AGRICULTURE - FARMERS WELFARE DEPARTMENT

POLICY NOTE
2023 - 2024

DEMAND No.5

Thiru. M.R.K. PANNEERSELVAM

Hon'ble Minister for Agriculture - Farmers Welfare

Policy Note 2023-2024

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INTRODUCTION

"பலகுடை நீழலும் தங்குடைக்கீழ்க் காண்பர்
அலகுடை நீழ லவர்"

(திருக்குறள் : 1034)

The Patriotic farmers desire to bring all other states under the control of their own king.

"கார்நடக்கும் படிநடக்கும் காராளர் தம்முடைய
ஏர்நடக்கு மெனிற்புகழ்சால் இயலிசைநா டகம்நடக்கும்
சீர்நடக்குந் திறநடக்குந் திருவறத்தின் செயநடக்கும்
பார்நடக்கும் படைநடக்கும் பசிநடக்க மாட்டாதே"

The farmers should stand firm in their moral duty and do farming, if it is to rain without fail. The language will prosper, if they undertake Green Revolution to eradicate hunger. The literary works will flourish. The country will gain good things. Knowledge and skills will progress. There comes a balance of **"Everything for All"** without takers and givers. Good morals will steer the world. **Kavichakaravarthy Kambar in his book "Yer Ezhupathu"** praised that the world will

prosper and the people will gain good health & well being, only because of the farmers doing Agriculture.

Agriculture is the noblest occupation of feeding the people of the world, though there have been many professions in the world. Agriculture plays a major role in the sustainable development of the country. Though Agriculture remains the primary occupation and livelihood for majority of the people, it also serves as a backbone for the development of other industries, rural employment, domestic and international trade and alleviation of poverty. The Government has taken various steps to uplift the farmers who are engaged in agriculture, amidst various seasonal challenges, which is crucial for food production.

"Agricultural practices are not merely rituals,
but rather noble actions,
that contribute to improving yield factors
that occur from time to time".

The Agriculture - Farmers Welfare Department has been working tirelessly to transform Agriculture into a profitable occupation

by introducing modern agricultural technologies into the practical traditional knowledge base our farmers and by attracting the youth into Agriculture.

In the present context, it is challenging for the farmers and the scientists to scale up food production in consonance with the growing population, to provide safe food to the consumers and to deal with various climatic change events and newly emerging pests and diseases.

There remains a compulsive situation in overcoming the difficulties in increasing the Ground water level and cropped area by developing new technologies, making the farmers to adopt them in larger areas and to ensure a conducive environment for crop cultivation with micro irrigation for increasing the cultivated area and production.

Agriculture is the source of livelihood for 70 percent of the people living in rural areas of Tamil Nadu. It is of paramount importance to give thrust to agriculture as the changes in agricultural front are most likely to bring out major changes in the economic development of Tamil Nadu. Hence,

the Government of Tamil Nadu is implementing various schemes giving utmost importance to the agriculture sector.

The farmers are recommended with new varieties of different crops and improved technologies suited to different agro climatic zones, rainfall and various soil types. Moreover, various schemes are being implemented to improve the livelihood and income of the farmers through integrated implementation of agriculture based activities like Animal husbandry, Fish culture, Bee keeping, Sericulture and Agro forestry.

Concerted efforts of the Government of Tamil Nadu for the development of Agriculture.

The Honourable Chief Minister of Tamil Nadu had opened the **Mettur Dam on 24.05.2022**, **19 days prior to the scheduled date** and subsequently, the Kuruvai Package Scheme was implemented at an estimated cost of Rs.61.12 crore. The rivers and canals were desilted at an estimated cost of Rs. 85 crore during the year 2022-2023. Due to these efforts

of the Government, Kuruvai cultivation had been taken up in an area of **2.17 lakh hectare**, **which is the highest in 47 years.**

The first one of the three long-term visions of the Honorable Chief Minister of Tamil Nadu is to increase the net cropped area in the state. Due to better implementation of the schemes announced in the last two Agriculture Budgets, the net cropped area has increased by **76,000 hectare** over the year 2020 – 2021.

As per the second vision, the double cropped area had increased by **1.17 lakh hectare** from **13.22 Lakh Hectare** in the year 2020 – 2021 compared to **14.39 lakh hectare** during the year 2021 - 2022.

Table: 1.1 –Productivity of Tamilnadu at National level

First Position	Second Position	Third Position	Fourth Position
Maize, Oilseeds, Groundnut, Sugarcane	Rice	Coconut	Nutri Rich Cereals (Ragi, Cumbu, Varagu, Thenai)

Source: Agricultural Statistics at a Glance-2021

Further, various subsidy schemes are being implemented for improving production and productivity in Sunflower and Cotton crops.

The list of beneficiaries of the schemes is being displayed in all the Village Panchayats at the Grama Sabha meetings held six times every year throughout Tamil Nadu for ensuring transparency in the implementation of the schemes. In addition, various agricultural technologies are exhibited in the meetings and downloading of **'Uzhavan App'** by the farmers is also being facilitated.

Niti Aayog has undertook the responsibility for achieving the transformation of the World by 2030 through the Sustainable Development Goals (SDGs). There are 17 Sustainable Development Goals (SDGs) that have been developed through a multi-pronged approach and implemented in all sectors. Out of these 17 SDGs, six SDGs have been identified for the Department of Agriculture viz., No Poverty, Zero Hunger, Good Health and Well-being, Clean Water and Sanitation, Responsible Consumption and Production and Life below Water and various schemes of the

department are formulated to achieve the Sustainable Development Goals and concerted efforts are being undertaken to achieve all theses SDGs.

Many useful schemes have been announced in the First and Second Agriculture Budget and implemented effectively to encourage the farmers, who are pursuing agriculture amidst various challenges posed.

Agriculture Department - Evolution

In the year 1863, the then **Governor of Madrass Presidency, Sir Willam Denison,** for the first time, drew the attention of his **council of note** towards Agriculture, by presenting the details on the agricultural activities in the State of Madras.

A **separate Department of Agriculture was formed in 1882** based on the recommendations of the Indian Famine Commission (1880). The Director of Settlement and Agriculture was redesignated as Commissioner for Revenue Settlement, Land Records and Agriculture. From 1905 onwards, the

Agriculture Department was organised as an independent unit and the Director of Agriculture and necessary supporting staff were appointed.

At the Secretariat level also, control over the Department was shifted from Revenue Department to the Development Department and later to the newly formed Agriculture Department. In 1949 – 1951, the Commissioner of Civil Supplies in the Board of Revenue was designated as Commissioner of Food Production and till 1956 he had also secretariat responsibilities which were later transferred to the Secretary to Government in Agriculture Department.

Table: 1.2 Details on the formation of various departments under the Department of Agriculture-Farmers Welfare

S. No	Department	Details on Orign
1.	Department of Agriculture	1882 (Separate Department), 1905 onwards functioning with Separate Director of Agriculture
2.	Department of Agricultural Marketing and Agri Business.	1977-1978

S. No	Department	Details on Orign
3.	Department of Horticulture and Plantation Crops	1979-1980
4.	Department of Seed Certification and Organic Certification	1979-1980 2022 – The Head Quarters changed from Coimbatore to Chennai.
5.	Department of Agricultural Engineering	1980-1981
6.	First Agricultural College	1876 (Saidapet)
	Tamilnadu Agricultural University	1971
7.	Department of Sugars	1969 Merged with Agriculture Department -2022
8.	Department of Food Processing	2012 (Department of Agricultural Marketing and Agri Business) 2022 – Micro, Small and Medium Enterprises Department
9	Restructuring of the Department	2008

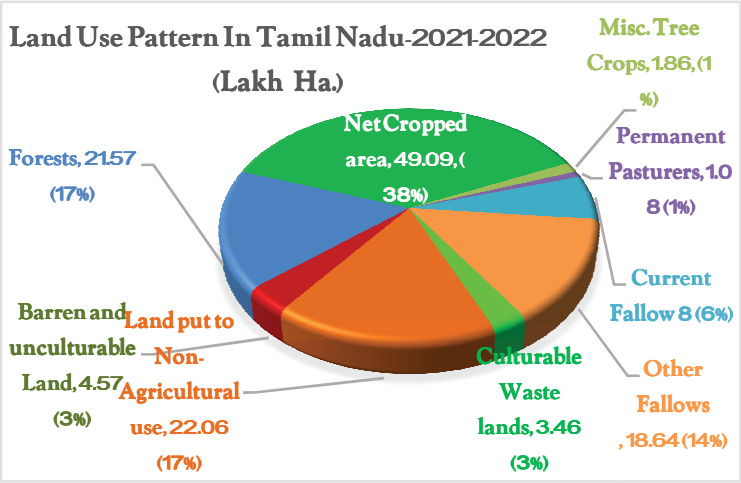
Source: Agricultural Departmental Manual 6th edition (1990)

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 with an population of 7.21 crore. 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 hectare (As per to 10th Agricultural Census). 93% of total land holdings are owned by Marginal and Small farmers, operating 62 % of the total cultivable lands. Remaining seven percent are medium and large farmers operating 38% of the total cultivable lands. The average land holding size of Tamil Nadu is only 0.75 hectare (National average land holding size - 1.08 hectare).

Figure:1 - Land Use Pattern of Tamil Nadu 2021-22.



Total Geographical Area – 130.33 lakh Ha

Cropping Intensity (%) – 129.33 (Gross cropped Area/Net cropped Area*100); ***(*) Difference between Gross Cropped Area (63.48 Lakh Hectare) and Area sown more than once (14.39 Lakh Hectare)***

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

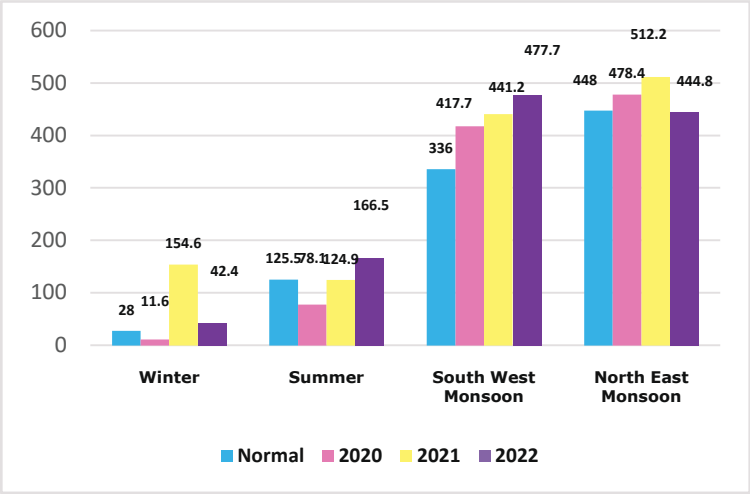
Table: 1.3 – Status of Land Use Pattern of Tamil Nadu 2021-22.

S. No	Land Use	(Lakh Hectare)		
		2020 - 2021	2021 - 2022	Remarks
1.	Gross Cropped area	61.55	63.48	1.93 Lakh hectare Increase
2.	Current fallow lands	8.93	8.00	0.93 Lakh hectare Decrease
3.	Other Fallow lands	18.65	18.64	0.01 Lakh hectare Decrease
4.	Net Cropped area	48.33	49.09	0.76 Lakh hectare Increase
5.	Cropping intensity (%)	127.35	129.33	1.98 % Increase

Average Rainfall of Tamil Nadu

The annual average rainfall of Tamil Nadu is 937.5 mm. In the year of 2022, 1131.40 mm of rainfall had been received.

Figure: 2 - Season wise Rainfall - 2022



Source: Indian Meteorological Department (IMD)

Sources of Irrigation

The details of net area irrigated using various sources of irrigation across the State are as below:

Table 1.4: Water Source wise Net Area Irrigated 2021-2022

Source of Irrigation	Numbers	Net Area Irrigated (Lakh Ha.)	% with reference to Net Area Irrigated
Canals	2,240	6.84	23.35
Tanks	41,114	4.10	14.00
TubeWells/ Bore wells	2,42,583	5.46	18.64
Open wells	14,42,079	12.85	43.87
Others		0.04	0.14
Total		**29.29**	**100**

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

The net area irrigated by tube wells, borewells and open wells is 63 percent, by canals is 23 percent and by tanks is 14 percent.

Status of Utilization of Irrigation water resources

The net area irrigated by canals and reservoirs increased to **6.84 lakh hectare** (2.39 percent) and **4.10 lakh hectare** (10.21 percent) respectively in the year 2021-2022 from **6.68 lakh hectare** and **3.72 lakh hectare** respectively in the year 2020 - 2021.

The area irrigated by wells, borewells and open wells increased to **18.31 lakh hectare** (6.45 percent) from **17.20 lakh hectare** in the year 2020 - 2021. The net irrigated area is in increasing trend by six percent.

Figure: 3 - Seven Agro Climatic Zones of Tamil Nadu

Source : Agri tech portal of Tamil Nadu Agricultural University

1. Agriculture

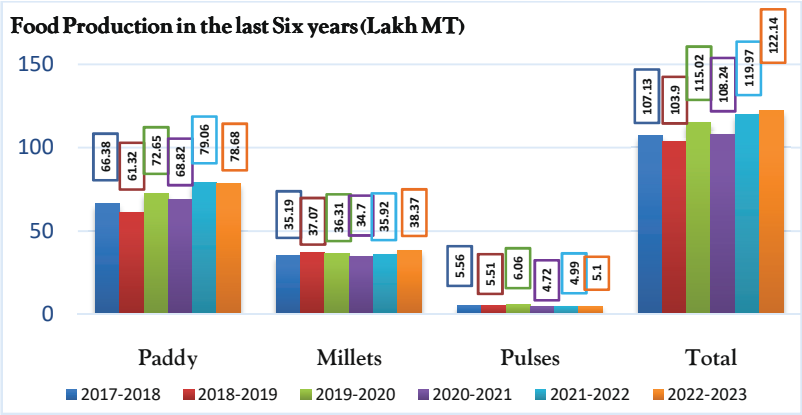
1.1. Increasing the Area, Production & Productivity of Agricultural Crops

The **Net area sown** has increased by **76,000 hectare** from 48.33 lakh hectare in the year 2020-2021 to **49.09 lakh hectare** in the year 2021-2022 due to the presentation of First ever Agriculture Budget in the history of Tamil Nadu in the year 2021 and also due to the successful implementation and ensuring the reach of various Farmers Welfare schemes to the farmers.

Similarly, the **area sown more than once** has increased by **1.17 lakh hectare** from **13.22 lakh hectare** in the year 2020 - 2021 to **14.39 lakh hectare** in the year 2021 - 2022.

In addition to that, the food grain production had reached **119.97 lakh metric tonne** in the year 2021 - 2022. This is **11.73 lakh metric tonne** more than the **108.24 lakh metric tonne** achieved in the year 2020-2021, but also a record not achieved in the last six years.

Figure: 4 – Comparison of Food Grain Production in the last six Years (Lakh Metric Tonne)



****(2022-23 - Second Advance Estimate)**

Table: 1.5 - Programme for 2023-24

Crop	Area (Lakh Ha)	Production (Lakh MT)	Productivity (Kg/Ha)
Rice	20.20	80.75	3,998
Millets	9.83	38.25	3,892
Pulses	9.50	8.00	842
Total food grains	**39.53**	**127.00**	
Oilseeds	5.56	15.40	2,769
Cotton	1.78	4.50*	432**
Sugarcane	1.75	227.50	130***
Total	**48.62**		

(*) Production in Lakh Bales; 170 Kg of lint for each bale;
(**)Productivity in terms of lint;
(***)Productivity (Metric Tonne/Ha)

1.2. Priority Schemes in Agriculture

1.2.1. Kalaignarin All Village Integrated Agricultural Development Programme

"The development of the villages is the development of the country", depicted by Mahatma Gandhi. The Government of Tamil Nadu is implementing Kalaignarin All Village Integrated Agricultural Developement Programme based on the concept of development of the villages is the actual development.

This scheme is being implemented in convergence in one fifth of the total village panchayats in Tamil Nadu, every year, selected by the Rural Development and Panchayat Raj Department for the implementation of the Anaithu Grama Anna Marumalarchi Thittam.

The fallow land clusters in the selected villages are provided with Electric or Solar powered irrigation facilities, along with drip irrigation and planting of perennial fruit trees and cultivation of Agricultural crops as inter crops, which is the special feature of this scheme.

As such, 80 % of the all major schemes of Agriculture-Farmers Welfare Department are converged in the selected villages of this scheme.

This scheme will be implemented in 2504 village Panchayats in 2023-2024 also.

1.2.2 Tamil Nadu Millet Mission (Five year Programme)

More than 40 % of lands in Tamil Nadu are rainfed. The development of rainfed lands is very important for the inclusive growth of Agriculture in all the districts.

In the context of completion of Chief Ministers' Dryland Development Mission implemented for the development of drylands in the last six years, the Millet Mission will be implemented in 25 districts in the next five years from 2023-2024 to 2027-2028 to cater to the welfare of the dryland farmers by encouraging cultivation of Millets and increasing its consumption.

Tamil Nadu Millet Mission will be implemented in 2023-2024 with an outlay of Rs.82 crore.

1.2.3 State Agriculture Development Scheme

The State Agricultural Development Scheme is a compendium of schemes comprising various components for ensuring good returns to the farmers, following modern technologies with good cultivation practices in all the parts of Tamil Nadu.

1.2.3.1. Nel Jeyaraman Traditional Paddy Varieties Conservation Mission

It is very important to preserve the traditional Paddy varieties which had been cultivated by our farmers for ages. The traditional Paddy varieties with medicinal importance like Thuyamalli, Seeraga Samba, Mappillai Samba, Karuppu Kavuni, Athoor Kichili Samba, Thanga Samba, Keerai Samba and other varieties are being cultivated. Apart from creating awareness about these varieties among the people, the objective of this mission is to produce the seeds through seed multiplication and distribute the seeds to farmers.

The seed farms have been raised in an area of 250 acre in the State Seed Farms to distribute 300 metric tonne of Traditional Paddy

seeds with a financial allocation of Rs.75 Lakh in 2022-23.

During 2023-24, the Traditional Paddy Seeds will be produced in 200 acre in the State Seed Farms and will be distributed with an allocation of Rs.50 lakh at subsidized cost in the year 2024-25.

The ethnic purity of the traditional paddy varieties needs to be preserved in order to utilize it for continuous usage. In this effort, an amount of Rs.30 Lakh @ Rupees Three Lakh per Seed Bank will be provided for 10 traditional Paddy seed banks to encourage the farmers who preserve the Seed Bank in the year 2023-2024.

1.2.3.2. Alternative Crops during Kuruvai season

The prime monsoon in Tamil Nadu is the North East monsoon which begins in October and ends in Decemeber. Therfore, good yields can be achieved by effective utilization of minimum water, during non monsoon season by cultivating less water requiring crops instead of high water requiring crops. Hence, the cultivation of less water requiring crops needs to be encouraged. The cultivation of less water requiring Millets,

Pulses, Oilseeds during Kar, Kuruvai, Sornavari season will be promoted, so as to improve the soil health and to increase the farmers' income.

In this year, the scheme will be implemented with a financial outlay of Rs.16.25 crore.

1.2.3.3. Crop Cultivation after Paddy

As farmers continue to cultivate the same crop, the nutrients in the soil deplete to very low level and the yield is likely to be reduced due to the same pest and disease attack. Therefore, cultivation of Millets, Pulses, Oilseeds and Cotton using the residual moisture after harvesting of Samba Paddy will increase the soil fertility in the fields and provide additional income to the farmers at a lower cost.

The scheme will be implemented in 2023-24 with an outlay of Rs.24 crore.

1.2.3.4. Making Youth into Agri-Entrepreneurs

The objective of this scheme is to attract young Agricultural graduates into Farming by

making them expert in providing technical advisories to the farmers besides becoming as an Agri Entrepreneur in rural areas.

Under this scheme, a subsidy of Rs.2 lakh will be provided to the youth who have completed their degree in Agriculture / Horticulture /Agricultural Engineering to start their own agriculture related business in 2023-24.

1.2.4. Promotion of Organic Farming

The Government of Tamil Nadu has released Tamil Nadu Organic Farming Policy, 2023 in March 2023 with various components to promote Organic Farming. This is a mile stone in Organic Farming.

The awareness on organic farming is prevalent among people from all walks of life. There is possibility of pesticide residue in the farm produces due to the continued use of fertilizers and pesticides. It becomes the causative factor for many diseases. The farmers taking up organic farming are being encouraged with financial assistance. The best organic farmer will be

rewarded with Nammazhwar award from the current year.

1.2.5. Green Cover through Agro Forestry

Forests play a major role in sustaining agriculture over years. Forest prevents soil erosion and provides good rainfall. This scheme has been framed with an objective of increasing the forest area and the income of farmers by providing high value tree saplings.

During 2022-23, fully subsidised 77 lakh high value tree saplings have been distributed to 36,694 farmers with a financial allocation of Rs.11.55 crore.

During 2023-24, a sum of Rs.15 crore has been allocated to strengthen the nurseries to distribute 75 lakh high value tree saplings to the farmers at free of cost.

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

There are 144.38 lakh Scheduled Caste and 7.95 lakh Scheduled Tribe people in Tamil Nadu. Out of 79.37 lakh total land holdings in Tamil Nadu, 7.99 lakh Scheduled Caste land holders operate in an area of 4.66 lakh hectare and 0.94 Scheduled Tribe land owners in an area of 0.75 lakh hectare doing cultivation. In order to further improve their standard of living and enable them to participate in high value Agricultural schemes, the Government of Tamil Nadu is providing 20% additional subsidy, in addition to the existing subsidy to reduce the financial burden in their contribution amount.

This scheme will be continued in the current year with an outlay of Rs. 11 Crore.

1.2.7. Digital Agriculture

Nowadays, digital Agriculture is omnipresent everywhere. This plays a vital role in expediting the Agriculture based rural growth, instant dissemination of information, sharing the

information on real time basis and to have a quick access to market prices.

During this year, Artificial Intelligence will be used to give instant remedial measures for 10 major pests and diseases and by using Internet of Things technology, automated irrigation and fertigation will be implemented in three State seed and State Horticulture Farms each at a cost of Rs.2.20 Crore.

GRAINS (Growers Online Registration of Agriculture Inputs System) – One Platform - The GRAINS portal, an Unified Farmer's Service Interface Portal will be utilized for availing all the scheme benefits by the farmers in the current year under a single platform.

The following information will be integrated with the GRAINS portal.

1. Details of the farmers linked with land details
2. Geo – referencing of all land parcels of 16,721 villages

3. Land holding wise collection of crop cultivation details (Electronic e–Crop Registration System)

The data in Grains Portal will be utilized by more than 13 Departments to deliver necessary scheme benefits to eligible and right farmers.

1.2.8. Integrated Farming system

The continuos flow of income is not possible if the farmers resort to crop cultivation alone. Only if they get a sustained income, their livelihood will improve leading to a contented family life. In order to provide income throughout the year, it is better to integrate other allied activities with crop cultivation. The produces obtained by this integration may be recycled which will help in improving the soil fertility and provide a sustaind income. Hence, Government of Tamil Nadu, with an objective to uplift the farm families, is encouraging to adopt Agriculture and other activities with crop cultivation as Integrated Farming System.

In 2022-23, 13,000 Integrated Farming System units have been formed with a financial

allocation of Rs.65.65 crore. This scheme will be continued with a financial allocation of Rs.50 crore in the current year.

1.2.9. Livelihood Development of Tribal Farmers

In Tamil Nadu, tribal farmers living in hilly areas of various districts are doing farming in line with nature. Agricultural development is the overall development of all farmers inclusive of all categories. Hence, the Government of Tamil Nadu is implementing this scheme with the objective of improving the livelihood of the Scheduled Tribal farmers in the hilly areas and forests by integrating the schemes of the Agriculture – Farmers Welfare Department with all other departments, to move them forward in the progressive path.

1.3. Area Coverage

1.3.1. Paddy

Rice is the staple food for the people of Tamil Nadu Paddy cultivation is important to ensure the food security. In total, Paddy is grown in 35% of the gross cropped area.

Table:1.6 – Details of Season, Area and Production

Season	Month	2021-2022	
		Area (Lakh Ha)	Rice Production (Lakh MT)
Kar / Kuruvai / Sornavari	April-July	4.14	16.9
Samba / Thaladi / Pishanam	August-November	14.49	48.02
Navarai / Kodai	December-March	3.54	14.14
Total		**22.17**	**79.06**

In order to increase the Paddy Area, Production and Productivity, the schemes viz., National Agricultural Development Programme (NADP) and National Food Security and Nutrition Mission have been implemented with a financial outlay of Rs.15.10 crore and Rs.4.57 crore respectively during 2022-23. These schemes will be implemented during 2023-24 also.

Tarpaulins have been distributed to the farmers at subsidized cost with a financial outlay

of Rs.5 Crore, in order to protect the agricultural produces from natural calamities. Further, Zinc Sulphate essential for paddy growth and Gypsum required for improving soil fertility have been distributed to the farmers with subsidy at an outlay of Rs.5 Crore during 2022-23. These schemes will be implemented in the current year also.

