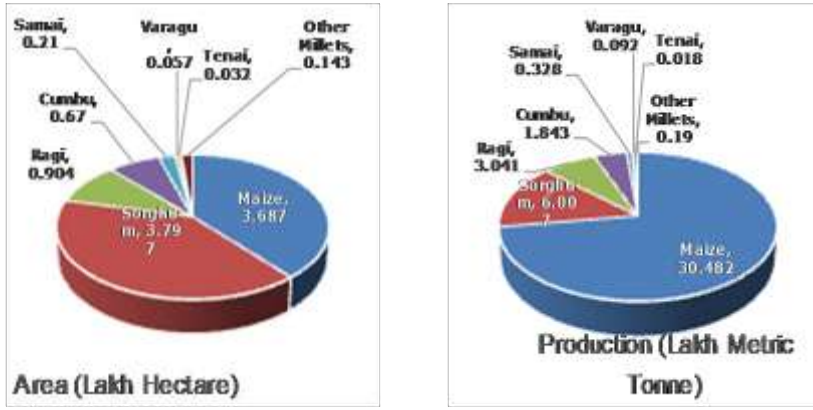
National Agricultural Development Programme and National Food Security Mission Schemes were implemented to increase the area, production and productivity at an outlay of Rs.21 crore and Rs.7.51 crore respectively. The scheme will be implemented during 2022-23.

Furthermore, initiatives like distribution of Tarpaulin to farmers, establishment of Demonstration plots of Pro-tray Nursery in Paddy, cultivation of bund crops, encouraging farmers to apply Zinc Sulphate and Gypsum will be implemented during 2022-23.

1.4.2. Millets

Millets are nutritious cereals. Millets are grown in a normal area of 8.94 lakh Ha with normal production of 31.35 lakh Metric Tonnes.

Fig: 5 Millets Area, Production – 2020-21



Source: Department of Economics and Statistics

***As per the Final Estimate**

1.4.2.1. Millet Mission in Tamil Nadu

To enhance Millet production, **"Two Millets Special Zones"** will be formed. **"Millet Festivals"** will be organized at the State and District level with State and Central Government funds.

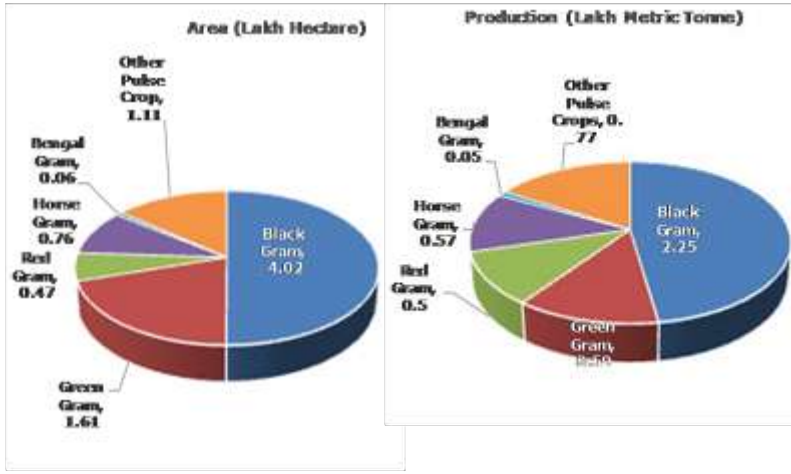
Under National Food Security Mission (NFSM), during the year 2021-22, components were implemented to increase the area and production in Maize and Nutri-Cereals at an outlay Rs.2.74 crore and Rs.13.54 crore

respectively. The scheme will be continued during 2022-23.

1.4.3. Pulses

Blackgram, Green gram, Redgram and Horsegram are the major pulses cultivated in Tamil Nadu covering a normal area of 8.17 lakh Ha with a production of 5.05 lakh Metric Tonnes.

Fig: 6 Pulses- Area and Production – 2020-21



(Source: Department of Economics and Statistics, Government of Tamil Nadu (Final Estimate))

With an aim to increase the area, production and productivity of pulses, National Food Security Mission and National Agricultural

Development Programme were implemented during 2021-22, with a cost of Rs. 34.51 crore and Rs.Five crore respectively. The schemes will be continued during 2022-23.

Further, to increase the production of Redgram, a **"Special Zone for Redgram"** will be formed during 2022-23.

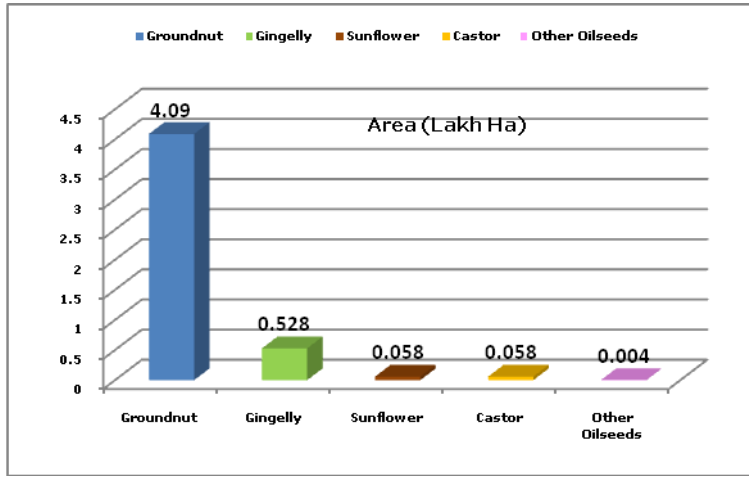
An area of 3.07 lakh Ha has been covered under pulses against the normal area of 2.2 lakh Ha, post Samba harvest.

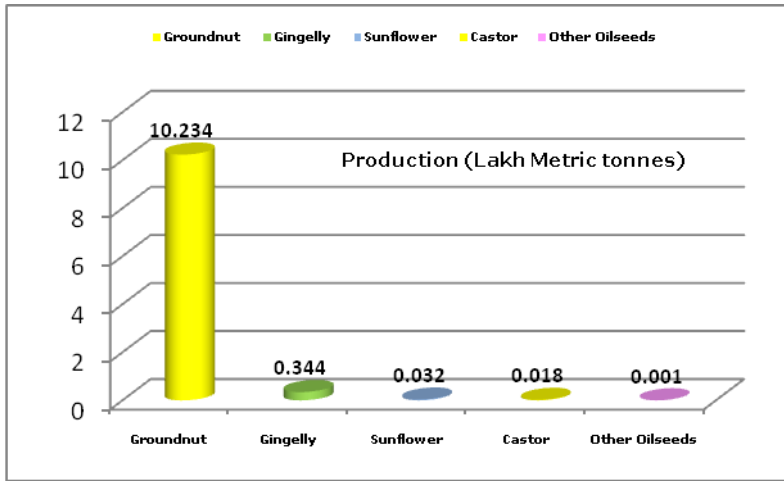
The scheme of Targetting Rice Fallow Pulses was implemented in Delta Districts at an outlay of Rs.3.03 crore. The scheme implementation will be continued during the year 2022-23 with a project cost of Rupees Five crore.

1.4.4. Oilseeds

Oilseeds are cultivated in an area of 3.82 lakh Ha normally with productivity at 2,405 Kg / Ha and production of 9.18 lakh Metric Tonnes.

Fig:7 Oilseeds – Area and Production – 2020-21





(Source: Department of Economics and Statistics, Government of Tamil Nadu (Final Estimate))

National Food Security Mission and National Agriculture Development Programme have been implemented with financial allocation of Rs.25.2 crore and Rs.65 lakh respectively during the year 2021-22 to increase the area and productivity of oil seeds.

Targeting Rice Fallow Area-Oilseeds scheme has been implemented to promote Groundnut and Gingelly after harvesting of

Paddy with a financial allocation of Rs.50 lakh during the year 2021-22.

Golden Bean - Soya scheme will be implemented to enhance the area of Soybean cultivation with financial assistance from State and Union Governments during the year 2022-23.

1.4.5 Cotton

Cotton is an important cash crop of Tamil Nadu normally cultivated in an area of 1.62 lakh Ha with a production of 3.92 lakh Bales and productivity of 411 Kg of lint per Ha.

To promote Long and Extra Long Staple Cotton Production in Tamil Nadu during 2021-22, the Government has implemented a new scheme called Sustainable Cotton Cultivation Mission at an outlay of Rs.11 crore and National Food Security Mission-Cotton was implemented at an outlay of Rs.2.83 crore. This scheme will be continued during the year 2022-23.

1.4.6 Sugarcane

Sugarcane is a major commercial crop cultivated normally in an area of 1.56 lakh Ha with a production of 161 lakh Metric Tonnes in 36 districts of Tamil Nadu.

During the year 2021-22, National Food Security Mission-Sugarcane has been implemented at an allocation of Rs.42 lakh to increase production and productivity of Sugarcane crop.

In Pradhan Manthri Krishi Sinchayee Yojana (PMKSY), State government subsidy to the tune of Rs.14.51 crore has been spent for Additional Components of Drip Irrigation for Sugarcane farmers covering 5,519 Ha during the year 2021-22. Due to the earnest efforts taken by the Government for Sugarcane farmers, Sugarcane area coverage has increased by 30% compared to last year. This scheme will be continued during the year 2022-23 also.

1.4.7 Coconut

Coconut is cultivated in all parts of the State in an area of 4.39 lakh Ha with an annual production of 49,474 lakh nuts per year.

Integrated Nutrient Management in Coconut and Management of Rugose Spiralling Whitefly in Coconut have been implemented with allocation of Rupees Three crore and Rupees Two crore respectively for encouraging Coconut cultivation during the year 2021-22. Moreover, the above components along with demonstrations to encourage intercropping in Coconut, Mango and Cashew crops are programmed to be implemented with an allocation of Rupees Nine crore during the year 2022-23.

1.5 Other Schemes in the Department of Agriculture

1.5.1. Integrated Farming System (IFS) for Sustainable Income

This scheme is being implemented in National Mission for Sustainable Agriculture-Rainfed Area Development (NMSA-RAD) and

National Agriculture Development Programme (NADP). 50% subsidy or Rs.45,000/- as assistance is provided for the package comprising Crop cultivation, Milch cow, Buffalo, Goats, Sheep, Poultry Birds, Fruit seedlings, Fodder crop, Vermicompost production and Apiary Units. About 13,300 integrated farming clusters have been formed during the year 2021-22 at an allocation of Rs.59.85 crore. This scheme will be continued during the year 2022-23.

1.5.2. Encouraging Organic Farming

The farmers interested in Organic farming will be provided with Green Manure Seeds with a financial allocation of Rupees Three crore and 100 farmers groups interested in production and sale of Vermicompost, Amirthakaraisal will be provided with Rupees One lakh / group with total allocation of Rupees One crore during the year 2022-23.

During the year 2022-23, in Paramparagat Krishi Vikas Yojana Scheme, farmers interested in organic farming will be integrated and formed as 150 organic farming clusters covering an area

of 7,500 acre with financial allocation from State and Union Governments.

1.5.3 Special Package for Bringing Fallow land into Cultivation

This special scheme with an objective to increase the cultivable area by bringing the lands remaining fallow for more than one year into cultivation has been implemented by cultivation of Millets, Pulses and Oilseeds in an area of 6,929 Ha, 6,347 Ha and 1,728 Ha respectively with financial allocation of Rs.20.57 crore during the year 2021-22. This scheme will be continued during the year 2022-23.

1.5.4 Empowering Agriculture Graduates as Agripreneurs

Agriculture, Horticulture, Agri Business, Agricultural Engineering graduates will be chosen to take up Agri Clinic or other Agri entrepreneurship. During the year 2021-2022, 193 such youth were selected and an allocation of Rs.1.93 crore was provided at the rate of Rs.One lakh / Graduate. This scheme will be implemented for 200 youth with a financial

allocation of Rupees Two crore during the year 2022-23.

1.5.5. Genetic Diversity Fairs

Genetic Diversity Fairs will be conducted three times a year at district level with an allocation of Rs.1.50 crore to get best varieties from the chosen traditional and local crop varieties.

1.5.6. Nel Jeyaraman Traditional Paddy Conservation Mission

The Seeds of 15 Traditional Paddy varieties produced in 200 acres in 33 State Seed Farms during the year 2021-22 will be distributed to farmers with an allocation of Rs.25 lakh. This Scheme will be continued during the year 2022-23 with an allocation of Rs.75 lakh.

1.5.7. Distribution of Agricultural Farm Implement Kits to Farmers:

Agricultural Implements Kits comprising spade, hand hoe, iron pot, crowbar and sickle in 64,444 numbers are being provided during

2021-22 to benefit the small and marginal farmers with an allocation of Rs.15 crore. During the year 2022-23 the kits will be provided at an outlay of Rs.15 crore.

1.6. Tamil Nadu State Seed Development Agency (TANSEDA)

TANSEDA has been established in the year 2015 under the Department of Agriculture for the production and distribution of Quality seeds and Coconut Seedlings. There are 33 State Seed Farms, six State Oilseed Farms and one State Pulses Multiplication Farm functioning in Tamil Nadu.

During the year 2021-22, a total quantity of 25,933 Metric Tonnes of certified seeds of Paddy, Millets, Pulses, Oilseeds and Cotton have been produced and distributed to the farmers.

It is programmed to procure 30,345 Metric Tonnes of certified seeds of Paddy, Millets, Pulses, Oilseeds and Cotton and to distribute to the farmers during the year 2022-23.

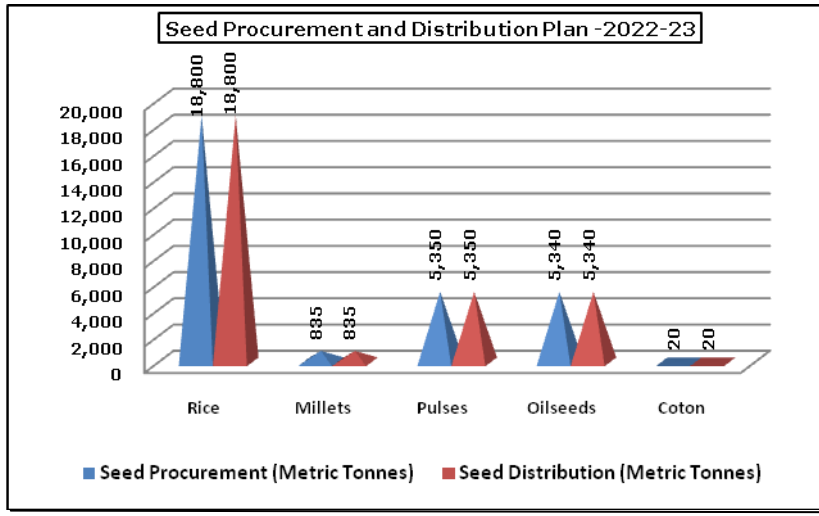


Fig:8. Seed Procurement and Distribution Plan - 2022-23

1.6.1 Production and distribution of Coconut Seedlings

During the year 2021-22, 9.84 lakh Coconut Seedlings were distributed through 23 Coconut Nurseries and 16 Coconut Crossing Centres in Tamil Nadu. During the year 2022-23, 17.4 lakh Coconut Seedlings will be provided to the farmers.

1.6.2. Seed Processing Units

Seeds are processed through 126 Seed Processing Units and distributed to provide quality seeds to the farmers.

1.6.3 Sub-Mission on Seeds and Planting Material (SMSP)

The scheme was implemented during the year 2021-22 with an allocation of Rs.29.43 crore to provide quality certified seeds at subsidized cost. This scheme will be continued during the year 2022-23.

1.6.4 Agricultural Extension Centres (AECs)

Totally, there are 880 Agricultural Extension Centres in Tamil Nadu. Out of these, 383 centres at block level are functioning as main centres and 497 centres at firka level are functioning as sub - centres.

228 Main Agricultural Extension Centres have been upgraded as **Integrated Agricultural Extension Centres (IAECs).** Construction work for new building is in progress for 256 **Sub - Agricultural Extension Centres**.

1.7. Plant Protection

Government of Tamil Nadu is taking earnest steps to ensure Integrated Pest and disease management, distribution of safe and quality Pesticides, advance forecasting to safeguard crops from Pest and Disease incidences and quarantine measures to prevent the entry of new exotic pests and diseases.

1.7.1. Production of Bio-Pesticides and Bio-Control Agents

The Bio-Pesticides and Bio-Control Agents are produced in 24 Bio-Pesticide Production Units of Tamil Nadu and distributed to the farmers.

Table 1.3 Production and Distribution of Bio-Pesticides and Bio-Control Agents during 2021-22

Sl. No	Bio-Pesticides and Bio-Control Agents	Production & Distribution
1.	Trichoderma viride (Kg)	1,58,700
2.	Pseudomonas fluorescens (Kg)	1,52,175

Sl. No	Bio-Pesticides and Bio-Control Agents	Production & Distribution
3	Beauveria bassiana (Kg)	38,332
4.	Trichogramma chilonis (cc)	17,924
5.	Metarrhizium anisopliae (Kg)	1,28,520
6	Chrysoperla Sp (Nos)	79,29,000

This Scheme will be continued during the year 2022-23.

1.7.2. Special Fund for Pest and Disease Outbreak in Crops

A Special Corpus Fund of Rupees Five crore is allocated to mitigate the sudden outbreak of new and exotic Pest and Diseases.

1.8. Fertilizer

Fertilizer, being a critical input is being allocated to Tamil Nadu by the Ministry of Chemicals and Fertilizers of the Union Government.

During the year 2021-22, 21.62 lakh Metric Tonnes of fertilizers have been distributed.

Table 1.4: Year wise details of Fertilizer Distribution

Fertilizer	Distribution of Fertilizer (lakh Metric Tonne)	
	2020 - 21	**2021 - 22**
UREA	8.66	9.51
DAP	2.50	2.20
MOP	2.62	2.35
NPK COMPLEX	5.44	7.56
Total	**19.22**	**21.62**

1.9. Quality Control Laboratories

In Tamil Nadu, 14 Fertilizer Control Laboratories, 12 Pesticides Testing Laboratories, three State Pesticides Testing Laboratory cum Coding Centres, two Organic Fertilizer Testing Laboratories are functioning. Besides these, Bio-Fertilizer Quality Control Laboratory at Tiruchirapalli and Central Control Laboratory at Pudukottai are also functioning.

1.9.1. Activities of Fertilizer Control Laboratories

In order to ensure the sale and supply of quality fertilizers, 19,495 Fertilizer samples were analysed during the year 2021-22, of which 459 fertilizer samples were found non standard. Departmental action for 376 samples and legal action for 56 samples have been initiated.

During the year 2022-23, it is programmed to analyse 24,500 Fertilizer samples. Moreover, action has been initiated to get ISO: 17025 : 2017 NABL accreditation for 14 Fertilizer Control Laboratories.

During the year 2021-22, 1,402 Organic Fertilizer samples, 1,001 Bio-Fertilizer samples were analysed and 112 Organic fertilizer samples and 31 Bio-Fertilizer samples were found to be non standard.

During 2022-23, it is programmed to analyse 2,160 Organic fertilizer samples and 2,200 Bio-Fertilizer samples.

1.9.2 Activities of Pesticides Testing Laboratories

ISO: 17025: 2017 NABL accreditation has been obtained for the Pesticide Testing Laboratory at Coimbatore and it is under progress for the Pesticide Testing Laboratory at Kancheepuram. Action has been initiated to get NABL accreditation for the remaining 10 Pesticide Testing Laboratories.

During 2021-22, 21,952 Pesticide samples have been analysed, of which 113 samples were declared as misbranded and necessary action is being taken. It is planned to analyse 21,850 Pesticide samples during the year 2022-23.

1.9.3 Bio-Control Agents Quality Control Laboratory

During the year 2022-23, it is planned to test the quality of 500 samples of Bio-Control Agents like Trichoderma Viride, Pseudomonas, Beauveria in the new Bio-Control Agents Quality Control Laboratory at Tiruchirapalli.

1.10 Soil Health Management

1.10.1 Soil Testing Laboratories

In Tamil Nadu, 32 Soil Testing Laboratories and 16 Mobile Soil Testing Laboratories are functioning. The Soil Survey and Land Use Organization units functioning at Coimbatore, Thanjavur, Vellore and Tirunelveli have initiated documenting the findings from detailed Soil Surveys that have already been completed.

During the year 2022-23 a new soil testing laboratory will be established at Mayiladuthurai for the benefit of farmers.

1.11. Micro Nutrient Mixture Production Centre

14 essential Micronutrient Mixtures are produced at Kudumiyanmalai in Pudukkottai District and 2,836 Metric Tonnes have been distributed during the year 2021-22.

It has been planned to produce 3,000 Metric Tonnes in the year 2022-23.

1.12. Bio-Fertilizers production Units

In Tamil Nadu, eight strains of Bio-Fertilizers are produced by 22 Bio-Fertilizer Production Units of the State and distributed to the farmers. Zinc Mobilizing Bacteria will be produced and distributed to the State Seed Farms.

11.38 lakh litres of Liquid Bio-Fertilizers have been produced and distributed to farmers during the year 2021-22. This Scheme will be continued during the year 2022-23.

1.13: Sub – Mission on Agricultural Extension (SMAE) – Support to State Extension Programmes for Extension Reforms Scheme (SSEPERS)-ATMA

The scheme on Sub-Mission on Agricultural Extension is being implemented with the co-ordinated efforts of Agriculture and sister Departments like Animal Husbandry, Sericulture, Fisheries and Fishermen welfare, Forestry, Tamil Nadu Veterinary and Animal Sciences University and Tamil Nadu Dr.J.Jayalalithaa Fisheries University.

1.13.1. IMPLEMENTATION OF ATMA

Various activities like Training on Agriculture, Exposure visits, demonstrations on Pests and Diseases management, Value addition of crop produces and Marketing methods were given under ATMA Scheme during the year 2021-22 utilising Rs.52.01 crore benefitting 4,76,154 farmers.

Table 1.5: Trainings Imparted to Farmers during 2021-22

S. No	Components	No. of Trainings	No. of Farmers benefitted
1	Training Within the State	313	12,920
2	Training Within the District	7,404	2,96,160
3	Exposure Visit Within the State	555	27,750
4	Exposure Visit Within the District	1,379	68,950
5	Demonstrations	6,914	6,914
6	Farm Schools	473	11,825

The Scheme will be continued during the year 2022-23.

1.14. Agriculture Training Centres

1.14.1. Farmers Training Centres:

The Department of Agriculture is imparting training to farmers, Farmer convenors, Farm women and Rural youth on Farm management practices and latest technologies through 22 Farmers Training Centres.

1.14.2. State Agricultural Extension Management Institute (STAMIN):

State Agricultural Extension Management Institute (STAMIN) provides trainings to the Extension personnel and Office Staff of the Department of Agriculture to equip them with latest technologies in Agriculture, Extension, Administration, Management and Computer applications.

During the year 2021-22, 1,033 departmental Officers were trained at cost of Rs.24.75 lakh. This scheme will be continued to during the year 2022-23.

