AGRICULTURE AND FARMERS WELFARE DEPARTMENT

POLICY NOTE 2021 - 2022

DEMAND No. 5

Thiru. M.R.K. PANNEERSELVAM

Hon'ble Minister for Agriculture and Farmers Welfare

Policy Note 2021-2022

INDEX

INTRODUCTION

உழுவார் உலகத்தார்க்கு ஆணிஅஃ தாற்றாது
எழுவாரை எல்லாம் பொறுத்து.

– திருக்குறள் (1032)

பல்வேறு தொழில் புரிகின்ற மக்களின் பசி போக்கிடும் தொழிலாக உழவுத்தொழில் இருப்பதால், அதுவே உலகத்தாரைத் தாங்கி நிற்கும் அச்சாணி எனப்படும்.

கலைஞர் மு.கருணாநிதி உரை

* * * * *

Agriculture development is of paramount importance for the overall economic development of a State. There is an urgent need to accelerate development in agriculture to protect the livelihoods of rural farmers along with food security, besides bringing continuous income and achieve sustainable economic development at the state level. Agriculture sector stimulates the industrial sector, thus promotes sustainable economic growth in the State.

The Government of Tamil Nadu is taking appropriate steps to promote sustainable agriculture by promoting organic farming. Our heritage will be preserved by adopting innovative new approaches to rejuvenate traditional paddy varieties and bring them back to cultivation. Farmer welfare schemes will be implemented with emphasis on rainfed and fallow lands to improve their livelihood. Entrepreneurship trainings will be imparted to develop agricultural graduates as job providers rather than job seekers.

The standard of living of the rural people depends on the agricultural development. Various factors limiting the agriculture development are conversion of land for non-agricultural purposes, water scarcity, spatial and temporal variation in seasonal rainfall, drought or flood, pests and diseases, scarcity of farm labour, escalating cost of agricultural inputs, volatile market price at the

time of harvest, post harvest losses, pandemic crisis etc.,

The Government is taking strenuous efforts to make agriculture a profitable venture and to attain Sustainable Development Goals (SDGs) by changing agriculture as a commercial venture by switching over from the present method of cultivation to the adoption of new scientific method of cultivation to increase the productivity manifold, value addition, processing and utilization of marketing opportunities.

Hence, the Agriculture Department has been renamed as **“Agriculture – Farmers’ Welfare Department”** by **Hon'ble Chief Minister of Tamil Nadu** for redesigning the approaches to rejuvenate agriculture and set in a definite path for the welfare of the farmers, besides increasing the area, production and productivity of agricultural crops with modern agro technological interventions.

Evolution of Agriculture Department

The Department of Agriculture was established in 1882, as per the recommendations of the Indian Famine Commission, 1880. A separate independent Directorate of Agriculture was formed with necessary supporting staff in 1904. Subsequently, in 1905, the Agricultural College was attached to the Department of Agriculture and now functioning as Tamil Nadu Agricultural University.

Tamil Nadu Agriculture at a Glance

Geographically, Tamil Nadu falls in semi dry sub humid climate with a total geographical area of 130.33 Lakh Ha which accounts for four percent of the Nation's geographical area. Tamil Nadu shares six percent of the Nation's population (2011 Census).

According to the 10th Agriculture Census of Government of India, 79.38 Lakh land holders are

operating 59.73 Lakh Hectare of culturable lands in the State. 93% of the total land holdings are marginal (up to one Ha) and small (from one Ha up to two Ha) land holders operating 62% of the total culturable land. Remaining 7% of land holdings are medium and large farmers operating 38% of the total land holdings. The average size of land holding of the country is 1.08 hectare (2.67 acre) but in Tamil Nadu, it is only 0.75 hectare (1.80 acre).