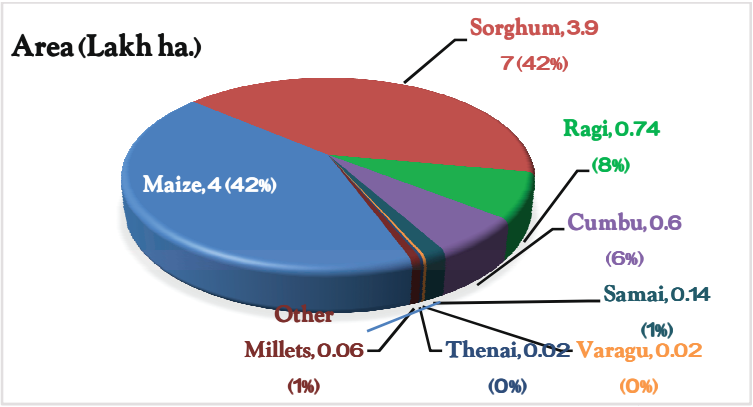
1.3.2. Millets

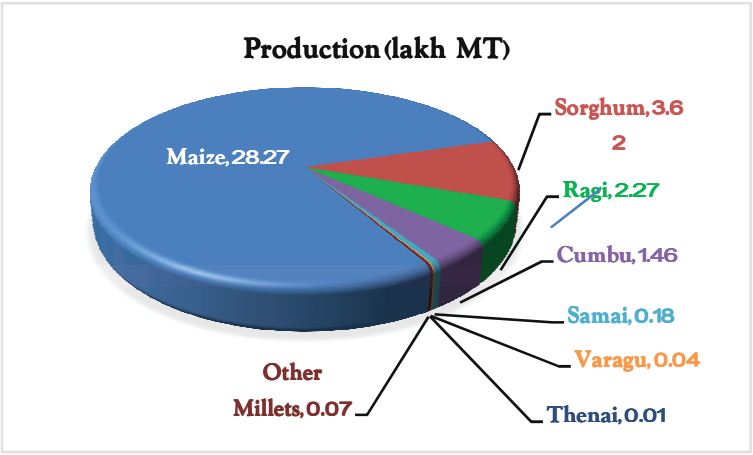
"உருவிலே சிறுதானியமானாலும்

உணவிலே அது பெருதானியமே"

In Tamil Nadu, the major millets such as Sorghum, Cumbu, Ragi, Maize and the minor millets such as Varagu, Panivaragu, Kuthiraivali, Samai and Tenai are cultivated in a normal area of 8.94 lakh hectare with the production of 31.35 lakh Metric Tonne.

Figure : 5 – Millets - Area, Production and Productivity 2021-2022





Source : Department of Economics and Statistics, Final Estimate 2021-2022

National Food Security and Nutrition Mission (NFSNM)

a. Nutri – Cereals

This scheme is being implemented with an objective of increasing the area, production and productivity of Millets, bringing the fallow and waste land under cultivation, restoring soil fertility, dissemination of technology and increasing high yield at the individual farm level, enabling better price and thereby increasing farmers income.

This scheme was implemented with the financial outlay of Rs.39.56 crore in 15 districts during 2022-23 and this scheme will be continued during 2023-24.

b. Maize

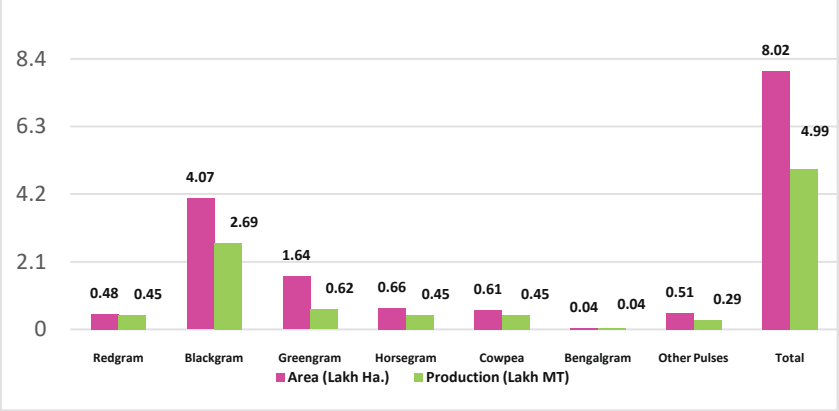
In order to increase the area and production of Maize, improving the soil fertility of the farmers field to sustain the productivity, obtain sustained income and livelihood for the farmers this scheme was implemented in Nine districts with a financial allocation of Rs.1.60 crore during 2022-23.

This scheme will be implemented with a financial allocation of Rs.1.63 crore during 2023-24.

1.3.3. Pulses

Cultivation of Pulses improves the soil health and provides rich source of protein to human. Redgram, Blackgram, Green gram and Horse gram are the important pulse crop of Tamil Nadu and normally grown in an area of 8.17 lakh hectare with a production of 5.22 lakh metric tonne.

Figure : 6 - Pulses - Area and Production - 2021-2022



Source: Department of Economics and Statistics, Government of Tamil Nadu, Final Estimate - 2021-2022

In order to attain self sufficiency in Pulses production, National Food Security and Nutrition Mission and National Agricultural Development Schemes were implemented during 2022-2023 with the financial allocation of Rs.42.66 crore and Rs.27.80 crore respectively.

Further, to increase the Redgram crop area and Production "Redgram Special Zone" was formed in Krishnagiri, Dharmapuri, Tiruvannamalai and Salem districts during the year 2022-23 and critical inputs were distributed to farmers at subsidized cost.

Further, "Pulses cultivation after paddy" scheme is being implemented in an area of 10 lakh acre with the financial allocation of Rs.30.30 crore.

During the year 2023-24, National Food Security and Nutrition Mission and National Agriculture Development Scheme will be implemented with the financial allocation of Rs.48 crore.

1.3.4. Oilseeds

In Tamil Nadu, Oilseed crops are cultivated in a normal area of 3.95 lakh hectare with a production of 9.44 lakh metric tonne.

In order to increase the area and productivity of oilseeds, during 2022-23, National Mission on Edible Oils (NMEO-Oilseeds) and National Agricultural Development Programme have been implemented with a financial allocation of Rs.28.50 crore. In addition, Golden Bean – Soyabean scheme has been implemented to increase the area of Soyabean cultivation with a financial allocation of Rs. 1.20 crore.

During 2023–24, these schemes will be implemented with a financial allocation of Rs.33.40 crore. Further, **"Special Oilseeds Zone"** will be formed by integrating major Oilseeds growing districts of Tamil Nadu.

1.3.4.1. Tree Borne Oilseeds

This scheme is being implemented to increase area under Tree Borne Oilseeds and to rehabilitate the Fallow lands of Tamil Nadu. Development of fallow/ waste land and to

increase the income of farmers through planting of Neem and Pungam tree seedlings, maintenance and intercropping in already established plantations and training components have been implemented with a financial allocation of Rs.1.66 crore during 2022-23. This scheme will be implemented continuously by including Illuppai tree cultivation during 2023-24.

1.3.5. Cotton

Cotton is the most important natural fibre and commercial crop cultivated in Tamil Nadu. This crop provides Cotton lint to the textile industries as well as raw material for fodder industry as its seeds are rich in protein. Cotton plays an important role in the economic development of Tamil Nadu, is cultivated in a normal area of 1.62 lakh hectares with production of 3.92 lakh bales of cotton.

This scheme was implemented with a financial allocation of Rs.11.56 crore during 2022-23 with assistance for production and distribution of seeds of Extra Long staple and Long staple Cotton varieties under National Agricultural Development Programme. During

2023-24, this scheme will be continued with a financial allocation of Rs.12 crore.

1.3.6. Coconut

Coconut is a perennial crop giving income throughout the year. To increase the production and productivity of Coconut, various schemes are implemented by the State and Coconut Development Board.

Coconut is cultivated in an area of of 4.44 lakh Ha with an average annual production of 51,282 lakh nuts and the productivity of 11,526 nuts per Ha. During 2022-23, various components have been implemented with a financial allocation of Rs.12.25 Crore under Coconut Development Board Assisted Schemes and Rs.5.58 Crore under State scheme. During 2023-24, this scheme will be implemented with a financial allocation of Rs. 48.19 Crore under Coconut Development Board Assisted Scheme.

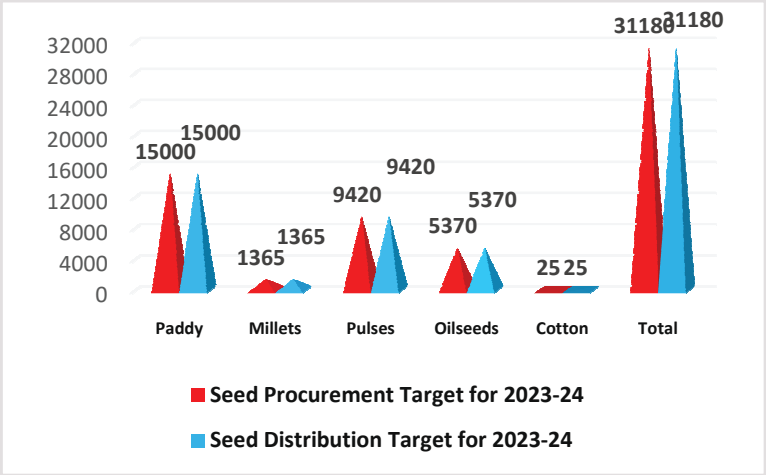
1.4. Other Schemes in the Department of Agriculture

1.4.1. Tamil Nadu State Seed Development Agency (TANSEDA)

Quality seeds are the basis for better yield. TANSEDA was established in 2015 with a noble ambition of supplying good quality seeds to the farmers at right time. To undertake the production of Foundation and Certified seeds of all notified crop varieties, to procure the certified seeds from seed farm growers, to undertake seed distribution at reasonable price as per Seed Price Policy and to integrate all seed related infrastructure in the department for quality seed distribution are important objectives of TANSEDA.

Under this agency, 33 State Seed Farms (SSF), six State Oilseed Farms (SOSF), one State Pulses Seed Multiplication Farm (SPMF), 23 State Coconut Nurseries (SCN), 16 Coconut Crossing Centres (CCC) and 108 Seed Processing Units (SPU) are functioning in the State.

Figure: 7 - Seed Procurement and Distribution Plan 2023-2024



During 2022-23, **28,011 MT** of certified seeds have been produced and distributed to Farmers. It is planned to procure and distribute **31,180 MT** of seeds during 2023-24.

1.4.2. Coconut Seedlings Production and Distribution

With an objective of production and distribution of quality Coconut seedlings to meet the demand of farmers and to increase the Coconut area and production of Tamil Nadu,

23 State Coconut Nurseries and 16 Coconut Crossing Centres are functioning in the State. During 2022-23, around 13.73 lakh coconut seedlings have been produced and distributed to the farmers. It has been programmed to produce 16.07 lakh coconut seedlings during 2023–24.

1.4.3. Agricultural Extension Centres

Agricultural Extension Centres act as an Integrated Centre for stocking and distribution of critical Agricultural inputs and dissemination of all advisories to the farming community right from sowing to harvest.

Out of 880 Agricultural Extension Centres, 383 centres are functioning at Block level as the main centres and 497 centres are functioning at Firka level as sub-centres.

In order to provide all agriculture related services to the farming community, 193 Main Agricultural Extension Centres out of 383 centres were upgraded as Integrated Agricultural Extension Centres (IAECs) and construction work for upgradation of 44 centres into IAECs is under progress.

Out of 497 Sub-Agricultural Extension Centres (Sub-AECs), new buildings with required amenities were created for 155 Centres and construction of new buildings is under progress for 124 Centres.

1.5. Plant Protection

Plant protection is the management practices involving suitable control measures at right time to prevent the crop losses by pests, diseases and weeds. The Government is taking earnest efforts to protect the beneficial insects, to protect the crops from harmful insects through distribution of quality and safe pesticides, encouraging farmers to adopt integrated plant protection management practices, monitoring and prevention of entry of foreign pests/diseases in Tamil Nadu.

1.5.1 Production of Bio-Pesticides and Bio- control Agents

Bio-control agents and Bio-Pesticides are produced by 24 Bio control laboratories and distributed to farmers, to minimize the usage of chemical pesticides, promotion of adoption of eco-

friendly plant protection measures and production of residue-free foods**.**

Table: 1.7 - Production and Distribution of Bio-Pesticides and Bio-Control Agents during 2022-23

S.No.	Bio-pesticides and Bio-Control Agents	Production and Distribution
1.	Trichoderma viride (Kg)	3,19,653
2.	Pseudomonas fluorescens (Kg)	4,02,197
3.	Beauveria bassiana (Kg)	20,969
4.	Trichogramma chilonis (cc)	1,17,120
5.	Metarhizium anisopliae (Kg)	1,11,381
6.	Chrysoperla Sp.(nos)	1,42,73,000

The scheme will be continued during 2023 -24.

1.6 Fertilizer

As fertilizer plays a vital role in crop growth, Department of Fertilizer and Chemicals, Government of India is allocating fertilizers as per the Monthly Supply Plan based on the monthly requirement of Tamil Nadu.

This Government is taking adequate efforts for ensuring the availability of fertilizer to the farmers at the right time. During 2022-23, **23.50 Lakh Metric Tonne** of fertilizers was distributed to farmers. During current year 2023-24, it has been planned to get required fertilizers from Union Government. For Kharif season 2023, the fertilizer requirement has been estimated at 10.38 lakh metric tone, out of which **4.15 lakh metric tonne (40%)** is being kept as opening stock to meet the demand for the ensuing season.

Table: 1.8 - Year wise Fertilizer Distribution

Fertilizer	Fertilizer Distribution (in Lakh MT)	
	2021 – 2022	2022 – 2023
Urea	9.180	10.750
DAP	2.170	3.050

Fertilizer	Fertilizer Distribution (in Lakh MT)	
	2021 – 2022	**2022 – 2023**
MOP	2.010	1.580
NPK Complex	7.740	7.380
Super Phosphate	0.720	0.740
Total	**21.820**	**23.500**

1.7 Quality Control Laboratories

To ensure the supply of quality fertilizers, pesticides and Bio-fertilizers to the farmers, 14 Fertilizer Control Laboratories, 12 Pesticides Testing Laboratories, three State Pesticides Testing Laboratory cum Coding Centres and two Organic Fertilizer Testing Laboratories are functioning in Tamil Nadu besides, Bio-Fertilizer Quality Control Laboratory at Tiruchirapalli and Central Control Laboratory at Pudukkottai are also functioning in the State.

1.7.1 Activities of Fertilizer Control Laboratories

Table: 1.9 – Details on Fertiliser Samples Analysis

Sl. No	Details	2022 - 2023		Non-Standard samples	2023-24 Target
		Target	Achieve-ment		
1	Fertilizer samples	24,600	23,226	588 – (Departmental action – 540, Legal action – 48)	24,600
2	Organic Fertilizer samples	1,440	1,410	106	1,440
3	Bio-Fertilizer samples	1,040	1,006	14	1,040

Action has been initiated to get ISO 17025:2017 NABL Accreditation for all the Fertilizer Control Laboratories.

1.7.2 Activities of Pesticides Testing Laboratories

Table: 1.10 – Details on Pesticides samples analysis

Sl. No	Details	2022-2023		Mis-branded samples	2023-24 Target
		Target	Achieve-ment		
1	Pesticides samples	21,850	21,766	130 – (Departmental action – 94, Legal action – 36)	21,850

Action has been initiated to get ISO 17025: 2017 NABL accreditation for the remaining 10 Pesticides Testing Laboratories like Coimbatore and Kancheepuram Laboratories.

1.7.3 Bio-Control Agents Quality Control Laboratory

It has been planned to test 500 samples of Bio-Control Agents like Trichoderma viride, Pseudomonas fluorescens, Beauveria bassiana per annum in the new Bio-Control Agents Quality

Control Laboratory at Tiruchirapalli during 2023 - 24.

1.8 Soil Health Management

1.8.1. Soil Testing Laboratories

Soil test based nutrient management and need based fertilizer application is the essential to double the crop production and triple the farmers income. In Tamil Nadu, 36 Soil Testing Laboratories and 16 Mobile Soil Testing Laboratories are functioning for the analysis of soil and irrigation water and distribution of test results to the farmers.

The establishment of new Soil Testing Laboratory at Mayiladuthurai and new Mobile Soil Testing Laboratories at Tirunelveli and Cuddalore districts are in progress for the benefit of farmers under Soil Health and Fertility Scheme during 2022-23.

So far 2,30,400 Soil Health Cards have been distributed to the farmers under Kalaignarin All Village Integrated Development Programme and Micro-irrigation schemes. Further, 37,000

irrigation water samples were analysed during 2022–23.

1.9.Micro Nutrient Mixture Production Centre

Micronutrient production Unit, Kudumiyanmalai in Pudukottai District is functioning to produce micro nutrient mixtures which reduce the micro nutrient deficienty in soil to get higher yield. During 2022-23, it has been planned to produce 3,300 Metric Tonnes of 14 essential crop specific Micronutrient mixtures out of which 3,244 Metric Tonnes have been produced and distributed to the farmers during 2022-23.

It has been planned to produce and distribute 3,300 Metric Tonne of Micronutrient mixtures during the year 2023-24.

1.10. Bio-Fertilizers Production Units

With an aim of protecting and enriching the soil health, it has been planned to produce 12.10 lakh litre of eight types of liquid bio-fertilizers in 22 Bio-Fertilizers Production units during 2022-23 and so far, 11.35 lakh litre distributed to the farmers. Further, to study the benefits of Zinc Solubilizing Bacteria (ZSB), 800 litre are produced

and distributed to the State Seed Farms in the year 2022-23 for demonstration.

This Scheme will be continued during 2023-24 with annual production capacity of 12.10 Lakh litres of liquid Bio-fertilizers.

1.11. ATMA (Agricultural Technology Management Agency)

This scheme aims to take up extension activities analyzing the technologies required by the farmers and special agricultural activities at village level, integrating all the Departments. The agency is formed in the districts for this purpose.

Extension activities are being implemented in Tamil Nadu except Chennai in co-ordination with the Departments of Agriculture, Horticulture and Plantation crops, Animal Husbandry, Sericulture, Fisheries, Forestry, Agricultural Engineering, Agricultural Marketing and Agri - Business, Seed Certification and Organic Certification, Tamil Nadu Agricultural University, Tamil Nadu University for Veterinary and Animal Sciences and Tamil Nadu Fisheries University.

1.11.1 Activities of ATMA in 2022-2023

The activities of ATMA are classified as Farmer oriented activities, Farm Information dissemination, Farm School, improvement of Agricultural Technologies, Evaluation and Adoption as well as other innovative activities.

During 2022–23, ATMA activities have been carried out with an outlay of Rs.61.68 crore for the benefit of farmers.

Table: 1.11 - Trainings and Number of Farmers benefitted under ATMA during 2022-2023

S. No	Components	No. of activities	No. of Farmers benefitted
1	Within the State Training	367	14,680
2	Within the District Training	7,051	2,82,040
3	Interstate Exposure visit	122	2,440
4	Within the State Exposure Visit	801	40,050
5	Within the District Exposure Visit	1,612	80,600

S. No	Components	No. of activities	No. of Farmers benefitted
6	Demonstration	10,656	10,656
7	Farm School	264	6,600

This scheme will be implemented in the current year also.

1.12. Farmers Facilitation Centres

1.12.1. Farmers Training Centre

In the State, 22 Farmer Training Centers are functioning to impart training to Convenors of Farmer Discussion Groups and Farm Women about latest technologies of Farm Management. Skill training has been conducted in collaboration with Tamil Nadu Skill Development Corporation for rural youth for self employment and income generation.

1.12.2. State Agricultural Extension Management Institute (STAMIN), Kudumiyanmalai

Training is being given to extension officials and Ministerial Staff working in

Agriculture department about latest technologies, administration, Extension Management and Computer Skills. Around 600 personnels were trained with a financial allocation of Rs.19.73 lakh during 2022-23.

During current year, it has been programmed to conduct training for 1,800 personnels with a financial allocation of Rs.54 lakh.

1.12.3. State Agricultural Management and Extension Training Institute (SAMETI), Kudumiyanmalai

Trainings are being imparted to Agriculture and the allied department officers under Support to State Extension Programme for Extension Reforms scheme. 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 and implemented by this Institute. Further, advisories are being provided for

agricultural scheme preparation, implementation, monitoring and evaluation.

During 2022-23, 2,620 technical officers have been trained with the financial expenditure of Rs 94.14 lakhs. During current year, it has been planned to impart training for 3,490 technical officers with a financial allocation of Rs 134.5 lakh. These trainings will be conducted in collaboration with National Agricultural Extension Management Centre, and National Institute of Plant Health Management at Hyderabad.

1.13. Disaster Management

Farmers are advised to take up plant protection measures during calamities. Also to encourage the farmers, input subsidy is being provided to the farmers to compensate the losses caused due to crop damage from the State Disaster Response Fund and the National Disaster Response Fund.

The Government of Tamil Nadu sanctioned an amount of Rs.174.11 crore during 2022 for extending SDRF Input subsidy to 1,93,366 farmers whose Agricultural crops were damaged

in an area of 1.39 Lakh hectare during various calamities of Heavy Rainfall during April – May, South West Monsoon, North East Monsoon and unseasonal Rainfall during January- February (30.01.2023 to 02.02.2023).

1.14 Formation of Agricultural Zonal Committee for Farmers welfare

Zonal committee meetings were held in West Zone, North West Zone, High Rainfall Zone, Hilly Zone and North East Zone during 2022-23. Zonal committees will continue to function in 2023–24 also.

1.15 Creation of awareness among farmers for enhancing the soil fertility with the application of tank silt

According to a Tamil saying "ஆற்று வண்டல் தேற்றும் பயிரை", the farmers are being encouraged to apply tank silt in their Agricultural field to improve soil fertility and to restore the capacity of water bodies. The scheme is implemented by Water Resources Department, Rural Development and Panchayat Raj Department, Industries Department and Agriculture Department.

During 2022-23, 15.86 lakh cubic meter tank silt was taken benefitting 12,895 farmers.

This scheme will be continued in 2023-24. Besides, award will be given to the District Collectors who carry out the desilting work without delay benefitting large number of farmers during 2023-24.

1.16 Providing three phase free electricity to farmers

Government of Tamil Nadu is providing free electricity to farmers since 1990. So far, 23.37 lakh number of free electricity connections have been provided to the farmers, which includes one lakh electricity connection provided in 2021-22 and 50,000 electricity connections in 2022-23. An amount of Rs 7,857.76 Crore has been sanctioned to provide free electricity till 2022-23. This scheme will be continued in 2023-24 also.

1.17. Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP)

This Project is being implemented by the Department of Agriculture, with the assistance of the World Bank, to enhance the productivity and

climate resilience of irrigated agriculture, to avoid mono cropping, to improve water management and to increase market opportunities for farmers and agro-entrepreneurs in 66 selected Sub-basin areas of Tamil Nadu over a period of seven years, from 2017-2018 with an allocation of Rs.84.15 crore.

This Project is being implemented in 51 selected sub-basins under four phases with the interventions viz., crop demonstrations, Mechanical Cono Weeding, other crop based interventions such as Farmer Field School, Seed Village, Integrated Pest & Disease Management villages, Integrated Nutrient Management and Model Village project with an allocation of Rs.14.96 crore during 2022-23. This Project will be continued in 2023–24.

1.18. Awards related to Agriculture:

With an aim to increase the productivity of crops by introducing various scientific technologies to the farmers for adoption in the fields, Government of Tamil Nadu is encouraging farmers by giving various special awards by conducting crop yield competitions.

Table: 1.12 – Details of Awards

S. No	Details of Awards	Remarks	Details of Prize amount
1	Thiru.C.Narayanaswamy Naidu Award for highest Paddy productivity	Highest Paddy productivity through System of Rice Intensification.	Rs.5 Lakh Cash Prize and a Silver Medal.
2	Bharat Ratna Dr. M.G.R Traditional Paddy Variety Conservator Award	Encouraging farmers to cultivate and preserve the Traditional Paddy varieties	First prize - Rs.One lakh, Second prize - Rs.75,000 /- Third prize - Rs.50,000/-
3	Best farmer award for Local Innovative Agricultural Technology and Invention of Local Agricultural Machineries	Innovation of Local Agricultural Technology and Local Agricultural Machineries	Rs.One lakh each (2 Awards)

S. No	Details of Awards	Remarks	Details of Prize amount
4	**District level Crop Yield Competition**		
i)	Paddy, Groundnut, Sugarcane and Cotton	Motivating the farmers to obtain high productivity by adopting the improved technologies	**First prize** Rs.15,000/- **Second prize** Rs.10,000/-
ii)	Cholam, Cumbu, Maize, Blackgram, Red gram and Green gram.		**First prize** Rs.10,000/- **Second prize** – Rs.5,000/-

1.19. Crop Insurance

Natural hazards such as floods, storms, droughts, pest and disease attacks caused by seasonal changes have become a major challenge for agriculture. Due to these calamities, food security and livelihood of farmers living in rural areas are greatly affected and production of food grains is also on decreasing trend. Crop Insurance scheme is being implemented in Tamil Nadu to

support the farmers financially at the time of unforeseen eventualities and to continue agriculture.

During 2022-23, the scheme was implemented in 14 clusters comprising 37 districts by the selected Insurance Companies. In pursuance to the concerted efforts taken by the Hon'ble Chief Minister of Tamil Nadu with the Government of India to extend the cut-off date for enrolment of Samba Paddy (Paddy II), an additional area of 71,368 acre was insured by 38,760 farmers. In total, an area of 39.64 lakh acres was insured by 18.54 lakh farmers due to which, about 72% of the Gross cropped area was insured against the target of 50% stipulated by the Government of India.

As the Government of India capped its share on Premium Subsidy, Government of Tamil Nadu shouldered the additional burden of premium subsidy and released a State share of **premium subsidy** of **Rs.2,312 crore during 2022-23.**

The Government of Tamil Nadu has facilitated the release of Rs.783 crore as compensation amount to 6.71 lakh farmers for

2021-22 and Rs.34.30 crore to 19,282 farmers of Mayiladuthurai district for Samba Paddy under Failed Sowing Category during 2022-23. This scheme will be continued during this year.

1.20. Staff Structure in Department of Agriculture

The Department of Agriculture is functioning with Technical Officers, Ministerial and other staff totalling to 10,575 staff.

Table: 1.13 – Technical Officers

Sl. 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

Sl. No	Name of the Post	Sanctioned Strength
8	Assistant Agricultural Officer	2,320
	Total Technical Officers	**4,863**

Table: 1.14 - Ministerial and Other Staff

Sl. 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 - 1)	1
11	Steno Typist (Grade - 2)	39

Sl. No	Name of the Post	Sanctioned Strength
12	Steno Typist (Grade - 3)	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. Department of Sugar

"கழனிச் சென்நெல் கரும்பு சூழ் மருங்கு"

Silapathikaram (112) states that paddy and sugarcane were cultivated together in the fields since Sangam period.