1.14.3. State Agricultural Management and Extension Training Institute (SAMETI):

Trainings are being imparted to the middle level officers of Agriculture & Allied departments. The Post Graduate Diploma in Agricultural Extension Management (PGDAEM) Course, Diploma in Agricultural Extension Services for Input Dealers (DAESI), Certificate Course on Insecticide Management for Pesticide Dealers / Distributors, Skill Training of Rural Youth (STRY) and Certified Farm Advisor Course (CFA) are being co-ordinated, monitored and implemented.

During the year 2021-22, trainings for 2,282 technical officers were imparted at the cost of Rs.65.14 lakh. This scheme will be continued during the year 2022-23.

1.14.4. Water Management Training Centre (WMTC)

This centre functioning at Vinayagapuram, Madurai district is imparting trainings on Irrigation technologies and Water Use Efficiency to field functionaries and farmers. This scheme will be continued during the year 2022-23.

1.15 Uzhavar Aluvalar Thodarbu Thittam:

The 10 leading farmers (at least two SC/ST farmers) identified once in six months at each village Panchayat will be trained on agriculture and allied activities, latest technologies and implementation of various schemes by the Agricultural Extension workers and Assistant Agricultural Officers.

The date and place of visit by the Extension functionaries to the Village Panchayats will be informed well in advance to the lead farmers which could also be known through the Uzhavan app.

1.15.1 Monitoring through Mobile APP

An exclusive mobile software application (UATT App) has been developed comprising the details of visit made by the Agricultural Extension Officers to village panchayat as entered be them and to facilitate monitoring of these visits by the higher officials of the Department of Agriculture.

A dashboard has been developed to monitor the scheduled field visits by the

Extension officials, skipped field visits, inspection details of Monitoring Officers and issues raised by the farmers. Farmers can also view the details of visit of extension functionaries, their name and contact number and contact point of the village Panchayat in the Uzhavan APP.

1.15.2 Skill Development Training to Rural Youth

2,500 Rural Youth will be imparted with Skill Development Trainings during the year 2022-23 as done in last year to transform the Agriculture and allied sector professions as remunerative.

1.16. Tamil Nadu Irrigated Agriculture Modernization (TNIAM) Project:

This Scheme, with the assistance of the World Bank, is being implemented to enhance the crop productivity, ensure climate resilient irrigated agriculture and improve water management in 66 Sub-basin areas over a period of seven years from 2017-2018 with an allocation of Rs.84.15 crore.

This Scheme is being implemented in three phases in 2021-22 in 43 sub-basins including crop demonstrations, mechanical cono weeding and Model Villages programme with an allocation of Rs. 17.17 crore. The project will be continued during the year 2022-23.

1.17 Awards in Department of Agriculture

1.17.1 Thiru.C. Narayanasamy Naidu Paddy Productivity award through SRI method of cultivation

A cash prize of Rupees Five lakh along with a medal in the name of Thiru.Narayanasamy Naidu is being awarded every year during the Republic Day function to the best performing farmer who obtains the highest productivity adopting the System of Rice Intensification since 2011.

The award for the current year will be bestowed to the farmer who has achieved in the year 2021-22.

1.17.2 Bharat Ratna Dr. M.G.R. Traditional Rice Variety Conservator Award

The farmers who conserve and cultivate traditional Paddy varieties are being encouraged and conferred with **"Bharat Ratna Dr. M.G.R. Traditional Rice Variety Conservator Award"** since 2018-19. This has been awarded to the first three Farmers at State level with the cash prize of Rupees One lakh, Rs.75 thousand and Rs.50 thousand respectively.

The awards for the current year will be bestowed to the farmers who have achieved in the year 2021-22.

1.17.3 Reward for the farmers who excel in Agriculture:

An amount of Rupees Six lakh in total at Rs.Two lakh each has been allocated for Department of Agriculture, Horticulture and Plantation Crops and Agricultural Marketing and Agri Business to give awards to encourage the best performing farmers.

This Scheme will be continued during the year 2022-23.

1.18 Crop Yield Competition

Crop Yield Competitions along with cash prizes are conducted to encourage the farmers to adopt advanced farming practices at State and District levels.

Table 1.6 Cash Prizes Awarded at State and District Levels

Crops	First Prize (Rs.)	Second Prize (Rs.)
State Level		
Groundnut, Sugarcane and Cotton	25,000/-	15,000/-
Cholam, Cumbu, Maize, Blackgram, Greengram and Redgram.	15,000/-	10,000/-
District Level		
Paddy, Groundnut, Sugarcane and Cotton	15,000/-	10,000/-
Cholam, Cumbu, Maize, Blackgram, Greengram and Redgram.	10,000/-	5,000/-

1.19. Digital Agriculture Scheme

Use of Information Technologies like Geo Tagging, Artificial Intelligence, Internet of Things, Geo Spatial and Remote Sensing technologies will be used to deliver farm wise recommendations thereby enhancing production and farmer's income.

The farmers will be provided with facilities for paying the farmer contribution through e-Chalaan, Credit Card, Debit Card, Unified Payments Interface (UPI) etc., in the Agricultural extension centres for the purchase of Agricultural inputs. This cashless transaction will be adopted on pilot basis in one Block in each District.

1.20. Crop Insurance

Crop Insurance Scheme is being implemented to compensate the farmers for the crop yield loss due to natural calamities.

During 2021-2022, Tamil Nadu resorted to Co-Insurance model of 80:20 proportionate sharing of risks between the State and insurance companies. The scheme was implemented in

14 clusters of 37 districts through Agriculture Insurance Company of India Ltd., and IFFCO-TOKIO, General Insurance Company.

During 2021-2022, 26.06 lakh farmers have been enrolled and an extent of 40.63 lakh acre has been insured. Moreover, 6.25 lakh farmers have been enrolled additionally during Samba season compared to 2020-2021.

Further, the Department of Agriculture & Farmers Welfare also launched a campaign on 26.02.2022 for the Door Step Crop Insurance Policy distribution for Rabi 2021-2022.

The Government of Tamil Nadu has released a premium subsidy amount of Rs.1,950 crore for 2020-2021 and Rs.2,324 crore has been allocated as Crop Insurance Premium Subsidy for 2021-2022.

The Government of Tamil Nadu also facilitated the release of Rs.2,082 crore as compensation amount to 9.65 lakh farmers for 2020-2021.

A sum of Rs.2,339 crore is allocated for the year 2022-2023 under this scheme.

1.21. Staff Structure in Department of Agriculture

The Department of Agriculture is functioning with a total strength of 10,575 staff.

Table: 1.7 - Technical Officers

S. No.	Name of the Post	Sanctioned Strength
1	Additional Director of Agriculture	5
2	Joint Director of Agriculture	37
3	Deputy Director of Agriculture	132
4	Assistant Director of Agriculture	424
5	Agricultural Officer	1,099
6	Deputy Agricultural Officer	337
7	Assistant Seed Officer	509
8	Assistant Agricultural Officer	2,320
	Total Technical Officers	**4,863**

Table: 1.8- Ministerial and Other Staff

S. No.	Name of the Post	Sanctioned Strength
1	Deputy Director (Administration)	2
2	Administrative Officer	34
3	Superintendent	185
4	Assistant	650
5	Junior Assistant	389
6	Typist	366
7	Superintendent (Security)	149
8	Assistant(Security)	249
9	Junior Assistant (Security)	573
10	Steno-Typist (Grade-I)	1
11	Steno-Typist (Grade -II)	39
12	Steno-Typist (Grade -III)	95
13	Driver	292
14	Laboratory Assistant	143
15	Record Clerk	157
16	Office Assistant	586
17	Watchman	1,133
18	Telephone Operator	2
19	Other Staff	667
	Total Ministerial and Other Staff	**5,712**

2. HORTICULTURE AND PLANTATION CROPS

The area under Horticulture Crops which was 6.60 lakh Ha in the year 1979 in Tamil Nadu has now increased to 15.28 lakh Ha. This reflects the tremendous improvement in cultivation of horticulture crops after the establishment of a separate Department for Horticulture in the year 1979. Horticulture Crops increase the farmer's income, generates employment through activities such as, sorting, grading, marketing, etc., and ensure nutritional security to people. Thus, Horticulture plays a prime role in Agriculture.

As the demand for fruits and vegetables increases day by day, various schemes are being implemented by Department of Horticulture to increase their production. Emphasis is given for on Protray seedling production, introduction of new crops like Strawberry, Durian, Avacado, Manila Tamarind, Dragon Fruit, etc. Application of Hi-tech practices like protected cultivation, micro irrigation, fertigation, integrated pest management, integrated nutrient management and post-harvest technology, Nutritive vegetable

garden, Terrace Garden, Nutritive Garden, Pandhal vegetable cultivation and Mushroom cultivation, are being advocated to increase the overall production in the State.

2.1: CONTRIBUTION OF TAMILNADU IN HORTICULTURE CROPS AT NATIONAL LEVEL

In Tamil Nadu, horticulture crops are grown in an area of 15.28 lakh ha with a total production of 206.39 lakh Metric Tonnes. An increase of 6.8% under production has been registered in Fruits, Vegetables, Plantation, medicinal, aromatic and flower crops as compared to previous year production.

Table: 2.1: Area, Production and Productivity of Horticulture crops in Tamil Nadu

Name of the Crop	2020-21			*2021-22 (1st Advance Estimate)		
	Area (lakh Ha)	**Production** (lakh MT)	**Productivity** (MT/Ha)	**Area** (lakh Ha)	**Production** (lakh MT)	**Productivity** (MT/Ha)
Fruits	3.13	56.34	18.02	3.30	60.72	18.4
Vegetables	3.34	82.02	24.49	3.83	94.03	24.55
Spices and Condiments	1.17	2.51	2.15	1.27	2.73	2.15
Plantation Crops	7.01	57.51	8.20	7.08	58.13	8.21
Medicinal and Aromatic crops	0.20	2.85	13.96	0.13	1.82	14.01
Flowers	0.43	5.16	12.03	0.45	5.45	12.1
Total	**15.28**	**206.39**		**16.06**	**222.87**	

2.1.1: Fruits

Area cultivated under fruit crops constitutes about 20% of the total horticulture crop area in Tamil Nadu. Various types of fruits are being cultivated in Tamil Nadu among which mango and banana are cultivated in a larger area of 2.44 lakh Ha, contributing about 78% of the total area under cultivation of fruits in Tamil Nadu. Other fruit crops like Guava, Lime and Lemon, Watermelon, Amla, Sapota, Jack, Orange, Grapes, etc., contribute around 22% of area under cultivation of fruits. Fruits contribute 27% of the total horticulture production in Tamil Nadu.

In Mango, Krishnagiri ranks 1st in Area (31,176 Ha) and Tiruvallur ranks 1st in Production (99,745 MT).

In terms of Banana, Erode ranks 1st in area (15,272 Ha) and production (5,60,756 MT) Thoothukudi ranks second in Area (8,283 Ha) and Theni ranks second (4,21,134 MT) in Production.

Tirunelveli stands first in area and production under Amla with an area of 1,208 Ha and production of 28,992 Metric Tonnes.

Table.2.2: Details of major Fruit growing Districts

Sl. No	Name of the Crops	Area (Ha)	Major Fruit Growing Districts (in Ha)
1	Mango	1,46,071	Krishnagiri (31,176), Dharmapuri (16,509), Dindigul (15,816), Thiruvallur (11,059) and Theni (9,385).
2	Banana	97,644	Erode (15,272), Thoothukudi (8,283), Coimbatore (7,012), Theni (6,122) and Tiruchirapalli (6,113)
3	Guava	12,958	Dindigul (1,938), Madurai (1,533), Virudhunagar (1,214), Villupuram (1,144) and Cuddalore (1,087).
4	Lime / Lemon	11,757	Tenkasi (3,057), Dindigul (2,388),Tiruchirapalli (1,023), Theni (748) and Thoothukudi (679)

Sl. No	Name of the Crops	Area (Ha)	Major Fruit Growing Districts (in Ha)
5	Watermelon	10,841	Chengalpattu (3,338), Villupuram (1,886), Thiruvallur (1,262), Salem (648) and Dharmapuri (625).
6	Amla	7,297	Tirunelveli (1,208), Tenkasi (1,063), Dindigul (1,054), Tiruppur (498) and Theni (345).
7	Sapota	5,268	Dindigul (1,006), Thirupathur (393), Virudhunagar (387), Krishnagiri (321) and Theni (314).
8	Jack fruit	3,180	Cuddalore (718), Kanniyakumari (567), Dindigul (382), Namakkal (258) and Pudukkottai (226).
9	Orange	2,228	Dindigul (1,337), Salem (702) and Nilgiris (93)
10	Grapes	2,070	Theni (1,796) and Dindigul (195)

Sl. No	Name of the Crops	Area (Ha)	Major Fruit Growing Districts (in Ha)
11	Other Fruits	13,229	Kanniyakumari (1,720), Erode (1,351), Dindigul (1,257), Thiruvannamalai (1,109), Namakkal (1,067)

During 2022-23, it has been proposed to cover new area of 31,259 Ha under cultivation of Fruits by providing subsidy through National Agriculture Development Programme, National Horticulture Mission, Rainfed Area Development, Integrated Horticulture Development Scheme and Tamil Nadu Irrigated Agriculture Modernization Project under the area expansion component at an outlay of Rs.71.36 crore.

2.1.2: Vegetables

Vegetable crops contribute to 22% in area and 40% in production of the total Horticulture crops grown in the State. The major Vegetable growing districts are Dharmapuri, Salem, Namakkal, Krishnagiri, Dindigul and Kallakuruchi.

Dharmapuri District (44,970 Ha) tops the State in over all area under cultivation of Vegetables, followed by Krishnagiri (32,800 Ha) and Namakkal (29,616 Ha).

Major Vegetable Crops like Tapioca, Onion, Tomato, Brinjal, Bhendi, Moringa, Green Leafy Vegetables, Beans, Carrot, Bitter Gourd and Lablab contribute to around 59% of the total area covered under Vegetables in Tamil Nadu.

Table: 2. 3 : Details of major vegetable growing Districts

SI. No	Name of the Crop	Area (Ha)	Major Flower Growing Districts (in Ha)
1	Onion	53,891	Perambalur (9,589), Namakkal (5,764), Tiruchirapalli (5,540), Thoothukudi (5,426) and Dindigul (4,314)
2	Tomato	44,918	Dharmapuri (13,542), Krishnagiri (10,845), Salem (5,000), Dindigul (2,501) and Tiruppur (2,399)
3	Brinjal	26,873	Dharmapuri (4,477), Salem (3,515), Tiruvannamalai (2,817), Krishnagiri (1,936) and Kallakurichi (1,076)

SI. No	Name of the Crop	Area (Ha)	Major Flower Growing Districts (in Ha)
4	Bhendi	22,876	Dharmapuri (4,883), Salem (3,739), Tiruvannamalai (2,187), Kallakuruchi (1,004) and Ranipettai (900)
5	Moringa	18,199	Dindigul (4,354), Theni (3,078), Karur (2,482), Thoothukudi (1,661) and Ariyalur (1,628)
6	Leafy Vegetables	10,267	Krishnagiri (2,440), Salem (1,242), Vellore (913), Thiruvallur (790) and Namakkal (706).
7	Beans	6,796	Krishnagiri (4,439), Dindigul (1,113), Nilgiris (329), Salem (261) and Erode (243)
8	Carrot	5,659	Nilgiris (3,728), Dindigul (978) and Krishnagiri (946)
9	Bitter gourd	5,069	Dharmapuri (1,072), Salem (684),Coimbatore (532), Tiruvannamalai (274) and Krishnagiri (218)
10	Lab Lab	4,278	Dharmapuri (1,292), Salem (742), Dindigul (673), Theni (426), Krishnagiri (337)

SI. No	Name of the Crop	Area (Ha)	Major Flower Growing Districts (in Ha)
11	Other Vegetables	44,613	Krishnagiri (6,973), Dindigul (4,900) , Dharmapuri (4,727), Salem (3,208), Nilgiris (2,986)

To promote cultivation of Vegetables and to ensure a year round income to farmers, during the year 2022-23, Area Expansion under Vegetable crops will be promoted in an area of 60,959 Ha at an outlay of Rs.118.58 crore through schemes like National Horticulture Mission (NHM), National Agriculture Development Programme (NADP), Rainfed Area Development (RAD), State Horticulture Development Scheme (SHDS) and Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP).

2.1.3: Flowers

The climatic conditions prevailing in Tamil Nadu is favourable for growing flower crops like Jasmine, Mullai, Pitchi, Kakada, Tuberose (Sambangi), Chrysanthemum, Rose, Marigold, Gomphrena, Nerium etc. Flower crops contribute to 2.8% in area and 2.5% in production of the total Horticulture crops cultivated in Tamil Nadu.

Jasminum sp. (Malligai, Mullai, Kakada and Pitchi) contribute to 40% of the total flower area cultivated followed by Tube rose (Sambangi) which contributes to 16% of the area cultivated.

Table 2.4: Details of major Flower cultivating Districts

Sl. No	Name of the Crop	Area (Ha)	Major Flower Growing Districts (in Ha)
1	Jasmine	13,719	Madurai (1,666), Dharmapuri (1,394), Thiruvallur (1,139), Erode (1,138) and Salem (909)
2	Tube Rose	7,026	Dharmapuri (2,936), Tiruvannamalai (1,626), Erode (344), Dindigul (311) and Thiruvallur (187).
3	Chrysanthemum	6,913	Dharmapuri (2,448), Krishnagiri (2,398), Salem (1,075) and Tiruvannamalai (508)
4	Rose	3,019	Krishnagiri (1,298), Dharmapuri (554), Tiruvannamalai (199) Namakkal (145) and Dindigul (105).

Sl. No	Name of the Crop	Area (Ha)	Major Flower Growing Districts (in Ha)
5	Arali	2,303	Salem (868), Dharampuri (517), Namakkal (420) and Dindigul (322).
6.	Other Flowers	9,940	Krishnagiri(1,687), Thiruvannamalai (1,467), Dharmapuri (1,187), Dindigul (807), Salem (547)

During 2022-23, cultivation of cut flowers will be promoted in protected structures like Poly Green Houses, Shade Net houses in an area of four lakh Sq.m at a total outlay of Rs.17.57 crore under National Horticulture Mission.

In addition, during the year 2022-23, area expansion of flowers will also be promoted in 2,805 Ha at an outlay of Rs.8.83 crore through various schemes like National Horticulture Mission, State Horticulture Development Scheme and Tamil Nadu Irrigated Agriculture Modernization Project.

2.1.4: Spices and Condiments

The major Spices and condiment crops grown in Tamil Nadu are Red chillies, Turmeric, Tamarind, Coriander seeds, Black Pepper, Cardamom, Clove, Betel vine, Ginger, garlic etc.,

Out of the total cultivated area under Horticulture crops in Tamil Nadu, Spice crops contribute to 7.5% in area and 1.2% in production.

Table. 2.5 : Details of major Spices growing Districts

Sl. No	Name of the Crop	Area (Ha)	Major Growing Districts (in Ha)
1	Red Chillies	54,231	Ramanathapuram (15,939), Thoothukudi (13,689), Sivagangai (5,064), Tiruvannamalai (2,344) and Salem (1,643).
2	Turmeric	20,771	Dharmapuri (6,704), Erode (4,259), Salem (3,302), Kallakurichi (2,154) and Namakkal (1,396).

Sl. No	Name of the Crop	Area (Ha)	Major Growing Districts (in Ha)
3	Tamarind	14,496	Dindigul (3,294), Theni (1,607),Dharmapuri (1,305), Madurai (1,146) and Kanyakumari (907).
4	Coriander (Seed)	9,334	Thoothukudi (3,672), Ramanathapuram (1,916), Virudhunagar (1,797), Tiruppur (682) and Dharmapuri (414).
5	Black Pepper	6,604	Namakkal (2,348), Dindigul (1,224), Salem (1,181), The Nilgiris (984) and Kanniyakumari (319).
6	Other Spices and condiments	11,299	Coimbatore (2,194), Nilgiris (1,807), Theni (1,657), Dindigul (959), Kanniyakumari (906)

During 2022-23, it has been planned to promote cultivation of Spice crops in an area of 7,250 Ha through schemes like National Horticulture Mission, National Agriculture Development Programme, State Horticulture Development Scheme and Tamil Nadu Irrigated

Agriculture Modernization Project with a total outlay of Rs.10.88 crore.

2.1.5: Plantation Crops

Plantation crops contribute to major area under the total Horticulture crops cultivated in Tamil Nadu. The share of plantation crops accounts to 46 % in area and 28 % in production.

The area under Plantation crops is mainly covered by Coconut (63%) with 65% in production followed by other Plantation crops Cashewnut, Tea, Coffee, Arecanut, Cocoa and Rubber.

Table.2.6: Details of major Plantation Crops growing Districts

Sl. No	Name of the Crop	Area (Ha)	Major Growing Districts (in Ha)
1	Cashew-nut	84,924	Ariyalur (30,524), Cuddalore (29,483), Pudukkottai (5,929), Villupuram (3,031) and Sivagangai (2,838)

Sl. No	Name of the Crop	Area (Ha)	Major Growing Districts (in Ha)
2	Tea	69,743	Nilgiris (55,910), Coimbatore (11,191), Theni (1,621), Tirunelveli (804) and Kanniyakumari (214)
3	Coffee	33,360	Dindigul (11,093), Nilgiris (7,457), Salem (7,008), Theni (3,107) and Coimbatore (2,248)
4	Arecanut	7,762	Coimbatore (2,282), Salem (2,006), Erode (802), Dharmapuri (737) and Namakkal (681)
5	Cocoa	2,170	Coimbatore (748), Dharmapuri (433) and Salem (238)
6	Other Plantation Crops	5,03,068	Coimbatore (88,527), Thiruppur (63,174), Kanniyakumari (53,940), Thanjavur (41,868), Dindigul (28,873)

During 2022-23, it has been programmed to promote cultivation of Plantation in area of 5,160 Ha at an outlay of Rs.9.95 crore through National Horticulture Mission and National

Agriculture Development Programme, Rainfed Area Development, Tamil Nadu Irrigated Agriculture Modernization Project.

2.1.6: Medicinal and Aromatic plants

Cultivation of Medicinal and Aromatic Crops is being encouraged and it is grown in an area of one percent out of the total area and contribute one percent of production out of the total horticulture crops cultivated in Tamil Nadu.

Dindigul District takes the 1st place in area (4,955 Ha) followed by Tiruppur (3,917 Ha), Dharmapuri (2,023 Ha), Tiruvannamalai (1,992 Ha) and Karur (1,315 Ha).

Table.2.7: Details of major Medicinal and Aromatic plants growing Districts

SI. No	Name of the Crop	Area (Ha)	Major Growing Districts (in Ha)
1	Gloriosa	5,134	Dindigul (2,370), Tiruppur (2,037) and Karur (603).
2	Coleus	3,403	Kallakurichi (1,151), Salem (1,011) and Tiruvannamalai (779).