The land use pattern in Tamil Nadu as per the 2019-20 statistical report is given below:

Table: 1.1- Land Use Pattern in Tamil Nadu 2019-20

S. No	Details	Area (Lakh Ha)	% with reference to total Geographical area
1	Forest	21.57	16.55
2	Net Cropped Area (*)	47.38	36.35
3	Area under Misc. Tree crops	2.21	1.70
4	Permanent Pastures	1.08	0.83
5	Current fallow	9.20	7.06
6	Other fallows	19.06	14.62

S. No	Details	Area (Lakh Ha)	% with reference to total Geographical area
7	Culturable Waste land	3.22	2.48
8	Land put to non agricultural use	22.03	16.90
9	Barren and Unculturable land	4.58	3.51
Total Geographical Area		**130.33**	**100.00**
Cropping Intensity (%)		**125.41**	

(*) Difference between Gross Cropped Area (59.42 Lakh Hectare) and Area sown more than once (12.03 Lakh Hectare)
Source: *Department of Economics and Statistics, GoTN.*

The net sown area has reduced considerably from 61.69 Lakh Ha in 1970's to 47.38 Lakh Ha in 2019-20. However, the cropping intensity for the State as a whole had shown marginal increase from 121.53 per cent in 1970's to 125.41 per cent in 2019-20.

The State receives annual average rainfall of around 937.5 mm which is only two third of the National annual average rainfall of 1,200 mm. The State receives 3% of the rainfall during winter (January- February), 13% in summer (March - May), 36% in South - West Monsoon

(June – September) and 48% during North - East Monsoon (October - December).

Table: 1.2-Season wise Rainfall-2020

Sl. No	Season	Rainfall (mm)			% of deviation	
		Normal	2019	2020	Normal	2019
1	Winter (Jan-Feb)	28.0	4.9	10.0	-64	104
2	Summer (March-May)	125.5	50.7	75.8	-40	50
3	South West Monsoon (June-Sept)	336.0	396.7	424.4	26	7
4	North East monsoon (Oct-Dec.)	448.0	454.7	480.3	7	6
	Total	**937.5**	**907.0**	**990.5**	**6**	**9**

(Source: India Meteorological Department)

Tamil Nadu has only 2.5 per cent of the water resources of India. Agriculture is the largest consumer of water in the State using 75 per cent of the State's water resources. The State has 46,540 million cubic meters (MCM) of total water potential including groundwater potential. Out of the total water potential, the total surface water potential in the State is 24,864 MCM. Hence, the Ground water is the only alternative source available for further development in agriculture.

Out of total 1,166 Firkas, 427 Firkas are categorised as Safe, 462 Firkas as Over-Exploited, 79 Firkas as Critical, 163 Firkas as Semi-Critical and 35 Firkas as Saline in Ground water of the State.

Net area irrigated through various water sources in the State (2019-20) is given below:

Table: 1.3- Water Source wise Net Area Irrigated 2019-20

Source	Availability (Nos)	Net Area Irrigated (Lakh Ha.)	% with reference to Net Area Irrigated
Canals	2,238	6.47	24.23
Tanks	41,123	3.51	13.15
Wells and Bore wells	18,75,742	16.69	62.51
Others		0.03	0.11
Total		**26.70**	**100.00**

Source: Department of Economics and Statistics, GoTN.

The canal and tank area irrigated has declined during 2019-20 as compared to 1970s. However, the well and bore well irrigated area has risen. There is an increase in gross area-irrigated to total gross area sown from 46% during 1970-71 to 59% in 2019-20.

Agro Climatic Zones of Tamil Nadu

Based on rainfall distribution, irrigation pattern, soil characteristics, cropping pattern and other physical, ecological and social characteristics, Tamil Nadu State has been classified into seven distinct agro-climatic zones.