"பொன்கழியாலைப் புகையொடு பரந்து
மன்குல் வானத்து மலையிற் றோன்றும்"

- சிலப்பதிகாரம் 151-152

Sangam literature reiterated the existence of sugar mills in Tamil Nadu during ancient period itself that the smoke emitted by boiling cane juice in the sugar mills would looks like a cloudy mountain on the nearby paddy fields.

Department of Sugar was established in the year 1969. Tamil Nadu Sugar Corporation (TASCO) and Tamil Nadu Cooperative Sugar Federation Limited (TNCSF)are functioning under the Department of Sugar. Department of Sugar is taking various measures like establishment of new Sugar Mills, expansion of existing Sugar Mills,

sugarcane development, allotment of sugarcane areas to Sugar Mills along with the suggestions to increase the productivity of sugarcane and to reduce the cost of cultivation, besides monitoring and control of Sugar Mills and monitoring the co-operative mill activities.

Considering the welfare of sugarecane farmers, the Government of Tamil Nadu has brought the Department of Sugar from Industries Department to Agriculture – Farmers Welfare Department, in full since January, 2022.

Among the agro based industries in Tamil Nadu, the Sugar Industry occupies the second most important place. Sugarcane is an important raw material for Sugar Mills besides an important cash crop. Sugarcane cultivation and Sugar Mills contribute to the socio-economic development of all rural people including farmers thereby increasing the economy of the State by generating employment opportunities.

Totally, of 40 Sugar Mills are functioning in Tamil Nadu including 16 Cooperative, Two Public Sector and 22 Private Sugar Mills. Among them, 30 Sugar Mills viz. 13 Cooperative, Two Public

Sector and 15 Private Sugar Mills are in operation during 2022-23 crushing season.

2.1. Sugarcane Cultivation:

According to the 2021-22 data of the Department of Economics and Statistics, Sugarcane is cultivated in an average area of 1.48 Lakh Hectares with an average productivity of 109 Metric Tonne per Hectare in Tamil Nadu. About 65 to 75 per cent of sugarcane produced in Tamil Nadu is used as raw material for Sugar Mills.

Table: 2.1 - Top Ten Sugarcane Growing Districts

Sl.No	District	Sugarcane Area (Ha)	Cane Production (LMT)	Productivity [M.T/Ha.]
1	Kallakurichi	24,747	26.96	109
2	Erode	18,124	22.78	126
3	Tiruvannamalai	17,137	17.31	101
4	Cuddalore	15,406	16.97	110
5	Villupuram	13,196	13.80	105
6	Namakkal	10,072	13.72	136

Sl.No	District	Sugarcane Area (Ha)	Cane Production (LMT)	Productivity [M.T/Ha.]
7	Salem	5,325	5.18	97
8	Ariyalur	4,416	4.23	96
9	Tiruvallur	4,004	4.42	110
10	Tiruppur	3,484	4.09	117

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

2.1.1. Area under Sugarcane cultivation for Sugar Mills

Due to various measures being, taken by the Government of Tamil Nadu, the area under sugarcane cultivated for Sugar Mills in Tamil Nadu has increased from 95,000 hectares in 2020-21 to 1,50,000 hectares in 2022-23 crushing season. Particularly, there is an increase from 37,000 ha to 55,000 ha in Cooperative and Public Sector Sugar Mills.

Figure: 2.1- Sugarcane Registration details in last four planting seasons

Planting Season

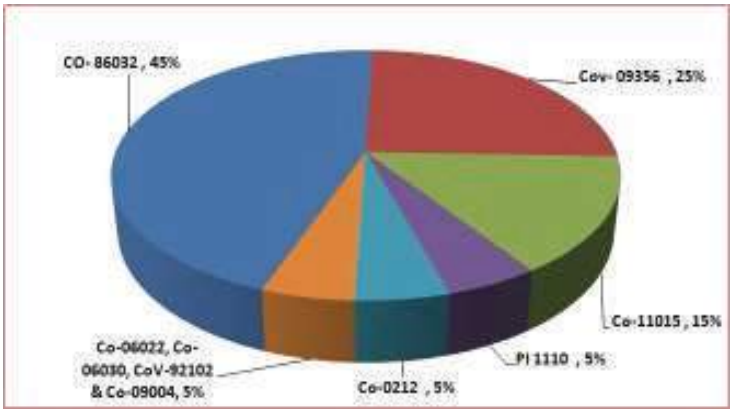
2.1.2. Sugarcane varieties:

The High yielding, high sugar content sugarcane Variety Co 86032 occupies around 45% of sugarcane area followed by CoV 09356 (25%), Co 11015 (15%), Co 0212 (5%), PI 1110 (5%) and other varieties (5%) in Tamil Nadu.

Further, the new Sugarcane varieties such as Co 11015, CoC 13339, CoG 6, CoG 7 and Co 18009 (Punnagai) and rejuvenated Co 86032 are popularized among sugarcane farmers. The seed materials for these varieties are multiplied through a nursery program in Cooperative, Public

Sector and Private Sugar Mills and distributed to farmers.

Fig: 2.2. Sugarcane Varieties Cultivated in Tamil Nadu



2.1.3. Sugarcane Price and Special Incentives

With an aim to increase the area under cultivation in Sugarcane which has decreased during past years in Tamil Nadu and considering the welfare of the sugarcane farmers, the Government of Tamil Nadu is providing incentives in addition to the Fair and Remunerative Price

(FRP) linked to 9.5% Sugar Recovery as announced by the Union Government.

During 2020-21 crushing season, a total of Rs. 192.50/- per MT as Transitional Production and Special Incentives and for 2021-22 Crushing season Rs. 195/- per MT as Special incentive have been extended to sugarcane farmers and hence cane price was increased to Rs. 2,900/- and Rs.2,950/- per metric tonne of sugarcane during the respective crushing seasons.

In the Agriculture Budget 2023-24, an amount of Rs. 253 crore has been allocated for providing Special Incentive of Rs. 195/- per Metric Tonne to sugarcane farmers in 2022-23 crushing season with an increase of Rs.3,016.25/- per Metric Tonne of sugarcane. About, 1.50 lakh sugarcane farmers will be benefitted.

Figure:2.3–Sugarcane price and incentives provided to the Sugarcane Farmers in Tamil Nadu (in Rupees)

Crushing Season

2.1.4. Sugarcane Cultivation Development Programme

2.1.4.1. National Agricultural Development Program (NADP)

In order to increase the sugarcane production, productivity, sugar recovery by reducing the cost of cultivation, Breeder seed, Tissue culture Seedlings, Budchip Seedlings and Single bud sets are distributed to the farmers with subsidy.

The scheme will be continued with an allocation of Rs.6.88 crore during 2023-24.

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

In order to achieve overall development in the Village Panchayats of Kalagnarin All Village Integrated Agricultural Development Programme and to increase sugarcane production, productivity, sugar recovery by reducing the cost of Sugarcane cultivation, Budchip Seedlings and Single bud sets are distributed to farmers with subsidy.

The scheme will be implemented in 2023-24 at an estimated cost of Rs.25 Lakhs

2.1.5. Tissue Culture Laboratory

A sugarcane Tissue Culture laboratory is functioning at Kallakurichi-I Cooperative Sugar Mill since 2021 with an annual capacity of 1.50 lakh tissue culture seedlings with the aim to produce true to type, high yielding, high sugar content; pest and disease free Sugarcane Seedlings. Quality Tissue Culture seedlings are

produced and distributed to farmers from this laboratory.

Table : 2.2 - Production and distribution of Tissue Culture seedlings

Planting season	No. of seedlings produced	No. of Seedlings distributed
2021-22	1,19,550	1,19,550
2022-23	1,05,000	1,05,000

It is planned to produce 1.20 lakh Tissue Culture seedlings during 2023-24 planting season and distribute to the farmers.

2.1.6. Micro irrigation

As sugarcane is a water-intensive crop, to ensure judicious utilization of irrigation water, Government is extending 100% subsidy to Small and Marginal Farmers and 75% to Other Farmers for installation of Micro Irrigation in sugarcane.

Further, to increase the area under micro irrigation in sugarcane cultivation, Government has earmarked State fund for providing additional cost assistance of Rs.32,715/- to Rs.43,534/- per hectare for the purchase of essential components

required for the installation of Micro Irrigation system. Awareness is being created among the Cane growers to install Micro Irrigation system with wider row planting.

This Scheme will be continued during 2023-24, also.

2.1.7.Mechanization in Sugarcane Cultivation

The shortage of labourers required for sugarcane cultivation is increasing day by day, and the cost of cultivation is increasing. Mechanization in Sugarcane cultivation right from land preparation till harvesting is being encouraged to reduce the cost of cultivation and increase farmers' income.

Till 2022-23, 71 Sugarcane Mechanical Harvesters were distributed to farmers and entrepreneurs in sugar mill areas under Sub Mission on Agricultural Mechanization and National Agricultural Development Programme.

The Agriculture Engineering Department is providing farm machinery like power tiller, Weeder, Mini Tractor, Rotavator, Detrashing Rotary Plow etc., to farmers, on custom hiring

basis, for which e-Vaadagai service has been introduced in Uzhavan Mobile App.

2.2. Implementation of Development Schemes in Sugar Mills

Government of Tamil Nadu is implementing various programmes to enhance the efficiency of Sugar Mills.

2.2.1. Establishment of Automated Weighment System

For quick and accurate weighment of harvested Sugarcane from farmers, the existing weighing systems in Amaravathi , Chengalrayan, Cheyyar, Dharmapuri, Kallakurichi - I, Madhuranthakam, M.R.K, Salem, Tiruttani, Tirupattur, Vellore, Kallakurichi -II, Subramania Siva Cooperative Sugar Mills and Perambalur, Arignar Anna Sugar Mills are being automated at an estimated cost of Rs 1.50 crore during 2022-23.

2.2.2. Establishment of Cement Concrete Cane Yard

The cane yard of Cheyyar, Chengalrayan, Madhuranthakam, Salem, Tiruttani, Arignar Anna and Perambalur Sugar Mills will be strengthened as cement concrete cane yard with an allocation of Rs 2.12 crore during the year 2023-24.

2.2.3. Installation of Hydraulic Tipplers

Installation of Hydraulic Tippler is in progress at MRK Cooperative Sugar Mills at an estimated cost of Rs.50 lakh during 2022-23, which helps in easy unloading of harvested sugarcane. During 2023-24, Hydraulic tipplers will be installed each at Vellore Cooperative Sugar Mills and Arignar Anna Sugar Mills with an outlay of Rs. 1 crore.

2.2.4. Modernization of Laboratories

Laboratory equipments and instruments have been modernized with latest technology in 15 Cooperative and Public Sector Sugar Mills at a cost of Rs 3 crore. This enables to retrieve accurate data on functioning of Sugar Mills.

2.2.5. Enriched organic Manure production from Pressmud

As announced in Agriculture Budget, 2023-24, with an aim to reduce the use of chemical fertilizers, increase the soil fertility, to convert press mud into a value-added product, to generate revenue to the Sugar Mills and to provide quality enriched organic manure to the farmers, the enriched organic manure will be produced from press mud in Salem and Amaravathi Cooperative Sugar Mills at an outlay of Rs.1.50 crore each during 2023-24. About 3,000 Metric Tonnes of enriched organic manure per annum will be produced and distributed to farmers.

2.3. Performance of Sugar Mills

Due to the strenuous efforts of the Government, the Cane crushing, Capacity Utilization, sugar recovery, production of sugar and its by-products are showing an increasing trend from 2020-21 onwards.

In 2021-22 crushing season, the Co-operative, Public Sector and Private Sugar

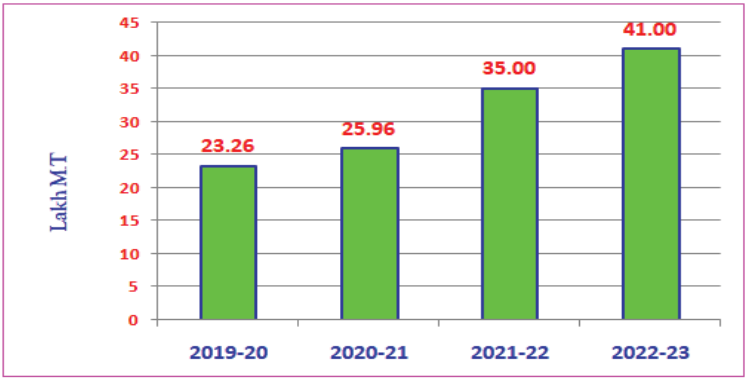
Mills have crushed 139.16 Lakh Metric Tonne of sugarcane and produced 12.67 Lakh Metric Tonne of sugar with an average sugar recovery of 9.10 per cent.

During 2022-23 crushing season, it is expected to crush 155 Lakh Metric Tonne of sugarcane and produce 14.41 Lakh Metric Tonne of Sugar. A quantum of 84.36 Lakh Metric Tonne sugarcane was crushed with an average recovery of 9.59 percent and produced 8.09 Lakh Metric Tonne of sugar was produced up to 15.03.2023.

2.3.1. Cane Crushing in Cooperative and Public Sector Sugar Mills

Cane crushing has increased from 23.26 Lakh Metric Tonnes to 41 Lakh Metric Tonnes in the last four crushing seasons in Cooperative and Public sector sugar mills.

Fig:2.4- Details of Cane Crushing in Cooperative and Public sector Sugar Mills

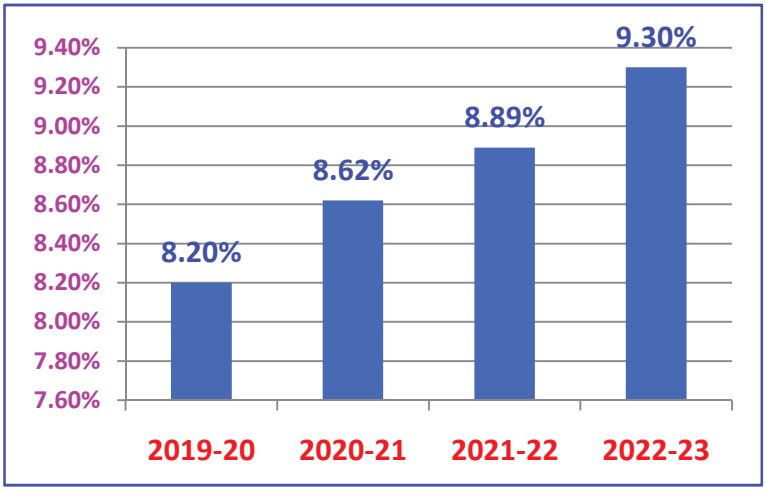


Crushing Season

2.3.2. Sugar Recovery

Sugar recovery has increased from 8.2 percent to 9.3 percent in the last four crushing seasons in Cooperative and Public Sector Sugar Mills.

Fig:2.5- Sugar Recovery (%) in Cooperative and Public Sector Sugar Mills

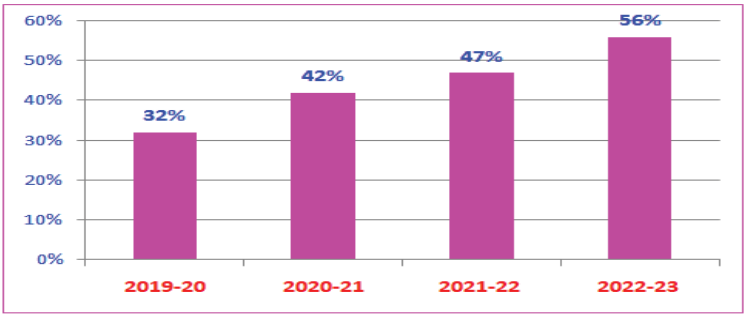


Crushing Season

2.3.3. Capacity Utilization

Capacity utilization **has increased** from 32 percent to 56 percent in the last four crushing seasons in Cooperative and Public Sector Sugar Mills.

Fig:2.6- Capacity Utilization (%) in Cooperative and public Sector Sugar Mills



Crushing Season

During the 2023-24 crushing season, it is programmed to crush 170 Lakh Metric Tonnes of sugarcane and produce 16.32 Lakh Metric Tonne of sugar with a sugar recovery of 9.60 percent.

2.3.4. Co-generation Project

In order to reduce the cost of production and to improve the cash flow in Cooperative and Public Sector Sugar Mills, 12 Co-generation Projects with a capacity of 183 MW have been sanctioned by the Government of Tamil Nadu to be implemented by the Tamil Nadu Power Generation and Distribution Corporation

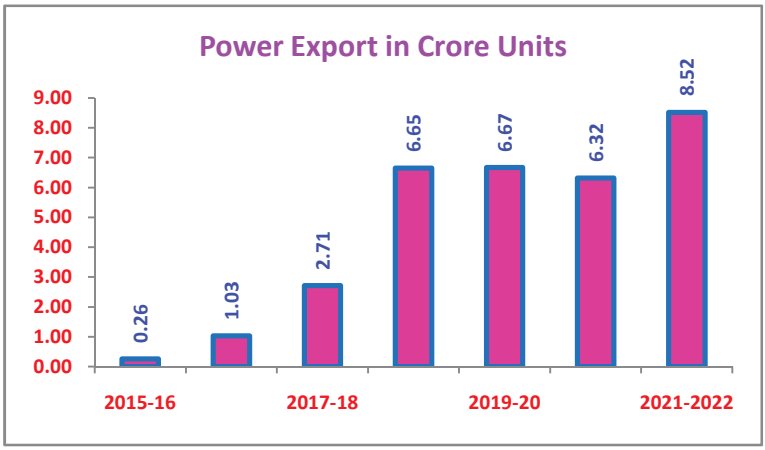
(TANGEDCO). At present, out of 12 approved Cogeneration Projects in Cooperative and Public Sector Sugar Mills, six projects (Chengalrayan, Vellore, Cheyyar, Arignar Anna, Perambalur and Dharmapuri) with a capacity of 93 MW have already been commissioned and are in operation.

Action is being taken through TANGEDCO to complete the pending erection & commissioning of 90MW co-generation projects at six Cooperative Sugar Mills, and the projects are expected to get commissioned during the year 2023-24.

The excess electricity generated at the already commissioned six co-generation plants is being exported to the Grid of Tamil Nadu Power Generation and Distribution Corporation (TANGEDCO).

As such 6.32 crore units in 2020-21 crushing season, 8.52 crore units in 2021-22 crushing season and 7.50 crore units in 2022-23 (upto 24.03.2023) have been produced and exported.

Fig:2.7- Details of Power Export in six Co-generation Projects



Crushing Season

2.3.5. Ethanol Production

Distilleries with a production capacity of 55 KLPD were established in 1993-94 and are in operation at Amaravathi and Salem Cooperative Sugar Mills. Further, the Rectified Spirit produced from these distilleries is being utilized as raw material for the production of 30 KLPD ethanol per day from 2007.

2.3.5.1. Installation of New Ethanol Plant:

Ethanol plants with a production capacity of 60 kiloliters per day using sugarcane juice and B heavy molasses as feedstock will be set up at a cost of Rs.170 crores at MRK and Kallakurichi-1 Cooperative Sugar Mills to reduce the cost of sugar production in the sugar mills, increase the revenue of the mills and achieve self-sufficiency in finance. As announced by the Government in the financial year 2021-22 and order was issued.

The detailed project report for setting up ethanol plant in Kallakurichi-1 and MRK Cooperative Sugar Mills has been received from the National Federation for Cooperative Sugar Mills located in New Delhi and public hearing has been completed for obtaining environmental clearance. After obtaining the environmental clearance, the tender works will be completed by May 2023 and the ethanol plant will be commissioned by the end of 2024.

2.4. Tamil Nadu Sugar Corporation (TASCO)

The Tamil Nadu Sugar Corporation was established in 1974 as a Government Corporation under the Corporations Act (1956). Arignar Anna Sugar Mill at Kurungulam, Thanjavur District and Perambalur Sugar Mill at Eraiyur, Perambalur District are the two functioning under Tamil Nadu Sugar Corporation.

Table:2.3.- Activities of Sugar Mills under Tamil Nadu Sugar Corporation

S.No.	Meaning	Arignar Anna Sugar Mills, Kurungulam, Thanjavur District		Perambalur Sugar Mills, Eraiyur, Perambalur District	
		2021-22	2022-23*	2021-22	2022-23*
1	Sugarcane Registration (ha)	2,641	1,693	4,845	292
2	Cane Crushing (Metric Tonne)	2,00,751	2,32,858	3,14,011	2,25,611
3	Sugar Recovery (%)	9.22	9.12	9.48	9.84
4	Sugar Production (Metric Tonne)	18,499	20,362	29,792	21,497
5	Capacity Utiliation (%)	46.68	54.15	60.85	43.72

*(upto 24.03.2023)

2.5. Tamil Nadu Cooperative Sugar Federation Ltd., (TNCSF)

Tamil Nadu Cooperative Sugar Federation was registered on 11.11.1961 and started its functioning on 31.05.1962. Now, 16 Cooperative and Two Public Sector Sugar Mills are the members of the Tamil Nadu Cooperative Sugar Federation. The TNCSF is functioning with an objective to coordinate and facilitate the working of the affiliated Sugar Mills, provide technical assistance, to arrange for centralized purchase and sale of sugar and by-products, represent the sugar mills at National Cooperative Sugar Federation and other organizations, arrange for periodical conferences, technical meets, trainings & Seminars etc. with a view to improve the working efficiency of the member Sugar Mills.

2.5.1. Main Bio-Control Research Laboratory (MBRL)

The Main Bio-Control Research Laboratory is functioning at Chengalpattu since 1982, to provide eco-friendly bio-fertilizers, bio-pesticides to sugarcane farmers in order to reduce the use

of chemical fertilizers /pesticides and to reduce the cost of cultivation in sugarcane cultivation.

The Bio fertilizers viz., Acetobacter, Phosphobacteria, Arbuscular mycorrhiza and bio pesticides like Trichoderma viridi, Pseudomonas, Metarrhizium, Bacillus thuringiensis and other bio-insecticides are produced in this laboratory and supplied to sugarcane farmers of Cooperative and Public Sector Sugar Mills.

This lab earned a profit of Rs 1.10 crore during 2021-22 and Rs 1.29 crore in 2022-23 (upto 20.03.2023).

2.5.2. Sale of Sugar and other by-products

The Sugar and other by-products, produced in the Cooperative and Public Sector Sugar Mills are sold through Tamil Nadu Cooperative Sugar Federation.

Table:2.4.-Sale of Sugar and other by-products during 2022-23 (upto 15.03.2023)

S.No.	Products	Quantity Sold	Value (Rs. in Crore)
1	Sugar (Lakh Metric Tonne)	3.86	1,385.62
2	Bagasse (Metric Tonne)	62,375	15.17
3	Molasses (Metric Tonne)	1,35,752	113.18
4	Alcohol (Lakh Litre)	49.65	23.67
5	Bio Inputs (Metric Tonne)	8.64	2.04
6	Bio Inputs (Litre)	94,027	

3. HORTICULTURE - PLANTATION CROPS

Tamil Nadu is one among the leading horticulture States in India, contributing 6.09 percent of production out of 5.47 percent of area at National level. State is bestowed with diversified agro climatic and geographical conditions congenial for the cultivation of different kinds of horticulture crops throughout the year.

Small and marginal farmers also attain more remuneration through crop diversification to Horticulture crops. Horticulture produces are utilized as raw materials for agro-based industries and for conversion into value added products, thus creating employment opportunities and potential for foreign export.

Hence, to increase the production for stabilizing the farmers income, to meet the daily essential requirement of the people and to plan for increasing the shelf life of perishable produce, the Department of Horticulture and Plantation Crops is implementing various welfare schemes.

For the Year 2023-24, special emphasis will be given for crop specific cluster Programme, extension of protected cultivation to non – traditional areas, intensification of micro irrigation in critical and over exploited firkas where the ground water is fast depleting.

3.1 Area, Production of Horticultural Crops and Contribution of Tamil Nadu at National Level

In Tamil Nadu, Horticulture crops like Fruits, Vegetables, Plantation crops, Spices and Condiments, Aromatic and Medicinal crops and Flowers are cultivated in an area of 15.88 lakh Hectares with a total production of 231 lakh Metric tonnes. In Tamil Nadu, the area and production of Horticulture crops has increased by 3.8 and 11.85 percent respectively in 2021-22 when compared to the previous year.

Table: 3.1: Area, Production and Productivity of Horticulture crops in Tamil Nadu

S. No	Category	2021-22 (Final)			2022-23 (First Advance Estimate)		
		Area (Lakh Ha)	Production (Lakh MT)	Productivity (MT/Ha)	Area (Lakh Ha)	Production (Lakh MT)	Productivity (MT/Ha)
1	Fruit crops	3.26	70.51	21.62	3.36	73.85	21.96
2	Vegetable crops	2.80	61.77	22.10	2.84	63.11	22.23
3	Plantation crops*	7.99	87.13	10.90	8.31	92.18	11.09
4	Spices & Condiments	1.21	3.82	3.15	1.22	3.98	3.27
5	Aromatic and Medicinal	0.16	1.72	10.45	0.18	1.70	9.71
6	Flower crops	0.46	5.91	12.95	0.48	6.16	12.74
Total		**15.88**	**230.86**	**14.54**	**16.39**	**240.98**	**14.70**

*** Includes Tapioca**

Graph 3.1: Area Coverage of Horticultural Crops In Tamil Nadu 2021-22 (Final)

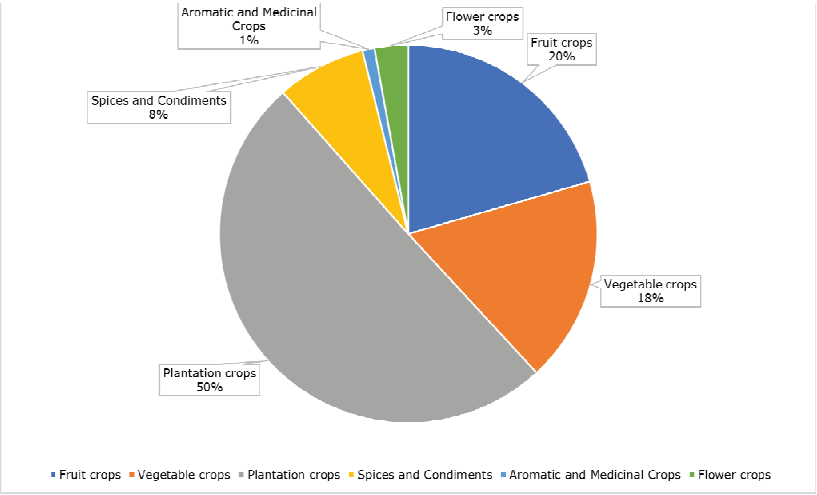


Table: 3.2: Tamil Nadu - Position in Area of various Horticultural crops at National Level

First	Second	Third
1. Clove 2. Tamarind 3. Jasmine (Gundumalli)	1. Cocoa 2. Chrysanthemum 3. Tuberose	1. Banana 2. Amla 3. Coconut 4. Black Pepper
Source: Final Estimates 2020-21, Horticulture Statistics Division, Department of Agriculture & Farmers Welfare, GOI, New Delhi.		