SI. No	Name of the Crop	Area (Ha)	Major Growing Districts (in Ha)
3	Palmarosa	791	Tiruvannamalai (546) and Dharmapuri (202).
4	Lemon Grass	363	Tiruvannamalai (360).
6	Other Medicinal and Aromatic Crops	10,748	Dindigul (2,584), Tiruppur (1,879), Dharmapuri (1,805), Viruthinagar (1,045), Karur (709)

2.2: Schemes implemented with Union and State Government funds

2.2.1: Scheme for judicious use of irrigation water

Tamil Nadu Government is taking concerted efforts to boost farmers' income and to increase productivity of crops through efficient usage of water. To supplement this, Micro Irrigation scheme is being implemented in the State to bring more area under cultivation and enhance production by judicious use of water. Also, to encourage the farming community 100% subsidy is provided to

Small/Marginal farmers and 75% for other farmers for installation of Micro Irrigation Systems.

During 2022-23, it has been programmed to implement the scheme in an area of 1.00 lakh Ha for Horticulture and Agriculture crops with a financial outlay of Rs.960 crore to enhance the productivity and increase the income of the farmers besides conserving water.

2.2.2 : Mission for Integrated Development of Horticulture - National Horticulture Mission (MIDH-NHM)

National Horticulture Mission is being implemented as a sub-scheme under Mission for Integrated Development of Horticulture from 2014-15 with a fund sharing pattern of 60:40 between the Centre and State. The scheme operates in 26 districts and focuses on the development of Fruits, Vegetables, Flowers, Plantation crops, Spices and Aromatic crops. The scheme also promotes additional income to the farmers by providing training and assistance in mushroom cultivation, vermi-compost production, apiculture etc.,

For the year 2021-22, the scheme is being implemented at an outlay of Rs.125 crore. Expansion of new horticultural crops has been carried out in an area of 24,188 hectare at an outlay of Rs.53.27 crore and organic farming has been promoted in an extent of 17,700 Ha. To empower women to convert themselves into entrepreneurs, an assistance of Rupees one lakh is being provided for the establishment of small-scale mushroom production units. A Special Centre for Jack is also being established in Panikankuppam village, Panruti block, Cuddalore district at an outlay of Rs. Five crore, to utilize the vast opportunities in jack cultivation and processing.

During the year 2022-23, it has been proposed to implement the scheme at a total financial outlay of Rs.340.31 crore.

2.2.3: National Agriculture Development Programme (NADP)

National Agriculture Development Programme is being implemented during 2021-22 at an outlay of Rs.61.05 crore. Organic cultivation of Vegetables is being promoted in an

area of 40,000 Ha by providing incentives to the farmers. In order to maximize quality production and productivity of Pandal type fruit and Vegetable crops, assistance is being provided for the establishment of Permanent Pandal structures (which is quite expensive for a small/marginal farmer to afford) in an area of 638 Ha. Moreover, the cultivation of vegetables in zero vegetable villages was encouraged in area of 1,250 Ha.

During the year 2022-23, it has been proposed to implement this scheme at an outlay of Rs.86.39 crore which includes promotion of Organic farming in Horticultural crops in an area of 41,000 Ha, crop diversification to Horticultural crops from low value field crops in an area of 8,381 Ha, Promotion of traditional vegetable cultivars in an area of 1,000 Ha, Promotion of Horticultural crops like Garlic, Mangosteen, Avocado, Moringa, Onion, etc., in an area of 5500 Ha, establishment of Permanent Pandal structures in an area of 200 Ha and providing assistance for 'Y' shape trellis for crops like banana, tomato and beans in an area of 3,000 Ha.

2.2.4: National Mission on Sustainable Agriculture (NMSA) - Rainfed Area Development (RAD)

Rainfed Area Development (RAD) is implemented with the objective to introduce appropriate farming systems, by integrating multiple components of Agriculture such as Horticulture, livestock, fishery, forestry with agro based income generating activities and value addition.

During the year 2021-22, Rainfed Area Development is being implemented at a total outlay of Rs.16.24 crore in 23 Districts. Integrated Farming System units (4,400 Nos) comprising Horticulture based farming, Rearing of Milch cows and Goats, Vermi beds, Training and Demonstration were implemented under this scheme.

During the year 2022-23, it has been proposed to implement this scheme at a total outlay of Rs.25.45 crore wherein establishment of 5,000 Integrated farming System units will be done at an outlay of Rs.25 crore. This will include assistance for Horticulture based

farming, rearing of cows and goats, fodder crop, Apiary units and Vermi-bed with a total assistance of Rs.50,000/unit.

2.2.5: National Bamboo Mission (NBM)

The scheme is implemented with an objective to increase the area under cultivation of Bamboo in Non-forest areas such as public and private lands and also to promote post-harvest management activities with Union and State Government funds.

During 2021-22, the scheme is implemented in an area of 614 Ha at an outlay of Rs.2.91 crore. During 2022-23, the scheme is proposed to be implemented in an area of 850 Ha at an outlay of Rs.3.75 crore.

2.2.6: State Horticulture Development Scheme (SHDS)

State Horticulture Development Scheme is implemented for area expansion under horticulture crops with a special focus on non-NHM districts.

Under Chief Minister's Nutritive Vegetable Garden Scheme, two lakh Vegetable seed kits, one lakh Terrace garden kits and two lakh Nutritive garden kits have been provided at 75% subsidy to the beneficiaries in all districts who had registered online.

During 2021-22, the scheme was implemented at an outlay of Rs.41.53 crore and for the year 2022-23, the scheme will be implemented at an outlay of Rs.33.38 crore.

2.2.7: Kalaignarin All Village Integrated Agriculture Development Programme –(KAVIADP)

Kalaignarin All Village Integrated Agriculture Development Programme (KAVIADP) was introduced during 2021-22 as Budget Announcement. It will be implemented for a period of five years to ensure overall development of Agriculture in all the villages to help them attain self-sufficiency and sustainability in agriculture and other allied activities. The scheme is implemented with State Government Fund.

During 2021-22, the horticulture components of this scheme are being implemented in 1,997 Villages at an outlay of Rs.5.28 crore. During the year 2022-23, horticulture components under this scheme will be implemented at an outlay of Rs.8.27 crore in 3,204 villages.

2.2.8: Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP)

TNIAMP is a Multi Disciplinary Project funded by World Bank and implemented by the Government of Tamil Nadu. The main objective of the programme is to accelerate crop diversification from more water requiring crops to less water requiring high remunerative horticultural crops, through promotion of hi-tech cultivation technologies and water conservation technologies in the proposed sub basins.

In 2021-2022, this scheme is being implemented at an outlay of Rs.35.62 crore to take up crop demonstration in an area of 5,486 Ha, micro irrigation installation in an area of 2,073 Ha and model villages.

During the year 2022-23, this scheme is proposed to be implemented at a total outlay of Rs.45.57 crore.

2.2.9: Pradhan Mantri Fasal Bima Yojana (PMFBY)

Under Pradhan Mantri Fasal Bima Yojana (PMFBY) scheme, farmers can insure the notified horticulture crops in notified Firkas.

- **Notified Horticulture Crops**

  - **April to September - Kharif Season – 13 Crops -** Banana, Tapioca, Turmeric, Potato, Onion, Red Chillies, Bhendi, Brinjal, Cabbage, Carrot, Garlic, Ginger, and Tomato

  - **October to March - Rabi Season – 13 Crops -** Banana, Tapioca, Potato, Onion, Red Chillies, Bhendi, Brinjal, Cabbage, Carrot, Garlic, Ginger, Coriander and Tomato

The farmers have to pay 5% of sum insured as premium rate for availing insurance of Horticultural Crops under PMFBY.

During the year 2021-22, a total number of 1,38,466 farmers insured their notified horticulture crops in a total area of 42,603 Ha. During 2022-23, the scheme implementation will be continued.

2.2.10: Sustainable Development Goal (SDGs)

During the year 2020-21, as per the Sustainable Development Goal indicators, 3,000 New FIGs have been formed, 29,647 Ha were covered under organic farming and Micro Irrigation has been installed in an area of 2,14,216 Ha.

Also, as per the targets, 82.02 lakh Metric Tonne of vegetables, 56.33 lakh Metric Tonnes fruits and 2.51 lakh Metric Tonnes Spices were produced.

2.3: Infrastructure facilities in Horticulture Department

2.3.1: State Horticulture Farms (SHFs)

There are 79 State Horticulture farms functioning in 36 Districts under Department of Horticulture and Plantation crops (Annexure.1).

The main objective of the State Horticulture Farms is timely production and distribution of quality, pedigree planting materials at a reasonable price to the farmers. These farms also serve as "Model Demonstration Farms" and disseminate latest technologies to the farmers. Further, the farms provide employment opportunities to the landless laborers.

During the year 2021-22, 37.28 crore planting materials were produced in State Horticulture Farms and Parks & Gardens and distributed to farmers. This includes 25.37 crore of pro tray seedlings of flowers and vegetables. It is programmed to produce 40.9 crore numbers of planting materials in the year 2022-23.

During 2021-22, 328 Metric Tonnes of truthfully labelled vegetable seeds were produced and were distributed as seed kit pockets, Vegetable seed kit and Vegetable Garden kits, under various schemes.

During 2022-23, it has been planned to produce 350 Metric Tonnes of truthfully labelled seeds of various vegetables such as Tomato, Brinjal, Bhendi, Onion, Amaranthus, Pumpkin,

Snake Gourd, Bitter Gourd, Ribbed Gourd, Bottle Gourd, Ash Gourd, Moringa, Cluster beans, Lablab, Peas, Beans, vegetable cowpea, Potato, seed tubers etc., in State Horticulture Farms.

Palmyrah being the "State Tree of Tamil Nadu" is grown in all types of soil and adverse conditions like cyclones, gale wind and drought. Considering the acute necessity of Palmyrah trees, during 2021-22, One lakh number of Palmyrah seedlings are being produced in State Horticulture Farms.

2.3.1.1: Vermicompost production

Vermicompost increases the yield potential of Horticulture crops by increasing the organic matter content, water holding capacity, microbial activity in the soil thereby improving the growth of plants. During the year 2021-22 around 823 Metric Tonnes of vermicompost were produced in State Horticulture Farms and distributed to farmers. During 2022-23, it is programmed to produce 1,000 Metric Tonnes of vermicompost.

2.3.2: Parks and Gardens

Horticulture Department maintains 24 Parks in eight Districts (Annexure.2) of the State. Parks act as recreation centres for the public and also serve as an educational centres for Botany students.

During 2021-22, works are being carried out for the establishment of Neithal Heritage Garden at an outlay of Rs.Two crore at Nagore of Nagapattinam district and Horticulture garden at an outlay of Rupees One crore at Vadalur of Cuddalore district.

2.3.3 : Landscape Wing

In order to cater to the landscaping needs of the people living in cities, Tamil Nadu Horticulture Development Agency has set up a landscaping wing with all the technical staff required for project, designing and implementation.

This wing is involved in creating new landscaping for the public, Government offices and private companies, further beautifying existing landscaping gardens and taking up

projects such as terrace gardening and executing them as per their needs.

Gardening work in the Egmore Museum and the lawn renovation work at Raj Bhavan have been completed in 2021-22 by the Landscaping wing. During 2022-23, landscape gardening work will be started at Thanjavur Air Force Base and Chemmancheri Housing Board at an outlay of Rs.0.8 crore.

2.3.4 : Centre of Excellence (CoE)

To provide training to farmers and act as demonstration centres for Hi- tech practices, six Centres of Excellences (COEs) have been established based on the crops grown in that particular area.

Table.2.8: Centre of Excellence

S.No	Centre of Excellence	Location
1.	Cut flowers	Thally, Krishnagiri District.
2.	Vegetables	Reddiyarchatram, Dindigul District.

S.No	Centre of Excellence	Location
3.	Hill vegetables	Nanjanadu, Nilgiris District.
4.	Tropical fruits	Kanchanaickenpatti, Tiruchirapalli District.
5.	Bee Keeping	Pechiparai, Kanyakumari District.
6.	Traditional Flower crops	Tiruparankundram, Madurai District.

2.3.5: Horticulture Training Centres

The Department of Horticulture and Plantation crops runs four Horticulture Training Centre at 1) Madhavaram in Chennai district, 2) Kudumianmalai in Pudukottai district, 3) Thally in Krishnagiri district and 4) Ooty in Nilgiris district. The prime objective of these training centres is to impart training on latest cultivation practices *viz.,* Hi tech Horticulture techniques to farmers.

2.3.6: Diploma in Horticulture

The Department is offering Two years Diploma Course in Horticulture annually for 50 students, each at Tamil Nadu Horticulture Management Institute, Madhavaram (Chennai), Horticulture Research and Training Centre, Thally, (Krishnagiri) and Centre of Excellence for Vegetables, Reddiyarchathiram, (Dindigul). The courses are being affiliated with Tamil Nadu Agricultural University since 2022.

2.4: Staff Strength:

Under Horticulture and Plantation Crops, the following staff are working in Block, District and State levels.

Table 2.9 : Cadre details

S.No.	Staff	Total posts
A.	**Technical Staff**	
1	Additional Director of Horticulture	2
2	Joint Director of Horticulture	6

S.No.	Staff	Total posts
A.	**Technical Staff**	
3	Deputy Director of Horticulture	43
4	Assistant Director of Horticulture	398
5	Horticultural officer	404
6	Deputy Horticulture officer	123
7	Assistant Horticulture officer	1,625
8	Assistant Seed Officer	5
	Total	**2,606**
B.	**Non Technical Staff**	
9	Non Technical Staff – (Deputy Director(Admin), Chief Accounts Officer, Administrative officer, Accounts officer, Assistant Accounts officer, Superintendent, Assistant, Junior Assistant, other posts)	1,222
Total		**3,828**

Annexure.1: List of State Horticulture Farms

Sl. No	District	Name of the Farm/CoE	Year of Establish-ment	Area (Ha)
1.	Ariyalur	Keelapaluvur	2018	7.58
2.	Chennai	Madhavaram	1980	4.38
3.	Coimbatore	Anaikatty	1986	12.00
4.	Coimbatore	Kannampalayam	2001	11.20
5.	Cuddalore	Neyveli	1985	39.53
6.	Cuddalore	Vridhachalam	1975	10.43
7.	Dharmapuri	Polayampalli	2013	2.73
8.	Dharmapuri	Block Level Nursery, Dharmapuri	2020	0.40
9.	Dindigul	Sandhaiyur	2018	15.20
10.	Dindigul	Neelamalai kottai	2020	0.40
11.	Dindigul	Kodaikanal	1961	1.73
12.	Dindigul	Thandikudi	1985	5.45
13.	Dindigul	Sirumalai	1980	200.04
14.	Dindigul	Centre of Excellence for Vegetables, Reddiyar chatram	2012	5.33
15.	Dindigul	Kottapully	2021	5.87
16.	Erode	Bagudham palayam	2018	10.00
17.	Chengalpattu	Attur	1961	12.24
18.	Kancheepuram	Vichanthangal	1982	23.25
19.	Kancheepuram	Melkadirpur	1982	42.63

Sl. No	District	Name of the Farm/CoE	Year of Establish-ment	Area (Ha)
20.	Kancheepuram	Melotti vakkam	1982	20.60
21.	Kancheepuram	Pichivakkam	1982	34.00
22.	Kanyakumari	Kanyakumari	1922	12.64
23.	Kanyakumari	Pechiparai	1967	6.00
24.	Karur	Mudalaipatti	1978	23.96
25.	Krishnagiri	Thimmapuram	1952	9.62
26.	Krishnagiri	Jeenur	1980	123.45
27.	Krishnagiri	Centre of Excellence for Cut Flowers, Thally	2012	22.00
28.	Madurai	Poonjuthi	2012	5.76
29.	Madurai	Centre of Excellence for Traditional Flowers, Thiruparan-gundram	2019	2.65
30.	Nagapattinam	Vanduvancherry	2018	6.54
31.	Nagapattinam	Pushpavanam	2021	10.25
32.	Namakkal	Semmedu	1974	11.60
33.	Namakkal	Padasolai	1989	22.67
34.	Perambalur	Vengalam	2018	4.72
35.	Pudukottai	Kudumiyanmalai	1974	118.68
36.	Pudukottai	Vallathirakottai	1977	521.20
37.	Pudukottai	Nattumangalam	1985	53.02
38.	Ramnathapuram	Oriyur	2013	14.77

Sl. No	District	Name of the Farm/CoE	Year of Establish-ment	Area (Ha)
39.	Salem	Giant Orchard, Karumandurai	1981	419.77
40.	Salem	Maniyarkundram	1982	101.21
41.	Salem	SHF, Karumandurai	1981	39.35
42.	Salem	Mulluvadi	1985	48.40
43.	Salem	Sirumalai	1987	8.00
44.	Salem	SHF Yercaud	1975	10.13
45.	Sivagangai	Devakottai	1985	81.19
46.	Sivagangai	Nemam	1979	38.77
47.	Sivagangai	Kilathari	2019	12.81
48.	Thanjavur	Aduthurai	1988	8.90
49.	Thanjavur	Marungulam	1966	10.70
50.	Nilgiris	Burliar	1871	6.25
51.	The Nilgiris	Kallar	1900	6.77
52.	The Nilgiris	Fruit Preservation Unit, Coonoor	1965	4.05
53.	The Nilgiris	Pomological Station,Coonoor	1948	10.46
54.	The Nilgiris	SHF,Kattery	1974	16.96
55.	The Nilgiris	Doddabetta	1969	2.52
56.	The Nilgiris	Thummanatty	1956	9.80
57.	The Nilgiris	Nanjanad	1917	64.00
58.	The Nilgiris	Devala	1978	80.00
59.	The Nilgiris	Colgrain	1989	20.40
60.	Theni	Periyakulam	1950	9.32

Sl. No	District	Name of the Farm/CoE	Year of Establish-ment	Area (Ha)
61.	Thoothukudi	Keelavallanadu	2019	3.82
62.	Thiruvarur	Moovanallur	2018	5.82
63.	Tiruppur	Sankaramanallur	2018	10.12
64.	Tirunelveli	Vannikonendal	2018	10.86
65.	Tiruvannamalai	Pudurchekkadi	2018	12.76
66.	Tiruvannamalai	Jamunamarathur (Block level Nursery)	2019	0.68
67.	Tiruvannamalai	Block level Nursery, Polur	2020	1.52
68.	Tiruchirapalli	Thorakudi	2013	4.05
69.	Tiruchirapalli	Centre of Excellence for Tropical fruit crops, Kanjanaicken-patti	2019	8.67
70.	Tirupattur	Thagarakuppam	1985	34.40
71.	Tirupattur	Kudapattu	1961	10.08
72.	Thiruvallur	EakaduKandigai	2020	3.62
73.	Ranipet	Navlock	1981	84.42
74.	Kallakurichi	A.Sathanur	2018	10.00
75.	Vellore	Agaramcheri	2020	34.76
76.	Virudhunagar	Poovani	1967	9.46
77.	Virudhunagar	Srivilliputhur	1982	46.27
78.	Virudhunagar	Adithanendhal	2020	0.81
79.	Villupuram	Elavalapakkam	2022	7.20
		Total		**2743.67**

Annexure.2: List of Parks and Garden

Sl. No	District	Name of the Park / Garden	Year of Establishment	Area (Ha)
1	Chennai	Semmozhi Poonga, Chennai	2010	3.21
2	Chennai	Horticulture Park Madhavaram	2018	8.90
3	Chennai	Sengandhal Poonga	2021	2.76
4	Chennai	Heritage Garden, Washermenpet	2021	1.56
5	Kanyakumari	Eco Park, Kanayakumari	2018	6.07
6	Ramanathapuram	Palai genetic Garden, Achadiparambu	2015	4.04
7	Salem	Rose Garden, Yercaud.	2005	2.02
8	Salem	Lake View Park, Yercaud	2018	1.32
9	Salem	Anna Park, Yercaud	1999	1.74
10	Salem	Government Botanical Garden-1 Yercaud	2012	8.50

Sl. No	District	Name of the Park / Garden	Year of Establishment	Area (Ha)
11	Salem	Government Botanical Garden-2, Yercaud	2012	7.69
12	Salem	Kurinchi Heritage Garden, Yercaud	2012	7.28
13	Tenkasi	Eco Park, Courtallam	1986	15.07
14	Tiruvannamalai	Tiruvannamalai Park	2021	3.64
15	Dindigul	Rose Garden & cut flower Demonstration unit, Kodaikanal	2012	4.05
16	Dindigul	Bryant Park and Anna Park, Kodaikanal	1900	8.29
17	Dindigul	Chettiyar Park, Kodaikanal	1980	2.02
18	The Nilgiris	Government Botanical Garden, Ooty	1848	21.60
19	The Nilgiris	Government Rose Garden, Ooty	1995	7.29
20	The Nilgiris	Sim's Park, Coonoor	1874	11.34
21	The Nilgiris	Kattery Park	2012	2.00

Sl. No	District	Name of the Park / Garden	Year of Establishment	Area (Ha)
22	The Nilgiris	Tea Park at Doddabetta	2015	1. 60
23	The Nilgiris	Arboretum, Ooty	2008	1.58
24	The Nilgiris	Eco Park, Kallar	2021	2.15
		Total		**134.12**

3. AGRICULTURAL ENGINEERING

In today's scenario of labour scarcity, Agricultural Engineering Department plays a significant role in propagating agricultural mechanization among farmers to carry out various farming operations, starting from land bed preparation, sowing, crop protection, harvesting, post harvest technology management and value addition in time.

Agricultural Engineering Department has taken prominence among the farmers, as it helps to meet the increasing demand of water for agriculture with the depleting water resources through the adoption of better water conservation and water management strategies. Agricultural Engineering Department assists farmers in soil conservation, creation of new irrigation sources and for adoption of renewable energy technologies for pumping water for irrigation.

Agricultural Engineering Department plays a vital role in helping the farmers to get profit by value addition of their agriculture produce,

thereby preventing the wastage of agricultural produce when the price is not remunerative.

Agricultural Engineering Department is systematically implementing the following schemes to reach such efforts to the farmers without any hindrance.

1) Hiring of Agricultural Engineering Department owned machinery
2) Agricultural Mechanization
3) Value addition of agricultural produce
4) Agriculture through Solar Energy
5) Soil and Water Conservation
6) Water Management
7) Strengthening of Infrastructure

3.1. Hiring of machinery

Various innovative, new agricultural machinery and implements are hired out by the Agricultural Engineering Department for utilization by the farmers under Land Development as well as Minor Irrigation schemes at nominal hire charges fixed by the Government.