Table: 1.4 - Agro Climatic Zones of Tamil Nadu

Sl. No	Agro Climatic Zones	Districts covered	Soil Type	Avg.Rain fall (mm)
1	North Eastern Zone	Kancheepuram, Chengalpattu, Tiruvallur, Cuddalore (Part), Vellore, Ranipet, Tirupattur, Villupuram, Kallakuruchi and Tiruvannamalai	Red sandy loam, clay loam, saline coastal-alluvium	1,105
2	North Western Zone	Dharmapuri, Krishnagiri, Salem and Namakkal (Part)	Non-calcareous red, non-calcareous brown, calcareous black	875
3	Western Zone	Erode, Coimbatore, Tirupur, Theni, Karur (Part), Namakkal (Part), Dindigul, (Part),Perambalur and Ariyalur (Part).	Red loam, black	715

Sl. No	Agro Climatic Zones	Districts covered	Soil Type	Avg.Rain fall (mm)
4	Cauvery Delta Zone	Thanjavur, Nagapattinam, Mayiladuthurai, Tiruvarur and Tiruchirapalli, Karur (part), Ariyalur (Part), Pudukkottai (part) and Cuddalore (part)	Red loam (new delta), alluvium (old delta)	984
5	Southern Zone	Madurai, Pudukkottai (Part), Dindigul(Part) Sivagangai, Ramanathapuram, Virudhunagar, Tirunelveli, Tenkasi and Thoothukudi	Coastal alluvium, black, red sandy soil, deep red soil.	857
6	High Rainfall Zone	Kanyakumari	Saline coastal alluvium, deep red loam.	1,420
7	Hilly Zone	The Nilgiris and Kodaikanal (Dindigul), Chervarayan Hills, Kolli Hills, Patchaimalai, Yelagiri, Yercaud, Javvadhu, Anaimalai and Pothigaimalai	Laterite	2,124

Due to the existence of seven such Climatic Zones, Tamil Nadu is suitable for cultivating different types of crops.

Exclusive Budget for Agriculture

For the first time in the history of Tamil Nadu, an exclusive budget for Agriculture was envisaged by **Hon'ble Chief Minister** with an aim to encourage farming as an enterprising and remunerative activity thereby contributing to the economic development and welfare of farmers in the State.

Consultative meetings were held with farmers, farmers associations, academic experts, exporters, traders, financial institutions and officials of the department who have provided valuable inputs towards arriving at a holistic budget.

Agriculture Budget thus prepared was presented by the **Hon'ble Minister for Agriculture and Farmers' Welfare** on 14.08.2021 on the floor of Assembly opening up a new era in the transformation of Agriculture and Farmers' Welfare in the State.

Kalaignar All Villages Integrated Agricultural Development Programme (KAVIADP)

In order to attain overall agricultural development and self sufficiency in all the villages of Tamil Nadu, a grand project called **"Kalaignar All Villages Integrated Agricultural Development Programme"** will be implemented by integrating the schemes of Department of Agriculture, Horticulture and Plantation crops, Agricultural Engineering, Agricultural Marketing and Agri Business, Revenue and Disaster Management, Co-operation, Food and Consumer Protection, Dairying, Animal Husbandry, Fisheries and Fishermen welfare, Sericulture, Rural Development and Panchayat Raj, Water Resources Department, Tamil Nadu Khadi and Village Industries Board and Electricity Board covering all the 12,524 village panchayats in the next five years in a phased manner.

Agriculture and Farmers Welfare Department is implementing special schemes comprising of

bringing fallow lands into cultivation, creation of water resources, installation of solar power pump sets, adoption of micro-irrigation system, marketing of value-added agricultural produces, creation of social forestry and other farmers welfare department schemes such as increasing milk production by safe guarding the health of livestock by Animal Husbandry Department, issuing crop loan by Co-operative Department, issuance of new patta and transfer of patta by the Revenue Department, desilting of tanks and canals by Rural Development and Panchayat Raj Department for holistic agricultural development at village panchayats.