Graph 3.2: Production of Horticultural Crops In Tamil Nadu 2021-22

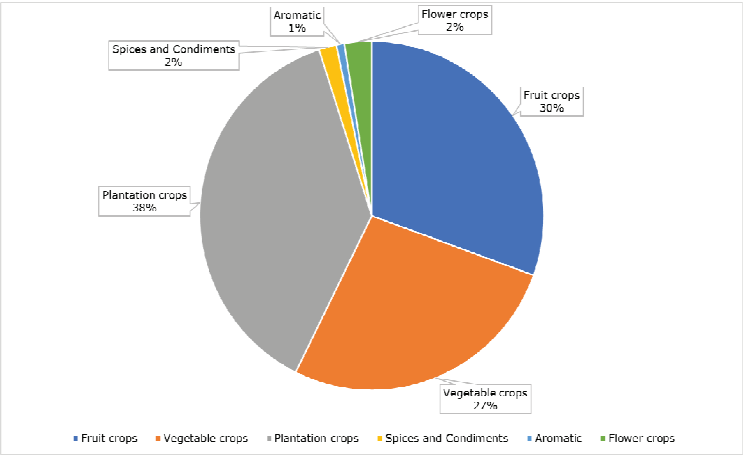


Table: 3.3: Tamil Nadu - Position in Production of various Horticultural crops at National Level

First	Second	Third
1. Clove 2. Tamarind 3. Jasmine (Gundumalli) 4. Tuberose	1. Coconut	1. Amla 2. Watermelon 3. Chrysanthemum 4. Bittergourd
Source: Final Estimates 2020-21, Horticulture Statistics Division, Department of Agriculture & Farmers Welfare, GOI, New Delhi.		

3.1.1: Fruit Crops

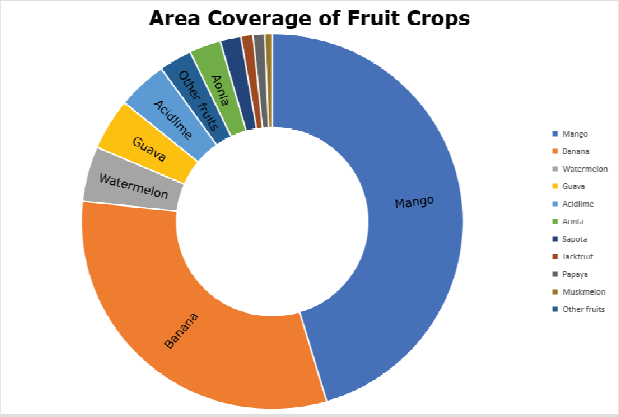


Table: 3.4: Details of major fruit growing districts of Tamil Nadu (2021-22)

S. No.	Crop name	Area (Ha)	Major fruit growing districts
1	Mango	1,47,983	Krishnagiri (32,450), Dharmapuri (15,983), Dindigul (15,801), Thiruvallur (11,515), Theni (9,471).
2	Banana	1,02,188	Erode (17,609), Thoothukudi (8,366), Coimbatore (7,731), Theni (6,403), Thirunelveli(5,768).
3	Water melon	15,476	Chengalpattu (7,393), Villupuram (2,303), Thiruvallur (1,719), Salem (768), Thiruvannamalai (553).

S. No.	Crop name	Area (Ha)	Major fruit growing districts
4	Guava	14,436	Dindigul (2,201), Madurai (1,688), Virudhunagar (1,382), Cuddalore (1,208), Villupuram (1,100).
5	Acid lime	13,770	Dindigul (3,601), Tenkasi (3,031), Trichy (1,024), Theni (801), Virudhunagar (757).
6	Other Fruits	32,206	Dindigul (6,233), Theni (2,678), Tenkasi (2,159), Namakkal (1,824), Salem (1,748).
Total area under Fruits cultivation= 3,26,059 Ha			

During the year 2023-24, Jack mission will be implemented in 21 districts such as Cuddalore, Villupuram, Dindigul, Salem, Kanniyakumari, Theni etc., by establishing integrated cluster for Panruti Jack and by introducing new jack varieties suitable for regions. Further, importance will be given for horticulture crops in high demand such as Dragon fruits, Avocado, Date Palm, Mangosteen, Fig, Olive etc.,

3.1.2: Vegetable Crops

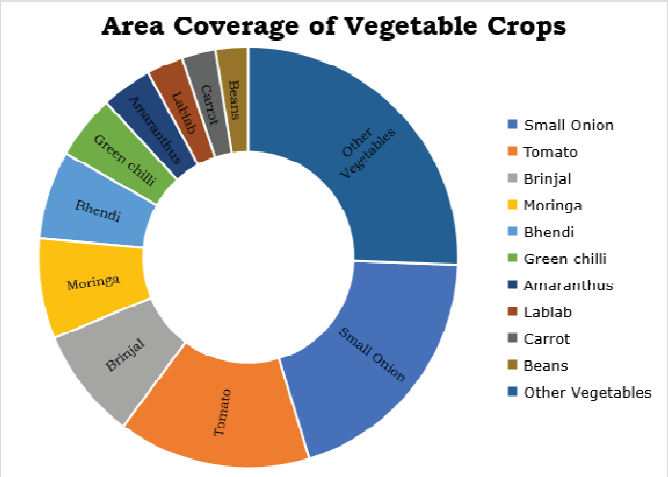


Table: 3.5: Details of major vegetable growing districts of Tamil Nadu (2021-22)

S. No.	Crop name	Area (Ha)	Major vegetable growing districts
1	Small Onion	55,123	Perambalur (8,258), Trichy (6,774), Thoothukudi (6,662), Namakkal (5,320), Dindigul (4,598).
2	Tomato	41,545	Dharmapuri (12,137), Krishnagiri (11,501), Salem (4,144), Dindigul (2,290), Thirupur (2,174).

S. No.	Crop name	Area (Ha)	Major vegetable growing districts
3	Brinjal	24,015	Dharmapuri (3,880), Salem (2,933), Thiruvannamalai (2,290), Krishnagiri (1,935), Ranipet (883).
4	Moringa	21,501	Dindigul (5,623), Karur (3,080), Theni (2,936), Thirupur (2,090), Thoothukudi (1,842).
5	Bhendi	18,967	Dharmapuri (3,654), Salem (2,851), Thiruvannamalai (2,025), Ranipet (787), Thirupathur (775).
6	Other Vegetables	1,18,397	Krishnagiri (22,939), Dindigul (9,200), Salem (8,920), Dharmapuri (8,772), Nilgiris (8,202).
Total area under Vegetable cultivation = 2,79,548 ha			

During the year 2023-24, steps will be taken to improve the production, storage and marketing of tomato and onion crops in order to stabilize the market supply of these two crops and ensure that the farmers will get regular reasonable income.

In addition to that, from this year onwards, Moringa Mission will be implemented in

Theni, Dindigul, Thoothukudi, Tiruppur, Ariyalur, Madurai and Karur Districts.

3.1.3: Plantation Crops

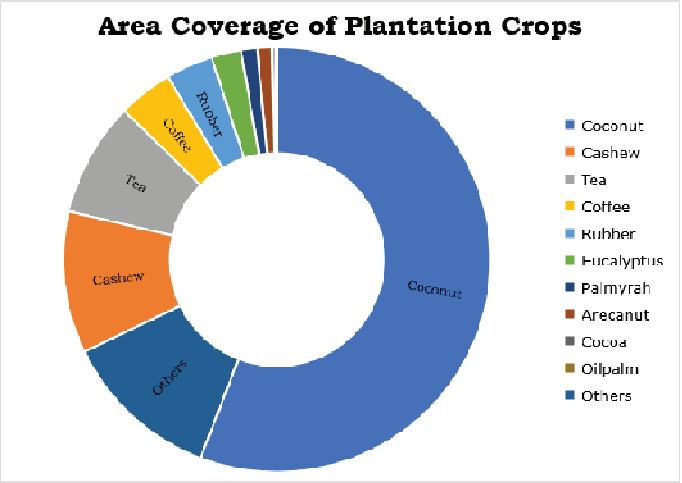


Table: 3.6: Details of major plantation crops growing districts of Tamil Nadu (2021-22)

S.No.	Crop name	Area (Ha)	Major plantation crops growing districts
1	Coconut	4,46,153	Coimbatore (89,926), Thirupur (68,277), Thanjavur (40977), Dindigul (29,346), Kanniyakumari (24,830)
2	Cashew	86,117	Ariyalur (30,584), Cuddalore (29,489), Pudukkottai (5,788), Villupuram (3,260), Theni (3,211)
3	Tea	69,588	Nilgiris (55,754), Coimbatore (11,191), Theni (1,621), Thirunelveli (804), Kanniyakumari (214)
4	Coffee	33,108	Dindigul (10,960), Nilgiris (7,357), Salem (7,029), Theni (3,106), Coimbatore (2,248)
5	Rubber	28,433	Kanniyakumari (28,332), Nilgiris (55), Thenkasi (42)
6	Other Plantation Crops	1,35,899	Namakkal (21,076), Kallakurichi (16,065), Salem (14,325), Dharmapuri (13,996), Erode (10,146)
Total area under cultivation of Plantation crops = 7,99,298 ha			

3.1.4: Spices and Condiments

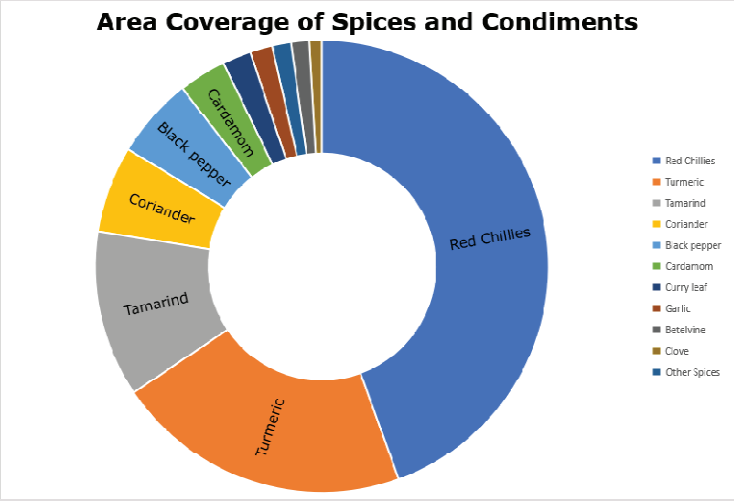


Table: 3.7: Details of major spices and condiments growing districts of Tamil Nadu (2021-22)

S. No.	Crop name	Area (Ha)	Major spices and condiments growing districts
1	Red Chillies	53,933	Thoothukudi (15,039), Ramanathapuram (15,036), Sivagangai (3,619), Salem (1,923), Thiruvannamalai (1,907)
2	Turmeric	25,559	Dharmapuri (8,618), Erode (4,754), Salem (4,172), Kallakurichi (2,420), Namakkal (1,504)

S. No.	Crop name	Area (Ha)	Major spices and condiments growing districts
3	Tamarind	14,409	Dindigul (3,208), Theni (1,557), Dharmapuri (1,294), Madurai (1,112), Krishnagiri (993)
4	Coriander	7,523	Thoothukudi (2,354), Virudhunagar (1,731), Ramanathapuram (1,711), Krishnagiri (882), Thirupur (192)
5	Black pepper	6,980	Namakkal (2,344), Salem (1,411), Dindigul (1,293), Nilgiris (986), Kanniyakumari (322)
6	Other Spices and Condiments	12,815	Coimbatore (2,345), Nilgiris (1,952), Theni (1,614), Dindigul (1,395), Krishnagiri (936)
Total area under Spices and Condiment crops cultivation= 1,21,219 ha			

From this year (2023-24), considering the marketing opportunities for chilli, Chilli Zone will be implemented by integrating Ramanathapuram, Virudhunagar, Sivagangai and Thoothukudi districts to improve chilli production, value addition and storage facilities.

Further, a cluster will be established in Coimbatore District, to promote the importance of curry leaf across the world and to improve the production, value addition and marketing of curry leaf, so that farmer can earn more income.

3.1.5: Aromatic and Medicinal

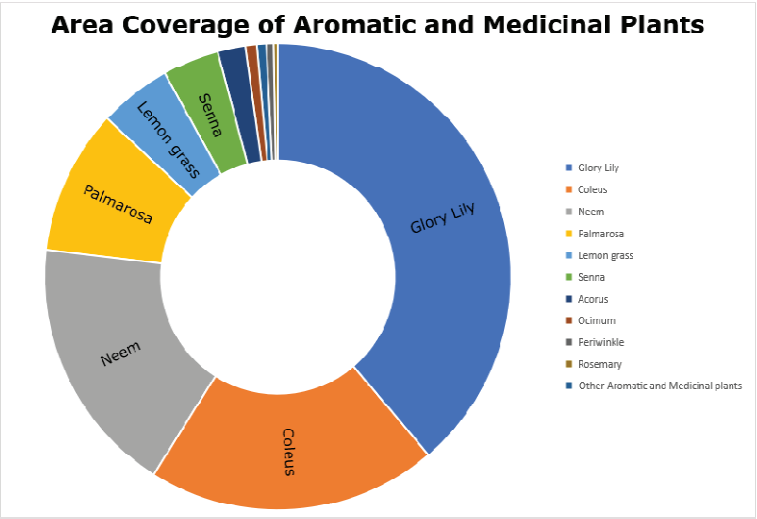


Table: 3.8: Details of major aromatic and medicinal plants growing districts of Tamil Nadu (2021-22)

S. No.	Crop name	Area (Ha)	Major aromatic and medicinal growing districts
1	Glory Lily	6,377	Dindigul (3,383), Thirupur (2,269), Karur (618), Trichy (37), Namakkal (18).
2	Coleus	3,305	Thiruvannamalai (1,558), Kallakurichi (766), Salem (483), Cuddalore (302), Namakkal (90).

S. No.	Crop name	Area (Ha)	Major aromatic and medicinal growing districts
3	Neem	2,949	Virudhunagar (657), Thoothukudi (364), Thirunelveli (252), Madurai (238), Namakkal (176).
4	Palmarosa	1,652	Dharmapuri (1,230), Thiruvannamalai (393), Kallakurichi (21).
5	Lemon grass	826	Thiruvannamalai (804), Theni (9).
6	Other Aromatic and Medicinal plants	1,324	Villupuram (365), Salem (290), Madurai (123), Cuddalore (121), Virudhunagar (93).
Total area under Aromatic and Medicinal plants cultivation = 16,433 ha			

3.1.6: Flowers

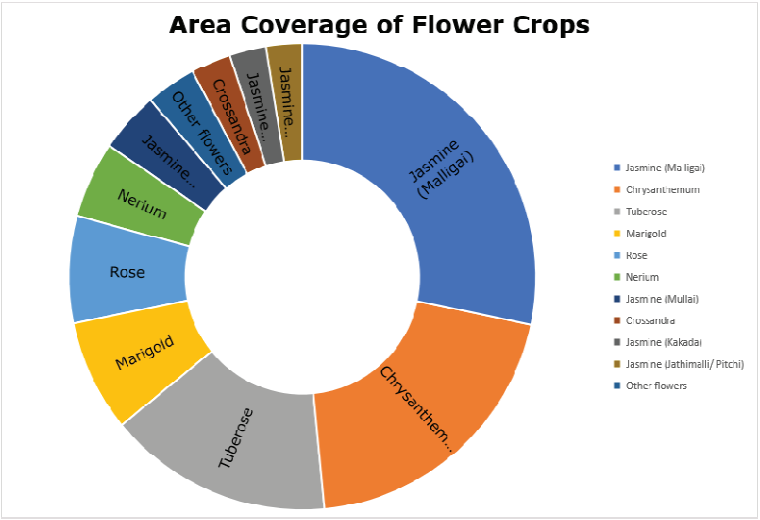


Table: 3.9: Details of major flower crops growing districts of Tamil Nadu (2021-22)

S.No	Crop name	Area (Ha)	Major flower growing districts
1	Jasmine (Gundumalli)	12,896	Madurai (1,614), Dharmapuri (1,415), Erode (1,138), Thiruvallur (1,119), Krishnagiri (897).
2	Chrysanthemum	9,218	Krishnagiri (3,531), Dharmapuri (2,346), Salem (1,622), Thiruvannamalai (902), Cuddalore (110).

S.No	Crop name	Area (Ha)	Major flower growing districts
3	Tuberose	7,102	Dharmapuri (2,778), Thiruvannamalai (1,552), Erode (416), Dindigul (300), Thiruvallur (227)
4	Marigold	3,534	Krishnagiri (1,953), Thiruvannamalai (422), Dharmapuri (290), Pudukkottai (126), Cuddalore (110).
5	Rose	3,379	Krishnagiri (1,748), Dharmapuri (294), Thiruvannamalai (276), Namakkal (166), Salem (155).
6	Jasmine (others)	4,219	Thiruvannamalai (742), Dindigul (646), Dharmapuri (481), Coimbatore (378), Virudhunagar (350).
7	Other flowers	5,259	Thiruvannamalai (1,252), Salem (965), Dharmapuri (912), Dindigul (540), Namakkal (532).
Total Flowers cultivated area = 45,607 ha			

3.2: Scheme implemented with Central and State Government funds

3.2.1: Micro Irrigation

Micro Irrigation Scheme is being implemented from 2007-08 onwards for

judicious use of irrigation water, thereby ensuring sustainable agriculture and to increase productivity.

During 2022-23, Micro irrigation system has been installed in an area of 70,856.19 ha at an outlay of Rs.550.68 crore to 70,304 farmers and the scheme implementation is in progress.

From 2023-24 onwards, Micro Irrigation Scheme will be implemented under the sub component of "Per Drop More Crop" (PDMC) of Rashtriya Krishi Vikas Yojana (RKVY) / National Agricutlure Development Programme (NADP).

For the year 2023-24, it is programmed to implement the scheme in an area of 89,000 ha at an outlay of Rs. 744.48 Crore. Special emphasis will be given to cover an area of 53,400 Ha in the ground water exploited critical and over exploited firkas at an outlay of Rs.450 Crore.

3.2.2: National Horticulture Mission (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 and being implemented in 26 Districts of Tamil Nadu.

During the year 2022-23, this scheme was implemented at an outlay of Rs.114.00 crore covering 1,10,802 beneficiaries. Expansion of new horticultural crops has been carried out in an area of 25,680 Hectare at an outlay of Rs.49.99 crore and organic farming has been promoted in an extent of 2,600 Ha. Mushroom cultivation is being promoted at an outlay of Rs.0.24 Crore by estabishing three units. Water harvesting structures for 350 individuals have been created at an outlay of Rs.2.63 crore. Protected cultivation is being implemented at an outlay of Rs.17.96 crore. Horticultural machineries have been distributed to farmers at an outlay of Rs.3.63 crore. To minimize post-harvest losses, integrated post-harvest management infrastructure have been created at an outlay of Rs.47.40 crore. Centres of Excellence for Amla, Mango, Subtropical and Temperate horticultural crops and Post harvest and packaging technologies for flowers are being established at an outlay of Rs.16 crore.

For the year 2023-24, it has been proposed to promote the cultivation of Jasmine, jack, chillies and curry leaf on cluster basis. For stabilizing the supply of Tomato and onion, subsidy will be provided to ensure production. To increase the production of winter season vegetable crops like chow-chow, beans, peas etc, subsidy will be provided. Cultivation of crops under Protected condition will be spread over to all the districts. It is planned to implement the scheme at an outlay of Rs. 164 crore.

3.2.3: National Agriculture Development Programme (NADP)

National Agriculture Development Programme is being implemented with an objective to ensure holistic development of Agriculture and allied sectors.

During the year 2022-23, the scheme was implemented at an outlay of Rs. 68.29 Crores. Crop Diversification from Paddy to Horticulture crops in an area of 6,544 ha, Revival of traditional vegetable varieties in an area of 1,000 ha, Popularization of high yielding varieties of Horticulture crops of Indian Institute

of Horticulture Research, Bangalore & Tamil Nadu Agriculture University in Tamil Nadu in an area of 760 ha, Supporting and special structures like pandhal for Horticultural crops, Cashew area expansion in an area of 1,500 ha, Organic farming in an area of 41,000 ha and Precision farming in an area of 4,666 ha were implemented.

During the year 2023-24, the scheme will be implemented with components like Promotion of specific horticulture demand crops like Fruits, Vegetables, Annual moringa, Perennial Moringa, Onion, Avocado and Dragon fruit in an area of 3110 ha, supporting structures like permanent pandal in an area of 200 ha for cultivation of gourds, trellis in an area of 2000 Ha for cultivation of Tomato and Beans, 2000 Ha of mulching at an outlay of Rs. 25 Crore.

3.2.4: Rainfed Area Development (RAD)

The objective of the scheme is to promote Integrated Farming Systems, to protect from crop losses due to climate changes, to make farming more productive, to generate sustainable and remunerative income by

integrating horticulture based farming with livestock, fishery, agro forestry and value addition.

During the year 2022-23, Rainfed Area Development was implemented at a total outlay of Rs.14.5 Crore in 21 Districts viz, Pudukottai, Sivagangai, Erode, Kalakurichi, Krishnagiri, Thiruvallur, Villupuram, Ariyalur, Coimbatore, Karur, Madurai, Ramanathapuram, Salem, Thirupathur, Thiruvannamalai, Ranipet, Tenkasi, Thiruppur, Thoothukudi, Vellore and Virudhunagar. Integrated Farming System units comprising Horticulture based farming, fodder crops, Rearing of Milch cows and Goats, Apiary units, Vermi beds, Training and Demonstration were implemented under this scheme. 1,850 farmers have been benefited under this scheme.

During the year 2023-24, it is proposed to implement this scheme at an outlay of Rs.31.12 Crore.

3.2.5: National Mission on Edible Oil – Oil Palm (NMEO-OP)

In Tamil Nadu, to increase the area and production of edible oil crops, the National

Mission on Edible Oil -Oil Palm Scheme is being implemented by the Department of Horticulture and Plantation Crops from 2022-23 onwards.

During 2022-23, this scheme is being implemented at an outlay of Rs.2.82 Crore, which includes components such as; new area expansion of Oil Palm in 382 Ha, subsidy for maintenance and intercropping in Oil Palm plantation up to four years, erection of borewell, Diesel / Electric Pump set, Machinery and tools for harvesting the bunches and "Flexi fund"- Production incentives to Oil Palm farmers who produce more than eight MT of Fresh Fruit Bunches from Oil Palm Tree plantation aged five years and above. 469 farmers got benefited under this scheme.

Provision has been made for crediting the price for the Oil Palm Fresh Fruit Bunches procured by private firms directly into the farmer's account as per the FFB Price fixed by the Government.

It is programmed to implement the scheme at an outlay of Rs.5.16 crore in 2023-24.

3.3. State Schemes

3.3.1: State Horticulture Development Scheme (SHDS)

To increase the area and production of Horticultural crops and to enhance the farmers income, State Horticulture Development scheme has been implemented with 100% State Government contribution at an outlay of Rs.28.48 crore during the year 2022-23 and 53,847 beneficiaries were benefitted.

Components such as area expansion of horticulture crops, promotion of Hi-Tech Practices in cultivation of horticulture crops through hydroponics and vertical garden to meet out the demand of vegetables in urban areas within the limited available space, precision farming for higher yield, protected cultivation, establishing gardens in government girls hostels, establishing low cost onion storage structures, establishing cottage mushroom units, distribution of vegetable garden kits, promotion of intercropping, distribution of horticulture tools and equipment, integrated nutrient & pest management in betel vine and establishing

home herbal gardens are being implemented under this scheme.

During the year 2023-24 the scheme will be implemented at an outlay of Rs. 29.62 Crore

3.3.2: Kalaignarin All Villages Integrated Agriculture Development Programme – (KAVIADP)

Kalaignarin All Village Integrated Agriculture Development Programme (KAVIADP) is being implemented from 2021-2022 onwards to attain overall development of Agriculture in the selected village panchayats and help the villages to attain self-sufficiency and sustainability in agriculture by converging various schemes of different departments and other allied activities.

Horticulture related components under this scheme are being implemented in 1,997 Village panchayats at an outlay of Rs.25.88 Crore during 2021-22 and in 3204 village panchayats at an outlay of Rs. 28.81 Crore for the year 2022-2023 and 10,36,631 beneficiaries have been benefitted. Further, the schemes viz.,

Micro irrigation, National Horticulture mission, National Agriculture Development Programme, Rainfed Area Development, State Horticulture Development Scheme, Tamil Nadu Irrigated Agriculture Modernization Programme are being dovetailed in the selected villages.

Under this scheme, main focus is being given for area expansion of perennial horticulture crops to develop new orchards.

During the year 2023-24, the scheme will be implemented in 2,504 panchayat villages at an outlay of Rs.16.87 Crore.