3.1.1. Land Development

Various Land Development machinery namely 86 Bull Dozers for bush clearance, land leveling and land shaping, 60 Backhoe with front end loaders and 10 Crawler excavators for the maintenance, improvement, strengthening the bunds and deepening of water bodies to improve their storage capacity, 272 Tractors and six Mini Tractors for ploughing, 44 Paddy Combine harvesters, 20 Truck operated Coconut hoists and one Sugarcane harvester are available with Agricultural Engineering Department. These machinery with attachments are hired out to the needy farmers at nominal hire charges fixed by the Government.

3.1.2. Creation of Ground Water Sources for Minor Irrigation

Under this Scheme, 25 Rotary drills for sinking of tube wells in alluvial soil areas of Kancheepuram, Tiruvallur, Cuddalore, Pudukkottai, Thanjavur and Tiruvarur districts, four Percussion drills to work in selected alluvial areas and hard rock areas of Tiruvallur district and 21 Mini Drills for sinking of tube wells in

shallow depth areas of Tiruvarur, Thanjavur, Nagapattinam and Mayiladuthurai districts are hired out by the Agricultural Engineering Department for the benefit of the farmers.

Further, in Agricultural Engineering Department, various Minor Irrigation Machinery like 19 Hand Boring sets for sinking of shallow tube wells, eight Rock Blasting Units for deepening of open wells as well as for blasting and removing rock out crops in farm lands, 21 Digital Resistivity Meters for assessing the lithology and for exploring ground water availability for drilling tube wells, bore wells and two Electrical Loggers for analyzing the quantity and quality of ground water, are hired out at nominal hire charges fixed by the Government.

3.1.3. e-Vaadagai online Mobile App

To enable the farmers to book the required agricultural machinery of Agricultural Engineering Department through online easily from their house or farm, to make use of required agricultural machinery and implements easily and to enable the farmers to pay advance hire charges through web based services or

Apps, e-Vaadagai online Mobile App has been launched by the Hon'ble Chief Minister of Tamil Nadu on 08.01.2022. This App has been welcomed greatly by the farmers and is being used by the farmers successfully.

3.1.4. Disaster Management Machinery

There are 21 Tractor operated water pumpsets and 805 Heavy duty chain saws with the Agricultural Engineering Department to carry out relief works during floods and natural disasters. In addition to Bulldozers and Tractors, Tractor operated pumpsets and Heavy duty chain saws are hired out by the Agricultural Engineering Department for disaster relief works.

3.1.5. New and innovative Agricultural machinery

To strengthen the hiring activity of Agricultural Engineering Department owned agricultural machinery and implements at nominal hire charges, as per the announcement made in the Agriculture Budget 2021-2022, action is being taken to procure the agricultural machinery which are useful to the farmers like

185 Tractors for ploughing and other agricultural activities, 185 Rotavators to uproot the plant residues, cut them into pieces and incorporate into the soil in order to convert into manure, 120 Tractor operated nine tyne spring type cultivators and 65 Tractor operated nine tyne rigid type cultivators for tillage operations of breaking the clods, loosening and aerating the soil and 120 Cage wheels for puddling operations at a cost of Rs.22.89 crore using the Watershed Development Fund of Tamil Nadu Watershed Development Agency (TAWDEVA).

3.1.6. Strengthening the availability of Agricultural Engineering Department owned machinery at Block level

After the procurement of above said agricultural machinery and implements for the Agricultural Engineering Department, as per the announcement made in the Agriculture Budget 2021-2022, action will be taken to allocate the agricultural machinery and implements currently available at revenue division level to benefit the farmers at block level in the Delta districts as first phase.

3.1.7. New Agricultural machinery, Mobile Servicing Unit

To strengthen the hiring of Agricultural Engineering Department owned Agricultural machinery to the farmers at nominal hire charges and to carry out the harvesting operations without any hindrance during the paddy harvest season, 10 Paddy combine harvesters are to be procured, as per the announcement made in the Agriculture Budget 2022-2023. Further, action will be taken to fabricate three Mobile Service Units for repairing of Agricultural Engineering Department owned Agricultural Machinery and implements at the work site itself.

3.1.8. Agricultural Machinery Sheds

In order to safely keep and protect the Agricultural Engineering Department owned machinery and implements and to ensure its efficient use by carrying out repairs immediately, construction of 35 Nos. of Agricultural Machinery Sheds each at a unit cost of Rs.20 lakh at a total cost of Rs. Seven crore under National Agriculture Development Programme were

commenced during 2021-22 and the works are under progress.

It is proposed to construct 10 Agricultural Machinery Sheds at a total outlay of Rs.2.6 crore under National Agriculture Development Programme during the year 2022-23.

3.2. Agricultural Mechanization

To encourage the usage of farm power in agriculture and to solve the increasing shortage of agricultural labour, subsidy assistance is provided under Sub- Mission on Agricultural Mechanization for the distribution of agricultural machinery and implements to individual farmers and for establishing various types of Custom Hiring Centres. This scheme is implemented with 60% Union Government share and 40% State share.

Under this scheme, farmers can get benefits by selecting the agricultural machinery models of their preference from the list approved by the Agricultural Engineering Department.

3.2.1. Distribution of Agricultural Machinery and Implements to Individual Farmers

Under the scheme of Sub- Mission on Agricultural Mechanization (SMAM), 50% subsidy assistance for Small, Marginal, SC, ST and Women farmers and 40% subsidy assistance for other farmers will be provided for the purchase of Tractor, Power Tiller, Rotavator, Paddy Transplanter, Multi crop Thresher, Baler, Groundnut Digger, Sugarcane Detrashing Machine and Combine Harvester etc. This scheme is implemented through Direct Benefit Transfer (DBT).

During the year 2021-22, under Sub-Mission on Agricultural Mechanization (SMAM) scheme, 1,598 agricultural machinery and implements were distributed with the subsidy assistance of Rs.25.87 crore and the scheme is being continued.

In the year 2022-23, 6,357 agricultural machinery and implements will be distributed at subsidy for the benefit of farmers by giving importance to millet and pulse crops.

To support small and marginal farmers who cannot afford to buy high value machinery for carrying out the agricultural operations, subsidy assistance will be provided for engaging agricultural machinery and implements with a maximum assistance Rs.800/acre limited to five acres per farmer. An amount of Rs.10 crore is to be allocated during 2022-23 under Union and State Government funds to implement the scheme to support around 37,000 small and marginal farmers covering an area of 62,000 acres.

3.2.2. Establishment of Agricultural Machinery Custom Hiring Centres

Agricultural Machinery Custom Hiring Centres are established with an aim to introduce modern and advanced agricultural technologies such as drones among the farmers for developing agriculture, to ensure the availability of agricultural machinery without shortage for carrying out farming operations and to assist small and marginal farmers who are unable to purchase and maintain hi-tech and high cost agricultural machinery. In this scheme, subsidy is provided for setting up of Custom Hiring

Centres at the block level, village level and Hi- tech Sugarcane based Custom Hiring Centres through Rural entrepreneurs, Registered farmer societies and Farmer Producer Organizations (FPOs). Through these centres, agricultural machinery and implements are hired out to the needy farmers.

For establishing the Block Level Custom Hiring Centres with a project cost of Rs.25 lakh, 40% subsidy assistance to a maximum of Rs.10 lakh is provided. During the year 2021-22, 36 Block Level Custom Hiring Centres were established and the scheme is being continued.

For the establishment of Village Level Custom Hiring Centres with a project cost of Rs.10 lakh, 80% subsidy assistance to a maximum of Rs. Eight lakh is provided. The farmers groups of the villages in the Chief Minister's Dry Land Development Mission clusters are given priority. As per the announcement made in the Agriculture Budget 2021-2022, an amount of Rs.14.64 crore was sanctioned for the programme and so far, 180 village level custom hiring centres have

been established and the scheme is being continued.

Further, 11 village level custom hiring centres have been established under Krishi Kalyan Abhiyan (KKA III) and the scheme is being continued.

Recognizing the significance of mechanization in sugarcane cultivation, Sugarcane based custom hiring centres are established through Entrepreneurs for a total amount of Rs.150 lakh with 40% subsidy assistance to a maximum limit of Rs.60 lakh. During the year 2021-22, under this scheme, 15 sugarcane based custom hiring centres were established in 11 districts namely Perambalur, Cuddalore, Ariyalur, Trichy, Theni, Chengalpattu, Villupuram, Kallakurichi, Tiruvannamalai, Sivagangai and Namakkal. The scheme is to be continued during the year 2022-23.

3.2.3. Service Centres for repair and maintenance of Agricultural Machinery and Solar pumpsets

In order to take up the repair work of agricultural machinery and solar pumpsets at

farm level without any delay, to carry out the agricultural operations at appropriate time, financial assistance is provided for the establishment of service centre for repair and maintenance of agriculture machinery and solar pumpsets to the Rural youth, Entrepreneurs, Farmers groups and Farmer Producer Organisations for a total amount of Rs. Eight lakh with a subsidy of 50% upto a maximum of Rs.Four lakh.

During the year 2021-22, sanction was accorded for the establishment of 19 service centres and the District Level Executive Committee has given approval for eight numbers. So far, two service centres have been established and the scheme is being continued.

As per the announcement made in the Agriculture Budget 2022-2023, in order to help the farmers, establishment of 25 Nos. of service centres for repair and maintenance of agriculture machinery and solar pumpsets through youth having Diploma or Degree in Agricultural Engineering, Mechanical Engineering, Automobile Engineering etc., is to be taken up

with 50% subsidy assistance at a total amount of Rupees One crore under National Agriculture Development Programme.

3.2.4. Rural Youth Agricultural Skill Development Mission

For developing skilled labour to attend the repair and maintenance of farmers owned agricultural machinery and solar pumpsets at the village level, for improving the economic status of unemployed rural youth by providing employment opportunities, skill development training programmes are conducted for handling, maintenance and operation of agricultural machinery and solar pumpset with assistance from Tamil Nadu Skill Development Corporation.

During the year 2021-22, approval has been obtained for providing training to 600 youth in the training centres of Agricultural Engineering Department located at Vellore, Coimbatore, Tiruchirapalli, Tiruvarur, Madurai and Tirunelveli and the trainings are to be commenced.

As per the Agriculture Budget 2022-2023, in order to support 750 unemployed youth and

Custom Hiring Centre owners additionally, training programme is to be organized with a financial assistance of Rs.63.48 lakh.

3.3. Distribution of Value Addition Machinery for Agricultural Produce

To extend the shelf life of millets, pulses, oilseeds and other agricultural produce cultivated by the farmers and to value add the produce, subsidy assistance of 40% will be provided for the purchase value addition machinery to the Individual Farmers, Farmer Producer Organisations, Self Help Groups, User Groups and Entrepreneurs.

During the year 2021-22, 208 Value Addition Machinery were distributed and the scheme is being continued.

As per the announcement made in Agriculture Budget 2022-2023, distribution of 292 Value Addition Machinery is to be carried out with a subsidy assistance of Rupees Five crore under National Agriculture Development Programme.

3.4. Agriculture through Solar Energy

To utilise the solar Energy, which is green source of energy in agriculture, various schemes are being implemented with subsidy assistance to farmers. The Agricultural Engineering Department is popularizing the technologies such as installation of solar powered pumpsets and solar drying units among farmers with subsidy assistance respectively for pumping water for irrigation to farmers without electricity connection and for drying the agricultural produce without changing its natural properties.

3.4.1. Chief Minister's Scheme of Solar Powered Pumpsets

During the year 2021-22, in 1st phase, the installation of Standalone Solar Powered Pumping Systems with 70% subsidy assistance to 171 farmers were taken up at a total outlay of Rs.3.8 crore.

In addition, as announced in the Agriculture Budget 2021-2022, Administrative sanction has been accorded for the installation of 5,000 Nos. of Off-grid, Stand alone Solar Powered Pumpsets upto 10 hp capacity with

70% subsidy assistance to farmers under the Chief Minister's Scheme of Solar Powered Pumpsets. The scheme is being implemented with the 1st instalment funds for the installation of 2,000 solar powered pumpsets with 70% subsidy assistance to the farmers. So far, work orders have been issued for 850 beneficiaries and the installation of Solar Powered Pumpsets in farmers' fields are under progress.

As per the announcement made in the Agriculture Budget 2022-2023, installation of 3,000 Standalone Solar Powered Pumpsets upto 10 hp capacity are to be taken up with 70% subsidy to 3,000 farmers with an outlay of Rs.65.34 crore.

3.4.2. Provision of Solar drying units

In order to dry various agricultural produce, by using the solar energy available in abundance naturally, green house type solar drying units of various sizes ranging from 400 sq.ft to 1,000 sq.ft are provided to farmers, farmers groups with the help of which various agricultural produce viz., Oil seeds like Copra, Groundnut, Gingelly etc., fruits like Banana,

Amla etc., Spices like Clove, Ginger, Chillies etc., Moringa leaves, Curry leaves, Herbal leaves etc., are dried uniformly in hygienic manner thereby reducing the post harvest losses, increase the shelf life and help the farmers, farmers groups to get more income.

During the year 2021-22, 90 poly carbonate sheet covered green house type solar drying units were installed to farmers, farmers group with 40% subsidy assistance under National Agriculture Development Programme (NADP) and Sub Mission on Agricultural Mechanisation (SMAM) scheme and the scheme is being continued.

As per the announcement made in the Agriculture Budget 2022-2023, it is proposed to provide 145 solar drying units at a total outlay of Rupees Three crore under Sub Mission on Agricultural Mechanisation (SMAM).

3.5. Soil and Water Conservation

Fertile soil is the primary medium of agriculture, which is to be protected from soil erosion due to runoff water. In view of this,

Agricultural Engineering Department is implementing soil and water conservation measures through the following schemes to increase the agricultural productivity.

3.5.1. Kalaignarin All Village Integrated Agriculture Development Programme (KAVIADP)

Agricultural Engineering Department activities like creation of water sources (Bore well, Tube well) based on Geo-physical survey, providing electric motor or solar powered pumpsets and providing water conveyance pipes to all the farmers in the cluster are being implemented in the clusters formed by Agriculture Department in 1,997 villages. This scheme is implemented in all the districts of Tamil Nadu, except, Chennai and Nilgiris with 100% subsidy.

Further, creation of 500 Farm Ponds in Farmers lands and Rehabilitation and Improvement works of 1,700 Panchayat Union MI tanks, Ooranies, Ponds and Supply channels are carried out by engaging Agricultural Engineering Department owned Machinery.

The above mentioned component of works are implemented at an outlay of Rs.210.02 crore using State fund.

As per the announcement made in the Agriculture Budget 2022-2023, this scheme is to be implemented at an outlay of Rs.270.05 crore in 3,204 village panchayats converged with Anaithu Grama Anna Marumalarchi Thittam (AGAMT).

3.5.2. Maintenance of water harvesting structures

As per the announcement made in Agriculture Budget 2021-2022, Government orders were issued to carry out the maintenance works by way of desilting in order to increase the inflow and carrying capacity of 1,700 water harvesting structures at a cost of Rs.Five crore. The maintenance works are taken up using the Agricultural Engineering Department owned machinery in the water harvesting structures created by Tamil Nadu Watershed Development Agency (TAWDEVA) under Drought Prone Areas Programme (DPAP), Integrated Watershed Development Programme (IWDP) and Integrated

Watershed Management Programme (IWMP) in watersheds of Tamil Nadu. So far, 97 works have been completed and the remaining works are under progress.

As announced in the Agriculture Budget 2022-2023, maintenance works in 1,500 water harvesting structures will be taken up at a total outlay of Rupees Five crore using the Watershed Development Fund of Tamil Nadu Watershed Development Agency (TAWDEVA).

3.5.3. Special Area Development Programme

Special Area Development Programme is being implemented on need basis for the hilly areas and the farmers in forest fringe villages of Western Ghats, by adopting integrated watershed approach in a holistic manner for sustainable livelihood and enhancing agricultural productivity.

The Soil and Water Conservation measures are executed in the forest fringe village agricultural lands with 90% subsidy for ST farmer, with 80% subsidy for SC farmer and

with 50% subsidy for General farmers and community works are carried out with 100% subsidy.

During the year 2021-22, Soil and water conservation and land development works like Gabion Check Dams, Check Dams, Landslide Protection Walls in Gabion and Stream Bank Protection Walls have been carried out by the Agricultural Engineering Department to a tune of Rs.20 crore with State funds, in 11 districts of Nilgris, Coimbatore, Erode, Tiruppur, Theni, Dindigul, Madurai, Virudhunagar, Tirunelveli, Tenkasi and Kanyakumari.

This scheme is to be continued during the year 2022-23.

3.5.4. River Valley Project

River Valley Project is implemented for preventing the loss of silt carried into multipurpose reservoirs designed for the development of irrigation for agriculture, electricity and drinking water, which ends up in the capacity reduction of reservoirs, further to retain the fertility and moisture of the soil.

River Valley Project is being implemented in South Pennaiyar and Mettur catchments from the year 2013-14 under National Agriculture Development Programme

Soil and Water conservation measures are taken up in community lands with 100% assistance and works to individual at farmer's field like stone wall bunds are executed with 50% farmers' contribution.

During 2021-22, Soil and Water conservation works viz., 41 Nos. of water harvesting structures and land development works benefiting 12 Ha were taken up with 60% Union Government share and 40% State share under National Agriculture Development Programme.

This Programme is to be continued during 2022-23.

3.5.5. Irrigated Agriculture Modernization - Construction of Farm Ponds

Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP), through Multi Department convergence in 43 sub-basins has

been programmed with World Bank assistance starting from the year 2017-18 and Agricultural Engineering Department has been allocated with Rs.15.53 crore for the construction of 1,899 Farm Ponds.

Under this scheme, during the year 2021-22, 83 farm ponds were constructed at a cost of Rs.61.29 lakh. During the year 2022-23, this scheme is to be continued.

3.5.6. Reclamation of Problem soils

In Tamil Nadu due to overuse of soil and water resources, problematic soils with either saline or alkaline in nature exist in the land area. Hence, a scheme on "Reclamation of Problem soils" as a sub-scheme of National Agriculture Development Programme is implemented.

Under this scheme, the following reclamation works namely, creation of water harvesting structures, construction of weir to prevent sea water intrusion, improvement of drainage systems, deep ploughing, green manuring and mixing with soil by rotavators, supply of inputs, imparting training to farmers

are taken up. This scheme is implemented with 60% Union Government share and 40% State share.

Under this scheme, during the year 2021-22, saline affected areas in Mayiladuthurai and Pudukkottai districts for an extent of 573 Ha were reclaimed for an amount of Rs.3.41 crore. During the year 2022-23, this scheme is to be continued.

3.6. Water Management

Due to over exploitation of ground water, and with limited scope for improving surface water potential, the focus is now mainly on effective water use and management. Agricultural Engineering Department is involved in various Water Management interventions by maximizing the water use efficiency, thereby increasing the water productivity.

3.6.1. Desilting of 'C' and 'D' channels in Delta Districts

Desilting of 'C' and 'D' channels in Delta districts of Tamil Nadu is necessary to ensure free flow of water in the channels for irrigation

purpose and to reach adequate water to the tail end in time.

As per the announcement made in the Agriculture Budget 2022-2023, 'C' and 'D' channel will be desilted for a length of 1,580 km at an outlay of Rupees Five crore under state fund to benefit two lakh acres of agricultural land in Cauvery and Vennar basins of five districts namely Thanjavur, Tiruvarur, Nagapattinam, Mayiladuthurai and Cuddalore.

3.6.2. Electric motor pumpsets with subsidy

In order to facilitate pumping of irrigation water from the wells by small and marginal farmers who own upto three acres of land and having power connection but are not able to afford to buy new electric motor pumpsets, a scheme is being implemented to provide subsidy assistance as per the announcement made in the Agriculture Budget 2021-2022, benefitting 1,000 farmers at an outlay of Rupees One crore under state fund, for the purchase of new efficient electric motor pumpsets or for the replacement of inefficient old electric motor

pumpsets. So far, 136 works have been completed and works are under progress.

As per the announcement made in the Agriculture Budget 2022-2023, subsidy assistance will be provided for an outlay of Rupees Five crore under the scheme, "PMKSY-Per Drop More Crop - Other intervention - SWMA" component to 5,000 farmers owning upto five acres of land to purchase new electric motor pumpsets at the rate of Rs.10,000 or 50% of the cost of electric motor pumpsets whichever is less.

3.6.3. Provision of Mobile Phone operated Automatic Pumpset Controller

In order to reduce the wastage of irrigation water in farmlands and to overcome the hardships like snake bites and injuries faced by the farmers while operating the pumpsets at night time, as per the announcement made in the Agriculture Budget 2022-2023, Mobile Phone operated Automatic Pumpset Controller will be provided to 3,000 farmers to operate the pumpset remotely from anywhere with a subsidy assistance of 50% upto a maximum of

Rs.5,000/- per unit at a total outlay of Rs.1.5 crore under National Agriculture Development Programme.

3.7. Infrastructure works

Agricultural Engineering Department provides technical guidance for the civil and infrastructure works of the sister departments viz., Agriculture Department, Horticulture Department, Agricultural Marketing and Agri Business Department coming under the control of of Agriculture and Farmers' Welfare Department and implements the infrastructure and development works in State Seed Farms, State Horticulture Farms, Parks and also the infrastructure works of Agricultural Engineering Department.

For Agriculture Department, construction of 14 Integrated Agricultural Extension Centres (IAEC), 225 Sub Agricultural Extension Centres (SAEC) and Office building for Water Management Training Centre at Vinayagapuram in Madurai district under NABARD and National Agriculture Development Programme (NADP) at a total cost of Rs.122 crore have been started

during the year 2021-22 and the works are in progress.

For Agricultural Engineering Department, construction of four Agricultural Engineering Extension Centres (AEEC) each at a unit cost of Rs.50 lakh at a total cost of Rupees Two crore have been taken up during the year 2021-22 and the works are in progress.

3.8. Establishment

One Chief Engineer (Agricultural Engineering), one Chief Engineer (Agricultural Engineering) - River Valley Project, three Superintending Engineers and two Executive Engineers are at Headquarters level to monitor various farmer welfare schemes being implemented in Agricultural Engineering Department.

There are 11 Superintending Engineers at regional level, 31 Executive Engineers at district level, five Executive Engineers for special schemes, 125 Assistant Executive Engineers, 850 Assistant Engineers / Junior Engineers at revenue division level and for special schemes,

and 1,120 Administrative staff and 1,866 field staff in the department.

Table 3.1. Staff Details

Sl. No.	Category of post	Numbers
1	Chief Engineer (AE)	1
2	Chief Engineer (AE), RVP	1
3	Superintending Engineer (AE)	14
4	Executive Engineer (AE)	38
5	Assistant Executive Engineer (AE)	125
6	Assistant Engineer(AE) / Junior Engineer(AE)	850
7	Ministerial Staff	1,120
8	Field staff	1,866
	Total	**4,015**

The Assistant Executive Engineers are responsible for the implementation of departmental activities at the revenue division

level, the Executive Engineers are in-charge of all the departmental activities of the respective districts and the Superintending Engineers are in-charge of the administrative and technical control of the departmental activities in the region.