During 2021-22, this scheme is being implemented in 2,500 Village Panchayats by integrating the schemes of Department of Agriculture and allied sectors with an outlay of **Rs.1245.45 crore** which includes the additional State fund of **Rs.250 crore.**

Agricultural Zonal Committees to ensure Farmers Welfare

Agricultural Zonal Committees will be formed consisting of officials from Departments of Agriculture, Horticulture and Plantation Crops, Agricultural Engineering, Tamil Nadu Agricultural University, Public Works Department, Water Resources Department, Pollution Control Board, Forest Department, Progressive Farmers and Environmental Experts. These committees will provide necessary guidance to protect the livelihood and welfare of farmers in their Agro climatic zones.

High Level Committee for Agriculture at State level

A High Level Committee for Agriculture will be constituted at the State level under the chairmanship of Chief Secretary to review Agriculture related schemes and to suggest solutions for the problems faced by farmers such as market price, crop loss due to natural

calamities, procurement and distribution of inputs, assessment of production of agricultural produce and its expected demand.

This Committee consisting of the Secretaries to Government for the Department of Agriculture and its allied sectors viz., Food and Consumer Protection, Animal Husbandry, Revenue, Rural Development and Panchayat Raj, Water Resources and Sugars shall meet every month to review all the schemes for integrated implementation and continuous monitoring.

1. AGRICULTURE

1.1. Chief Minister's Visionary Plan

The Hon'ble Chief Minister of Tamil Nadu has presented the following three-pronged agricultural visionary plans to achieve sustainable high growth in agriculture over the period of ten years in Tamil Nadu.

a. An additional area of 11.75 lakh hectares will be brought back to cultivation, to increase the existing net cropped area from 60 percent to 75 percent.
b. The present 10 lakh hectares of area cropped more than once will be doubled within next ten years, i.e. 20 lakh hectares.
c. Tamil Nadu will attain one among the top three places in agricultural productivity for food grains, cash crops

such as coconut, cotton, sunflower and sugarcane at National level.

The State Government will take strenuous efforts to protect the farmers' welfare by formulating various policies for achieving vibrant agriculture development in the State.

Augmentation of net cultivated area from 60 percent to 75 percent will be accomplished by suitably bringing fallow lands and culturable waste land into cultivation besides enhancing water resources through formation of farm ponds, percolation ponds, check dams and bore wells wherever possible and judiciously utilizing the water available. Short duration crops such as Millets, Pulses, Oil seeds, Cotton, Vegetables and Fruits will be cultivated and an additional area of 11.75 lakh hectare will be gradually brought into cultivation in the course of 10 years.

Moreover, to increase the area cropped more than once from the existing 10 lakh hectares to

20 lakh hectares in the next ten years, creation of water harvesting structures, formation of micro irrigation clusters, cultivation of short duration varieties viz., Millets, Rice fallow Pulses, Cotton, Oilseeds, Vegetables and Greens will be encouraged.

To achieve the goal of pioneering in productivity of Food grains, Coconut, Sunflower, Sugarcane and Cotton at National level, site-specific agricultural technologies will be adopted.

The Agricultural Extension officials diligently disseminate, distribute and transfer the Government policies, new technologies, multifaceted farmers' welfare centric schemes of Government of Tamil Nadu in time to farmers.

Further, **"Uzhavar Aluvalar Thodarbu Thittam"** (UATT) will be strengthened by emphasizing direct visit of extension officials to the farmers field in all village panchayats for

resolving the field level issues. Modern high tech software namely **'Uzhavan app"** will be upgraded with latest services for improving technical knowhow of agricultural technologies. Awareness will be created among the farmers on the agricultural technologies and Farmers' welfare schemes, through SMS, voice messages, short videos and radios.

Collective action is needed to address the losses in agriculture caused by climate change and natural disasters. The Government supports farmers by providing disaster management techniques, crop insurance, area-based cultivation techniques, alternate crops and other technologies to protect the vulnerable crops from various disasters as well as providing relief

assistance to affected farmers who incurred unforeseen losses due to natural disasters.