3.3.3: Palmyrah Development Mission (PDM)

To give importance to the 'State tree of Tamil Nadu' 'Palmyrah', Palmyrah Development Mission is implemented at an outlay of Rs.1.57 crore during the year 2022-23 with the components such as distribution of 10 lakh palmyrah seed nuts, establishment of 124 value addition units for palmyrah products, distribution of equipment to 510 beneficiaries for palmyrah value addition, distribution of palmyrah tree

climbing and harvesting equipment to 1000 beneficiaries.

During the year 2023-24, this scheme will be implemented at an outlay of Rs. 2 Crore.

3.4. World Bank Funded Scheme

3.4.1: Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP)

TNIAMP is a Multi-Disciplinary Project is being funded by World Bank with a sharing pattern of 70:30 implemented by the Government of Tamil Nadu. The main objective of the programme is to accelerate crop diversification from crops requiring more water to less water requiring and highly remunerative horticultural crops, through promotion of hi-tech cultivation technologies and water conservation technologies in the proposed sub basins.

During the year 2022-23, the scheme was implemented at an outlay of Rs.47.17 crore in 47 sub basins covering 34 Districts. The interventions covered are 8,353 Ha of crop demonstrations at Rs.17.12 Crore, 2,969 Ha of Micro Irrigation system installation at

Rs.28.06 Crore and model village activities at Rs.0.62 Crore.

In the year 2023-24, it is proposed to implement this scheme at an outlay of Rs. 19.72 Crore in 38 sub basins covering 34 Districts.

3.5: Infrastructure facilities in Horticulture

3.5.1: State Horticulture Farms (SHFs)

There are 79 State Horticulture Farms functioning in 37 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 Training Centres to disseminate the latest technologies to farmers. Further, the farms provide employment opportunities to the landless labourers.

During 2022-23, it was planned to produce 250 MT 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 and so far, 207 MTs of truthfully labelled seeds of vegetables have been produced and are being distributed.

It was programmed to produce 31.74 crore numbers of planting materials in the year 2022-23 and so far, 31.72 crore numbers of planting materials have been produced and are being distributed to the farmers.

During 2023-24, major emphasis is given on the production of planting materials of perennial horticultural crops and it is planned to produce and distribute 20 crore numbers of planting materials from State Horticulture Farms.

3.5.1.1: Vermicompost production

Vermicompost increases the organic matter content, aeration, water holding capacity and microbial activity in soil which in turn improves the growth of plants, thereby increasing the yield potential of Horticulture

crops. Guidelines for production methods and quality of vermicompost have been standardized. During 2022-23, it was programmed to produce 1000 MT of vermicompost and so far, 830 MT of vermicompost has been produced and is being distributed.

During 2023-24, it has been planned to produce 1,000 MT of vermicompost.

3.5.2: Parks and Gardens

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

Moreover, landscape works are being carried out at Air Force Station, Thanjavur at an outlay of Rs.0.40 Crore by the Landscape wing, during 2022-23.

3.5.3: Centres of Excellence (CoE):

To impart training to farmers and act as demonstration centres for Hi- tech practices,

five Centres of Excellences (COEs) have been established based on the crops grown in that particular area.

Table.3.8: Details of Centres of Excellence

S.No.	Centre of Excellence	Location
Functioning COEs		
1.	Cut flowers	Thally, Krishnagiri District.
2.	Vegetables	Reddiyarchatram, Dindigul District.
3.	Hill vegetables	Nanjanad, The Nilgiris District.
4.	Tropical fruits	Kanchanaickenpatti, Trichy District.
5.	Traditional Flower crops	Tiruparankundram, Madurai District.
COEs with ongoing establishment works		
6.	Bee keeping	Pechiparai, Kanyakumari district
7.	Mango	Vedharampatti, Dharmapuri district
8.	Amla	Kalakkad, Tirunelveli district
9.	Sub-Tropical Horticultural crops	Kodaikanal, Dindigul District
10.	Post Havest Technologies for Flower crops	Thally, Krishnagiri district

3.6.1 : Horticulture Training Centres

The Department of Horticulture and Plantation crops has seven Horticulture Training Centres namely Tamil Nadu Horticulture Management Institute, Madhavaram, Chennai district, Horticulture Training Centre, Kudumianmalai, Pudukottai district, Horticulture Research and Training centre, Thally, Krishnagiri district, Centre of Excellence for Vegetables, Reddiyarchatram, Dindigul district, Farmers Training Centre, Ooty, The Nilgiris district, Centre of Excellence for Traditional Flowers, Thiruparankundram, Madurai district and Centre of Excellence for tropical fruits, Kanjanayakanpatti, Trichy district. The prime objective of these training centres is to impart training on Hi tech Horticulture techniques to farmers. The above training institutes have been empanelled by the Tamil Nadu Skill Development Corporation.

3.6.2 : Diploma in Horticulture

Two year Diploma course in Horticulture is being offered by Department of Horticulture and Plantation crops to 150 students annually at

Three Diploma institutes namely Tamil Nadu Horticulture Management Institute, Madhavaram, Chennai district, Horticulture Research and Training Centre, Thally, Krishnagiri district and Centre of Excellence for Vegetables, Reddiyarchathiram, Dindigul district in affiliation with Tamil Nadu Agricultural University, Coimbatore.

3.7: Staff Strength:

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

Table 3.9 : Sanctioned Strength

S.No	Staff details	Total posting
1	Technical Staff	2,606
2	Non Technical Staff	1,222
Total		**3,828**

Table 3.10 : Cadre detail

S. No	Staff details	Total posting
	Technical Staff	
1	Additional Director of Horticulture	2
2	Joint Director of Horticulture	6
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**
	Non Technical Staff	
9	Non Technical Staff – (Deputy Director(Admin), Chief Account 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

S. No	District	Name of the Farm/CoE	Year of Establishment	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

S. No	District	Name of the Farm/CoE	Year of Establishment	Area (Ha)
18.	Kancheepuram	Vichanthangal	1982	23.25
19.	Kancheepuram	Melkadirpur	1982	42.63
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, Thiruparangundram	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	East Vengalam	2018	4.72
35.	Pudukottai	Kudumiyanmalai	1974	118.68
36.	Pudukottai	Vallathirakottai	1977	521.20

S. No	District	Name of the Farm/CoE	Year of Establishment	Area (Ha)
37.	Pudukottai	Nattumangalam	1985	53.02
38.	Ramnathapuram	Oriyur	2013	14.77
39.	Salem	Giant Orchard, Karumandurai	1981	419.77
40.	Salem	Maniyarkundram	1982	101.21
41.	Salem	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	10.77
50.	The 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

S. No	District	Name of the Farm/CoE	Year of Establishment	Area (Ha)
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
61.	Thoothukudi	Keelavallanadu	2019	3.82
62.	Thiruvarur	Moovanallur	2018	5.82
63.	Tirupur	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.	Trichy	Thorakudi	2013	4.05
69.	Trichy	Centre of Excellence for Tropical fruit crops, Kanjanaickenpatti	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

S. No	District	Name of the Farm/CoE	Year of Establishment	Area (Ha)
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

S. 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	Ramanatha-puram	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, Yercaud-1	2012	8.50
11	Salem	Government Botanical Garden, Yercaud-2	2012	7.69
12	Salem	Kurinchi Heritage Garden, Yercaud	2012	7.28

S. No	District	Name of the Park / Garden	Year of Establishment	Area (Ha)
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
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**

4. Agricultural Engineering

Agricultural Engineering Department is functioning to conserve natural resources such as soil and water and supports the farmers to face the challenges viz., water scarcity, soil infertility, shortage of agricultural labourers and post-harvest losses faced by Agriculture successfully with the help of new Agricultural Engineering Technologies.

The Agricultural Engineering Department is implementing various programmes to improve the agriculture work and protect the welfare of the farmers.

4.1. Agricultural Mechanization and Value addition of agricultural produce

With an objective to enhancing the farm power availability by popularizing the modern and innovative agricultural machinery and implements, to address the agricultural labour shortage and to help in carrying out the agricultural operations in time, thereby enabling the farmers to get more income through increased farm production, subsidy assistance is

provided for the distribution of agricultural machinery, Value Addition Machinery to the individual farmers and also for establishment of Block level, Village level and Sugarcane based Custom Hiring Centres under the scheme of Sub Mission of Agricultural Mechanization. This scheme is implemented with 60% Union Government share and 40% State share.

4.1.1. Distribution of Agricultural Machinery, Implements and Value Addition Machinery

Under the scheme Sub Mission on Agricultural Mechanization, Agricultural machinery such as Tractors, Power tillers, Rotavator, Cultivator, Paddy Transplanter, Multi crop thresher and small implements such as Drum seeder, sprayers in order to support the small and marginal farmers, new and modern agricultural machinery such as Drones and Value Addition Machinery such as Onion de-topper, Coconut dehusker, Oil Extracting Machine, pulveriser etc., are distributed with subsidy assistance.

Besides, additional top up subsidy of 20% is provided to small and marginal farmers of SC and ST category through the State Government fund.

During 2022-23, Agricultural Machinery were distributed to 2,198 individual farmers with the subsidy assistance of Rs.36.21 crore. During 2023-24, Agricultural Machinery will be distributed to 8,623 farmers with the subsidy assistance of Rs.105.01 crore.

Considering the declining land holdings in Tamil Nadu and to promote the usage of small agricultural machinery, 5,000 Power tillers at the rate of two power tillers per village will be distributed with a subsidy assistance of Rs.43.00 crore is implemented, under Sub Mission on Agricultural Mechanization during 2023-24 in 2,504 Villages were Tamil Nadu Government’s Vision Scheme of Kalaignarin All Village Integrated Development Programme.

4.1.2. Establishment of Agricultural Machinery Custom Hiring Centres

In order to help the Small and Marginal farmers who are not able to purchase and maintain Hi-tech and costly farm machinery, Value Addition Machinery on their own and to benefit by hiring, Block level and Village level Custom Hiring Centres, Sugarcane based Custom Hiring Centres are established by Rural Entrepreneurs, Registered farmers societies, Cooperative Societies of Farmers and Farmer Producer Organizations (FPOs). Totally, 65 Nos. of Block, Village and Sugarcane based Custom Hiring Centres were established during 2022-23 with subsidy assistance of Rs.7.30 crore. During 2023-24, totally 150 Nos. of Block, Village and Sugarcane based Custom Hiring Centres will be established with the subsidy assistance of Rs.18.74 crore.

4.1.3. Service Centre for repair and maintenance of Agricultural Machinery and Solar pumpsets

The Service Centre for repair and maintenance of Agricultural Machinery and Solar

pumpsets is established with 60% Union Government share and 40% State share under National Agriculture Development Programme. These centres are established by youth having Diploma or Degree in Engineering, Rural youth, Entrepreneurs, Farmer Groups and Farmer Producer Organisation with a subsidy assistance of 50% upto a maximum of Rs.4 lakh. So far, 18 service centres were established in the last two years with a subsidy assistance of Rs.71.00 lakh.

4.1.4. Skill Development Training to Rural Youth

With an aim to help the rural youth to become entrepreneur, training programmes were conducted by Agricultural Engineering Department in co-ordinatioin with Tamil Nadu Skill Development Corporation for 351 rural youth on "Operation and maintenance of agricultural machinery and equipment service provider" in the six Government Tractor Workshops located at Tiruvarur, Trichy, Tirunelveli, Madurai, Vellore and Coimbatore at a cost of Rs.13.13 lakh in the last two years. During 2023-24, it is proposed to conduct

training programme on "Driving of Combine Harvester Machine Operator and Tractor" for 500 trainees at a cost of Rs.1.00 crore and training programme in Agricultural Engineering Department workshops on "Repair and Maintenance of Agricultural Machinery and Implements" for 200 trainees at a cost of Rs.50 lakh.

4.2. e-Vaadagai Mobile App

e-Vaadagai Mobile App has been developed by the Agricultural Engineering Department to facilitate the farmers to book required agricultural machinery and implements of Agricultural Engineering Department and to pay hire charges through online. Farmers are greatly benefitted as they can book the required agricultural machinery from their place itself without visiting the Agricultural Engineering Department (AED) offices.

It is anticipated that around 25,000 farmers will be benefitted through this App during 2023-24 and an amount of Rs.60.00 crore will be collected as receipt to the Government.

4.2.1. Hiring out of Agricultural Engineering Department owned Agricultural Machinery to the farmers

The details of agricultural machinery hired out to the farmers by the Agricultural Engineering Department are furnished in the following table.

Table 4.1. Details of Agricultural Machinery in the Agricultural Engineering Department

Sl. No.	Name of the Machinery	Number of Machinery
1	Bull Dozer	85
2	Tractor	449
3	Tractor with suitable implements	1,752
4	Paddy Combine Harvester – Wheel Type	32
5	Paddy Combine Harvester – Track Type	18
6	Backhoe with Front end loader	60
7	Crawler Excavator	10
8	Mini Tractor	6
9	Sugarcane Harvester with infielders	1
10	Truck Operated Coconut Hoist	20

Sl. No.	Name of the Machinery	Number of Machinery
11	Heavy Duty Chain Saws	805
12	Tractor Operated Pumpsets	21
13	Rotary Drills	24
14	Percussion Drills	3
15	Mini Drills	20
16	Hand Boring Sets	17
17	Rock Blasting Units	5
18	Resistivity Meters	21
19	Electrical Loggers	2

4.2.2. Uploading the details of private Machinery and Mechanics in e-Vaadagai App

To reduce the hardships of the farmers during harvest seasons when the demand for the Paddy combine harvesters increases, the details of 4,456 private Paddy, Maize, Pulses and Cereals harvesting machinery owners viz., Name of the owner, address, mobile number etc., have been uploaded block wise and district wise in the e-Vaadagai App by the Agricultural Engineering Department.

Pursuant to this, in order to facilitate the farmers to carry out the agronomic practices without difficulties and to rectify the defects in case of repair in the agricultural machinery, implements and pumpsets, action will be taken to upload the details of private Tractor owners and private mechanics like name of the owner, address and mobile number-block wise and district wise in the e-Vaadagai App continuously by the Agricultural Engineering Department.

4.2.3. Strengthening of machinery Hiring Scheme in Agricultural Engineering Department

In 2021-2022, Tractors, Tractor operated Rotavators, Tractor operated cultivators – each 185 Nos., and 120 Cage wheels have been procured by the Agricultural Engineering Department at a cost of Rs.22.59 crore and are being hired out to the farmers at block level in the Delta districts in the first phase.

To facilitate the farmers all over Tamil Nadu, to carry out the agricultural operations without difficulties Tractors, Rotavators, Cultivators and Paddy combine harvesters will

be procured at a total cost of Rs.25.00 crore during 2023-24 and will be hired out to the farmers, at block level.

In order to harvest the millets and pulses during paddy harvest off-season, 32 wheel type paddy combine harvesters in Agricultural Engineering Department have been suitably modified and are being hired out to the farmers for harvesting millets and pulses at nominal hire charges fixed by the Government.

4.2.4. Fabrication of Innovative agricultural machinery in Government Tractor workshops

An amount of Rs.30.00 lakh will be allocated to fabricate new and innovative agricultural machinery, implements, equipments and tools in the Government Tractor workshops at Coimbatore, Vellore, Trichy, Tiruvarur, Madurai and Tirunelveli during 2023-24 and an amount of Rs.80.00 lakh will be allocated to procure the machinery required for fabrication under National Agriculture Development Programme (NADP). Further action will be taken to demonstrate these new and innovative

agricultural machinery, implements, equipments and tools to the farmers, besides hiring out Tractor operated implements to the farmers at Government fixed nominal hire charges. Further, action will be taken to sell such fabricated small equipments and tools to the farmers through Agriculture and Horticulture Departments.

4.3. Chief Minister's Scheme of Solar Powered Pumpsets

To meet the irrigation requirement of farmers, without grid connection and to get the sustainable production in agriculture, under the scheme "Chief Minister's Scheme of Solar Powered Pumpsets", 2,000 Nos. of off-grid standalone solar powered pumpsets up to 10 hp capacity are being provided to the farmers with 70% subsidy assistance (Union Government 30% and State Government 40%) with a financial allocation of Rs.43.56 crore for 2021-22. Under this scheme, 2,000 Nos. of work orders have been issued and installation has been completed in 1,740 places and the balance works are nearing completion. Solar Powered Pumpsets are being installed by giving priority to

the farmers in the villages covered under Kalaignarin All Villages Integrated Agriculture Development Programme, in the cluster bore wells created under that programme, wherever feasible. Further, additional 20% subsidy is being provided to Small / Marginal farmers of SC/ST category.

On receipt of the approval of rates and companies for 2022-23 and 30% fund allocation from Union Government and the matching 40% State fund allocation from the State Government, 1,000 Nos. of Solar powered pumpsets programme will be implemented during 2023-24.

4.4. Soil and Water Conservation

In order to conserve soil resources and to harvest rain water, the following Soil and water conservation works are being implemented through the Agricultural Engineering Department.

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

Under this scheme, the following activities are being implemented by Agricultural Engineering Department (AED)in 1,997 villages selected during 2021-22 and in 3,204 villages selected during 2022-23.

Under Creation of water source in the identified clusters in Non- Irrigated areas, 534 wells have been drilled so far. For the benefit of small and marginal category of individual Scheduled Caste and Scheduled Tribe farmers, 318 wells have been drilled with 100% subsidy with the provision of electric motor / solar pumpsets. Also, 730 Farm Ponds have been created in Farmer's lands with 100% subsidy under this scheme. Rehabilitation and Improvement works have been completed in 1,147 Panchayat Union Minor Irrigation tanks, Ooranies, Ponds and Supply channels under the control of Rural Development and Panchayat Raj Department.

Under this scheme, subsidy has been released to 1,245 farmers so far for the purchase of Power tillers and balance works are under progress.

Under Kalaignarin All Village Integrated Agriculture Development Programme,works will be implemented in 2,504 villages during 2023-24.

4.4.2. Maintenance of water harvesting structures

In order to increase water availability, store more rainwater and increase the flow of water through the inflow channels of water harvesting structures by way of desilting, the maintenance of 1,700 water harvesting structures created by Tamil Nadu Watershed Development Agency (TAWDEVA) under the Drought Prone Area Programme (DPAP), Integrated Watershed Development Programme (IWDP) and Integrated Watershed Management Programme (IWMP) were planned to carry out at a total outlay of Rs.5.00 crore utilising the Watershed Development Fund with Agricultural Engineering Department owned machinery in

2021-22. So far, 866 works have been completed and the works are under progress.

Also, to carry out maintenance work in 1,500 water harvesting structures created by Tamil Nadu Watershed Development Agency (TAWDEVA) at a total outlay of Rs.5.00 crore in 2022-23, a committee consisting of Agriculture and Agricultural Engineering Department officials has been formed for selection of structures, 857 structures have been identified, 463 structures have been approved by the District Collector and the maintenance works are under progress.

4.4.3. Special Area Development Programme

To protect the natural resources, Soil and Water Conservation works and Land development works are implemented in the Western Ghats hilly areas and its forest fringe villages, under Special Area Development Programme for benefiting agricultural lands.

In this scheme, totally 219 Soil and water conservation works, 14,544 metres of Drainage line treatment works and Land slide protection

works have been carried out at a cost of Rs.18.28 crore in 2022-23 in 11 districts of The Nilgiris, Coimbatore, Erode, Tiruppur, Theni, Dindigul, Madurai, Virudhunagar, Tirunelveli, Tenkasi and Kanyakumari with the State Government assistance. This scheme will be continued during 2023-24 also.

4.4.4. Rain Water Harvesting Structures

To prevent the sedimentation in multipurpose reservoirs, Gully control works, Silt Detention structures, Silt Monitoring stations will be implemented under the World Bank aided Dam Rehabilitation and Improvement project (DRIP), for a period of four years from 2023-24. In the Catchment areas of the Vaigai Dam in Theni District and Mettur Dam in Salem District, 102 soil conservation and watershed management works will be implemented at a cost of Rs.6.00 crore.

4.4.5. Irrigated Agriculture Modernization - Construction of Farm Ponds

Construction of Farm ponds is being implemented through the World Bank aided

Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP). Upto Third Phase, 1,024 farm ponds have been constructed for an amount of Rs.678.76 lakh. Under Phase-IV, 873 Farm Ponds have been programmed to be constructed in 11 sub basins of 14 districts namely, Thanjavur, Tiruvarur, Nagapattinam, Mayiladuthurai, Ramanathapuram, Sivagangai, Trichy, Madurai, Cuddalore, Villupuram, Ariyalur, Tiruvallur, Kancheepuram and Karur. During the 1st year programme (2022-23), funds have been allocated for the construction of 373 farm ponds at an outlay of Rs.373 lakh. So far, 109 Farm Ponds have been constructed and the balance works are under progress. During 2023-24, this scheme will be continued.

4.5. Water Management

Due to depleting water resources of surface water as well as ground water, it is imperative to manage the available water resources effectively. In order to enhance the ground water harvesting and improve the surface water utilization, necessary water

management techniques are being adopted by Agricultural Engineering Department.

4.5.1. Ensuring irrigation to the Tail end

To ensure availability of irrigation water to the tail end, as a first phase, 1587.87 km of 'C' and 'D' channels have been desilted in the Five Districts of Cauvery and Vennar sub basins, viz, Thanjavur, Tiruvarur, Nagapattinam, Mayiladuthurai and Cuddalore for the benefit of 1,43,654 acres of agricultural lands at a cost of Rs.4.97 crore. In second phase, during 2023-24 in the above said 5 Districts, it is proposed to desilt 1,146 km of 'C' and 'D' channels to benefit 1,32,000 acres of agricultural land at an outlay of Rs.5.00 crore.

4.5.2. Electric motor pumpsets with subsidy

To help small and marginal farmers to buy new electric motor pumpsets or to replace inefficient old electric motor pumpsets, assistance is provided to the farmers as a back ended subsidy at the rate of Rs.10,000/- or 50% of the cost of electric motor pumpsets whichever is less. So far, 968 Nos. of supply orders have

been issued and 937 farmers have been benefitted during 2021-22 and works are under progress. For 2023-24, this scheme will be continued.

4.6. Popularizing innovative Agricultural Engineering Technologies among the farmers

To popularize new innovative agricultural machinery and Agricultural Engineering Technologies and to create awareness among the farmers, 50 demonstrations were organized in 2022-23 in collaboration with various research institutes, private companies and Government departments by the Agricultural Engineering Department in various districts and at the State Agricultural Machinery Information Data Centre (SAMIDC) benefitting 2,253 farmers. Recognizing the importance of modern agriculture, the scheme will be implemented in 2023-24 also to popularize Innovative Agricultural Engineering Technologies among the farmers.

With the objective of popularizing Agricultural Mechanization among the farming

community, a unique **"State Agricultural Machinery Information Data Centre"** integrating all agricultural engineering technologies is functioning in the office premises of the Chief Engineer, Agricultural Engineering Department. So far, 5,469 farmers, school and college students, educated youth, Academicians, officials and General public have visited this centre on free of charge and benefited by getting information on Agricultural Engineering technologies and Government subsidy schemes.

Besides, five days training programme on "New and modern agricultural machinery and technologies" is being given at this centre to students of Agriculture and Agricultural Engineering colleges to improve their skills.

4.7. Strengthening of Infrastructures

Agricultural Engineering Department undertakes the departments own infrastructure works and provides technical support and guidance for the infrastructure works of the sister departments viz., Agriculture Department, Horticulture Department, Agricultural Marketing - Agri Business Department.

4.7.1. Agricultural Extension Centres and Laboratory Buildings

For Agriculture Department, 14 Integrated Agricultural Extension Centres (IAEC), 225 Sub Agricultural Extension Centres (SAEC) and 2 Bio Control Laboratory buildings are being constructed under NABARD fund and National Agriculture Development Programme (NADP) at a total cost of Rs.122.12 crore.

4.7.2. Strengthening the infrastructure of Agricultural Engineering Department Tractor Workshops

To strengthen the infrastructure of the Government Tractor Workshops functioning at Vellore, Trichy, Coimbatore, Tiruvarur, Madurai and Tirunelveli to carry out the repair and maintenance of Agricultural Engineering Department owned machinery and implements and to impart training to farmers on repair and maintenance of various agricultural machinery, construction of new office buildings with training hall and renovation works will be taken up under National Agriculture Development Programme

during 2023-24 at an estimated cost of Rs.12.65 crore.

4.8. Establishment

Table 4.2. Agricultural Engineering Department 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**

5. AGRICULTURAL MARKETING - AGRI BUSINESS

"இருங்கழி யிழிதரும் ஆர்கலிவங்கம்
தேறுநீர்ப் பரப்பின் யாறு சீத்துய்த்துத்
துறைதொறும் பிணிக்கு நல்லூர்
உறைவின் யாணர் நாடுகிழ வோனே"

- புறநானூறு

Kovoor Kizhaar, an ancient poet is commending the accomplishments of the king through the above poem quoting "The King is in possession of a great land with vast coastline which generates revenue by the trade of commodities through shipping". Such is the glory and tradition of "trade" which is the underlying concept on which the Department of Agricultural Marketing and Agri Business is functioning.

Agricultural marketing plays a vital role in connecting the producers and consumers through a series of activities thus becoming an essential element in the economy. Agri Business activities emphasize on post harvest management, value

addition besides empowering farmers groups in entrepreneurial skills on market promotion. Considering this, Department of Agricultural Marketing - Agri Business is implementing various schemes.

5.1. AGRICULTURAL MARKETING

5.1.1 Market Committees and Regulated Markets

Market Committees and Regulated Markets are established for regulation of buying and selling of notified agricultural produce in notified market area. In Tamil Nadu, 27 Market committees have been established under which 284 Regulated Markets are functioning as per the provisions of the Tamil Nadu Agricultural Produce Marketing (Regulation) Act 1987, and its Rules 1991.

The farmers participate in the secret auction conducted in the Regulated Markets without the intervention of middlemen thereby getting remunerative price.

To improve the infrastructure in Regulated Markets, 50 Drying yards, Four paddy dryers,

11 storage godowns in Tiruvarur district are being established at an estimated cost of Rs.30.50 crore. In the current year, construction of new and additional buildings, reconstruction of dilapidated storage godowns and renovation works will be carried out in Regulated Markets at a total cost of Rs.161.75 crore.