TAMIL NADU AGRICULTURAL UNIVERSITY

4. AGRICULTURAL EDUCATION, RESEARCH AND EXTENSION EDUCATION

Tamil Nadu Agricultural University has been constantly orienting its activities of Agricultural education, research and extension towards the goal of sustained increase in agricultural productivity for holistic development of land, water and human resource potentials of the state. Tamil Nadu Agricultural University offers 12 Undergraduate courses, 35 Masters and 30 Doctoral programmes through 18 Constituent Colleges. Also, 29 Affiliated Colleges (private) are functioning under Tamil Nadu Agricultural University.

This University introduced Tamil medium in Agriculture and Horticulture recently. In addition, the University offers Open and Distance Education in Agriculture through structured Certificate and Diploma programmes to elevate the employment potential and entrepreneurship. The University with its prominence in research is bringing out new varieties, crop production technologies and farm

implements which benefit the farming community.

In addition, Special Drive was made for the popularization of TNAU released new varieties and technologies among the farmers. The University has taken up new initiatives including remote sensing technologies, Agriculture entrepreneurship and Agri-Business besides promotion of nano-technologies. Research initiatives and technological up gradation are being made to introduce Drones in the ensuing years to overcome the problems of labour intensive agriculture and to introduce Artificial Intelligence and innovations like Robotics.

4.1. Tamil Nadu Agricultural University Budget allocation

The University has an annual budgetary provision of Rs. 530.96 crore for its mandated functions of teaching, research and extension through various constituent colleges and research stations in order to achieve higher agricultural education and to improve farmers' welfare.

4.2. Infrastructure facilities

Provision of infrastructure facilities for various colleges under the control of Tamil Nadu Agricultural University at a total cost of Rs.58.68 crore with loan assistance from NABARD were sanctioned during 2018-2019, for totally 19 works. The works are carried out in six campuses viz., Forest College and research Institute, Mettupalayam, Agricultural College and Research Institute, Trichy, Horticulture Research Station, Ooty, Institute of Agriculture, Vamban and Tiruchirapalli to create infrastructure facilities like Physical Education infrastructure, Lecture Hall, Boys and Girls Hostel, Students Study Centre, Trainees Hostel, Administrative Block and Compound wall. Out of 19 works, 15 works have been completed and the buildings are put into use. Remaining four works are in progress.

Administrative Approval has been accorded for Conservation, restoration and upgradation of the Heritage building of Tamil Nadu Agricultural University, Coimbatore for Rs.4.2 crore. Out of this, an amount of

Rs.1.6 has been released during the year 2021-22.

Administrative Approval has been accorded under NABARD assistance towards the establishment of Centre of Excellence in Bio-Technology within a period of 10 years at a total outlay of Rs.430 crore. Approval was given for Rs.10 crore for the first year out of which Rs.5.7 crore was released as first instalment upto 2020-21 and balance of Rs.4.3 crore was released during 2021-22 as second instalment.

Administrative Approval has been accorded for establishment of one New Horticultural College & Research Institute at Jeenur in Krishnagiri District and establishment of three New Agricultural College & Research Institutes at Keezhvelur in Nagapattinam District, at Chettinad in Sivagangai District and Karur District with a financial sanction of Rs.Two crore each, during the current year.

4.3. Agricultural Education

Tamil Nadu Agricultural University offers 12 Under-Graduate, 35 Masters and 30 Doctoral

degree programmes through its constituent colleges and four constituent diploma institutes are functioning to offer Diploma in Agriculture / Horticulture.

The number of applications received for the admittance to various Under-Graduate programmes has increased multifold from 9,652 during 2011-12 to 40,585 during 2021-22.

Table 4.1. Student Admission and Passed out (2021-22)

Education Details	Admission	Passed out
Under Graduate	In Progress	2,370
Post Graduate	398	477*
Doctoral Degree	166	117
Diploma	In Progress	371

* including passed out supplementary students

4.4. New initiatives

Promotion of use of Kisan Drones for crop assessment including crop area, crop condition,

yield and damage assessment at Farm Level, Digitization of Land records, Drone Spraying of plant protection chemicals (pesticides, fungicides, herbicides), nutrients, crop boosters, organics and bio inoculants has been initiated. Tamil Nadu Agricultural University has formed a drone team to standardize Drone Spraying Protocols in major field crops for smart delivery of agriculture inputs. TNAU has submitted proposal through Department of Agriculture and Farmers Welfare for procuring sixty drones and demonstrating drone spraying in 14,400 ha at a cost of Rs.10.32 crore.

To enhance research on palmyra through the collection of genetic resources, identification of high yielding palm varieties and improved nursery techniques, an announcement was made during the last year budget and integrated research projects on palmyra are being carried out at the Agricultural College and Research Institute, Killikulam, Thoothukudi District.

Tamil Nadu Agricultural University, Coimbatore is coordinating all research projects related to Turmeric at the newly established

Turmeric Research Station at Bhavanisagar, Erode district, for which Rupees Two crore was allocated during the last year budget.

Research and package of practices for organic farming were standardized at Department of Sustainable Organic Agriculture functioning under Tamil Nadu Agricultural University, Coimbatore which was upgraded into a research centre in the name of Natural Farming scientist Nammazhvar at an outlay of Rupees Three crore.

4.5. Students welfare, Career counseling and placement

The Centre for Students Welfare organizes motivational lectures, coaching classes, mock group discussions, interviews and trainings to improve the soft skills for the winning streak of the upcoming potential candidates to snatch jobs in India /abroad.

During 2021-22, through the Centre for Students Welfare, 212 students were placed in various industries namely; Agro Industries (36), Food Industries (39), NGO / Government (128), Finance (7) and other institutions (2).

A state-of-the-art 'Communication Laboratory' is available to sharpen the soft skills and communication skills of the students.

4.6. Agricultural Research

Research is being conducted in 18 Colleges and 39 Research Stations across the State, to cater to the location specific and crop specific problems. Research is being funded by mobilizing collaborative, networking and innovative projects from Government, International funding agencies and Indian Council of Agricultural Research.

4.6.1. Newly released crop varieties

Tamil Nadu Agricultural University has released 17 new crop varieties during the year 2021-22 as given below:

1. **Rice CO 55**

   Short duration variety (115 days); High yielding with mean grain yield of 6,050 kg/ha; Medium slender rice with milling percentage of 66% and head rice

recovery of 62%; suitable for Sornavari, Kar, Kuruvai, Navarai in Tamil Nadu.

2. Rice ADT 57

Short duration variety (115 days); High yielding with mean grain yield of 6,500 kg/ha; Medium slender rice with milling percentage of 69% and head rice recovery of 60%; suitable for Sornavari, Kar, Kuruvai, Navarai, Kodai in Tamil Nadu.

3. Rice TKM 15

Short duration drought tolerant variety (115-120 days); Mean yield of 4,200 kg/ha; Medium slender rice with milling percentage of 68% and head rice recovery of 63%; suitable for direct sowing under semi dry condition during north east monsoon season (September – October).

4. Rice TRY 5

Short duration variety (110 – 115 days); Mean grain yield of 5,100 kg/ha; Medium slender fine rice with milling percentage of 64% and head rice recovery of 54%;

Suited to salt affected soils during Kuruvai, Late Thaladi, Navarai seasons.

5. Blackgram ADT 7

Mutant of ADT 3 (65 – 70 days); Mean seed yield of 724 kg/ha, Suitable for rice fallow conditions.

6. Greengram VBN 5

Short duration (70 – 75 days); Mean seed yield of 870 kg/ha; Resistant to Mung bean yellow mosaic virus; Suitable for cultivation under all seasons.

7. Groundnut VRI 9

Bunch type shorter duration variety (115 days); Mean yield of 2,500 kg/ha; Moderately resistant to late leaf spot and rust; Has oil content of 47% with high seed viability; No *insitu* germination of matured pods observed before harvest; Suitable for Chithirai, Adi and Aippasi pattam under rainfed and Margazhi pattam under irrigation.

8. Groundnut VRI 10

Bunch type shorter duration variety (95 days); Mean yield of 2,530 kg/ha; Moderately resistant to late leaf spot and rust; Oil content is 48% with high seed viability; no *insitu* germination of matured pods observed before harvest; Suitable for Chithirai, Adi and Aippasi pattam under rainfed and Margazhi pattam under irrigation.

9. Sugarcane COG 7

Mid-late season variety (12 months); Mean sugarcane yield is 134 tonnes/ha under normal soil condition and 126 tonnes/ha under salt affected soils; Moderately resistant to red rot.

10. Banana CO 3

Has a duration of 13 months; Mean yield is 21 kg/bunch; Each bunch has with 10-11 hands with 16 fruits/hand; Fruit is bright yellow without ashy coating; Has tolerance to root lesion nematode attack.

11. Jack PKM 1

Clonal selection from identified trees; Mean yield is 2.3 tonnes/tree/year; fruit weight is 21 kg/fruit, yields 106 fruits/tree; Recommended population is 156 plants/ha; Harvesting can be done twice during March – May and November – December; variety is suitable for tropical and sub-tropical regions.

12. Jamun PKM 1

Semi spreading tree with drooping branching habit; Mean yield is 82 kg/tree/year; Large size fruit with a weight of 17g/fruit and has high anti-oxidant properties, Potassium, Iron and Vitamin C; suitable for planting in dry tracts including waste lands.

13. Brinjal MDU 2

Crop duration (140 days); Mean yield is 31 t/ha; has moderate resistance to phytoplasma diseases and shoot fly incidence; Suitable for cultivation during

June – September and November – February.

14. LabLab CO 15

Pole type lab lab with mean yield of 14 kg/plant; Harvest of green pods starts from 70 days and continues upto 240 days with 25 harvests.

15. Elephant Foot Yam CO 1

Has duration of 240 days with the mean yield of 50 t/ha; planting season is February to March; suitable for Salem, Namakkal, Erode, Ariyalur, Tiruppur, Theni, Dindigul, Cuddalore, Krishnagiri and Dharmapuri districts.

16. Turmeric BSR 3

Has duration of 240-250 days with mean rhizome yield of 51 t/ha; planting season is May – June; Has higher Curcumin content of 4.8%; Moderately resistant to leaf spot and leaf blotch diseases; Suitable for cultivation in the districts of

Coimbatore, Tiruppur, Erode, Salem, Dharmapuri and Krishnagiri.

17. Coriander CO 5

Duration is 35 – 40 days for green leaf harvest; Mean green leaf or herbage yield is 4.7 t/ha. It has essential oils like other varieties and linalool content is higher; Suitable for cultivation in Kharif and Rabi seasons.

4.6.2. Research Schemes

Research interventions are being taken up at Tamil Nadu Agricultural University with focused projects sanctioned by different funding agencies

4.6.2.1. National Agricultural Development Programme (NADP)

The Government has sanctioned the following five projects under National Agricultural Development Programme (NADP) during 2021-22 at an outlay of Rs.5.56 crore.

Augmenting income of farmers of Shevaroy hills by promoting hill based and other sub-tropical crops such as Avocado, Jamun, etc., in a Multi-tier system at Horticultural Research Station, Yercaud (Rupees Two crore).

Introduction of speed breeding facility for expediting the introduction of new varieties and facilitating development of improved rice varieties like Mappillai samba (Rs.1.9 crore).

Augmentation of Seed Replacement Rate in Pulses and Oilseeds through Farmers Participatory Seed Production (Rs.1.34 crore).

Production and Popularization of Khejri (*Prosopis cineraria*) in dry tracts of Tamil Nadu on pilot basis (Rs.20 lakh).

Redefining the production technologies of mundu chilli and enhancing its production potential through technological dissemination and adoption in Ramnad and Sivagangai districts of Tamil Nadu (Rs.12 lakh).

4.6.2.3. World bank scheme

World Bank funded Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP) is implemented at TNAU for the period 2017-24 at a total outlay of Rs.87.46 crore with the overall objective of promoting climate resilient activities and market led agriculture in 40 river sub basins across the state.

4.7. Agricultural Extension Education

4.7.1. Krishi Vigyan Kendras (KVK)

There are 14 Krishi Vigyan Kendras (KVK) functioning under Tamil Nadu Agricultural University. During 2021-22, 189 On-Farm Tests (OFTs) and 314 Front Line Demonstrations (FLDs) were conducted by the KVKs, besides organizing training programmes.

4.7.2. Educational Media Centre (EMC)

The Educational Media Centre of TNAU produced 63 video programmes during 2021-22. Besides, 51 Video programmes have been uploaded in TNAU TV YouTube Channel to infuse

the concept of seeing is believing for farmers / public during the year 2021-22.

4.7.3. TNAU Agritech Portal

The TNAU Agritech portal **(http://agritech.tnau.ac.in)** contains about 11 lakh pages of information related to agriculture and allied sciences in Tamil and English. This facility is utilized by 871 persons everyday and 3.2 lakh persons every year.

4.7.4. Android Apps on Expert System

Android Apps on Expert System have been developed in Tamil and English languages for crops viz., paddy, sugarcane, ragi, coconut, banana and animal husbandry enterprises viz., cow and buffalo, goat rearing and poultry. Totally, 12 Android Apps have been made available in the Google Play Store.

4.7.5. Uzhavarin Valarum Velanmai

'Uzhavarin Valarum Velanmai' a monthly Tamil magazine of Tamil Nadu Agricultural University, Coimbatore is published since 1975. During 2021-2022, Uzhavarin Valarum Velanmai

has a total of 9,698 subscribers with 1,518 annual subscribers and 21 life subscribers were newly enrolled.

4.7.6. Kisan Call Centre (KCC)

It provides service to the farmers through a toll-free number 1551 or 1800-180-1551. The caller can interact in their local language with the experts. This Centre functions on all working days between 7 am and 10 pm. During the year 2021-22, totally, 1,48,367 calls were attended and technical advices were rendered.

4.7.7. Community Radio Station

'TNAU Vivasayee CRS 107.4' is functioning since 2010 catering to the needs of farmers and general public within 10 km radius of TNAU. The CRS broadcasts agricultural content from Monday to Friday between 10 am to 12 noon. Totally 1,315 programmes were broadcasted through Community Radio during 2021-2022.

4.8. Seed Production Programme

During 2021-22, a total quantity of 150 tonnes of breeder seeds, 53.01 tonnes of

foundation seeds, 15.48 tonnes of certified seeds, 52.48 tonnes of Truthful Labelled Seeds (TFL) and 12.48 lakh seedlings of various crops were produced and distributed.

During 2022-23, it is targeted to produce approximately 158.28 tonnes of breeder seeds, 100 tonnes of foundation seeds, 9.30 tonnes of certified seeds, 56.38 tonnes of Truthful Labelled Seeds (TFL) and 27 lakh seedlings and other planting materials of various crops for distribution.

4.9. The Agro Climate Research Centre

For timely weather forecasts and advanced research on climate and climate change, the Agro Climate Research Centre is functioning at TNAU. The centre, under the aegis of India Meteorological Department (IMD), Ministry of Earth Sciences, Government of India has been implementing a scheme called "Gramin Krishi Mausam Sewa" (GKMS) in Tamil Nadu in which the weather based agro advisories are prepared and issued to the farmers at block level. There are 11 Agro Meteorological Field Units (AMFU) covering seven agroclimatic regions of

Tamil Nadu providing bi-weekly agro advisories to the farmers at district and block level. In addition to AMFUs, 14 District Agro Meteorological Units (DAMU) have been initiated in the KVKs of different districts from where the block level advisories are being given to the farmers. To address climate change issues, these centres also disseminate details on extreme weather events in order to protect their crops and animal husbandry.

About 8.25 lakh farmers are benefitted from the SMS services. The Agro Climate Research Centre has been predicting the district wise South West Monsoon and North East Monsoon rainfall and provides the forecast well in advance before start of respective monsoon which is highly useful for the farmers and planners.

4.10. Price Forecast and Market Intelligence

Domestic and Export Market Intelligence Cell (DEMIC) functioning in the Centre for Agricultural and Rural Development Studies (CARDS), generate and disseminate price

forecasts for major agricultural and horticultural crops grown by farmers in Irrigated Agriculture Modernization Project (TN-IAMP) basins of Tamil Nadu. Under the scheme, price forecast for 14 major crops including cereals, Pulses, Oilseeds, fruits, vegetables, spices and condiments are disseminated to the farmers. The market advisories are given well before sowing and before harvest of these crops, which help farmers to take appropriate sowing, selling and storing decisions on a scientific basis. These advisories are disseminated through print and electronic media well in time. In 2021-22, DEMIC has provided 11 Pre-sowing market advisories and 16 pre harvest advisories.

4.11. Agri-Business Development

Directorate of Agri- Business Development is involved in Agribusiness Incubation, technology, hybrids seeds and machinery commercialization, consultancy services, Venture Capital Scheme, student entrepreneurship, Executive Development Programme, Institutional Development Plan and Unnat Bharat Abhiyan 2.0.

Unnat Bharat Abhiyan (UBA) is a flagship national programme of Ministry of Human Resource Development (MHRD), Government of India. The Directorate of Agri Business Development, is functioning as the Regional Coordinating Institute (RCI) to guide, monitor and facilitate the activities of 174 Participating Institutes (PIs).

4.12. Intellectual Property Rights

Tamil Nadu Agricultural University has filed 75 patent applications, two copyright applications and two Geographical Indications. Tamil Nadu Agricultural University has been granted with 16 patents and two copyrights.

5. SUGAR

அரும் பெறல் அமிழ்தம் அன்ன
கரும்பு இவண் தந்தோன் பெரும்
பிறங்கடையே.

–குறுந்தொகை

Great heir (Athiyan) who brought us sugarcane, precious to obtain like divine nectar, from the land beyond.

– Kurunthokai

*****

The Department of Sugar has been fully brought under Agriculture & Farmers Welfare Department in view of the role played by the primary agriculture sector in enhancing the livelihood of farmers, performance of sugar mills and economy of the State on whole.

Sugar Industries are agro based industries which remains as a source of livelihood for more than 1,50,000 farmers and their families in Tamil Nadu. Sugar mill provides direct employment to more than 50,000 people and indirectly to more than 4,00,000 people.

Tamil Nadu stands in 5th place in the production of sugar in India. Against the Tamil Nadu State demand of 15 lakh Metric Tonnes of sugar per year, around eight lakh Metric Tonnes of sugar per year alone is produced in the State.

Presently, 42 sugar Mills are in Tamil Nadu, of which 16 Sugar Mills are under Co-operative Sector, two Sugar Mills are under Public Sector and 24 Sugar Mills are under Private Sector. During 2021-22 crushing season 13 Co-operative, two Public and 14 Private Sector Sugar Mills with a total of 29 sugar mills are in operation.

5.1. Sugarcane Cultivation

In Tamil Nadu, Sugarcane cultivated for the manufacturing of white sugar in sugar mills is in about 1.27 lakh ha with the average production of 101.5 Metric Tonnes per ha and it stands first in productivity all over India. The main by products obtained from sugar industry are Bagasse, Molasses and Press Mud which give additional revenue to the Sugar Mills.

The Government of Tamil Nadu is taking strenuous efforts to increase the sugarcane yield and sugar recovery. Special thrust are being extended by the Co-operative, Public and Private sector sugar mills to cultivate high yielding and high sugar recovery varieties of sugarcane viz., Co 11015, CoG 6, CoC 13339, Co 0212 and Co 86032.

It is programmed to cover 1.40 lakh ha area under sugarcane crop during 2022-23 planting season.

5.1.1. Support Measures extended by the Government for Sugarcane cultivation.

5.1.1.2. Transitional Production Incentive (TPI) and Special Incentive to Sugarcane farmers

In order to protect the interest of sugarcane farmers and to address the long standing demand of sugarcane farmers to increase the price of sugarcane, the Government of Tamil Nadu sanctioned Transitional Production Incentive of Rs. 42.5 per Metric Tonne of sugarcane and Special Incentive of

Rs.150 per Metric Tonne of sugarcane over and above the Fair and Remunerative Price as fixed by Government of India to the farmers who supplied sugarcane to sugar mills during 2020-21 crushing season with an allocation of Rs. 39.4 crore and Rs.139.18 crore respectively.

Accordingly, an amount of Rs.150.81 crore was directly disbursed to the bank accounts of 91,120 eligible sugarcane farmers as Transitional Production Incentive and Special Incentive by which the sugarcane farmers have received Rs.2900/- of cane price per Metric Tonne of cane after a long gap from the crushing season 2015-16.

The Government of India has announced, Rs.2,755 per Metric Tonne as Fair and Remunerative Price linked to 9.5% recovery with premium of Rs.29 per Metric Tonnes for every 0.1% increase in recovery during 2021-22 crushing season. Almost all the sugarcane farmers of Tamil Nadu will get only Rs. 2,755 per Metric Tonne as cane price, since most of the average sugar recovery is below 9.5%.

In order to protect the interest of sugarcane farmers and to improve the performance of sugar mills, the State Government has announced Special Incentive @ Rs.195 per Metric Tonne of sugarcane to eligible farmers who have supplied sugarcane to the Sugar Mills during 2021-22 crushing season. By this, 1.2 lakh sugarcane farmers will be benefitted.

5.1.1.3. Sugarcane Development and reducing the cost of cultivation activities

1. In order to increase the sugarcane production, productivity, sugar recovery and to motivate the sugarcane farmers to cultivate new sugarcane varieties, Sugarcane Cultivation Development Project will be implemented at a cost of Rs.10 crore during 2022-23 financial year under National Agriculture Development Programme.

2. Considering the paucity of labour, mechanization in sugarcane cultivation from land preparation to harvest have

been encouraged. During 2021-22, sugarcane harvesters were distributed to 15 the sugarcane farmers through Agricultural Engineering Department under Sub-mission on Agricultural Mechanisation (SMAM) scheme. During 2022-23, it is programmed to distribute 25 mechanical harvesters to the eligible sugarcane farmers.

3. Three-tier nursery programme is strictly in all the Co-operative and Public Sector Sugar Mills to ensure the distribution of quality seed materials to the sugarcane farmers.

4. One Tissue Culture Laboratory is functioning at Kallakurichi –I Sugar Mill since 2021 for the production and distribution of quality tissue culture seedlings to the sugarcane farmers of Co-operative and Public Sector Sugar Mills. During 2021-22 planting season, 1,20,000 quality tissue culture seedlings have been produced and distributed to the sugarcane farmers.

5. Main Bio-control Research Laboratory (MBRL) is functioning at Chengalpet since 1982 with a production capacity of one lakh litres and is commercially producing and distributing quality bio-inputs viz., Acetobacter, Phosphobacteria, Trichoderma viride, Pseudomonas, Metarhizium, Bacillus Thuringiensis, Bio-Inoculam, Arbuscular Mycorhiza to sugarcane farmers of Co- operative and Public sector sugar Mills.