There is a need today to popularize organic farming with traditional crop varieties to make hygienic food available to our society. In order to spread organic farming in Tamil Nadu, a novel project called **Organic Farming Development Programme** will be implemented. A separate division will be established for organic farming in Department of Agriculture to ensure easy availability of quality organic inputs by enforcing the quality control measures. Farmers will be sensitized trained on organic certification. In addition, nutritious traditional paddy varieties will be propagated in state seed farms and provided

to farmers. Besides encouraging more youth in agriculture, this scheme will promote the participation of women in agriculture with various farmers' welfare activities by giving incentives and special awards to farmers who adopt innovative technologies and take the lead in crop production.

The Government of Tamil Nadu has implemented various strategies bringing renaissance to attain progressive growth in agriculture and increased income of farmers ensuring food security in the State.

1.2. Area, Production and Productivity

System of Rice Intensification, Direct sowing of Paddy, System of Pulses Intensification, Improved Agronomic practices for Coarse Cereals and Nutricereals, implementation of various State and Central schemes resulted in 113.46 lakh Metric Tonnes (4th Advance Estimate) of Food Grain Production during 2020-21 in Tamil Nadu.

Table: 1.5- Food Grain Production in the past Five years

Crop	Food Grain production (Lakh Metric Tonnes)				
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21 ****
Rice	35.54	66.38	61.32	72.65	72.83
Millets	13.45	35.19	37.07	36.31	35.68
Pulses	3.39	5.56	5.51	6.06	4.94
Total Food Grains	**52.38**	**107.13**	**103.90**	**115.02**	**113.46**
**** As per Fourth Advance Estimate**					

The Government has set a targeted production of 125 Lakh Metric Tonnes of food grains during 2021-22.

To achieve the above target, all crop oriented and farmers welfare schemes will be implemented expeditiously through State Government's concerted strategies with tangible vision such as increasing the area under cultivation, promoting the area cropped more than once for additional cultivation, converting Fallow lands into Fortune lands, improving water resources, practicing efficient use of irrigation water, adopting micro-irrigation, coping with natural calamities**.**

Table: 1.6- Programme for 2021-22

Crop	Area (Lakh Ha)	Production (Lakh MT)	Productivity (Kg/Ha)
Rice	19.00	75.50	3,973
Millets	9.50	42.00	4,421
Pulses	9.00	7.50	833
Total food grains	**37.50**	**125.00**	
Oilseeds	5.40	14.06	2,603
Cotton	1.70	4.30 (*)	430
Sugarcane	1.60	200.00	125 (**)
Total	**46.20**		

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

*(**)*Production in terms of cane; *Productivity (Metric Tonnes/Ha)*

1.3. Crop cultivation

Paddy, Millets, Pulses, Oilseeds, Cotton and Sugarcane are the major agricultural crops predominantly cultivated in Tamil Nadu.

1.3.1. Paddy

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

The State is endowed with all favourable climatic conditions suitable for Paddy cultivation with the normal area of 18.50 Lakh Ha and an average production of 70.72 Lakh MT as a result of special and innovative agriculture technologies. Paddy accounts for about 32% of the gross cropped area and 56% of the total irrigated area of the State. However, about 36% of the paddy

area is cultivated in the delta districts comprising of Thanjavur, Nagapattinam, Mayiladuthurai, Tiruvarur, Trichy, Pudukkottai, Karur, Ariyalur and Cuddalore.

During 2021-22, it is programmed to cover an area of 19 Lakh Hectare under Paddy with rice production of 75.50 Lakh Metric Tonne in Tamil Nadu.

1.3.1.1. Season-wise High Yielding Paddy Varieties

Season specific High Yielding certified Paddy seeds are being distributed to the farmers at appropriate time.

The paddy varieties such as Co-51, ASD-16, ADT (R)-45 for Kar/Kuruvai/Sornavari Season, BPT-5204, CR -1009(Sub1), TKM-13 for Samba/ Thaladi/Pishanam Season and CO-51, ADT-37 and ASD-16 for Navarai /Kodai Season are the leading varieties widely cultivated by farmers.