Details of Infrastructure facilities created by the Department (Annexure I)

During 2022-23, as a record achievement, farmers transacted 29.26 lakh MT of agricultural commodities and an amount of Rs.138.60 crore has been collected as revenue. Pledge loan facility is provided to the farmers to a maximum of Rupees Three lakh at five percent interest. During 2022-23, an amount of Rs.30.1 crore was sanctioned to 1,302 farmers.

Also, pledge loan facility is extended to traders at nine percent interest so as to facilitate them in settling the amount immediately to farmers. During 2022-23, an amount of Rs.4.58 crore was sanctioned to 254 traders.

5.1.1.1 e Negotiable Warehouse Receipt

For the first time in Tamil Nadu, strengthening of 150 storage godowns have been carried out for getting registration from Warehousing Development and Regulatory Authority (WDRA) to implement e-Negotiable Warehouse receipt system out of which registration is completed for 107 godowns. So far, 6,593 MT of produce were stocked and an amount of Rs.12.13 crore was sanctioned as loan through banks and the State stands first at National level.

5.1.2. e National Agriculture Market (eNAM)

eNAM is being implemented in 2 phases since October 2017. So far, 127 Markets were integrated with eNAM portal in Tamil Nadu and transactions are being carried out. Further, action is being taken for online trading in another 30 markets.

In eNAM markets, 26.57 lakh numbers of Coconut and 4.54 lakh MT of other Agricultural produce worth Rs.1,113 crore have been transacted and e-payment to a tune of

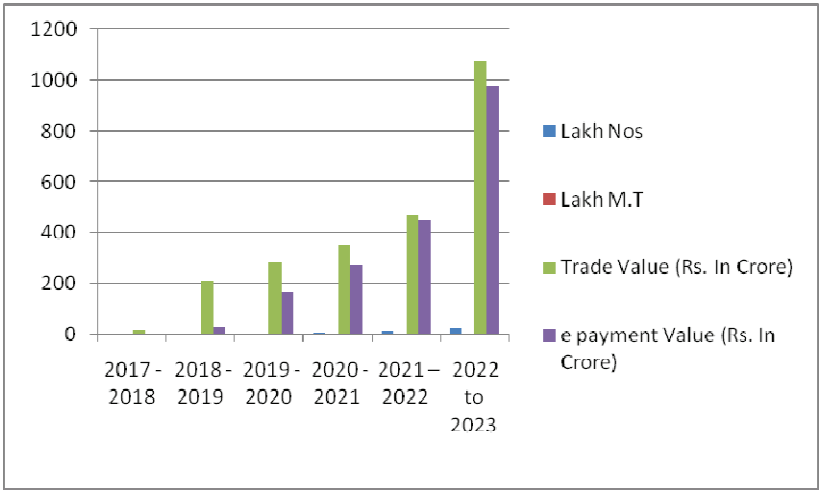
Rs.999.07 crore has been made through eNAM portal to 3.23 lakh Farmers during 2022-23. **Tamil Nadu occupies first position in e- Payment in the entire Nation.**

Unified Single Licenses have been issued to 5,517 traders to facilitate trade in all the Regulated Markets of the State.

Inter-mandi trade to the tune of 92,170 MT amounting to Rs.247.02 crore have been carried out through eNAM during 2022-23 with the participation of 1,080 Traders.

Inter-State trade of 279.94 MT Agricultural Produce valued at Rs.199.66 lakh has been carried out with Puducherry Union Territory and Uttar Pradesh for commodities like Blackgram, Red gram, Cotton, Maize and Potato in 2022-23.

Year wise eNAM transaction since 2017



5.1.2.1 Farm Gate Trade in eNAM:

To reduce the transportation cost and to benefit the farmers, Farm gate trade through eNAM Portal to the tune of 5.37 lakh Nos. of Coconut and 2,425 MT of other Agricultural Produce worth Rs.6.46 crore have been carried out during 2022-23.

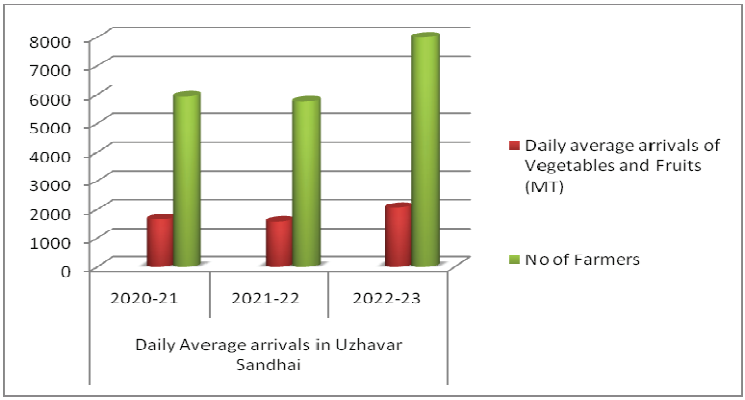
5.2 Agri Business Activities

5.2.1 Uzhavar Sandhai

The foresighted vision of Muthamizh Arignar Dr.Kalaignar paved way for the initiation of the scheme of Uzhavar Sandhai in the year 1999 for the benefit of both Farmers and Consumers. Currently, Uzhavar Sandhais are functioning in 183 locations.

On an average, 2,000 MT of Vegetables and Fruits worth Rs.6.70 crore are being sold by 8000 farmers to over three lakh consumers every day. The Uzhavar Sandhai price details are made available in the Uzhavan App.

Daily Average Arrivals in Uzhavar Sandhai



During 2021-22, 50 Uzhavar Sandhais were renovated at a cost of Rs.12.50 crore. Also, it has been proposed to establish 10 new Uzhavar Sandhais at a cost of Rs.4.53 crore, out of which, four new Uzhavar Sandhais have been made functional at a cost of Rs.1.81 crore and the remaining works are in progress.

Price Display Boards have been installed in 50 Uzhavar Sandhais at a cost of Rs.1.15 crore to facilitate consumers to know the daily rate of Vegetables and Fruits. In order to decompose the waste generated in Uzhavar Sandhais, composting machines have been set up at a cost of Rs.2.75 crore in 25 Uzhavar Sandhais and 5.10 MT of compost has been produced so far.

Further, 50 more Uzhavar Sandhais are being renovated at a cost of Rs.15 crore during 2022-23. Also, 10 new Uzhavar Sandhais are being set up at a cost of Rs.7.50 crore.

Shops have been allocated to Farmer Producer Organizations in 50 Uzhavar Sandhais for the sale of value added products and products worth Rs.3.50 crore have been sold by them.

Shops have also been allotted for the Agriculture and Horticulture departments.

During 2023-24, it is proposed to renovate 25 Uzhavar Sandhais at a cost of Rs.8.75 crore. Further, necessary action will be taken for getting **Food Safety and Standards Authority of India (FSSAI)** certificate for 50 Uzhavar Sandhais at a cost of Rs.25 lakh. Also, canteens for traditional food will be established in 25 Uzhavar Sandhais in Public Private Partnership mode.

5.2.1.1 Farm to Home

A subsidy of Rupees Two Lakh per vehicle is being provided for the purchase of 30 mobile vehicles in five corporation areas of Chennai, Tiruchirapalli, Coimbatore, Salem and Tiruppur to benefit farmers, consumers and rural educated youth. So far, Rs.40 lakh subsidy has been released for 20 mobile vehicles.

5.2.2 Establishment of Value Addition centers for Agricultural Commodities:

Maize value addition centre has been established at Thozhudhoor, Cuddalore District at

a cost of Rs.3.78 crore and it is being utilised by a Farmer Producer Organization. During 2022-23, 1,394 MT of animal feed has been produced and traded for Rs. 2.93 crore. In addition, Millet and Pepper Processing units, Coffee Huller cum Grader unit, Pepper Grader cum Pulveriser unit and Coconut value addition centres are being established at a total cost of Rs. 9.20 crore to facilitate the agri business activities.

5.2.3 Cold Storage Facilities:

In Tamil Nadu, 187 cold storage units have been established with the total capacity of 17,467 MT to prevent post harvest losses of perishables like Fruits and Vegetables. These facilities have been utilized by 5,623 farmers, 28 Farmer Producer Organizations and 110 Traders during 2022-23.

In addition, Nine Mega Cold storage structures and 80 solar powered micro Cold Storage Units (5 MT each) are being established with the total capacity of 22,900 MT at a cost of Rs.110 crore.

During 2023-24, action will be taken to get **WDRA accreditation** for 25 cold storage units with a capacity of 31,000 MT to follow the system of e-Negotiable Warehouse Receipt.

5.2.4. Financial Assistance to Sugarcane farmers for the production of high quality Jaggery:

In order to increase the income of Sugarcane farmers through the production of high quality Jaggery, a subsidy amount of Rupees One crore has been allotted under State Agriculture Development Scheme and is being implemented in Salem, Erode, Namakkal, Dharmapuri, Tiruppur, Coimbatore, Theni and Dindigul districts. So far, financial assistance to the tune of Rs.35 lakh is extended to 20 beneficiaries under this scheme.

5.2.5. Supply Chain Management

Primary Processing Centres are established for Fruits, Vegetables and other perishables under this project to reduce post-harvest losses.

In phase I, 64 Primary Processing Centres in 10 districts are functioning with Post harvest infrastructure facilities such as pack house, cold storage, storage godowns etc., equipped with facilities for cleaning, washing, sorting, grading and packing at a total outlay of Rs.482.36 crore (Annexure-III).

A total volume of 1,15,250 MT of Fruits and Vegetables have been handled in these Primary Processing Centres. An average of 110 to 200 MT of Vegetables and Fruits are handled per day and 1,54,786 farmers have been benefitted.

The project is extended in Phase-II to another eight Districts viz., Salem, Erode, Tiruvallur, Kancheepuram (including Chengalpet), Tiruvannamalai, Cuddalore, Villupuram and Karur at an outlay of Rs.102.47 crore for the establishment of 20 Primary Processing Centres (Annexure-IV).

The civil works are completed and action is being taken for the selection of Market Integration Partners for utilizing the Primary Processing Centres.

5.2.6 Farmer Producer Organizations (FPOs)

The Department of Agricultural Marketing and Agri Business have formed and promoted 381 Farmer Producer Organizations under the schemes of Tamil Nadu Small Farmers Agri Business Consortium (TNSFAC) and Tamil Nadu Irrigated Agriculture Modernisation Project (TNIAMP).

5.2.6.1 Tamil Nadu Small Farmers Agri Business Consortium (TNSFAC)

Tamil Nadu Small Farmers Agri Business Consortium (TNSFAC) has formed 318 Farmer Producer Organizations (FPOs) at a cost of Rs.78.91 crore and is promoting them.

a) State Government scheme for Financing Farmer Producer Company:

S. No	Component	Fund Allotted (Rs. in Cr.)	Sanctioned amount (Rs. in Cr.)	No of FPOs benefitted
1.	Mezzanine Capital Assistance	25.00	24.28	286

S. No	Component	Fund Allotted (Rs. in Cr.)	Sanctioned amount (Rs. in Cr.)	No of FPOs benefitted
2.	Revolving Fund Scheme	41.67	14.23	111
3.	Credit Guarantee Scheme	12.50	5.41	36
	Total	**79.17**	**43.92**	**433**

b) Other Support to Farmer Producer Organizations:

i. 28 FPOs are utilising 30 Primary Processing Centres.

ii. Unified Single License has been issued to 211 FPOs

iii. 23 FPOs have traded 1,089 MT of commodities worth Rs.1.86 crore through eNAM portal.

iv. 23.83 MT of Millets have been procured from FPOs and marketed through Co-operative shops and fair price shops in Chennai and Coimbatore.

v. To facilitate marketing of Agricultural Produce and value added products of FPOs, 50 Speciality shops are being

established in the Corporation areas at a cost of Rupees Five crore.

vi. Capacity Building training and Exposure visits are being organized for 310 FPOs (53 batches) through Tamil Nadu Agricultural University at a cost of Rupees Two crore for a period of three years from 2021-22. So far, training has been completed for 25 batches.

vii. FPO Management centre with key experts is functioning at the Directorate of Agricultural Marketing and Agri Business to facilitate and promote FPOs.

viii. Chartered Accountants and Company Secretaries have been empanelled for the benefit of the FPOs at the District level.

ix. Training on Modern Packaging will be imparted at a cost of Rs.15 Lakh to enable the FPOs to add market value for their products.

x. Toll free No. 1800 425 1907 (Office Hours) and WhatsApp No. 7200818155 have been created for the benefit of FPOs**.**

5.2.6.2.Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP)

This scheme is being implemented as financial support to FPOs in 66 sub-basins at a project cost of Rs.125.00 crore from the year 2017-18.

a) Financial Support to Farmer Producer Organizations:

Start up Grant of Rs.10.00 lakh/FPO, Productive Investment Grant of Rs.20.00 lakh/FPO and Business Expansion Grant of Rs.30.00 lakh for best performing Farmer Producer Organizations is being provided.

During 2022-23, Start Up Grant of Rs.95 lakh has been provided to 19 FPOs, Productive Investment Grant of Rs.2.60 crore has been provided to 13 FPOs and Business Expansion Grant of Rs.5.70 crore has been provided to 19 FPOs totalling to Rs.9.25 crore.

Details of FPOs in terms of Business turnover		
Business turn over (Rs. in lakh)	No. of FPOs	
	2021-22	2022-23
>100	14	25
50-100	37	71
25-50	55	84
10 to 25	91	123
<10	184	78

5.2.7. Kalaignar All Village Integrated Agricultural Development Programme (KAVIADP):-

During 2021-22, 50 Drying yards have been constructed in the selected villages at a cost of Rs.5.25 crore under this scheme. In 2022-23, 135 Drying yards at a cost of Rs.14.17 crore are being established. Drying yards with Grading and Sorting hall will be established in 250 villages at a cost of Rs.85 crore during 2023-24.

5.2.8. Food Processing:

5.2.8.1. Setting up of Millet Processing centers:

The United Nations has declared 2023 as **"International Year of Millets"**. During 2023-24, Millet Processing Centres will be established for value addition of Millets which would fetch additional income to the farmers.

5.2.9. Credit facilities through Agriculture Infrastructure Fund Scheme (AIF)

Financial assistance is provided under this scheme for post-harvest management activities and setting up of necessary infrastructure to prevent wastage of agricultural produce. Farmers, Primary Agricultural Co-operative Credit Societies, Farmer Producer Organizations and Agri-entrepreneurs will benefit under the scheme.

Since the inception of the scheme in 2020-21, so far 2,837 loan applications have been approved and Rs.636.63 crore loan amount has been sanctioned.

5.2.10. AGMARK Grading

"AGMARK" symbol ensures Government guarantee for correct weight and quality besides ensuring availability of unadulterated food products to the end consumers. To ensure the quality, 30 State Agmark Grading Laboratories (SAGL) and one principal laboratory are functioning in the state.

At present, Agmark standards cover quality specifications for 232 Agricultural commodities.

During 2022-23, Agricultural commodities to the tune of 3.86 lakh MT were graded and grading charges of Rs.91.30 lakh has been realized as revenue to the State Government.

5.2.11. Details of Staff in the Department

In the Department of Agricultural Marketing and Agri Business, 1,343 Department staff and 1,674 Market Committee staff are working.

Table: 5.1- 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
7	Asst. Agricultural Officer	627
8	Administrative Officer	1
9	Asst. Accounts Officer	1
10	Other non-technical staff	452
	Total	**1,343**

Table: 5.2- 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

S. No	Name of the Post	Sanctioned Post
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**

5.3. Tamil Nadu State Agricultural Marketing Board (TNSAMB)

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".

5.3.1 Source of Income

Tamil Nadu State Agricultural Marketing Board receives 15% of the revenue collected as license fee and market fee by the Market

Committee as its contribution for Market Development activities.

5.3.2 Functions of Tamil Nadu State Agricultural Marketing Board

5.3.2.1. Capacity Building Training

The State Level Training Centre of TNSAMB is functioning at Uttamacholapuram, Salem. It provides training to all the technical Staff of Department of Agricultural Marketing and Agri-Business besides giving training to farmers. In coordination with Tamil Nadu Skill Development Corporation, skill development training on Food processing technology to rural youth for employment generation is also being imparted.

During 2022-23, 35 training programmes were conducted at a cost of Rs.21 lakh benefitting 857 technical staff and farmers. This training programme will be continued during 2023-24 also.

5.3.2.2. Construction / Maintenance Works

The Engineering Wing is functioning under the control of Tamil Nadu State Agricultural

Marketing Board which takes up the developmental activities of Regulated Markets and creation of infrastructure related to Agricultural Marketing and Agri Business. During the year 2022-23, infrastructure were created at an outlay of Rs.65.00 crore. These scheme works will be continued during 2023-24 also.

5.3.2.3 Price Support Scheme (PSS)

Price Support Scheme is being implemented in the State to protect farmers from price fall of Pulses and Copra during its peak harvest season.

During the past two years, 4,690 MT of Pulses and 39,515 MT of Copra worth Rs.450 crore was procured from 38,205 farmers. Steps are being taken to procure 60,203 MT of Blackgram and 12,605 MT of Greengram besides 56,000 MT of Copra during the current Rabi Procurement season.

5.3.2.4 Agro Export Promotion Activities

An Agricultural Export Facilitation Centre has been established in Chennai to hand-hold the farmers in export. Farmer who excels in the

export of Agricultural products is awarded with a cash prize of Rupees Two lakh.

Steps are being taken to establish Pesticide Residue Testing Laboratories at Chennai and Tiruchirapalli at an outlay of Rupees Nine crore each.

During this financial year, 10 State level seminars will be conducted at an outlay of Rs.50.00 lakh to increase the export opportunities.

5.3.2.5 Geographical Indication Tag (GI Tag)

Action is being taken to get Geographical Indication tag for unique products of the State.

During 2022-23, GI has already been filed for 10 crops including Sholavandhan Betel leaf, Panruti Jack Fruit and Panruti Cashewnut.

Steps will be taken to get Geographical Indication tag for 10 products viz., Krishnagiri Arasampatti Coconut, Krishnagiri Panneer rose, Thanjavur Peravoorani Coconut, Mulanur Moringa, Thoothukudi Vilathikulam Chillies, Sathur Vellari, Cuddalore Kottimulai katharikkai, Thanjavur

Veeramangudi Achuvellam, Madurai Sengarumbu and Sivagangai karuppukavuni rice.

5.3.2.6 Moringa Export Zone

Considering the export potential of Moringa and its value added products, the Government had declared the area comprising seven districts viz., Theni, Dindigul, Karur, Thoothukudi, Ariyalur, Tiruppur and Madurai as Moringa Export Zone. During Phase I, a special export facilitation center for Moringa has been established and functioning in Madurai.

In Phase II, a Detailed Project Report has been prepared for creation of Infrastructure Facilities for Moringa Processing.

5.3.2.7. Establishment of Small Food Parks/ Agro Processing Clusters

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

5.3.2.8. International Flower Auction Centre

This Centre has been established at a cost of Rs.20.20 crore at Hosur, Krishnagiri district for the benefit of farmers and exporters. The software for flower auction has been developed. Trial run has been completed and e-auction is being conducted.

5.3.2.9 e-Initiatives

Software are being developed at a cost of Rupees One crore through TNeGA with the Market development fund of TNSAMB, for online booking of godowns and cold storages to the farmers and traders, issue of license to the traders, effective monitoring of Farmers Producer Organizations (FPOs), creating online sale platform (e-Market platform) for value added products of the FPOs and dissemination of information on Uzhavar Sandhai arrivals, sale and prices to the farmers.

Annexure I

Infrastructures created in the 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	Specialized Market Complex	Integrated Agriculture Market Complex	No of FPOs
1	Kancheepuram	4	--	7	4000	--	--	6	--	7	--	--	8
2	Chengalpattu	9	--	2	2600	--	--	1	--	2	--	--	8
3	Tiruvallur	6	--	10	12800	--	--	5	--	7	--	--	12
4	Cuddalore	5	--	15	20100	4	77	29	76	16	--	--	16
5	Villupuram	3	--	18	41600	2	40	38	31	12	--	--	11
6	Kallakuruchi	3	--	17	23500	2	50	29	13	7	--	--	10
7	Vellore	4	--	8	5000	2	27	4	25	3	--	--	6
8	Ranipet	2	--	10	8500	--	--	10	11	6	--	--	8
9	Thiruppathur	3	--	8	7250	2	27	1	4	2	--	--	6
10	Tiruvannamalai	8	--	33	35100	7	175	47	50	12	--	--	19
11	Dharmapuri	5	5	8	7600	7	1310	6	10	10	1	--	14
12	Krishnagiri	5	10	10	9600	21	1547	3	13	11	1	1	14
13	Salem	11	--	17	15000	12	260	17	20	18	--	1	14

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	Specialized Market Complex	Integrated Agriculture Market Complex	No of FPOs
14	Namakkal	6	--	9	7850	6	84	4	--	7	1	--	12
15	Erode	6	--	42	54352	7	1225	36	37	40	3	--	16
16	Thiruppur	6	--	60	81900	6	152	33	10	47	2	--	8
17	Coimbatore	8	7	31	26405	20	1694	19	51	30	3	--	12
18	Nilgiris	4	9	--	--	9	592	1	--	--	--	1	9
19	Perambalur	2	--	2	2500	2	75	1	--	1	1	--	8
20	Ariyalur	2	--	5	5500	1	25	14	--	7	--	--	11
21	Trichirappalli	8	12	14	13000	12	3282	15	5	21	4	--	13
22	Karur	5	--	2	1000	1	25	1	--	--	--	--	9
23	Thanjavur	5	--	29	41650	2	125	22	16	6	2	--	15
24	Thiruvarur	7	--	27	30100	--	--	9	--	58	--	--	9
25	Nagapattinam	1	--	14	11820	--	--	4	--	--	--	--	7
26	Mayiladuthurai	2	--	4	3500	--	--	7	--	5	--	--	4
27	Pudukottai	6	--	7	4600	2	125	3	--	4	1	--	12
28	Madurai	7	--	13	15900	2	27	4	--	9	1	1	13
29	Dindigul	6	5	14	19200	9	1115	6	105	11	1	--	12

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	Specialized Market Complex	Integrated Agriculture Market Complex	No of FPOs
30	Theni	7	5	12	13500	12	722	8	--	9	3	--	9
31	Virudhunagar	8	--	15	17200	3	150	5	55	5	--	--	11
32	Sivagangai	5	--	17	16450	1	25	3	--	7	--	--	9
33	Ramnad	3	3	9	13050	6	2155	3	136	11	1	--	9
34	Tirunelveli	5	2	8	10800	5	72	4	3	5	2	--	8
35	Tenkasi	2	3	6	12000	9	1980	6	40	5	--	--	7
36	Thoothukudi	2	3	18	20100	11	277	7	6	5	1	--	7
37	Kaniyakumari	2	--	11	10500	2	27	3	85	5	2	--	5
	Total	**183**	**64**	**532**	**625527**	**187**	**17467**	**414**	**802**	**411**	**30**	**4**	**381**

ANNEXURE- II

District wise, Market Committee wise eNAM and Non eNAM Markets

S. No	District	Market Committee	Regulated Market	eNAM Markets	Non eNAM Markets
1	Kancheepuram	Kancheepuram	3	2	1
2	Chengalpattu		4	1	3
3	Tiruvallur		8	3	5
4	Cuddalore	Cuddalore	11	7	4
5	Viluppuram	Viluppuram	11	8	3
6	Kallakurichi	Kallakurichi	8	6	2
7	Vellore	Vellore	3	2	1
8	Ranipet		6	3	3
9	Tiruppathur		3	2	1
10	Tiruvannamalai	Tiruvannamalai	18	8	10
11	Dharmapuri	Dharmapuri	7	3	4
12	Krishnagiri		9	3	6
13	Salem	Salem	14	10	4
14	Namakkal	Namakkal	6	2	4
15	Erode	Erode	18	14	4

District wise, Market Committee wise eNAM and Non eNAM Markets

S. No	District	Market Committee	Regulated Market	eNAM Markets	Non eNAM Markets
16	Tirupur	Tirupur	15	9	6
17	Coimbatore	Coimbatore	10	9	1
18	The Nilgiris	Nilgiris	4	0	4
19	Perambalur	Perambalur	2	1	1
20	Ariyalur		4	1	3
21	Tiruchirapalli	Tiruchirapalli	10	5	5
22	Karur		4	0	4
23	Thanjavur	Thanjavur	13	6	7
24	Thiruvarur	Thiruvarur	8	4	4
25	Nagapattinam	Nagapattinam	4	1	3
26	Mayiladuthurai		4	4	0
27	Pudukkottai	Pudukkottai	10	3	7
28	Madurai	Madurai	6	5	1
29	Dindigul	Dindigul	8	7	1
30	Theni	Theni	7	4	3
31	Virudhunagar	Virudhunagar	7	4	3

District wise, Market Committee wise eNAM and Non eNAM Markets

S. No	District	Market Committee	Regulated Market	eNAM Markets	Non eNAM Markets
32	Sivagangai	Sivagangai	7	5	2
33	Ramanatha-puram	Ramanatha-puram	6	6	0
34	Tirunelveli	Tirunelveli	4	3	1
35	Tenkasi		7	4	3
36	Thoothukudi		9	1	8
37	Kanyakumari	Kanyakumari	6	1	5
Total			**284**	**157**	**127**

Annexure III.

Supply chain Management Project Phase -I

Details of Primary Processing Centres (PPC)

Sl. No.	District	Primary Processing Centres
1	Krishnagiri (10)	Hosur, Kamandoddi, Denkanikottai, Thattiganapalli, Royakottai, Alapatti, Kundarapalli, Krishnagiri, Kaveripattinam, Pochampalli.
2	Dharmapuri (5)	Pennagaram (Co-operative Marketing Society), Palacode, Dharmapuri, Harur, Papparapatti.
3	Coimbatore (7)	Chikkadasampalayam, Sulur, Vadakkipalayam, Pooluvapatti, Pichanur, Anaimalai, Pollachi.
4	The Nilgiris (9)	Hosahatty, Anikorai, Dhavanai, Ooty Rose Garden, Nilgiris (Co-operative Marketing Society), New Allanji, Sullikoodu, Uppatti, Aiyyankolli.