6. Karumbu Karangal, a monthly magazine is being published through Tamil Nadu Co-operative Sugar Federation Ltd. which contains advanced sugarcane cultivation technologies, activities of sugar mills, articles from sugarcane farmers and technocrats etc., in Tamil and widely circulated to the sugarcane farmers, Sugar Mills and other stakeholders.

5.2. Sugar Production

During 2020-21 season , Co-operative, Public and Private Sector Sugar Mills in Tamil Nadu have crushed 98.67 lakh Metric Tonne of sugarcane with an average recovery of 8.97% and produced 8.85 lakh Metric Tonne of sugar.

During 2021-22, up to 15.03.22, the sugar mills in Tamil Nadu have crushed 64.32 lakh Metric Tonnes of sugarcane with an average recovery of 9.16 % and produced 5.76 lakh Metric Tonnes of sugar.

5.2.1. Support Measures extended by the Government for Sugar Industries

5.2.1.1. Establishment of Cogeneration Project in Cooperative and Public Sector Sugar Mills

Out of 12 Nos of approved Cogeneration Projects in Cooperative and Public Sector Sugar Mills, five projects (Chengalrayan, Vellore, Cheyyar, Arignar Anna, and Perambalur) have already been commissioned and are in operation. At present erection works for 12MW Cogeneration Plant at Dharmapuri District

Cooperative Sugar Mill has been completed and unit is under trial run from 07.03.2022.

The Cogeneration Plant erection works were stopped at MRK, Kallakurichi-1 and Kallakurichi-2 Cooperative Sugar Mills during May 2015. The erection works in the above three mills have been resumed and the plants are expected to get commissioned during 2022-23 crushing season.

5.2.1.2.Other activities for Sugar Industries

1. Considering the long lasting demand of farmers and farmers associations, the Hon'ble Minister for Agriculture and Farmers welfare has announced to constitute a committee to examine the possibilities of resuming the operation of Nadipisai pulavar K.R. Ramasamy (NPKRR) sugar mills at Mayiladuthurai.

2. The existing cane weighment system in 15 Co-operative and Public Sector Sugar Mills will be upgraded as computerized automated Weighment

system at an outlay of Rs.1.5 crore during 2022-23.

3. In order to perform the laboratory analysis in a fast and accurate manner, the laboratories in the 15 Co-operative and Public Sector Sugar Mills will be modernized at an outlay of Rupees Three crore during 2022-23.

5.3. Sale of Sugar and its By-Products

The sugar and its By-products produced by all the Co-operative and Public Sector Sugar mills are sold through Tamil Nadu Cooperative Sugar Federation Limited.

5.3.1. Sugar Sales Realization

During the financial year 2021-22 up to 15.03.2022, 2.58 lakh Metric Tonnes of sugar have been sold and an amount of Rs.856.68 crore has been realized.

5.3.2. Bagasse Sales Realization

The surplus bagasse produced by the sugar mills, after meeting the fuel demand of the Mills is sold to paper and bio-energy

manufacturers. During the financial year 2021-22 up to 15.03.2022, 60,332 Metric Tonnes of bagasse has been sold and an amount of Rs.14.63 crore has been realized.

5.3.3. Molasses Sales Realization

The surplus Molasses after meeting the demand of the distillery units in Amaravathi and Salem Cooperative Sugar mills is sold to private distilleries; cattle feed producers and other users. During the financial year 2021-22 up to 15.03.2022, 84,843 Metric Tonnes of molasses have been sold and an amount of Rs.64.42 crore has been realized.

5.3.4. Alcohol Sales Realization

In the Distillery units of Salem and Amaravathi Co-operative Sugar mills, during the financial year 2021-22 up to 15.03.2022, 37.85 lakh litres of rectified spirit have been sold and an amount of Rs.18.19 crore has been realized.

5.4 Staff Pattern

5.4.1 Department of Sugar

The Department of Sugar is functioning with 59 employees.

Table: 5.1- OFFICERS

S. No.	Post	Sanctioned Strength
1.	Additional Chief Secretary / Commissioner of Sugar, IAS	1
2.	Additional Commissioner of Sugar, IAS	1
3.	Additional Director of Sugar	1
4.	Joint Director Sugar (Cane)	1
5.	Deputy Director of Sugar (Accounts)	1
6.	Assistant Director of Sugar	2
7.	Accounts Officer	1
8.	Technical Assistant	1
TOTAL		**9**

Table: 5.2- MINISTERIAL AND OTHER STAFF

S. No.	Post	Sanctioned Strength
1.	Cooperative Sub Register	4
2.	Superintendent	6
3.	Assistant	15
4.	Steno typist	4
5.	Typist	3
6.	Junior Assistant	3
7.	Telephone Operator	1
8.	Driver	1
9.	Record Clerk	1
10.	Office Assistant	12
TOTAL		**50**

5.4.2 Cooperative and Public Sector Sugar Mills

The Cooperative and Public Sector Sugar Mills are functioning with 8,446 employees.

Table: 5.3- Staff Strength

S. NO	NAME OF THE SUGAR MILL	SANCTIONED STRENGTH
A.	**COOPERATIVE SUGAR MILLS**	
1	Amaravathi	516
	Distillery	47
2	Ambur	516
3	Cheyyar	496
4	Chengalrayan	509
5	Dharmapuri	505
6	Kallakuruchi –I	529
7	Kallakuruchi –II	356
8	Maduranthagam	0
9	M.R.K	495
10	N.P.K.R.R	548
11	National	529
12	Subramaniya siva	476
13	Salem	506
	Distillery	47
14	Tiruttani	504
15	Tirupattur	444
16	Vellore	514

S. NO	NAME OF THE SUGAR MILL	SANCTIONED STRENGTH
B. PUBLIC SECTOR SUGAR MILLS		
17	Arignar Anna	440
18	Perambalur	469
	Total	**8,446**

6. SEED CERTIFICATION AND ORGANIC CERTIFICATION

Agriculture Industry fulfills the food security of the nation and promisingly meets the raw material needs of Indian Industries. Quality seeds are the most crucial elements for ensuring nutrient security of the nation and for increasing the agricultural production. Production of high quality seeds is the cornerstone of all successful agriculture programmes thereby doubling the farmers' income.

The Department of Seed Certification and Organic Certification provides dedicated services to ensure timely availability of quality seeds to the farming community. This department encourages participation of Government Organisations, Quasi Government and Private companies to take up certified seed production in major food crops, oilseed crops, fodder and fibre crops.

The Department of Seed Certification and Organic Certification works to certify quality seeds and monitors the seed supply chain and ensures the quality of seeds. It also works for

certifying the organic farms to encourage the usage of organic products. These activities are carried out by the following divisions.

1. Seed Certification
2. Seed Quality Control
3. Seed Testing
    i) Seed Testing Laboratories
    ii) DNA Finger Print Laboratory
    iii) Grow out Test Farm
    iv) Referral Lab cum Bt Toxin Lab
4. Training
5. Organic Certification

6.1. Seed Certification:

The Seed Certification wing functions in accordance with the provisions of The Seeds Act, 1966 and The Seeds Rules, 1968. It includes the certification of notified crop varieties that fulfil the required standards of germination, physical purity and genetic purity as prescribed under the

Indian Minimum Seed Certification Standards (IMSCS).

This Department has achieved the targeted quantity of certified seeds in paddy and millets. Concerted efforts are being taken up by this Department for production of certified seeds in various crops such as pulses, oilseeds, fodder and fibre crops.

Under seed certification programme, an area of 65,359 Ha seed farms has been registered during the year 2021-2022. The highest registration of seed farms was achieved in Tiruppur (9,375 Ha.), Thanjavur (6,826 Ha.), Thiruvarur (6,560 Ha.), Villupuram (3,876 Ha.) and Nagapattinam (3,765 Ha.) districts. An area 34,957 Ha of seed farms have been registered in other districts.

A total quantity of 1,29,907 Metric Tonnes of seeds have been certified in various crops during the year 2021 – 2022.The highest quantity of certified seeds was tagged in Tiruppur (71,282 MT), Villupuram (8,128 MT), Madurai (5,668 MT), Tirunelveli (4,831 MT) and Namakkal (3,318 MT) districts. A quantity of

36,680 Metric Tonnes of certified seeds were tagged in other districts.

The department of seed certification has a target plan to register 57,000 Ha of seed farms and to certify 1,10,000 metric tonnes of quality seeds during the year 2022-2023.

TABLE 6.1: AREA REGISTERED UNDER SEED CERTIFICATION 2021-2022

Sl. No	Head Quarters	AREA REGISTERED (Ha.)			
		Govt.	Quasi Govt.	Private	Total
1	Kancheepuram	1038	0	476	1514
2	Tiruvallur	833	0	171	1004
3	Cuddalore	1835	11	608	2454
4	Viluppuram	2460	0	1416	3876
5	Vellore	1031	0	193	1224
6	Tiruvannamalai	2427	0	95	2522
7	Salem	1193	65	439	1697
8	Namakkal	668	42	95	805
9	Dharmapuri	903	0	4	907
10	Krishnagiri	891	0	20	911
11	Coimbatore	291	68	632	991

Sl. No	Head Quarters	AREA REGISTERED (Ha.)			
		Govt.	Quasi Govt.	Private	Total
12	Eorde	650	158	2463	3271
13	Trichy	928	33	536	1497
14	Perambalur	571	0	605	1176
15	Karur	387	0	150	537
16	Pudukkottai	928	72	165	1165
17	Thanjavur	1746	83	4997	6826
18	Nagapattinam	2139	41	1585	3765
19	Tiruvarur	2221	9	4330	6560
20	Madurai	529	59	1592	2180
21	Theni	244	0	652	896
22	Dindigul	417	109	2825	3351
23	Ramanadu	678	0	17	695
24	Sivagangai	439	0	27	466
25	Virudhunagar	501	10	585	1096
26	Tirunelveli	1368	8	1569	2945
27	Thoothukudi	1252	20	228	1500
28	Kanniyakumari	136	0	18	154
29	Tiruppur	457	22	8896	9375
	Total	**29161**	**810**	**35389**	**65360**

6.2. Seed Quality Control:

The Seed Quality control wing is a pioneer in the nation and tops the performance tables, among their counter parts in other states. This wing functions by provisions under the various seed legislations viz., The Seeds Act 1966, The Seeds Rules 1968, The Seeds (Control) Order 1983 and The Environment (Protection) Act 1986. Seed quality is ensured by monitoring and regulating the seed distribution.

This department has issued seed selling licenses to 1,405 Government, 1,167 Quasi Government and 10,079 Private organisations accounting to a total of 12,651 seed selling points under the Seeds (Control) Order, 1983.

During 2021 - 2022 , seed selling points inspections were carried out and 80,909 Official and Service samples were drawn for quality check. In this, 1,775 samples were declared as sub-standard for which departmental / legal action has been initiated. Moreover, stop sale order has been issued owing to sub-standard and other violations for 2,541 Metric tonnes of seeds, worth Rs.22.21 crore.

During the year 2022 - 2023, it is targeted to carry out 70,000 seed selling point inspections and to draw 81,000 Official and Service samples for quality check.

6.3. Seed Testing:

Seed Testing plays a vital role in Seed Quality Control. Seed samples are tested for Physical Purity, Germination, Moisture and Other Distinguishable Varieties (ODV) in notified Seed testing Laboratories. This enables timely distribution of quality seeds to the farming community.

There are 33 notified seed testing laboratories functioning in Tamil Nadu. The newly established Seed Testing Laboratory, Tiruppur has started functioning from 01.03.2022. The Seed Testing Laboratories analyse Certification Samples and Official samples from Seed Certification and Seed quality control wings respectively and Service Samples from farmers, seed producers and seed dealers.

A total number of 1,09,563 seed samples were analyzed for quality check during 2021-2022 and it is proposed to analyze 1,10,000 seed samples for the year 2022-2023.

6.3.1. ISTA Accredited Seed Testing Laboratory:

The Coimbatore seed testing laboratory is accredited as an ISTA seed testing laboratory in the year 2014 by International Seed Testing Association (ISTA), Switzerland. This laboratory is the first public sector lab in India that secured ISTA accreditation. The laboratory is accredited for the scope of sampling from the seed lot, Physical Purity, Other Crop Seeds (OCS), Germination and Moisture tests for Cereals, Pulses and Vegetable crops. This accredited laboratory is authorized to test and issue Orange International Seed Lot Certificate (OIC) and Blue International Seed Sample Certificate (BIC) to carry out international trades to other countries.

6.3.2. State DNA Finger Print Laboratory

A state of art DNA Finger Print Laboratory has been established in the Directorate of Seed Certification and Organic Certification,

Coimbatore under Central Sector Scheme in the year 2007 to enhance the production and distribution of quality seeds to the farming community. DNA Finger Print technique helps in the detection of genetic purity of a crop varieties within a short span of time (4-5 days) . This DNA Finger Print Laboratory is first of its kind in the country and has been notified during 2014 as "**State DNA Finger Print Laboratory**" by Tamil Nadu Government. This laboratory has a potential to ensure the genetic purity of 25 notified paddy varieties by using Simple Sequence Repeat (SSR) markers which are prominently cultivated in the State.

6.3.3. Grow Out Test Farm:

The Grow Out Test Farm notified by Government of Tamil Nadu, is functioning under Directorate of Seed Certification and Organic Certification at Kannampalayam in Coimbatore District since 1997. The Genetic Purity of a given seed lot is verified in accordance with the Indian Minimum Seed Certification Standards (IMSCS). The seed samples of the grow out test is verified for genetic purity throughout the growing season

of the crop. The plants are examined for distinguished morphological characters specific to the particular variety or hybrid and screened for genetic purity. The results of the grow out tests are declared under Section 12b of Seed Act 1966 by the Seed Analyst. During the year 2021-2022, 4,145 seed samples were tested for Genetic Purity. During the year 2022-2023, it is targeted to test the genetic purity for 4,200 seed samples.

6.4. Training:

In order to impart incessant knowledge and technical updates on the departmental activities, the training wing of this department organizes various training programmes to officials, Seed Producers, Seed Dealers and Organic Farmers.

During the year 2021-22 a total number of 47,320 persons have been trained. It is programmed to train 50,000 persons during the year 2022-2023.

6.5. Organic Certification

Tamil Nadu Organic Certification Department (TNOCD) was established in the year 2007 by the Government of Tamil Nadu. This wing is committed to provide its operators with a standard quality procedure to enhance the quality, endurance and reliability of the organic production system thereby ensuring quality of final organic product. TNOCD is a Certification Body of Agricultural & Processed Food Products Export Development Authority (APEDA) under The Ministry of Commerce and Industry, Government of India. This department carries out the Inspection and Certification of the Organic production system in accordance with the norms of NPOP (National Programme for Organic Production).

Certificates Issued by TNOCD

a) Crop Production.
b) Processing of Agricultural Produce
c) Trade and Export

TNOCD holds the largest number of certified individual farmers among the 33 certification

bodies functioning in the country. It also certifies more numbers of groups in association with the Department of Horticulture.

The Scope certificate of TNOCD issued to individual operators and groups is valid for one year. Currently the Organic Certification is extended to 1,632 individual Farmers, 158 Farmer Groups consisting of 23,867 farmers, six Organic Processors and four traders throughout the State during 2021-2022.

TNOCD has catered to the export of organic produce by issuance of Transaction Certificate for a quantity of 77.6 metric tonnes with value of Rs.38.92 lakh to the produce like Coconut, Virgin Coconut Oil, Coffee, Moringa, Tea and Cocoa in the year 2021-2022.

During the year 2021-22, an area of 1,15,597 acres has been registered under organic certification, out of which highest area was registered in Dindigul (9,519 acre), Salem(9,044 acre), Krishnagiri (8,082 acre), Dharmapuri (7,384 acre) and Nilgiris (6,428 acre) districts and the remaining 75,122 acres were registered in other districts.

It is proposed to register an area of 1,25,000 acres under Organic Certification during the current year 2022-2023.

6.6. "SPECS" (Seed Production, Enforcement and Certification System) Online:

The IT wing of the Directorate of Agriculture has developed an exclusive software "SPECS" to make all the technical activities of the Department of Seed Certification online to quicken the certification process and to link all the activities of the certification department for better monitoring and transparency in the system. It is pertinent to note that entire seed certification processes has been made online and is the first of its kind among Indian Seed Certification Agencies.

The "SPECS" online module has been working successfully in all districts and now all stakeholders have been acquainted with this SPECS software and are getting benefited on its quickness, transparency and accuracy.

6.7. STAFF STRENGTH:

The Department of Seed Certification and Organic Certification is functioning with a total strength of 845 staff.

Table 6.2. SANCTIONED STAFF STRENGTH

Sl. No.	Staff Details	Sanctioned Strength
1	Director of Seed Certification and Organic Certification	1
2	Joint Director of Seed Certification	1
3	Joint Director of Seed Inspection	1
4	Quality Manager	1
5	Deputy Director of Seed Inspection	15
6	Assistant Director of Seed Certification	38
7	Seed Certification Officer	119
8	Seed Certification Officer and Organic Certification Inspector	26
9	Seed Inspector	70
10	Agricultural Officer	63

Sl. No.	Staff Details	Sanctioned Strength
11	Organic Certification Inspector	10
12	Administrative Officer, Legal Advisor, Assistant Accounts Officer, Superintendent, Assistant, Junior Assistant and Other Posts	500
	Total	845

7. AGRICULTURAL MARKETING AND AGRI BUSINESS

To increase the crop productivity, the Government of Tamil Nadu had introduced various technologies, leading to increase in the production. The Regulated markets have provided a platform to ensure sale of agricultural produces at fair price to the farmers. However, the department focuses to transform farmers into entrepreneurs by promoting and facilitating them in value-addition and marketing of their produce.

The Agricultural Marketing wing helps the farmers to sell their produce at reasonable price and precise weighment. Moreover, this wing has also involved in creation of infrastructure facilities for storing the farm produce during the glut and selling them during the period when market price is increased.

To ensure competitive price for farm produce at pan India level, an electronic online trading platform system called e-NAM is in place. Farm Produces such as paddy, millets, pulses,

oilseeds, cotton and copra are sold by farmers in the Regulated Markets. When the market price crashes, Pulses and Copra are being procured from farmers at Minimum Support Price under Price Support Scheme.

Details of infrastructure facilities established in Department of Agricultural Marketing and Agribusiness are given in **Annexure- I**.

7.1. AGRICULTURAL MARKETING ACTIVITIES

7.1.1 Market Committees and Regulated Markets

In Tamil Nadu, 284 Regulated Markets are functioning under 27 Market Committees to regulate the trading of agricultural commodities. A secret tender system is being followed in Regulated Markets, wherein farmers get competitive price when compared to sale in local markets or at the farm gate.

The Market Committees and Regulated Markets are functioning as per the provisions of

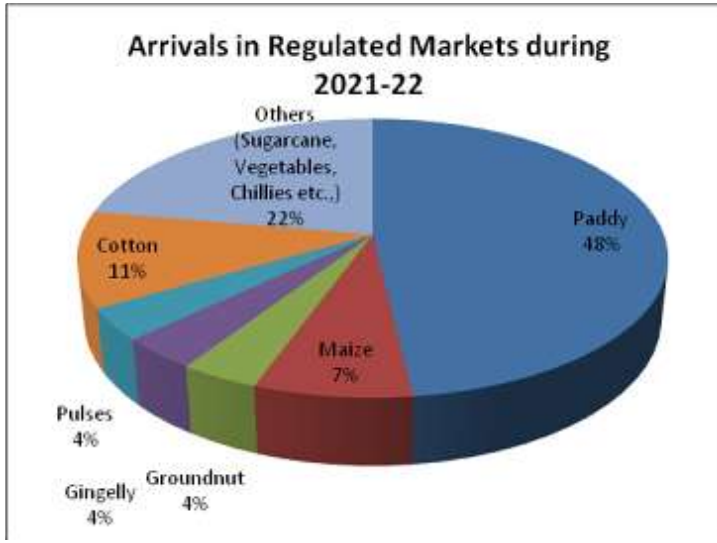
the Tamil Nadu Agricultural Produce Marketing (Regulation) Act, 1987 and its Rules, 1991.

During 2021-22, agricultural commodities to the tune of 27 lakh Metric Tonnes have been transacted in the notified market areas of Regulated Markets and an amount of Rs.130.94 crore has been collected as revenue.

To avoid distress sale during peak harvest season and to promote the habit among farmers to store their produce, pledge loan of Rs.3 lakh or 50% of value of produce is being provided to farmers at 5% interest. During 2021-22, pledge loan to the tune of Rs.36.08 crore has been provided to 1,700 farmers.

Besides, pledge loan facility of Rs.2 lakh or 50% of the value of produce is also extended to traders at 9% interest to meet the payment to farmers. During 2021-22, an amount of Rs. 4.65 crore was sanctioned as pledge loan to 269 traders.

No fee is collected from the farmers for the services rendered in Regulated Markets.



7.1.2. e-National Agriculture Market (e-NAM)

The introduction of e-National Agriculture Market (e-NAM), a Pan-India online trading platform ensures transparent trade, better price to farmers, faster tender process, quality based prices and online payment directly to farmers.

During 2021-22, 13.39 lakh Coconuts and 23.98 lakh Quintals of other agricultural

produces valued at Rs.471.48 crore have been transacted in 63 e-NAM Markets and e-payment has been made to the tune of Rs.445.08 crore to 1.60 lakh farmers through e-NAM portal.

Inter-mandi trade of 5.85 lakh quintals of agricultural produce valued Rs.14.13 crore have been undertaken through e-NAM during 2021-22 with the participation of 152 traders across Tamil Nadu.

During 2021-22, Inter-State trade of 59.38 quintals of Black Gram, Gingelly, Paddy and Ragi with the total value of Rs.1.47 lakhs was undertaken from e-NAM markets of Kilpennathur, Mayiladuthurai, Panruti, Udumalpet and Oddanchatram with Puducherry.

The number of Mandis linked to e-NAM has been included as nationwide indicators in "Goal No.2 - Zero Hunger under Sustainable Development Goal". In Tamil Nadu, 63 Regulated Markets out of 284 Regulated Markets were linked to e-NAM, which accounts 22%.

7.2. AGRI BUSINESS ACTIVITIES

7.2.1. Uzhavar Sandhai

Uzhavar Sandhai Scheme is a novel initiative launched during the year 1999 by the Chief Minister Muthamizh Aringnar Dr. Kalaignar to enable the farmers to sell their vegetables and fruits directly to the consumers without intermediaries and get a better price. Presently, 180 Uzhavar Sandhais are functioning in Tamil Nadu.

The details of daily price prevailing in the uzhavar sandhais are made available in the Department website www.agrimark.tn.gov.in and in Uzhavan app. On an average, 1,900 metric tonnes of Vegetables and Fruits worth Rs. 5.50 crore are being sold daily, by 7,000 farmers to three lakh consumers.

As announced in the Agriculture Budget 2021-22, 50 Uzhavar sandhais are being renovated at a cost of Rs. 12.50 crore and 10 new Uzhavar sandhais are being established at a cost of Rs. 4.53 crore.