1.3.1.2 Kuruvai Package Assistance

Kuruvai cultivation is taken up in delta districts of Thanjavur, Thiruvarur, Nagapattinam, Mayiladuthurai and parts of Cuddalore, Trichy and Ariyalur districts in a normal area of 3.23 Lakh acres.

With an aim to ensure increase in area coverage, high production and for the better income and improved livelihood of farmers, Hon'ble Chief Minister has opened the Mettur dam on 12.06.2021 and announced Kuruvai Assistance Package with a financial outlay of Rs.61.09 crore.

Under this package, distribution of paddy seeds, Green manure seeds, fertilizers, agricultural machineries & equipments and formation of farm ponds are being implemented. This scheme will benefit around two lakh farmers in the delta districts. Because of the opening of Mettur Reservoir on 12th June, timely desilting of all channels and proactive stocking of all critical

inputs, the area under Kuruvai paddy has crossed 4.90 lakh acres this year as against the targeted area of 3.50 Lakh acres which is a historical achievement in the last 46 years.

1.3.1.3. High-tech cultivation in Paddy

Suitable high yielding varieties, judicious use of inputs and water through System of Rice Intensification (SRI) technology, machine transplanting, direct sowing techniques are being promoted to increase the rice production.

Direct sowing method of Paddy cultivation has additional benefits such as increased water use efficiency, reduced labour requirement and ensures early maturity than transplanted crop. This technique is to be promoted in an area of 4.50 Lakh Hectare during 2021-22. Further, it is programmed to cover 13 Lakh Hectare under SRI / Machine planting method of Paddy cultivation.

To increase the area, production and productivity of Paddy, subsidy will be extended towards production and distribution of certified seed, distribution of agricultural inputs, demonstrations, paddy drum seeder, pump set and also training to farmers on cropping system.

During 2021-22, an amount of Rs.21.05 crore has been sanctioned under National Agricultural Development Programme and Rs.7.51 crore under National Food Security Mission.

1.3.2. Millets

Millets play a crucial role in nutritional security besides its advantages over other crops with respect to drought and pest resistance. Millets can withstand all climatic conditions and grow well in relatively less fertile soil.

Millets are classified into Coarse cereals - Maize and Nutri Cereals comprising of Cholam, Cumbu,

Ragi and other minor millets such as Kudhiraivali, Varagu, Thenai, Samai and Panivaragu.

Millets are known for their role as food, fodder and poultry feed. Consumption of millets has increased since the importance of this traditional crop is widely realised by the public.

Table: 1.7- Important Millet Growing Districts and varieties in Tamil Nadu

Sl. No	Name of the Crop	Districts	Varieties
1.	Sorghum	Salem, Coimbatore, Trichy, Karur, Tirupur, Namakkal, Dindigul, Virudhunagar, Theni	Co(S)-30, Co(S)-28, K-12, K-11, CSV-20, Co (S)-32
2.	Cumbu (Pearl millet)	Villupuram, Thoothukudi, Madurai, Kallakurichi	CO-10,CO(Cu)-9, Dhansakthi, MPU-480
3.	Ragi (Finger millet)	Dharmapuri, Krishnagiri, Salem	CO-13,CO(Ra)-14, CO-15,Paiyur(Ra)-2, GPU-67,GPU-28, ML-365, KMR301(Gowri)
4.	Maize	Nammakal, Salem, Tiruppur, Erode, Theni, Perambalur, Ariyalur, Dindigul, Virudhunagar, Thoothukudi, Coimbatore, Kallakurichi	CO(H)M-4, CO(H)M-5, CO(H)M-6, NK-6240, Ankur -3034, RIL-009, S-668,