Sl. No.	District	Primary Processing Centres
5	Tiruchirappalli (12)	Lalgudi, Mannachanallur – I, Mannachanallur – II, Thiruchendurai, P.K.Agaram, Arasalur, Pidaramangalam, Thuraiyur (Co-operative Marketing Society), Uppiliapuram (South), Thathaiyangarpettai, Kallikudi, M.Puthur.
6	Dindigul (5)	Palani, Palani (Co-operative Marketing Society), Gopalpatti, Kavunji, Vedasanthur.
7	Theni (5)	Theni, Chinnamanur, Cumbum – I, Cumbum – II, Periyakulam.
8	Ramanathapuram (3)	Paramakudi, Mudhukulathur, Kamuthi (Co-operative Marketing Society).
9	Thoothukudi (3)	Srivaikundam, Pudur, Vilathikulam.
10	Tirunelveli (2)	Ramayanpatti, Valliyoor.
11	Tenkasi (3)	Pavoorchatram, Sankarankovil, Kadayanallur.

Annexure IV.

Supply Chain Management Project –Phase-II

Details of Primary Processing Centres (PPC)

Sl. No.	District	Primary Processing Centres
1.	Salem (5)	Uthamasolapuram, Thalaivasal, Valapadi, Edappadi, Kolathur.
2.	Erode (2)	Alukkuli, Anthiyur.
3.	Thiruvallur (2)	Thiruvallur, Arani.
4.	Kancheepuram (1)	Sunguvarchatram.
5.	Chengalpet (1)	Madhuranthagam.
6.	Tiruvannamalai (2)	Padavedu, Kuppanatham.
7.	Cuddalore (2)	Panruti, Kurinjipadi.
8.	Villupuram (2)	Olakkur, Vanur.
9.	Karur (3)	Aravakurichi, Mahadanapuram, Velayuthampalayam.

6. TAMIL NADU AGRICULTURAL UNIVERSITY

The Government of Tamil Nadu is implementing various schemes to eradicate poverty and to ensure food and nutrition security. To implement the welfare schemes and policies of the Government, Tamil Nadu Agricultural University has been supporting the efforts of the Government through Agricultural Education, Research and Extension.

To achieve agriculture based human resource development, self-sufficiency in food production and improved productivity as well as to augment the farmers welfare, teaching, research and extension were imparted through Constituent Colleges, Research Stations and Krishi Vigyan Kendra of Tamil Nadu Agricultural University with the budget outlay of Rs. 560.72 crores allocated during 2022-2023 (Annexure 1).

In the current financial year 2023 – 2024, Tamil Nadu Agricultural University is provided with Rs 586.02 crores to carry out its mandated activities effectively.

First time in Tamil Nadu, an amount of Rs. 100 crores will be provided to Tamil Nadu Agricultural University as Corpus Fund so as to improve the agricultural research.

6.1. Agricultural Education

Tamil Nadu Agricultural University is offering 12 Under graduate, 32 Post graduate and 28 Doctoral degree programmes through its 18 Constituent Colleges. In addition, through 4 Constituent Diploma Institutes of Tamil Nadu Agricultural University, Diploma in Agriculture, Horticulture and Agricultural Engineering are also being offered.

The number of applications for the Under graduate programmes which was only 9,652 during 2011-12 has been increased manifold to 39,489 during 2022-23.

Table 6.1. Students Admission (2022-23)

Education Details	Admission
Under Graduate	5,050
Post Graduate	483
Doctoral Degree	218
Diploma	427
Total number of students in constituent and affiliated colleges	6,178

6.1.1 Puthumaipen Thittam

In order to increase the establishment of Government school female students in the higher education, through Muvalur Ramamirtham Ammaiyar Higher Education Guarantee Scheme, an amount of Rs.1000/- is being provided as scholarship. Last year, out of 591 girl students who applied under this scheme, scholarship was provided to 448 girl students.

6.1.2 Assistance for students' Education

During last year, 2,950 Backward Class, 1,768 Most Backward Class, 1,054 Scheduled Caste and 296 Scheduled Tribe students were provided with community based education scholarship.

6.1.3 Infrastructure

The Government of Tamil Nadu has given administrative approval to set up a new Horticulture College and Research Institute at Jeenur in Krishnagiri District, three Agricultural Colleges and Research Institutes at Karur, Keezhvelur in Nagapattinam District and Chettinad in Sivagangai District. These colleges have started their functioning.

State Government has taken steps for strengthening the infrastructure at Agriculture College and Research Institute Chettinad with NABARD funding of Rs.61.79 crore under RIDF-XXVIII.

6.1.4 Social Welfare Activities

As a forerunner among the Indian Agricultural Universities, Tamil Nadu Agricultural University in association with Dindigul District Administration at Single Location 6,03,009 tree were planted by a Team in four hours and entered into Elite Book of World Records.

To improve and maintain the Insect Museum of Tamil Nadu Agricultural University, a sum of Rs.1.25 Crores was allotted during the last financial year (2022-2023). In addition, during the current financial year, the State Government has taken steps for strengthening Insect Museum at an outlay of Rs.3.00 crore.

State Level Farmers' day was organized between 14.10.2022 and 16.10.2022 at Agricultural college and Research Institute, Madurai. 27,000 farmers and 4,200 students were benefitted.

6.1.5 Students welfare and Career guidance

The Centre for Students Welfare organizes motivational lectures, coaching classes, mock group discussions, interviews and individual skill-oriented trainings to produce potential candidates and to facilitate domestic and international job opportunities. Special coaching with spoken English (78 students), German language (23 students) and French language (74 students) were offered were provided for the students. Students were also provided coaching for banking services (62 students) and civil services (42 students).

During 2022-23, through the Centre for Students Welfare, totally 226 students were placed in various industries *viz.,* Agro Industry (157), Banking (32), Food Industry (1), NGO / Government (20), Finance (6) and other institutions (10).

6.2 Agricultural Research

The research is being conducted in 18 Constituent Colleges and 40 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.

Demonstration on application of Agricultural inputs, weedicides as well as crop boosters has been organized in 224 hectare of Tamil Nadu through drones in all the districts of Tamil Nadu with the budget outlay of Rs.37.50 lakh.

Cropping System based on Integrated Horticulture for Livelihood Security was started at Horticulture College and Research Institute, Periyakulam and Regional Research Station, Aruppukottai.

Government of Tamil Nadu has sanctioned a project on promoting crop diversification and improved agricultural practices in saline-affected districts in the Protected Agricultural Development Zone for Rs.5.00 lakh.

In addition, a sum of Rs.5.00 lakh was sanctioned for undertaking research project on improved crop diversification and increasing the

water use efficiency in Tamil Nadu protected Agricultural Development Zone.

In the current financial year (2023-2024), an amount of Rs.5.00 crore has been given for the revitalization of Tamil Nadu Agricultural University Botanical Garden and Rs.30 crore, for the establishment of Banana and Palmyrah Research Stations.

To provide agricultural technologies and improved management practices at farmer's doorstep, one agricultural scientist will be attached as in-charge at block level.

6.2.1 Tamil Nadu Irrigated Agriculture Modernization Project (TN-IAMP)

World Bank funded Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP) is being implemented at Tamil Nadu Agricultural University for the period of 2017-2024 with the total outlay of Rs.85 Crore. The overall objective is to promote climate resilient agricultural activities and market led agriculture in 54 river sub basins across the state. Through precision farming, hydro technology demonstration and

innovation training, 10,125 farmers have benefited.

6.2.2 The Agro Climate Research Centre

Medium range weather forecast is very important for determining daily work in agriculture. Keeping this in mind, the Medium range weather forecast has been developed to increase the accuracy at village level and make data available at hourly intervals for the next six days. It can be easily seen on the website http://aas.tnau.ac.in/vlf. in the form of map or table at free of cost. The accuracy of this village-level weather forecast is around 70 - 80 percent.

6.2.3 Price Forecast and Market Intelligence

The Price Forecasting Project is implemented by the Domestic and Export Market Information Center (DEMIC) of the Center for Agricultural and Rural Development Studies (CARDS) with the support of the Tamil Nadu - Irrigated Agriculture Modernization Program (TN-IAMP). Under this scheme, farmers will be provided with price forecasts for 14 major crops

including maize, blackgram, green gram, groundnut, sesame, copra, banana (Poovan, Karpuravalli, Nendran), tomato, brinjal, small onion, cotton, chilli and coconut. The information centre has provided 17 market advisories on sowing and 14 pre-harvest advisories during 2022-23.

6.2.4 Research Publications

Last year (2022-23), more than 625 research articles from Tamil Nadu Agricultural University have been published in internationally recognized research journals (Scopus Index Journals) with National Academy of Agricultural Sciences ranking index above six.

6.2.5 Newly released crop varieties

23 new varieties of agricultural, horticultural and forest crops from Tamil Nadu Agricultural University have been approved by State Variety Release Committee and released.

Sl. No	Name of the variety	Duration (Days)	Special Feature
1.	Rice CO 56	130 - 135	Grain yield: 6372 kg/ha
2.	Rice Improved *Kavuni* CO 57	130-135	Grain yield: 4638 kg/ha
3.	Rice ADT 58	125	Grain yield: 6376 kg/ha
4.	Rice ASD 21	120	Grain yield: 6330 kg/ha
5.	Maize Hybrid COH (M) 11	105-110	Grain yield: 6,590 kg/ha
6.	Pearl millet Hybrid COH 10	85-90	Yield :Irrigated3020 kg/ha Rainfed 2050 kg/ha
7.	Sorghum K 13	95-100	Yield :2575 kg /ha, Stover Yield :11.4 t/ ha
8.	Kudiraivali ATL 1	90	Yield: 2123 dry fodder yield :3057 kg / ha
9.	Panivaragu ATL 2	65-70	Seed Yield :2140 kg /ha and dry fodder yield :2793 kg / ha
10.	Greengram CO 9	65-70	Yield: 825 kg/ha
11.	Greengram VBN 6	70-75	Yield: 760 kg/ha
12.	Cowpea VBN 4	70-75	Yield: Irrigated: 1377kg/ha Rainfed:1035 kg/ha

Sl. No	Name of the variety	Duration (Days)	Special Feature
13.	Sunflower hybrid COH 4	90-95	Yield: Irrigated 2182kg/ha Rainfed:1898 kg/ha
14.	Sesame VRI 5	75-80	Yield: 795 kg/ha
15.	Sugarcane Co 18009 (Punnakai)	356	Yield: 160.39 t/ha, Sugar Yield: 20.71 t/ ha
16.	Sunhemp ADT 1	120	Yield: 20.8 t/ha
17.	Ridge Gourd MDU 1	120-130	Yield: 18.75 t/ha
18.	Winter Jasmine CO 1	Peranial	Yield: 8.52 t/ ha
19.	Bush Lab lab CO 16	100-120	Yield: 16.5 t/ ha
20.	Silk Cotton MTP 1	4-40 years	Yield:900 – 1500 pods/tree
21.	Red sanders MTP 1	15-18 years	Yield:100 kg heartwood / tree
22.	Casuarina MTP 3	3 years	Yield: 162 t / ha
23.	Khaya MTP 1	5-6 years	Yield: 150 t / ha

6.3 Agricultural Extension

A new ICAR KVK is functioning at the Nilgiris, Ooty under the administrative control of Tamil Nadu Agricultural University.

For seventy extension officials, Online training was provided on 'Researchable issues in

Next Generation (Innovative) Extension Approaches and Methodologies in Technology Transfer'.

A High-Level Delegation from Ethiopia, Africa visited the Tamil Nadu Agricultural University (TNAU), Coimbatore for three days (09.10.2022-11.10.2022). This visit was part of the India-Ethiopia Knowledge exchange on 'Pluralistic Agriculture Extension Systems'.

Doordharsan Kendra, Podhigai Channel under the aegis of people's mass media has documented 63 varieties and technologies of Tamil Nadu Agricultural University.

85 Tamil Nadu Agricultural University scientists were linked to Doordharsan Phone-in-Live Programme "VelanKalam" (every Monday 12.00 to 1.00 P.M.) telecasted by Podhigai Channel of Doordharsan Kendra.

Through 15 Krishi Vigan Kendras (KVK) under Tamil Nadu Agricultural University, 153 On Farm Trials, 314 Front Line Demonstrations and trainings were organized during 2022-2023 for up-skilling of farmers.

Sl. No	Extension Activity	Numbers	Beneficiaries
1.	Trainings	1,878	88,251
2.	Front Line Demonstrations	314	3,188
3.	On Farm Trials	153	995
4.	Demonstrations	2,965	23,125
5.	Field Day	54	1,829
6.	Exhibition	176	1,25,512
7.	Farmers Day	24	10,139
8.	Conferences	16	3,268
9.	Farmers – Scientist Interaction	62	3,726
10.	Farm Advisory Service	1,444	8,714
Total		**7,086**	**2,68,747**

6.3.1 Trainings

A one-month certificate level agricultural training program was conducted for third level field officers of Maldives.

A three-day refresher course was scheduled for 36 nos. of Tamil Nadu Cooperative Marketing

Federation team officers' on 'Latest Developments in Agricultural Technology'.

A five-day Human Resource Development training programme on 'Extension Next: for Transformation of Innovations in Agriculture' was organized for 45 senior and middle level officials in National Institute of Agricultural Extension Management (Management), Hyderabad.

Trainings and exposure visits have been organized for around 5,331 farmers under Agricultural Technology Management Agency (ATMA) in association with Line Departments.

6.3.2 Educational Media Centre (EMC)

The Educational Media Centre of TNAU produced 55 video programmes. During 2022, 82 Video programmes have been uploaded in TNAU TV YouTube Channel to increase the confidence of public. 29.23 lakhs subscribers viewed this page.

6.3.3 TNAU Agritech Portal

The Tamil Nadu Agricultural University's Agritech portal **(http://agritech.tnau.ac.in)** contains more than 12 lakh pages of information related to agriculture and allied sciences both in Tamil and English. This facility is being utilized by 3,653 persons per day and 13.3 lakh persons per year.

6.3.4 Kisan Call Centre (KCC)

It provides service to the farmers through a toll-free number 1800-180-1551. The caller can interact in their local language with the experts. This Centre functions on all working days between 6.00 A.M. and 10.00 P.M. During 2022, technical advices were rendered for 1,30,332 calls.

6.4 Seed Production Programme

During 2022-23, a total quantity of 153.6 tonnes of breeder seeds, 644.7 tonnes of foundation seeds, 179.8 tonnes of certified seeds, 907.4 tonnes of Truthfully Labelled Seeds (TFL) and 22.85 lakh seedlings of various crops were produced and distributed.

6.5 Agri-Business Development

Through this Directorate of Agribusiness Development, Agribusiness Incubation, Technology, hybrid seeds and machinery commercialization, Consultancy services, Venture Capital Schemes, Student Entrepreneurship, Executive Development Programmes, Agri Hub, Institutional Development Programme and Unnat Bharat Abhiyan 2.0 are being undertaken. This Directorate has established six Agribusiness Federations with 266 members and 182 entrepreneurs. In addition, 704 business advisories were also provided.

6.6 TNAU- FPO linkage Initiative

Tamil Nadu Agricultural University implements TNAU-FPO Linkage initiative programme from 2022-23 onwards. The main objective of the programme is to empower Farmers Producers Organisation (FPO) in Tamil Nadu through entrepreneurial skill development, business aspects and policy-oriented research. Under this programme, each university centres will select one FPO for providing technical support, mentoring and capacity building. During

2023-24, the University has planned to link 100 FPOs covering one lakh Farmers.

6.7 Awards

a) During 2021, Indian Council of Agricultural Research conferred 'Sardar Patel Outstanding ICAR Institution (Agricultural University Category)' to Tamil Nadu Agricultural University to attest its outstanding performance in teaching, research and extension activities.

b) Federation of Indian Chambers of Commerce and Industry (FICCI) with Ministry of Education as well as Ministry of Commerce and Industry, Government of India conferred 'University of the Year (more than 30 years) 2021' during 17th FICCI Higher Education Summit 2022.

c) Centre for Agricultural and Rural Development Studies of Tamil Nadu Agricultural University has been bestowed with Professor Ramesh Chandra Agrawal Award of Excellence for its outstanding contributions in the field of Agricultural Economics.

d) The Seed Centre of Tamil Nadu Agricultural University conferred with Chaudhary Devi Lal Outstanding All India Coordinated Research Project Award for most significant contribution towards Agricultural Productivity.

Annexure I

Budget (2022 – 2023)

Sl. No	Particulars	Budget (in Crores)
1.	Cost of Personnel	297.79
2.	Travelling Allowance	0.50
3.	Expenditure for Research	46.56
4.	Pension	192.99
5.	25% of State Share on ICAR Partly Financed Research Scheme	18.80
6.	Minor Repair Work	0.80
7.	Rural Agricultural Work Experience (RAWE) State Share – Balance ICAR	0.13
8.	Fees Concession to Students	0.12
9.	7.5% Reservation for Government School Students	2.68
10.	Settlement of 7 Ex Canteen Workers of TNAU	0.35
Total		**560.72**

Smart Class Room

Hands On Practical Class

Agricultural Inputs Application through Drones

Mechanization in Cotton Cultivation

7. DEPARTMENT OF SEED CERTIFICATION AND ORGANIC CERTIFICATION

Agriculture is the ultimate driving force of the Nation. To increase the food production and to attain self sufficiency, use of quality inputs in agriculture is essential.

Seed plays a vital role among all agricultural inputs. The use of quality certified seeds is essential for higher agricultural productivity in any farming system. In order to make available adequate quantities of quality seeds at right time to the farming community, quality enhancing efforts are being taken up continuously by the Department of Seed Certification and Organic certification. Based on the agriculture budget announcement 2022-23, the headquarters has been shifted from Coimbatore to Chennai and starts functioning from 1.6.2022 onwards.

The Department of Seed Certification and Organic Certification is implementing the various displicines like Seed Certification, Seed Quality Control and inspection, Seed Testing, Training and Organic certification.

7.1 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 crops and varieties as prescribed under the Indian Minimum Seed Certification Standards (IMSCS).

Breeder seeds are being supplied to the Government and private seed producers by inspecting Breeder seed field standards at Agricultural Research stations through the Breeder seed inspection team. During 2022-23, breeder seed farm was inspected by this team for the production of 147 MT breeder seed.

In the field of seed certification, supply of quality certified seeds to farmers is ensured through seed farms organized by Government and private seed producers through a series of activities such as seed source screening, field inspection, seed processing, seed standard testing and tagging of certified seeds.

Under seed certification programme, an area of 73,948 Ha seed farms has been registered

and total quantity of 1,34,648 metric tonnes of seeds have been certified during 2022-2023.

TABLE 7.1: 2022-23 - SEED FARM AREA REGISTERED AND TAGGED QUANTITY UNDER SEED CERTIFICATION

S.No	Head Quarters of Assistant Director of Seed Certification	Seed farm area (in ha)	Tagged quantity (in MT)
1	Coimbatore	1,330	1,330
2	Cuddalore	4,383	1,838
3	Dharmapuri	1,536	434
4	Dindigul	2,453	3,138
5	Erode	3,398	1,590
6	Kanchipuram	1,644	2,684
7	Kanyakumari	196	186
8	Karur	698	328
9	Krishnagiri	1,302	504
10	Madurai	2,366	5,820
11	Nagapattinam	3,880	3,135
12	Namakkal	1,733	2,988
13	Perambalur	1,298	2,067
14	Pudukkottai	1,300	1,305
15	Ramnad	742	575

S.No	Head Quarters of Assistant Director of Seed Certification	Seed farm area (in ha)	Tagged quantity (in MT)
16	Salem	2,237	919
17	Sivaganga	476	446
18	Thanjavur	7,199	2,839
19	Theni	886	2,706
20	Thiruvallur	1,330	946
21	Thiruvarur	6,820	2,585
22	Thoothukudi	1,610	879
23	Tirunelveli	3,039	6,270
24	Tiruppur	9,159	73,927
25	Tiruvannamalai	3,757	2,691
26	Trichy	1,224	3,062
27	Vellore	1,927	851
28	Villupuram	4,758	7,921
29	Virudhunagar	1,267	686
	Total	**73,948**	**1,34,648**

During 2023-24, it is targeted to register 93,000 Ha of seed farms and to certify 1,30,000 metric tonnes of quality seeds.

7.2 Seed Quality Control – Seed Inspection:

To regulate the quality of seeds distributed to the farmers in the State, various seed legislations viz., the Seeds Act 1966, the Seeds Rules 1968, the Seeds (Control) Order 1983, the Environment (Protection) Act 1986 and Essential Commodities Act 1955 are being enforced by Seed Inspection wing of Department of Seed Certification Department and Organic Certification.

This department has issued Seed Selling Licenses to 12,881 seed sale outlets. These seed selling points are being inspected by the concerned Seed Inspectors and departmental / legal actions are initiated against defaulters who stock the sub-standard seed lots.

TABLE 7.2: DISTRICTWISE LICENCED SEED SELLERS (Numbers)

S. NO	District	Govt	Quasi Govt	Private	Total
1	Kanchipuram	27	1	86	**114**
2	Chengalpet	26	3	158	**187**
3	Chennai	7	1	49	**57**
4	Coimbatore	46	94	360	**500**
5	The Nilgiris	23	16	119	**158**

S. NO	District	Govt	Quasi Govt	Private	Total
6	Cuddalore	49	14	421	**484**
7	Dharmapuri	26	2	344	**372**
8	Dindigul	44	6	501	**551**
9	Erode	71	36	638	**745**
10	Villupuram	32	6	351	**389**
11	Kallakurichi	28	14	338	**380**
12	Kanyakumari	33	16	64	**113**
13	Karur	19	55	104	**178**
14	Krishnagiri	31	5	581	**617**
15	Madurai	48	12	266	**326**
16	Nagapattinam	28	4	181	**213**
17	Mayiladuthurai	27	3	174	**204**
18	Namakkal	52	109	163	**324**
19	Perambalur	11	1	198	**210**
20	Ariyalur	21	8	300	**329**
21	Pudukkottai	44	31	372	**447**
22	Ramanathapuram	33	29	160	**222**
23	Salem	67	114	646	**827**
24	Sivagangai	41	3	200	**244**
25	Tirunelveli	41	26	200	**267**
26	Tenkasi	40	46	304	**390**
27	Thanjavur	78	24	488	**590**
28	Theni	32	3	244	**279**
29	Tiruvallur	63	55	137	**255**
30	Tiruvarur	53	11	303	**367**
31	Thoothukudi	38	132	236	**406**
32	Tiruppur	29	39	248	**348**
33	Tiruvannamalai	68	66	440	**574**

S. NO	District	Govt	Quasi Govt	Private	Total
34	Trichy	49	8	362	**419**
35	Vellore	20	1	81	**102**
36	Ranipet	25	4	115	**144**
37	Tirupathur	24	3	126	**153**
38	Virudhunagar	38	114	244	**396**
	Total	**1,432**	**1,115**	**10,302**	**12,881**

During 2022-2023, the Seed Inspectors have carried out 75,136 seed selling point inspections and during the inspection, 55,353 Official seed samples were drawn and 54,758 samples were analysed. Further, 27,862 Service samples were sent by farmers and private seed companies in which 27,762 samples were analysed, totally 82,520 official and service samples were analysed to ensure the seed quality through Seed Testing Laboratories during this period. Based on the seed testing reports, 2,494 samples were identified as sub standard, of which department action was taken for 1,516 samples worth Rs.346 lakh with stop sale order for 459 Metric tonnes and legal action has been initiated for 174 samples. Also, 2,165 Metric tonnes of seeds, worth Rs.1807 lakh have been issued stop sale order for sub standard and other violations.

During 2023-2024, it is targeted to inspect 75,000 Seed Selling Points and to draw 60,000 Official Seed samples for quality check.

7.3 Seed Testing

Seed Testing activities are carried out by notified Seed Testing Laboratories (STL) to analyze and ensure various seed standards, as per the Indian Minimum Seed Certification Standards (IMSCS).

At present, there are 34 notified Seed Testing Laboratories in our State. Three types of samples viz., the certified seed samples received from the seed certification wing, the official samples received from the Seed Quality Control wing and the service samples sent by the farmers, seed dealers and seed producers are tested in the notified Seed Testing Laboratories.

Table : 7.3 Samples analyzed in 2022-23:

S.No	Categories of Samples	Target (Nos)	Achievement (Nos)
1	Certified Sample	26,000	35,066
2	Official Sample	54,500	54,758
3	Service Sample	26,500	27,762
	Total	**1,07,000**	**1,17,586**

It is proposed to analyze 1,15,000 seed samples during 2023-24.

A State Seed Testing Laboratory (Referral Lab) in which referral test for Germination of seed samples drawn from other notified STLs is done. During 2022-23, 1,800 seed samples have been tested and it is proposed to analyze 1,900 samples during 2023-24.

Detection of Bt toxin for cotton is done in Bt laboratory. The seed samples for Bt test are sent by Seed Inspectors.During 2022-23, Bt test was conducted for 2282 samples and it is proposed to analyze 2300 samples during 2023-24.

7.3.1 International Seed Testing Association (ISTA) accreditated Seed Testing Laboratory:

Coimbatore Seed Testing Laboratory got accreditation in 2014 by International Seed Testing Association (ISTA), Switzerland. This is the first public sector laboratory in India that secured ISTA accreditation. The laboratory is accredited for the scope of sampling from the seed lot to analysis Physical purity, Other Seeds Determination (OSD), Germination and moisture for Cereals, Pulses and Vegetable crops seeds.

This laboratory is authorized to issue Orange International Seed Lot Certificate (OIC) and Blue International Seed Sample Certificate (BIC) to the Seed Exporters to ensure Seed quality to International Standards. Since ISTA accreditation, blue International seed sample certificate has been issued to exporters for 91 seed samples. During 2022-23, Blue International seed sample certificate has been issued to the exporters for 12 seed samples and 15 seed samples have been targeted for Blue International seed sample certification for 2023-24.