Subsequently, 50 more Uzhavar sandhais will be renovated at a cost of Rs. 15 crore in 2022-23. Facilities like computers, price display boards etc., will also be provided in Uzhavar Sandhais.

In 50 Uzhavar sandhais, shops will be exclusively allotted for sale of value-added products and vegetables produced by the members of Farmers Producer Organizations (FPO), in addition to Agriculture and Horticulture Departments to sell inputs such as seeds, bio-fertilizers, vegetable seeds, seedlings, fruit seedlings etc.,

Awareness programmes / trainings will also be conducted every fortnight for the benefit of the farmers of Uzhavar Sandhais. One Uzhavar Sandhai in every district will function in the evening, for enabling sale of food grains.

7.2.2 Establishment of Common Facilitation Centres to create opportunities for Value Addition among Farmers

Department of Agricultural Marketing and Agri Business is popularising and promoting

Value Addition of Agricultural produce. To support the farmers in this regard, facilities for Primary, Secondary and Tertiary processing have been created under various projects.

Common Facilitation Centres will be established under Millet Mission Programme during 2022-23. Further, for value addition of Coffee and Pepper, Coffee Huller cum Grader unit and Pepper Grader cum Pulveriser unit are proposed to be established at a cost of Rs. 75 lakh.

7.2.3 Cold Storage Facilities:

To enable the farmers to enhance the shelf life of the perishable produce, especially during peak harvest period, 194 cold storage structures with a capacity of 17,527 metric tonnes have been established in Tamil Nadu.

Table:7.1- Capacity-wise Cold Storage Facilities

Capacity (MT)	Number of Units	Total Capacity (MT)
2,000	2	4,000
500-1,000	12	8,000
100-200	18	2,155
40-75	17	850
13-25	94	2,266
2-10	51	256
Total	**194**	**17,527**

For ensuring a better cold chain facility, micro and mega cold storage facilities are established in Tamil Nadu at a cost of Rs.100 crore.

Based on the demand of farmers, two cold storage units with a capacity of 1,000 metric tonne each are being established at Panruti and Oddanchathiram. Hence, the total capacity of cold storage will be increased to 40,427 metric tonnes.

7.2.4 Integrated Market Complex

Regulated Markets and Uzhavar Sandhais act as integrated platforms for sale of farm produce. But, a paradigm shift is necessary to provide integrated facilities like input shops, farm machineries, banking, advisory services etc., inside the market to ensure one stop solution to the farmers. Such Integrated Markets are being established in Madurai, Nilgiris and Nagapattinam Districts.

7.2.5. Implementation of Supply Chain Management Project

To reduce post-harvest losses, to connect farmers with major market centres, processors and consumers, to convert surplus production into value added products and to provide uninterrupted supply of quality fruits and vegetables to the consumers thereby increasing the farmers income, the Department is implementing Supply Chain Management Project for Fruits, Vegetables and Other perishables in 10 Districts of Krishnagiri, Dharmapuri, Coimbatore, The Nilgiris,

Tiruchirappalli, Dindigul, Theni, Ramanathapuram, Thoothukudi and Tirunelveli (including Tenkasi) under phase-I, with a total outlay of Rs.482.36 crore under NABARD Warehouse Infrastructure Fund.

The Supply Chain Management project has been extended to another eight Districts viz., Salem, Erode, Tiruvallur, Kancheepuram (including Chengalpet), Tiruvannamalai, Cuddalore, Villupuram and Karur, in Phase - II at an outlay of Rs.102.47 crore for the establishment of 20 Primary Processing Centres under NABARD Rural Infrastructure Development Fund and the construction work is in progress.

7.2.6. Farmer Producer Organizations (FPO)

Farmer Producer Organizations (FPO) play a vital role in production, aggregation and marketing thereby realizing a remunerative price for their commodities.

Abstract of FPOs formed in Tamil Nadu

Sl. No	Supporting Agency	No. of FPOs
1	Department of Agricultural Marketing and Agri Business	381
2	National Bank for Agriculture and Rural Development (NABARD)	259
3	Self Promoted	163
4	Small Farmers Agri Business Consortium, Government of India	36
5	National Cooperative Development Corporation (NCDC)	24
6	National Agricultural Cooperative Marketing Federation of India (NAFED)	25
7	Tamil Nadu Rural Transformation Project (TNRTP)	15
	Total	**903**

7.2.6.1 State Financial Support for Farmer Producer Companies

With an objective to sustain the performance and viability of the FPOs, the Government have sanctioned a corpus fund of Rs.266.70 crore. The scheme is being implemented in coordination with NABKISAN. This fund is utilized under the following categories.

I. Mezzanine Capital Assistance

II. Credit Guarantee Scheme

III. Revolving Fund Support

7.2.6.2 Other Supports to Farmers Producer Organizations:

i. Seed Processing Unit cum Storage Godown is being established by 50 FPOs with a total outlay of Rs.30 crore.

ii. Ten Farmer Producer Organizations have been provided with the financial support of Rs.1.54 crore for establishment of Dhal Mill unit under National Food Security Mission.

iii. For providing a sale platform to Farmer producer Organizations, 50 Speciality Shops are being created in five Corporations.

iv. Training and Exposure Visit will be imparted to 310 Farmer Producer Organizations through Tamil Nadu Agricultural University on Good Agricultural Practices, Company administration, Governance, Planning, business management, accounting, export market etc., with an outlay of Rs. 2 crore.

v. Action is being taken for the procurement of minor millets from Farmer Producer Organisations and distribution through Cooperative stores and Fair Price Shops in Chennai and Coimbatore.

vi. Number of Farmer Producer Organisations formed has been included as State Level Indicator in Goal No.1, No Poverty of Sustainable Development Goal (SDG). So far, 903 Farmer

Producer Companies have been registered in Tamil Nadu.

7.2.7. Food Processing

7.2.7.1. Tamil Nadu Food Processing Policy, 2018

Government of Tamil Nadu has evolved an exclusive Policy for food processing sector in the State.

Vision of the Policy

I. To steer Tamil Nadu as the Premier Food Processing Hub of India by harnessing its production strength, deep industrial culture, skilled manpower, favourable agro-climatic conditions and excellent connectivity.

II. To capitalize the rich and diverse food production base of the State and to provide fillip to this sector.

7.2.7.2. Pradhan Mantri Formalization of Micro Food Processing Enterprises (PMFME)

In order to establish and upgrade the unorganized micro food processing enterprises, a Scheme "Pradhan Mantri Formalization of Micro Food Processing Enterprises" is in operation in Tamil Nadu with Central and State assistance.

The scheme aims to enhance the competitiveness of existing individual micro enterprises in the unorganized segment of the food processing industry, promote formalization of the sector and to support Farmer Producer Organizations (FPOs), Self Help Groups (SHGs) and Producers Cooperatives in the entire value chain.

It is proposed to benefit 12,000 individual enterprises over a period of five years.

The scheme adopts "One District One Product" (ODOP) approach. **(Annexure II)**

During 2021-22, under Individual component, 206 loans amounting Rs.7.50 crore

have been sanctioned as subsidy so far, while one Farmer Producer Company Limited has benefitted under Group enterprises component with a subsidy of Rs.5.25 lakh.

During 2022-23, it is proposed to cover 3,942 units under Individual component, 29 units under Group enterprises component and 4,520 Self Help Group members under Seed Capital Component for availing the subsidy under PMFME Scheme.

7.2.8 Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP)

Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP) is being implemented in 66 sub-basins at an estimated cost of Rs. 125 crore.

Creation of new Farmer Producer Companies, Business development for existing Farmer Producer Companies, promotion of agri-entrepreneurs and modernization of Regulated Markets are the various interventions of this project.

Grants for FPOs under this project:

1. Start up grant of Rs.10 lakh per FPO
2. Productive Investment Grant of Rs.20 lakh per FPO
3. Business Expansion Grant of Rs.30 lakh per FPO.

During 2021-22, an amount of Rs.14.15 crore has been released as subsidy under this scheme.

Scheme details

Phase	No of Districts	Sub basins	Administrative sanction (Rs.in crore)	No of FPOs	Beneficiaries	Fund allocation (2022-23) (Rs.in crore)
I	20	18	51.72	26	25,451	12.30
II	17	16	26.38	24	19,700	7.80
III	09	09	19.42	13	7,844	12.52

7.2.9. AGMARK Grading

This scheme is a voluntary one to provide unadulterated food products to the consumers. To ensure the quality, 30 State Agmark Grading Laboratories (SAGL) and one Principal Laboratory are functioning in Tamil Nadu.

Agmark is a quality certification mark on agricultural products in India and it is legally enforced by the Agricultural Produce (Grading and Marking) Act of 1937 (amended in 1986*)* by Directorate of Marketing and Inspection of Union Government. Presently, Agmark standards cover quality specifications for 230 commodities.

During 2021-22, totally, 35.65 lakh quintals of agricultural commodities were graded and grading charges of Rs.92.34 lakh have been collected as State revenue. The Scheme will be continued during the year 2022-23.

7.3 HUMAN RESOURCE MANAGEMENT

Agricultural Marketing and Agri Business are the two wings of the department which carry out various activities like operation of Regulated

Markets and Uzhavar Santhais, implementation of schemes related to FPOs, Food Processing, disseminating market and agri business related Agricultural Technologies to farmers and updating farmers on the latest Market information through field functionaries. These two wings function with 1,343 Department staffs and 1,674 Market Committee staffs.

During 2022-23, the Department will be strengthened and restructured with qualified personnel to identify appropriate export avenues, value addition techniques and to prepare project proposals.

Table: 7.2- Details of Department Staff

S. No	Name of the Post	Sanctioned Post
1	Additional Director of Agriculture	1
2	Joint Director of Agriculture	2
3	Deputy Director of Agriculture (AB)	37
4	Assistant Director of Agriculture	5
5	Agricultural Officer	170
6	Deputy Agricultural Officer	47

S. No	Name of the Post	Sanctioned Post
7	Asst. Agricultural Officer	627
8	Administrative Officer	1
9	Asst. Accounts Officer	1
10	Other non-technical staff	452
	Total	**1,343**

Table: 7.3- Details of Market Committee Staff

S. No	Name of the Post	Sanctioned Post
1	Senior Secretary / Deputy Director of Agriculture	2
2	Senior Secretary	2
3	Secretary / Assistant Director of Agriculture	11
4	Secretary	11
5	Superintendent	202
6	Engineering Supervisor	9
7	Supervisor	346
8	Other non-technical staff	1,091
	Total	**1,674**

7.4. TAMIL NADU STATE AGRICULTURAL MARKETING BOARD

The State Agricultural Marketing Board was established in the year 1970 and reconstituted as a Statutory Board in accordance with the **"Tamil Nadu Agricultural Produce Marketing (Regulation) Act 1987".**

7.4.1. Constitution of the Board

President: Nominated by the Government. If the President is not appointed by the Government, Agricultural Production Commissioner and Secretary to Government, Agriculture and Farmers' Welfare Department will act as the President.

Members:

1. Non-Official Members (Chairman / Special officers of 27 Market Committees)
2. Director of Agricultural Marketing and Agri Business
3. Registrar of Co-operative Societies

4. Managing Director, Tamil Nadu State Warehousing Corporation
5. Agricultural Marketing Advisor, Government of India
6. President, Tamil Nadu Cooperative Marketing Federation
7. An Officer from the Agriculture Department in the Secretariat not below the rank of Deputy Secretary to Government.

Tamil Nadu State Agricultural Marketing Board is functioning with its headquarters at Chennai.

7.4.2 Source of Income

The Market Committees contribute 15% of the revenue collected as license fee and market fee to the Tamil Nadu State Agricultural Marketing Board as share amount.

7.4.3 Functions of Tamil Nadu State Agricultural Marketing Board

1. Conducting market research and survey.
2. Creation and maintenance of market infrastructure facilities.
3. Imparting training to farmers and officials.
4. Organizing seminars, workshops and exhibitions.
5. Functioning as State Level Supporting Agency for Price Support Scheme.
6. Coordinating Agro Export promotional activities.

7.4.3.1. Imparting Capacity Building Training

The State Level Training Centre is functioning at Salem. This centre provides training to officials and staff of Department of Agricultural Marketing and Agri-Business, capacity building programme to farmers on

value addition, marketing of agricultural produce and e-trading.

During 2021-22, 45 training programmes were conducted at a cost of Rs.12.15 lakh benefitting 1,522 technical staff and farmers. This training programme will be continued during 2022-23 also.

7.4.3.2. Construction/Maintenance Works

The Engineering Wing with its sub-divisional offices at Chennai, Madurai and Vellore is functioning under the control of Tamil Nadu State Agricultural Marketing Board. It takes up the construction and maintenance of infrastructures such as Regulated Markets, Uzhavar Sandhais, Food parks, Godowns, Cold storages etc.,

During 2021-22, infrastructure facilities are being constructed for an amount of Rs.275 crore. These works will be continued during 2022-23 also.

7.4.3.3 Price Support Scheme (PSS)

To protect farmers from price fall during peak harvest season, Price Support Scheme is being implemented in the State. Tamil Nadu State Agricultural Marketing Board (TNSAMB) is serving as the State Level Agency for this programme. Regulated Markets are functioning as Primary Procurement Centres (PPCs) which procure the agricultural produce from the farmers on behalf of NAFED, being the Central Procurement Agency designated by Government of India. Fair Average Quality (FAQ) produces are being procured from the farmers for which Minimum Support Price (MSP) fixed by Government of India is paid to the farmers through online.

Since the inception of the programme, 17,072 metric tonnes of Pulses and 387 metric tonnes of Copra were procured at a total cost of Rs.116.15 crore from 15,488 farmers.

During 2022, it was programmed to procure 50,000 metric tonnes of Milling Copra and 1,000 metric tonnes of Ball Copra. So far, 1182 metric tonnes was procured at cost of

Rs.12.52 crore. Further, it was programmed to procure 10,992 metric tonnes of Redgram, 14,282 metric tonnes of Greengram and 57,350 metric tonnes of Blackgram.

To protect the farmers from price fall, this scheme will be continued during 2022-23 also.

This intervention of the Government facilitates stabilization of market price of Pulses and Copra and paves way to protect the farmers from price fall.

7.4.3.4 Agro Export Promotion Activities

The Government is taking more efforts to increase the volume of agricultural exports. An Agricultural Export Facilitation Centre will be established in Chennai to handhold the farmers in exports.

An action plan will be formulated to promote the agricultural and horticultural crops with higher export potential in coordination with Agricultural and Processed food products Export Development Authority (APEDA) and relevant stakeholders like National Plant Protection Organisation (NPPO).

In a bid to promote, motivate and encourage the first time exporters, 50 % financial assistance (upto a maximum of Rs.10,000/-) will be extended for laboratory tests carried out by them in NABL accredited laboratories. Farmers who excel in agricultural exports will be identified and the best performing farmer will be awarded with a cash prize of Rs.2 lakh.

Realising the potential of crops with Geographical Indication (GI) tagging to fetch greater value in global market, steps are being taken by the Government to get GI tag for potential products of the State.

Presently, GI has been filed for Sholavandhan betelvine, Panruti jack and Panruti cashewnut.

Moringa grown in Tamil Nadu has got high export potential. Considering the export potential of Moringa and its value added products, the Government has declared the area comprising seven districts viz., Theni, Dindigul, Karur, Thoothukudi, Ariyalur, Tiruppur and Madurai as Moringa export zone. Action is being

taken to establish a special export facilitation center in Madurai to increase the export opportunities for Moringa.

7.4.3.5. Establishment of Food Parks:

Value addition in agricultural produce is given much impetus for a better income. As per the Tamil Nadu Food Processing Policy, food parks are being promoted in the State.

I) Establishment of Mega Food Park at Gangaikondan in Tirunelveli district

A Mega Food Park Project is being established in an area of 50 acres at SIPCOT Industrial Estate, Gangaikondan, Tirunelveli District at a project cost of Rs.77.02 crore. Tamil Nadu State Agricultural Marketing Board is functioning as the Project Implementing Agency.

II) Establishment of Small Food Parks / Agro Processing Clusters

Small Food Parks in an area of 10 acres are being established in seven locations viz., Cuddalore, Theni, Dindigul, Krishnagiri, Tiruvannamalai, Salem and Madurai with a project cost of Rs.191.88 crore. The Market

Committee Secretaries are functioning as the Project Execution Agencies.

Action is also being taken to set up small Food Parks in seven districts namely Tiruvarur, Dharmapuri, Ariyalur, Karur, Perambalur, Ramanathapuram and Tenkasi.

Annexure- I

Infrastructure available in Department of Agricultural Marketing and Agri Business

(Unit in Nos)

S. No	District	Uzhavar Sandhai	Primary Processing Centre	Godowns	Total Capacity of Godowns (MT)	Cold Storages	Total Capacity of Cold Storages (MT)	Transaction Shed	Traders shop	Drying yard	Specialised Market Complex
1	Kancheepuram	4	--	7	4000	--	--	6	--	7	--
2	Chengalpet	10	--	2	2600	1	2	1	--	2	--
3	Tiruvallur	6	--	10	12800	--	--	5	--	7	--
4	Cuddalore	5	--	14	19600	4	77	29	10	15	--
5	Villupuram	3	--	17	41100	2	40	38	--	11	--
6	Kallakuruchi	3	--	16	23000	2	50	29	--	7	--
7	Vellore	4	--	8	5000	2	27	4	--	3	--
8	Ranipet	2	--	10	8500	--	--	10	--	6	--
9	Tiruppathur	3	--	8	7250	4	77	1	--	2	--
10	Tiruvannamalai	8	--	31	34100	7	175	47	10	12	--
11	Dharmapuri	5	5	8	7600	7	1310	6	10	10	1
12	Krishnagiri	5	10	10	9600	21	1547	3	--	10	1

S. No	District	Uzhavar Sandhai	Primary Processing Centre	Godowns	Total Capacity of Godowns (MT)	Cold Storages	Total Capacity of Cold Storages (MT)	Transaction Shed	Traders shop	Drying yard	Specialised Market Complex
13	Salem	11	--	17	15000	12	260	17	--	16	--
14	Namakkal	6	--	8	7600	6	84	4	--	5	1
15	Erode	5	--	40	53602	7	1225	36	10	34	3
16	Tiruppur	6	--	59	81650	6	152	33	--	45	2
17	Coimbatore	8	7	31	26405	20	1694	19	10	30	3
18	Nilgiris	4	9	--	--	9	592	1	--	--	1
19	Perambalur	2	--	2	2500	2	75	1	--	1	1
20	Ariyalur	2	--	5	5500	1	25	14	--	7	--
21	Tiruchirappalli	7	12	14	13000	12	3282	15	--	20	4
22	Karur	5	--	2	1000	2	27	1	--	--	--
23	Thanjavur	5	--	28	41150	3	127	22	--	5	2
24	Tiruvarur	7	--	17	14600	1	2	9	--	8	--
25	Nagapattinam	1	--	13	11320	--	--	4	--	--	--
26	Mayiladuthurai	2	--	4	3500	--	--	7	--	5	--
27	Pudukottai	6	--	6	4350	2	125	3	--	4	1
28	Madurai	7	--	13	15900	3	29	4	--	7	1
29	Dindigul	5	5	14	19200	9	1115	6	--	8	1

S. No	District	Uzhavar Sandhai	Primary Processing Centre	Godowns	Total Capacity of Godowns (MT)	Cold Storages	Total Capacity of Cold Storages (MT)	Transaction Shed	Traders shop	Drying yard	Specialised Market Complex
30	Theni	7	5	12	13500	12	722	8	--	7	3
31	Virudhunagar	8	--	15	17200	3	150	5	--	5	--
32	Sivagangai	5	--	17	16450	1	25	3	--	7	--
33	Ramnad	3	3	9	13050	6	2155	3	25	9	1
34	Tirunelveli	4	2	8	10800	5	72	4	--	5	2
35	Tenkasi	2	3	6	12000	9	1980	6	10	5	--
36	Thoothukudi	2	3	18	20100	11	277	7	--	5	1
37	Kanniyakumari	2	--	11	10500	2	27	3	--	4	2
	Total	**180**	**64**	**510**	**605027**	**194**	**17527**	**414**	**85**	**334**	**31**

Annexure II

ONE DISTRICT ONE PRODUCT – TAMIL NADU

S. No	District	ODOP
1.	Ariyalur	Cashew processing
2.	Chengalpet	Fishery products
3.	Chennai	Bakery Products
4.	Coimbatore	Coconut products
5.	Cuddalore	Cashew processing
6.	Dharmapuri	Millet based products (Except Maize)
7.	Dindigul	Animal feed
8.	Erode	Turmeric based units
9.	Kallakurichi	Edible Oils(Groundnut)
10.	Kancheepuram	Edible Oils(Groundnut)
11.	Kanyakumari	Fishery products
12.	Karur	Moringa products
13.	Krishnagiri	Mango products
14.	Madurai	Dhal products
15.	Nagapattinam	Fishery products
16.	Namakkal	Poultry feeds and Products
17.	Perambalur	Animal feed
18.	Pudukkottai	Groundnut based products
19.	Ramanathapuram	Fishery products
20.	Ranipet	Edible Oils (Groundnut)

S. No	District	ODOP
21.	Salem	Tapioca products
22.	Sivagangai	Coconut products
23.	Tenkasi	Lemon Based products
24.	Thanjavur	Coconut products
25.	The Nilgiris	Vegetable processing
26.	Theni	Banana based products
27.	Tiruvallur	Dhal products
28.	Thoothukudi	Palm products
29.	Tirunelveli	Banana based products
30.	Tirupathur	Groundnut based products
31.	Tiruppur	Poultry feeds and Products
32.	Tiruvannamalai	Groundnut based products
33.	Tiruvarur	Dhal products
34.	Trichy	Banana based products
35.	Vellore	Dairy products
36.	Villupuram	Edible Oils(Groundnut)
37.	Virudhunagar	Millet based products (Except Maize)


1 DISTRICT 1 PRODUCT

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8. Tamil Nadu Watershed Development Agency (TAWDEVA)

8.1. The Tamil Nadu Watershed Development Agency was established in 2002 and registered under the Tamil Nadu Societies Registration Act, 1975 with the objective of developing wastelands through participatory watershed development. Subsequently, a State Level Nodal Agency (SLNA) was constituted in TAWDEVA in 2009. All watershed programmes in the State like Drought Prone Areas Programme (DPAP), Integrated Wasteland Development Programme (IWDP), National Watershed Development Project for Rainfed Areas (NWDPRA) and Integrated Watershed Management Programme (IWMP) were implemented under the control of TAWDEVA.

At present, the following Watershed Development Programmes are implemented by Tamil Nadu Watershed Development Agency

1. Watershed Development Component - Pradhan Mantri Krishi Sinchayee Yojana 2.0 (WDC - PMKSY 2.0)

2. Watershed Development Fund (WDF) - assisted by NABARD

3. Climate Proofing of Rainfed Watersheds in Salem and Virudhunagar Districts of Tamil Nadu under National Adaptation Fund for Climate Change (NAFCC)

Further, Tamil Nadu Watershed Development Agency has also been designated as the Nodal Agency for the following schemes to co-ordinate with the implementing departments, State Government and Government of India.