7.3.2. State DNA Finger Printing Laboratory

In order to ensure timely supply of quality seeds to farmers, DNA Finger Printing Laboratory has been established in Coimbatore in 2007 for detection of genetic purity of Paddy crop variety within a short span of time (4-5 days). This DNA Finger Printing Laboratory is first of its kind in the country and has been notified as "**State DNA Finger Printing Laboratory**" in 2014 by Government of Tamil Nadu. This laboratory has a potential to analysis the genetic purity of 27 notified paddy varieties which are prominently cultivated in the State by using Simple Sequence

Repeat (SSR) markers. During 2022-23, DNA Fingerprinting test was conducted for 205 paddy seed samples and it is proposed to analyze 250 samples during 2023-24.

7.3.3. Grow Out test Farm:

Grow Out Test farm was established in 1997 at Kannampalayam by the Government of Tamil Nadu, to test the genetic purity of crop varieties and hybrids. The Genetic Purity of a given seed lot is verified in accordance with the Indian Minimum Seed Certification Standards (IMSCS). The plants are examined for distinguished morphological characters specific to the particular variety or hybrid and screened for Genetic Purity. The Grow Out test farm receive official seed samples and certified seed samples from all districts of Tamil Nadu.

During 2022-2023, Genetic Purity test was done for 2700 seed samples and it is targeted to test the Genetic Purity for 3000 seed samples during 2023-24.

7.4 Training:

To promote quality seed production and distribution, various training programmes are

organized by the training wing of this Department to Department Officials, Seed Growers, Seed Producers and Seed Dealers. During 2022-23, training was imparted 47,826 persons and it is targeted to impart training to 50,000 persons in 2023-24.

7.5 Organic Certification

Tamil Nadu Organic Certification Department is a certification body established by the Government of Tamil Nadu in 2007. The Tamil Nadu Organic Certification Department has been accredited by Agricultural and Processed Food Export Development Authority (APEDA) for certifying the System of Organic Crop Production, in accordance with Marketing aspects.

Tamil Nadu Organic Certification Department is functioning based on the principles of National Programme for Organic Production (NPOP) under the Ministry of Commerce & Industry. The certification issued by Tamil Nadu Organic Certification Department is equivalent to the standards of European Union and Swiss Organic Farming Ordinance. The National Programme on Organic Production (NPOP) system

of certification enables the organic products for marketing within India and also to other Countries. The scope of Organic Certification is valid for a period of one year. The Organic regulations ensure the avoidance of synthetic chemical fertilizers, pesticides, weedicides and genetic engineering.

7.5.1 Participatory Guarantee System:

As per the approval given by the National Center for Organic Farming and Natural Farming under the Union Ministry of Agriculture and Farmers' Welfare, group registration is being carried out for issue of Scope certificates to individual (farmers) and groups under the Participatory Guarantee Scheme from 2022-23. It functions based on the Standards of Participatory Guarantee System. The Certified Organic Farmers are empowered to sell their Organic Products in Domestic Market.

During 2022-23, an area of 86,285 acres has been registered under Organic Certification. The Organic enrollment in Tamil Nadu Organic Certification Department is extended to 46,127 operators which includes 2,825 individual

Farmers, 583 Farmer Groups with 43,302 farmers, 24 Organic Processors and 22 Organic traders throughout the State during 2022-2023. Tamil Nadu Organic Certification Department is the only certification body to register the highest number of individual operators at National level.

Table: 7.4 Present status of Organic Certification

S.No	Status	No. of Farmers	No. of Groups
1.	Ist Year Conversion	1,991	576 (42,272 farmers)
2.	IInd Year Conversion	480	4 (678 farmers)
3.	Organic	354	3 (352 farmers)

Tamil Nadu Organic Certification Department also issued certificate for the Organic produce for export purpose to the tune of 223.85 MT amounting Rs.166 lakh by issuance of Transaction Certificate to the Processors and Traders. The major products certified for export are Coconut, Virgin Coconut Oil, Coffee, Moringa, Tea, Cocoa, Turmeric and Jaggery.

The Pesticide Residue Analysis was made on the Organic products of selected 265 registered Organic operators based on the Non conformities recorded during the field inspection made in their farms. Based on the analysis, 262 Farmers declared fully Organic and three farmers were downgraded to first year conversion status.

Table 7.5. Year wise details, area registered under National Programme on Organic Production (NPOP)

(in acres)

S. No	District	2018-19	2019-20	2020-21	2021-22	2022-23
1	Ariyalur	51.49	5.10	829.46	811.00	656.00
2	Coimbatore	1526.21	1905.95	3905.00	3645.00	3633.00
3	Chengalpattu	0	0	1357.16	1266.00	1301.20
4	Cudddalore	2739.86	2251.05	1799.00	1755.02	1013.60
5	Dharmapuri	1468.00	1359.45	7687.00	7384.19	3526.00
6	Dindigul	1209.97	1924.97	3585.00	9518.70	7556.62
7	Erode	1170.17	1136.02	3982.02	3425.00	3575.50
8	Kallakurichi	0	0	2307.12	2375.00	192.81
9	Kancheepuram	2063.81	1164.34	894.01	1752.00	1070.68
10	Kanyakumari	10.48	1.79	403.00	796.12	3562.53
11	Karur	1503.77	1371.30	1323.51	2044.92	2168.28

S. No	District	2018-19	2019-20	2020-21	2021-22	2022-23
12	Krishnagiri	1101.51	48.42	7063.94	8082.00	2629.11
13	Madurai	750.54	384.52	4193.55	3841.50	1954.72
14	Mayiladuthurai	0	0	514.12	1436.10	759.24
15	Nagapattinam	2650.32	113.00	2769.31	1004.56	1083.63
16	Namakkal	132.52	980.00	1640.00	5275.46	577.64
17	Perambalur	61.35	53.15	805.56	1372.8	1062.69
18	Pudukottai	104.02	118.87	3120.68	3796.62	1951.68
19	Ramnad	3382.25	3374.16	1850.66	2389.00	3235.07
20	Ranipet	0	0	1531.00	1705.00	2367.97
21	Salem	117.25	160.78	3701.00	9043.66	7443.32
22	Sivagangai	428.42	292.76	1146.00	1650.00	1671.57
23	Thanjavur	531.30	205.78	785.38	1963.06	1647.98
24	Nilgiris	26.85	5455.21	6447.00	6428.00	1606.26
25	Theni	221.14	180.80	3973.00	3804.51	3787.35
26	Tenkasi	0	0	975.00	1483.29	1221.95
27	Thirupathur	0	0	2144.00	2065.38	1498.05
28	Thiruvallur	287.03	328.54	1473.21	1484.00	1676.94
29	Tiruvanamalai	2248.01	404.54	3424.00	5810.56	4431.14
30	Thoothukudi	124.76	129.82	472.55	810.54	747.46
31	Tirunelveli	722.94	761.38	2734.00	3201.61	3399.75
32	Tiruppur	1692.56	897.07	4360.00	4124.00	4125.00

S. No	District	2018-19	2019-20	2020-21	2021-22	2022-23
33	Tiruvarur	245.34	75.98	561.19	829.02	1061.60
34	Trichy	127.09	201.34	1568.14	1614.72	1574.34
35	Vellore	1178.07	1201.73	2221.84	2339.06	1785.24
36	Villupuram	2517.28	1656.605	3120.00	2722.60	2415.16
37	Virudhunagar	1292.93	370.24	2667	2546.00	2314.51
TOTAL		31687.24	28514.69	93334.44	115596.51	86285.58

Table: 7.6 Details of Area Registered under Participatory Guarantee System in 2022-23

Sl. No	District	No. of Groups	No. of Farmers	Area Registered (In Acre)
1	Coimbatore	2	250	1075.1
2	Dharmapuri	15	193	2181.8
3	Dindigul	5	86	2781.9
4	Nagapattinam	3	15	47.77
5	Pudukottai	4	80	213.78
6	Theni	2	63	196.74
7	Thiruvallur	3	15	36.433
8	Tiruppur	5	176	934.1
Total		**39**	**878**	**7,545.18**

It is proposed to register an area of 1,25,000 acres under Organic Certification during 2023-24 both under National Programme on Organic Production and Participatory Guarantee System.

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

Exclusive software namely SPECS (Seed Production, Enforcement and Certification System) has been developed to make certification process online, simplify and quicken the certification process. It links all the activities of the certification department to ensure better monitoring and more transparency in the system.

It is pertinent to note that this software is the first of its kind among Indian Certification Agencies.

7.7 STAFF STRENGTH

The Department of Seed Certification and Organic Certification is functioning distinctly with the staff strength of 345 technical and 500 ministerial staff.

Table 7.7: Details of sanctioned Staff Strength

Name of the post	Sanctioned Strength
A. Details of Technical Staff	**345**
Director of Seed Certification & Organic Certification	1
Joint Director of Seed Certification& Organic Certification	1
Joint Director of Seed Inspection	1
Deputy Director of Seed Inspection	15
Quality Manager	1
Assistant Director of Seed Certification (Seed Analyst)	1
Assistant Director of Seed Certification and Organic Certification	29
Evaluator (Organic Certification)	1
Seed Testing Officer	7
Seed Certification Officer	119

Name of the post	Sanctioned Strength
Seed Certification Officer & Organic Certification Inspector	26
Agricultural Officer	63
Seed Inspector	70
Organic Certification Inspector	10
B. Ministerial Staff	**500**
Total Staff Strength	**845**

8. Tamil Nadu Watershed Development Agency (TAWDEVA)

8.1. The Tamil Nadu Watershed Development Agency was established in the year 2002 and registered under the Tamil Nadu Societies Registration Act, 1975 with the preliminary objective of developing wastelands through participatory watershed development. Subsequently, a State Level Nodal Agency (SLNA) was constituted in TAWDEVA during the year 2009 and 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 brought under its fold.

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. NABARD Assisted Watershed Development Fund (WDF)

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

i. DPR based projects of NADP/RKVY
ii. Rainfed Area Development (RAD)
iii. Soil Health and Fertility (SHF)
iv. Paramparagat Krishi Vikas Yojana (PKVY)
v. Agro Forestry
vi. Crop Diversification Programme (CDP)

2. 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)

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

Government of India sanctioned 27 Projects in Perambalur, Thoothukudi, Dindigul, Krishnagiri, Ramnad, Dharmapuri and Virudhunagar districts to cover an area of 1.30 lakh ha. in 275 Micro Watersheds at an outlay of Rs.286.73 crore from the year 2021-22 to 2025-26 for development of rainfed and degraded lands with the following objectives.

i. **Economy –** Improving income of village community in the watersheds 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 and resources developed and involving them in various community institution.

8.2.1 Institutional set up for Project Implementation:

TAWDEVA is the State Level Nodal Agency (SLNA). Six District Watershed Development Agencies (DWDA's) have been established under the Chairmanship of the concerned District Collectors with technical experts from Agriculture and Agricultural Engineering Departments on deputation. In each project, to carry out field level works, Watershed Development Team's

(WDT) with members comprising an expert in Agronomy, Agricultural Engineering and Sociology (at district level alone) have been formed. Watershed Committee's are formed at Watershed Level as a sub-committee of Grama sabha to implement the various work components of the projects.

8.2.2 Project Activities:

The project activities are to be taken up in three phases over a period of five years. The project is now in Phase II under which the following components are implemented.

Sl. No	Component	Activities
1	Natural Resources Management	Farm Ponds, Percolation Ponds, Minor, Medium and Major Checkdams, Village Ponds, Desilting of Oorani, Desilting of Supply Channels, Gabion Check Dams, Recharge Shafts, Rejuvenation of Wells and Sunken Ponds.

Sl. No	Component	Activities
2	Farm Production System	Horticulture Plantation, Agro forestry, Floriculture, Fodder Cultivation, Crop Demonstrations, Vermicompost, Supply of Power Sprayers, Hand Sprayers, Battery Sprayers, Tarpaulin, Chaff Cutter, Fish culture in farm ponds, Distribution of goats/ sheep, bee hives and Poultry rearing.
3	Livelihood Supporting System	Readymade cloth and Tailoring, Dairy Farming, Backyard poultry farm, Food production and Bakery, Petty Shop, Charcoal making, Catering and event management, Hand craft production, Goat rearing, Distribution of goats/ sheep, Supply of tailoring machines, Iron Box, bee hives, Idly/ Dosa Batter Grinding Mill and Revolving Fund to SHG.
4	Institution Capacity Building	Training

During 2022-2023 an amount of Rs.71.40 crore was sanctioned and works are under taken. During 2023-2024, this scheme will be implemented at a total outlay of Rs.78.50 crore.

8.3 Watershed Development Fund (WDF) assisted by NABARD.

This scheme has been under implementation from 2004 onwards through Non-Governmental Organisations approved by NABARD. These watershed Projects are sanctioned by the State Level Steering Committee of NABARD. After the Capacity Building Phase, the projects are handed over to TAWDEVA for the Full Implementation Phase. The fund is equally shared by State Government and NABARD.

The major Components of the scheme include physical area treatment like Contour trenches, Farm ponds, Percolation ponds, Sunken ponds, Agro-Forestry, Horticulture, Drainage line treatment like Desilting of ponds, repair of supply channels, Livelihood Support for landless women and Training

8.3.1. Ongoing WDF Projects

Sl. No	District	Project	Block
1	Madurai	1	Kesampatti

Sl. No	District	Project	Block
2	Tiruchirapalli	1	Ayyampalayam
3	Tiruvallur	1	Koppur
4	Pudukottai	2	Odukkur, Mambatti
5	Cuddalore	1	Karaikadu
6	Tiruvannamalai	1	Chetpet
7	Sivangangai	1	Idayamelur
	Total	**8**	

An amount of Rs.3.11 crore has so far been released and utilized.

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 capacity of the community to adapt to climate change.

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 etc., Livelihood Support Activities and Micro Enterprises like Vermicompost units and Backyard Poultry are provided to the farmers. As add on activities towards Climate Proofing, Support for alternative crops and climate resilient varieties, Afforestration in Public and on Private Lands, Solar Pumps, Bio Compost Units, Bio fuel units, Maintenance of Weather Monitoring Stations etc. are provided. Out of an amount of Rs.11.52 crore sanctioned, expenditure of Rs.10.80 crore has been made till 2022-23.

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 Farm ponds / Check dams / Percolation Ponds / Others / Existing Structures renovated.

During the year 2023-24, it is proposed to create 4,812 nos. of water harvesting structures and desiltation of 3,06,347 rmt of supply channels in seven districts under WDC - PMKSY 2.0.

M.R.K. Panneerselvam

Minister for Agriculture - Farmers Welfare.

DEMAND 05 – AGRICULTURE - FARMERS WELFARE DEPARTMENT

ESTIMATE OF THE AMOUNTS REQUIRED FOR EXPENDITURE IN 2023 – 2024

BUDGET ESTIMATE 2023 – 2024

(Rs. in thousands)

	Revenue	Capital	Loan	Total
DEMAND FOR GRANT - VOTED	14,124,43,40	129,00,98	1,00,17	14,254,44,55
APPROPRIATION - Charged	1,03	---	---	1,03

Net Expenditure

(Rs. In thousands)

HEAD OF ACCOUNT		2021 -2022	2022 – 2023	2022 – 2023	2023-2024
		Accounts	Budget Estimate	Revised Estimate	Budget Estimate
2059	PUBLIC WORKS	2,18,36	2,82,50	2,82,50	5,15,13
2401	CROP HUSBANDRY	10,084,95,07	11,951,17,39	13,922,96,93	13,021,51,76
2402	SOIL AND WATER CONSERVATION	75,00,15	147,51,06	95,14,97	107,58,34
2408	FOOD STORAGE AND WAREHOUSING	57,71,16	5,00,03	100,53,33	13
2415	AGRICULTURAL RESEARCH AND EDUCATION	540,28,71	486,74,82	543,32,31	625,53,89
2435	OTHER AGRICULTURAL PROGRAMMES	265,95,29	246,83,18	260,75,01	264,84,81
2501	SPECIAL PROGRAMMES FOR RURAL DEVELOPMENT	17,92,05	-------	125,44,30	71,68,16
2551	HILL AREAS	66,91	82,96	75,72	92,42

HEAD OF ACCOUNT		2021 -2022	2022 – 2023	2022 – 2023	2023-2024
		Accounts	Budget Estimate	Revised Estimate	Budget Estimate
2702	MINOR IRRIGATION	6,55,38	8,27,39	6,34,54	7,03,73
2705	COMMAND AREA DEVELOPMENT	---	------	1	1
2810	NEW AND RENEWABLE ENERGY	-----	1	1	1
3054	ROADS AND BRIDGES	------	3,74,68	15,20	------
3451	SECRETARIAT – ECONOMIC SERVICES	13,30,25	16,37,10	17,06,95	18,30,45
4401	CAPITAL OUTLAY ON CROP HUSBANDRY	84,60,16	165,94,74	160,29,02	60,56,92
4402	CAPITAL OUTLAY ON SOIL AND WATER CONSERVATION	12,87,69	24,49,80	11,73,81	24,01,93
4408	CAPITAL OUTLAY ON FOOD STORAGE AND WARE HOUSING	------	------	2,55,00	-------
4415	CAPTIAL OUTLAY ON AGRICULTURAL RESEARCH AND EDUCATION	------	-----	------	10,00,00
4435	CAPITAL OUTLAY ON OTHER AGRICULTURAL PROGRAMMES	155,84,23	84,02,54	84,15,11	34,42,13
6401	LOANS FOR CROP HUSBANDRY	---	1	130,00,00	1
6425	LOANS FOR COOPERATION	---	16	252,90,64	16
7610	LOANS TO GOVERNMENT SERVANTS ETC.,	75,68	75,00	1,82,02	1,00,00

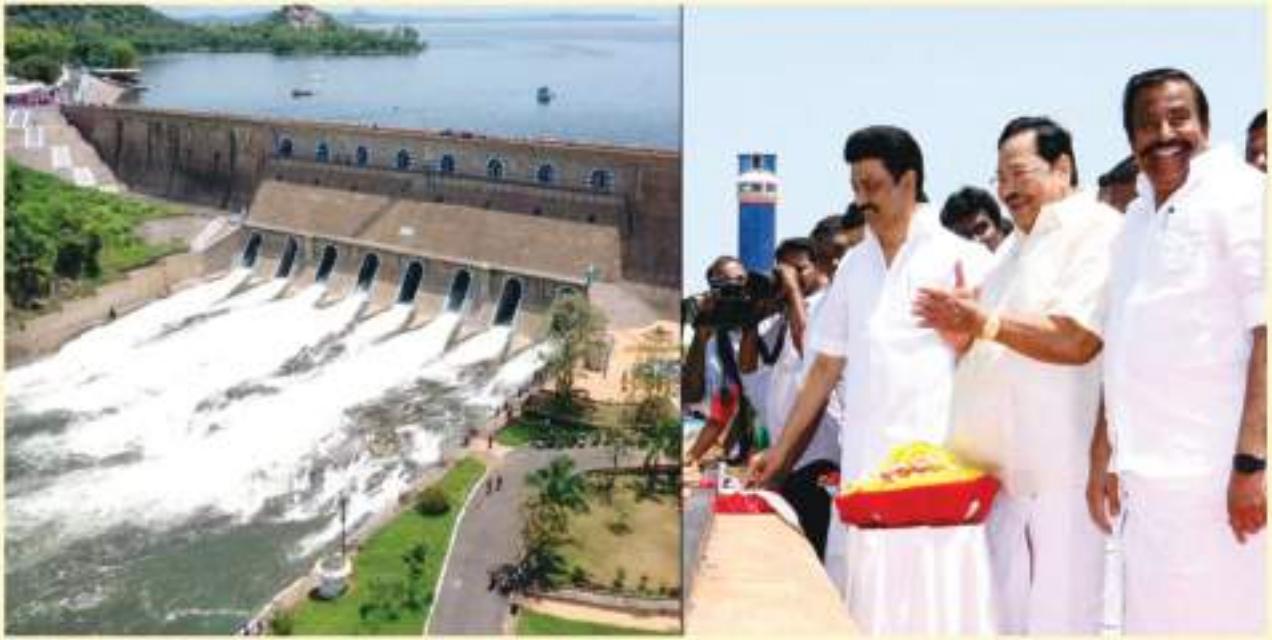
DEMAND 05 AGRICULTURE - FARMERS WELFARE DEPARTMENT

BUDGET ESTIMATE 2023-2024

Rupees in Thousands (Gross)

Sl. No	Head of Department			Revenue	Capital	Loan	Total
1.	005 01	Agriculture - Farmers Welfare Department - Secretariat	Voted	18,30,45	-----	1,00,00	19,30,45
2.	005 02	Directorate of Agriculture	Charged	2	-----	------	2
			Voted	10,716,93,08	55,10,03	1	10,772,03,12
3.	005 03	Directorate of Agricultural Marketing and Agri Business	Voted	243,29,33	34,42,13	-----	277,71,46
4.	005 04	Directorate of Seed Certification	Voted	60,32,53	------	-----	60,32,53
5.	005 05	Directorate of Horticulture and Plantation Crops	Voted	1,389,79,54	5,46,89	-----	1,395,26,43
6.	005 06	Agricultural Engineering Department	Charged	1,01	----	-----	1,01
			Voted	831,50,81	24,01,93	------	855,52,74
7.	005 07	Agro Engineering Services	Voted	59,02	-----	-----	59,02
8.	005 08	Tamil Nadu Agricultural University, Coimbatore	Voted	606,68,93	10,00,00	----	616,68,93
9.	005 09	Directorate of Organic Certification	Voted	1,66,59	-----	------	1,66,59
10.	005 10	Directorate of Sugar	Voted	255,33,12	------	16	255,33,28
Total			Charged	**1,03**	**----**	**-----**	**1,03**
			Voted	**14,124,43,40**	**129,00,98**	**1,00,17**	**14,254,44,55**

The Hon'ble Minister for Agriculture – Farmers Welfare got the blessings from the Hon'ble Chief Minister of Tamil Nadu before presenting Third Agriculture Budget on 21.03.2023 for the year 2023-2024.



The Hon'ble Chief Minister of Tamil Nadu Thiru. M.K. Stalin opened the Mettur Dam on 24.05.2022 for the first time in the history of Independent India in May for cultivation of Kuruvai paddy in the Cauvery delta region.

The Hon'ble Chief Minister of Tamil Nadu Thiru. M.K.Stalin visited the Paddy Machine Planting of Kuruvai Cultivation at Nalladai village, Mayiladuthurai district on 31.5.2022.

The Hon'ble Chief Minister of Tamil Nadu Thiru. M.K. Stalin distributed the Coconut seedlings to the beneficiaries of Kalaignarin All Village Integrated Agriculture Development Programme in Kallar Village at Nagapattinam District on 31.05.2022.


Ragi – Krishnagiri
Cumbu- Kallakurichi
Thenai - Villuppuram
Kudhiraivali – Ramanathapuram
Samai - Tiruvannamalai

Blackgram -Thoothukudi

Redgram – Krishnagiri

Pulses as Bundcrop- Thiruvarur

Greengram – Namakkal

The Hon'ble Minister of Agriculture – Farmers Welfare Thiru. M.R.K Panneerselvam and the Hon'ble Minister of Food and Civil Supplies, Consumer Protection and Price Control, Thiru R. Sakkarapani called upon the Hon'ble Chief Minister of Tamil Nadu Thiru. M.K. Stalin at Secretariat on 06.02.2023 to submit the crop damage report due to unseasonal rainfall in delta districts.

The Chief Secretary Dr. V. Iraianbu,I.A.S discussed with all Departmental Secretaries on 21.02.2023 for preparation of the Agriculture Budget- 2023-2024.

The Hon'ble Minister of Agriculture – Farmers Welfare, Thiru. M.R.K. Panneerselvam presented Third Agriculture Budget for 2023-2024 in the Tamil Nadu Legislative Assembly on 21.3.2023.

Groundnut – Cuddalore

Sesame -Salem

Sunflower - Thoothukudi

Soybean -Thanjavur

Cotton - Perambalur

Onion - Tiruppur

Tomato - Krishnagiri

Brinjal - Tirunelveli

Mundu Chilli - Ramanathapuram

Ridge Gourd - Ariyalur

Dragon Fruit - Cuddalore

Pandhal Vegetables – Coimbatore

Grapes – Theni

Multi Crop Thresher - Cuddalore

Onion Detopper - Perambalur

Sugarcane Seedling Planter - Tirunelveli

Solar Powered Pump Set - Theni

KVK Training – Value addition in milk - Erode

KVK Training – Awareness on Vermicompost - Namakkal

The Hon'ble Chief Minister of Tamil Nadu Thiru. M.K. Stalin issued order on 07.12.2022 at the Secretariat for sanctioning the Special Incentive to the tune of Rs.214 Crore @Rs.195/- per tonne to Sugarcane farmers who supplied Sugarcane to the sugar mills.

High Yield , High Sugar Variety

Single Budsetts –Kallakurichi

Transplanting -
Budchip seedlings – Kallakurichi

Production of Tissue Culture seedlings - Kallakurichi

Subsurface Micro Irrigation system - Thanjavur

Mechanical Harvesting in Sugarcane - Kallakurichi

Paddy – Seed Farm Inspection - Thanjavur

Groundnut – Seed Farm Inspection - Erode

Seed Testing Lab - Tiruppur

Seed Testing Lab –Nagapattinam

The Hon'ble Tamil Nadu Chief Minister Thiru. M.K. Stalin inaugurated the buildings constructed on behalf of Agriculture - Farmers Welfare Department, Secretariat at the cost of Rs.15.40 crore on 7.12.2022.

Tomato - Dharmapuri

Bhendi – Dharmapuri

Chilli - Thoothukudi

Banana - Coimbatore

Primary Processing Centres

Watershed Development Agency

Goat Distribution - Virudhunagar

Tailoring Machine Distribution - Dindigul

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