1. Rashtriya Krishi Vikas Yojana - [National Agriculture Development Programme] - (RKVY/ NADP) - RAFTAAR

2. National Mission for Sustainable Agriculture (NMSA)

3. Pradhan Mantri Krishi Sinchayee Yojana - (PMKSY)

    i. Pradhan Mantri Krishi Sinchayee Yojana - Per Drop More Crop (PMKSY - PDMC)

ii. Pradhan Mantri Krishi Sinchayee Yojana - Har Khet Ko Pani (PMKSY - HKKP)

iii. Accelerated Irrigation Benefit Programme (AIBP)

4. Agriculture Infrastructure Fund (AIF)

8.2. Status of Implementation of Watershed Development Component - Pradhan Mantri Krishi Sinchayee Yojana 2.0 (WDC - PMKSY 2.0)

Watershed Development Component - Pradhan Mantri Krishi Sinchayee Yojana 2.0 (WDC - PMKSY 2.0) is a programme for the development of rainfed and degraded land. The objectives of the scheme are as follows.

i. **Economy –** Improving income of village community in the watershed areas by increasing the productivity of various crops through optimal, integrated, sustainable and efficient use of natural resources and managing sustainability.

ii. **Ecology –** Harnessing, Conserving, developing natural resources (to restore ecological balance) by way of building

community organizations and promoting simple, affordable technologies and practices.

iii. **Equity -** Improving the social and economic conditions of the poor, landless, physically challenged and women through equitable access to land, water, resources developed and by involving them in various community institutions.

The Government of India has sanctioned 275 Watersheds under 27 Projects in Perambalur, Thoothukudi, Dindigul, Krishnagiri, Ramnad, Dharmapuri & Virudhunagar districts to cover an area of 1.3033 lakh ha at an outlay of Rs.286.73 crore for implementation from 2021-22 to 2025-26.

Table 8.1 District wise Approved Project

Sl No	District	No. of Projects	No. of Micro Watersheds	Proposed area (ha)	Project Cost (Rs. in crore)
1	Perambalur	3	28	11,855	26.08
2	Thoothukudi	7	66	35,430	77.95
3	Krishnagiri	3	52	16,203	35.65
4	Ramnad	3	21	15,000	33.00
5	Dindigul	5	33	21,067	46.35
6	Dharmapuri	3	31	15,775	34.71
7	Virudhunagar	3	44	15,000	33.00
Total		**27**	**275**	**1,30,330**	**286.73**

8.2.1 Project Activities:

The project activities are to be taken up in three phases over the period of five years.

i. **Phase I -** Preparatory Phase (Planning, Institution Development, Entry Point activities & Detailed Project Report Preparation) - six months to one year - 6% of the Total Project Cost.

ii. **Phase II -** Work Phase - Two to Three years with 79% of the total project cost for Natural Resource Management, Farm Production System and Livelihood Activities for the asset less persons, Micro Enterprises and Business Development.

Under Natural Resource Management, the development of natural resources like Farm Ponds, Percolation Ponds, Minor, Medium and Major Check dams, Village Ponds, Desilting of Oorani and Supply Channels, Gabion Check Dams, Recharge Shafts, Rejuvenation of Wells and Sunken Ponds are taken up.

Under the Production System, activities like Horticulture Plantation, Agro-forestry, Floriculture, Fodder Cultivation, Crop Demonstrations, Vermicompost

preparation, Supply of Power Sprayers, Hand Sprayers, Battery Sprayers, Tarpaulin, Chaff Cutter, Fish culture in farm ponds, Distribution of goats/ sheep, beehives and Poultry rearing are taken up for the improvement of the economy of the village community in the watershed areas.

Under Livelihood Activities for asset less person, Micro Enterprises and Business Development components like Readymade cloth and Tailoring, Distribution of Dairy Cows, Backyard poultry farm, Preparation of Food products and Bakery, Petty Shop, Charcoal making, Catering and event management, Handicraft, Goat rearing, Distribution of goats/ sheep, Supply of tailoring machines, Iron Box, beehives, Idly/ Dosa Batter Grinding Mill are taken up, besides Revolving Fund is also provided SHGs with an aim to improve the socio- economic conditions of the village community of the watershed area.

iii. **Phase III -** Consolidation and Withdrawal Phase - supervision & Estimation works - six months to one year - 5% of Project Cost.

Action Plan for 2021-22 has been approved for an outlay of Rs.71.68 crore. Based on the release from GoI, sanction was accorded for Rs.17.92 crore for 2021-22 and proposed to be utilized for Preparation of Detailed Project Report, Entry Point Activity, Capacity Building, Livelihood Support System for landless, Natural Resources Management, Production System and administrative Expenditure. This scheme will be continued with allocation of Rs.125.44 crore during 2022-23.

8.2.2 Expected Outcome:

i. Increase in average productivity of crops, livestock and other agricultural enterprises,

ii. A rise in cumulative output of all agricultural produce in the project area,

iii. Minimizing the risks and uncertainties in both production and marketing stages through diversified production system.

iv. Increase in the average income of the farmers and

v. Popularity of sustained production technologies & farm management practices among the farmers.

8.3 Watershed Development Fund (WDF) assisted by NABARD.

This scheme has been implemented since 2004 onwards through Non-Governmental Organisations. These watershed Projects are sanctioned by the State Level Steering Committee and after the Capacity Building Phase, they are handed over to TAWDEVA for the Full Implementation Phase. It is funded by State Government (as 50% loan assistance) and NABARD (50% grant assistance).

8.3.1. Ongoing WDF Projects

The eight Watershed Development Fund Projects viz., Odukkur and Mampatti in

Pudukottai, Koppur in Tiruvallur, Ayyampalayam in Trichy, Karaikadu in Cuddalore, Kesampatti in Madurai, Chetpet in Tiruvannamalai and Idayamelur in Sivangangai districts are in the Full Implementation Phase under TAWDEVA fold in seven districts. Out of the 50% of the total Project cost of Rs.3.47 crore, an amount of Rs.3.11 crore has been released to the Non-Governmental Organisations and Rs.2.97 crore has been incurred as expenditure so far for the Physical Area Treatment, Drainage Line Treatment, Livelihood Support for Landless Women and Training Activities. These projects are proposed to be continued during 2022-23 in a concerted manner.

8.4 "Climate Proofing of Rainfed Watersheds in Salem and Virudhunagar Districts of Tamil Nadu" under National Adaptation Fund for Climate Change (NAFCC)

This Project is being implemented as a Grants-in-aid project by the Ministry of Environment, Forest & Climate Change, Government of India with NABARD as the

National Implementing Entity and TAWDEVA as the Executive Entity.

This Project is implemented in Salem and Virudhunagar districts to treat an area of 15,990 ha with a project outlay of Rs.23.80 crore. The Project implementation period is from 2019-20 to 2022 -23.

8.4.1. Project Objectives

1. To adapt to the adverse impact of climate change through soil and water conservation.
2. To ensure sustainable livelihoods through promotion of crop diversification and alternate livelihoods.
3. To build capacities of the community to adapt to the climate changes.

8.4.2. Project Components

In order to establish rapport with the villagers, felt need of the watershed like Water Storage Tanks are constructed as an entry point activity. As the Project progresses, Water Resource and Soil Health management activities like construction of Check Dams, Farm Ponds,

Recharge shafts, Livelihood Support Activities & Micro Enterprises like Vermi Compost units and Backyard Poultry are provided to the farmers. As add-on activities towards Climate-Proofing, Support for alternative crops, climate resilient varieties, Afforestration in Public and Private Lands, Solar Pumps, Bio Compost Units, Bio fuel units, Maintenance of Weather Monitoring Stations are provided.

An amount of Rs.11.52 crore has been released through NABARD upto the year 2021-22, out of which an expenditure of Rs.7.63 crore was incurred. This scheme is proposed to be continued during 2022-23 with an outlay of Rs.12.28 crore for implementing the various activities under NAFCC in Salem and Virudhunagar districts.

8.5. Sustainable Development Goals

Goal 6 - Clean Water and Sanitation

Target 6.6 - Protect and Restore water related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes.

State Indicator Framework - 6.6.4

Number of New Farm ponds, Check dams, Percolation Ponds created and renovated through AED, TAWDEVA and Department of Horticulture.

During the year 2022-23, it is proposed to create 3,845 water harvesting structures and desiltation of 2,54,170 Rmt of supply channels in seven districts under WDC - PMKSY 2.0. Besides, 935 water harvesting structures are proposed to be taken up in Salem and Virudhunagar districts Under NAFCC Scheme.

8.6. Agriculture Infrastructure Fund (AIF)

The scheme of Agriculture Infrastructure Fund was introduced by Government of India to mobilize medium - long term debt financing facility for investment in viable projects for post harvest management infrastructure and community farming assets through incentives and financial support.

Development of Agriculture infrastructure, especially at the post harvest stage, is crucial for value addition, minimizing the wastage and giving a fair deal to farmers.

The scheme entails provision of financing facility up to a limit of Rupees Two crore with interest subvention of 3% per annum for a maximum period of seven years. In case of loans beyond Rupees Two crore, interest subvention will be limited up to Rupees Two crore. Credit Guarantee for loans up to Rupees Two crore is also provided.

A Memorandum of Understanding (MoU) has been signed by Government of India with Public & Private scheduled Commercial banks, Small finance Bank, Regional Rural Banks, State Corporative Banks and Non-Banking Financial Companies to provide loans @ 9% interest per annum with interest subvention of 3% towards the creation of Agriculture Infrastructure. The scheme can be availed by Primary Agricultural Co-operative Credit Societies (PACCS), Farmer Producer Organizations (FPOs), Self Help Groups (SHGs), Farmers, Joint Liability Groups (JLGs), Multipurpose Cooperative Societies, Agri-entrepreneurs and Start-Ups.

Under this scheme, the State Government has planned to create Agriculture infrastructure with credit facility for Rs.5990 crore over the Project period from 2020-21 to 2032-33.

During 2021-22, sanction was accorded by NABARD for 290 projects proposed by PACCS for an outlay of Rs.33.62 crore and Rs.59.71 crore was approved by scheduled Commercialised banks to 95 projects proposed by individual beneficiaries.

During 2022-23, this scheme is proposed to be implemented for an outlay of Rs.1660 crore for the creation of agriculture infrastructure with credit facility.

DEMAND 05 – AGRICULTURE AND FARMERS WELFARE DEPARTMENT

ESTIMATE OF THE AMOUNTS REQUIRED FOR EXPENDITURE IN 2022 – 2023

BUDGET ESTIMATE 2022 – 2023
(Rs. in thousands)

	Revenue	Capital	Loan	Total
DEMAND FOR GRANT - VOTED	12,875,31,22	274,47,08	75,17	13,150,53,47
APPROPRIATION - Charged	3	---	---	3

Net Expenditure

(Rs. In thousands)

HEAD OF ACCOUNT		2020 -2021	2021 – 2022	2021 – 2022	2022-2023
		Accounts	Budget Estimate	Revised Estimate	Budget Estimate
2059	PUBLIC WORKS	2,31,29	2,70,75	2,70,75	2,82,50
2401	CROP HUSBANDRY	9,144,58,36	10,963,39,78	10,861,29,29	11,951,17,39
2402	SOIL AND WATER CONSERVATION	87,38,69	166,61,24	136,28,16	147,51,06
2408	FOOD STORAGE AND WAREHOUSING	46,57,62	161,05,01	59,52,88	5,00,03
2415	AGRICULTURAL RESEARCH AND EDUCATION	592,72,00	622,61,44	523,56,78	486,74,82
2435	OTHER AGRICULTURAL PROGRAMMES	224,32,19	275,61,76	285,17,99	246,83,18
2501	SPECIAL PROGRAMMES FOR RURAL DEVELOPMENT	---	6	6	---

HEAD OF ACCOUNT		2020 -2021	2021 – 2022	2021 – 2022	2022-2023
		Accounts	Budget Estimate	Revised Estimate	Budget Estimate
2551	HILL AREAS	69,96	73,76	72,03	82,96
2702	MINOR IRRIGATION	6,64,16	7,25,85	6,85,24	8,27,39
2705	COMMAND AREA DEVELOPMENT	---	3	3	---
2810	NEW AND RENEWABLE ENERGY	---	31,62,38	1	1
3054	ROADS AND BRIDGES	---	---	---	3,74,68
3451	SECRETARIAT – ECONOMIC SERVICES	12,83,29	17,73,94	14,27,80	16,37,10
4401	CAPITAL OUTLAY ON CROP HUSBANDRY	90,12,03	221,17,08	142,84,17	165,94,74
4402	CAPITAL OUTLAY ON SOIL AND WATER CONSERVATION	23,35,26	26,61,01	23,15,21	24,49,80
4435	CAPITAL OUTLAY ON OTHER AGRICULTURAL PROGRAMMES	173,34,84	301,61,28	190,70,62	84,02,54
6401	LOANS FOR CROP HUSBANDRY	---	130,00,00	130,00,00	1
6425	LOANS FOR COOPERATION	---	---	---	16
7610	LOANS TO GOVERNMENT SERVANTS ETC.,	61,10	75,00	75,00	75,00

DEMAND 05 AGRICULTURE AND FARMERS WELFARE DEPARTMENT

BUDGET ESTIMATE 2022-2023

Rupees in Thousands (Gross)

Sl. No	Head of Department			Revenue	Capital	Loan	Total
1.	005 01	Agriculture and Farmers Welfare Department - Secretariat	Voted	16,37,10	---	75,00	17,12,10
2.	005 02	Directorate of Agriculture	Voted	9,204,89,41	163,75,73	1	9,368,65,15
3.	005 03	Directorate of Agricultural Marketing and Agri Business	Voted	245,46,67	84,02,54	---	329,49,21
4.	005 04	Directorate of Seed Certification	Voted	44,88,17	---	---	44,88,17
5.	005 05	Directorate of Horticulture and Plantation Crops	Charged	1	---	---	1
			Voted	1,969,49,15	2,19,00	---	1,971,68,15
6.	005 06	Agricultural Engineering Department	Charged	2	---	---	2
			Voted	912,28,19	24,49,81	---	936,78,00
7.	005 07	Agro Engineering Services	Voted	70,02	---	---	70,02
8.	005 08	Tamil Nadu Agricultural University, Coimbatore	Voted	471,75,25	---	---	471,75,25
9.	005 09	Directorate of Organic Certification	Voted	78,19	---	---	78,19
10.	005 10	Directorate of Sugar	Voted	8,69,07	---	16	8,69,23
Total			Charged	**3**	**---**	**---**	**3**
			Voted	**12,875,31,22**	**274,47,08**	**75,17**	**13,150,53,47**

CONCLUSION

The Hon'ble Chief Minister, has renamed as Agriculture – Farmers Welfare Department for the welfare of farmers. The first exclusive Agricultural Budget formulated based on the opinions received from farmers to Agricultural experts has been announced for the implementation of various special schemes by the Government of Tamil Nadu.

The Second Agricultural Budget has been presented for the year 2022-2023 considering the experience gained from the implementation of schemes in the first year, the views of exporters, agricultural researchers, traders, agriculture and allied sector officials and presented with various new schemes for all the departments which will be implemented.

The introduction of Digital Methodologies along with traditional technologies will ensure that the Agriculture – Farmers Welfare Department undergoes creative evolution and makes good progress in the lives of the farmers. In addition, schemes will be introduced and

implemented to reduce the difficulties of farmers from their sowing to marketing.

To make agriculture as Commercial and Profit oriented, the schemes like Kalaignarin All Village Integrated Agriculture Development Programme, Chief Minister's Dry Land Development Mission and various new State Schemes integrated as State Agriculture Development Scheme, Palmyrah Development Mission, Micro Irrigation schemes and separate department for increasing the exports of the Agricultural produces have been announced in the Agriculture budget in consonance with the mindset of the farmers.

Thus, the Government of Tamil Nadu is taking earnest efforts, to improve the livelihood as well as income of farmers and make their income sustainable besides ensuring nutritious value of the food.

M.R.K. Panneerselvam,

Minister for Agriculture and Farmers Welfare.

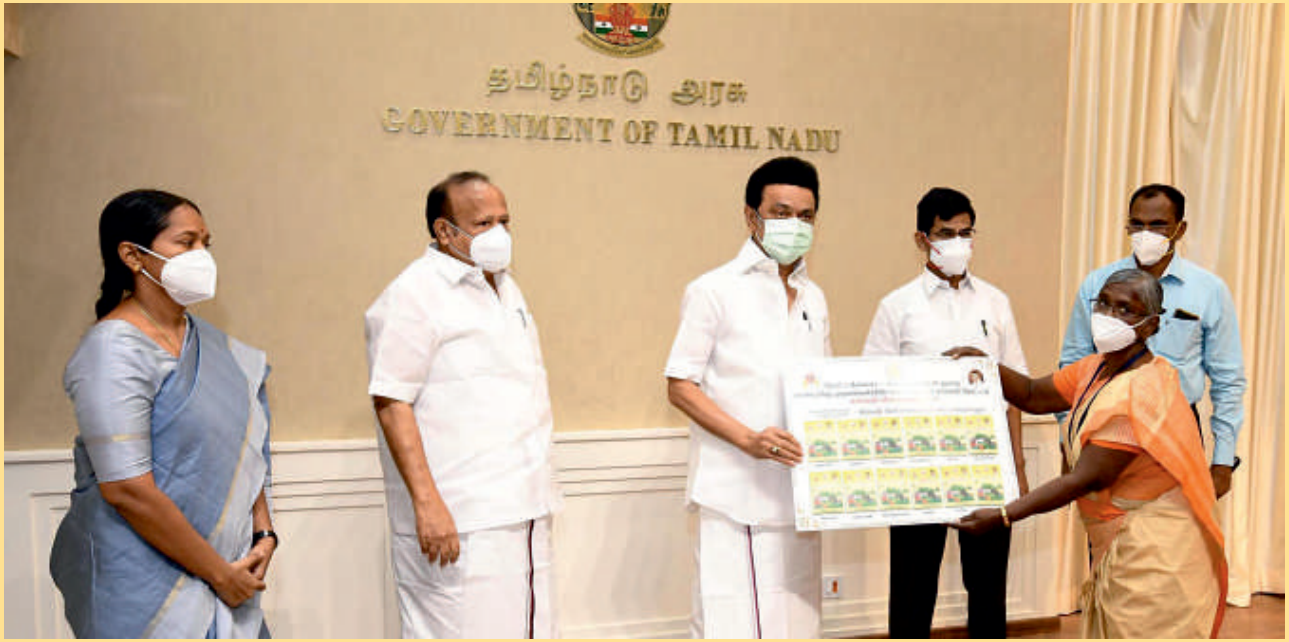
The Hon'ble Minister for Agriculture – Farmers Welfare called upon the Hon'ble Chief Minister of Tamil Nadu before presenting the exclusive Agriculture Budget on 19.03.2022

The State Level Convergence work shop for the All Village Anna Renaissance Scheme and Kalaignar All Village Integrated Agricultural Development Programme Scheme was held in the presence of the Hon'ble Minister for Agriculture – Farmers Welfare, Thiru.M.R.K. Panneerselvam and the Hon'ble Minister for Rural Development Thiru. KR. Periakaruppan on 26.02.2022. Respected Chief Secretary Dr.V. Irai Anbu, I.A.S and other officials participated in the meeting.

The Hon'ble Chief Minister of Tamil Nadu Thiru.M.K.Stalin, at the Secretariat on 17.09.2021 received palm nut seeds from the Hon'ble Speaker Thiru.M.Appavu. The Hon'ble Minister for Agriculture – Farmers Welfare, Thiru. M.R.K. Panneerselvam, Agricultural Production Commissioner and Secretary to Government Thiru.C.Samayamoorthy, I.A.S., also participated in the event.

The Hon'ble Chief Minister of Tamil Nadu Thiru.M.K.Stalin, at the Secretariat on 08.01.2022 inaugurated Sustainable Cotton Cultivation Mission Scheme at an outlay of Rs. 11 Crore covering an area of 25,000 Hectare in Long Staple Cotton Production. The Hon'ble Minister for Agriculture – Farmers Welfare, Thiru.M.R.K.Panneerselvam, The Chief Secretary Dr.V.Irai Anbu, I.A.S., the Additional Chief Secretary / Commissioner of Sugar and other officials attended the event.

The Hon'ble Chief Minister of Tamil Nadu Thiru.M.K.Stalin, at the Secretariat on 16.11.2021 handed over tree saplings to the farmers to inaugurate the distribution of 73 Lakh tree Saplings under the Tamil Nadu Mission for Sustainable Green cover Scheme at an outlay of Rs. 11.14 Crore.



The Hon'ble Chief Minister of Tamil Nadu Thiru.M.K.Stalin, at the Secretariat on 06.12.2021 inaugurated the CM Nutritive Garden Scheme by distributing the seeds worth of Rs.265 to the farmers.

The Hon'ble Chief Minister of Tamil Nadu Thiru.M.K.Stalin, at the Secretariat on 08.01.2022 inaugurated E-Rental Online Application and Agricultural Mechanization Project through which farmers can register the machineries at their doorstep. The Hon'ble Minister for Agriculture – Farmers Welfare, Thiru.M.R.K.Panneerselvam, the Chief Secretary Dr.V.Irai Anbu, I.A.S., the Additional Chief Secretary / Commissioner of Sugar and other officials participated in the event.

Estabilshment of Individual Water Storage Structures (Farm Ponds)

The Hon'ble Minister for Agriculture – Farmers Welfare, Thiru.M.R.K.Panneerselvam witnessing the demonstration of Drone Application in Tamil Nadu Agricultural University.

Activities carried out in
Dharmapuri Uzhavar Sandhai

Activities carried out in
Tindivanam Uzhavar Sandhai

Construction of International Flower Auction Centre in Hosur with facilities to store 2.50 Lakh flower stems at refrigerated warehouse, Auction Centre, Grading Centre, Traders Centre, Cold Storage Unit of 2,000 tonnes capacity, Conference Hall and 16 Retail Outlets.

Construction of Regulated Market at Poonthottam with warehouse capacity of 2000 MT and 1000 MT.

New variety in Sugarcane (Co 11015)- Cuddalore District

System of Rice Intensification (SRI) – Tirunelveli District

Weeding operation using Cono Weeder in Tenkasi District

Millet Mission

Ragi-Krishnagiri District

Maize- Perambalur District

Sorghum- Tenkasi District

Cumbu- Kallakurichi District

Sunflower-Tenkasi District

Groundnut- Namakkal District

Sesame-Villupuram District

Mango-Krishnagiri District

Jackfruit- Cuddalore District

Tuberose-Dindigul District

Solar Dryer

Government Central Press, Chennai - 600 001.