Sl. No	Name of the Crop	Districts	Varieties
5.	Kudiraivali (Barnyard millet)	Madurai, Virudhunagar.	CO-1,K-1,K-2,CO(KV)-2,MDU-1
6.	Varagu (Kodo millet)	Cuddalore, Villupuram,Perambalur, Ariyalur	CO-3, APK-1, Vamban-1, TNAU-86
7.	Samai (Little millet)	Vellore, Tiruvannamalai, Dharmapuri, Krishnagiri	CO(Samai)-4, Paiyur- 2,ATL-1
8.	Tenai (Fox tail millet)	Salem, Cuddalore, Namakkal	CO-6, CO(Te)-7, ATL-1

Table: 1.8- Millets - Area, Production and Productivity at State level 2019-20

S. No	Crop	Area (Lakh Ha.)	Production (Lakh Metric Tonnes)	Productivity (Kg/Ha)
1	Maize	3.336	26.148	7,839
2	Sorghum	4.500	5.198	1,155
3.	Ragi	0.845	2.745	3,247
3	Cumbu	0.675	1.851	2,743
5	Samai	0.139	0.219	1,569
6	Varagu	0.020	0.040	1,975
7	Tenai	0.023	0.011	470
8	Other Millets	0.076	0.104	1,373
	Total	**9.614**	**36.315**	

Normally, Millets are cultivated in an area of 8.66 Lakh Ha with the production of 31.28 Lakh Metric Tonnes in Tamil Nadu.

It is programmed to cover an area of 9.50 Lakh Ha with the production of 42 Lakh Metric Tonnes during 2021-22.

1.3.2.1. Millet Mission-Nutri cereals

National Food Security Mission - Nutri Cereals is implemented in 15 districts namely Coimbatore, Tiruppur, Krishnagiri, Dharmapuri, Trichy, Dindigul, Thoothukudi, Erode, Karur, Madurai, Namakkal, Salem, Villupuram, Kallakurichi and Virudhunagar for increasing the production through area expansion and productivity.

Under this scheme, components such as production and distribution of certified & hybrid seeds, demonstration, Integrated Nutrient Management, Integrated Pest Management, distribution of sprayers, State and District level

workshops, awareness and training programmes will be implemented during 2021-22 with a financial allocation of Rs.12.09 crore.

1.3.2.2. Coarse Cereals (Maize)

National Food Security Mission-Coarse Cereals is implemented in 9 districts namely Salem, Erode, Tiruppur, Perambalur, Dindigul, Thoothukudi, Kallakurichi, Virudhunagar and Cuddalore to increase the production and productivity of Maize.

Under the scheme, cluster demonstration, Distribution of Hybrid seeds, integrated pest and disease management are implemented during 2021-22 with a financial allocation of Rs.2.49 crore.

1.3.3 Pulses

Pulses are rich in protein & dietary fibre and the second important constituent of our diet after cereals. Pulses being a short duration crop play an

important role in crop rotation, mixed cropping, bund cropping and intercropping, increasing soil fertility, thereby generating additional income to the farmers.

Black gram, Green gram, Red gram, Horse gram and Cowpea are the major pulses cultivated in a normal area of 8.34 Lakh ha with a productivity of 630 Kg per ha and production of 5.27 Lakh MT.

Table:1.9 - Area, Production and Productivity of Pulses in Tamil Nadu 2019-20

S. No	Crop	Area (Lakh Ha)	Production (Lakh Metric Tonne)	Productivity (Kg/Ha)
1	Black gram	4.05	3.17	783
2	Green gram	1.72	0.76	444
3	Red gram	0.42	0.53	1273
4	Horse gram	0.79	0.61	776
5	Bengal gram	0.06	0.06	926
6	Other Pulses	1.20	0.92	766
	Total	**8.24**	**6.05**	**735**

Table: 1.10- High yielding Varieties of Pulses in Tamil Nadu

S.No	Crops	Variety Name
1	Redgram	VBN (Rg)3 , BRG 2, LRG 41, Co (Rg)7, CO 8, BRG 4 and BRG 5
2	Blackgram	VBN 5, VBN 6, VBN 7, VBN 8, VBN 9, VBN 10, VBN 11, CO 6, ADT 3, MDU1, KKM 1, ADT 6, ADT 5 & TU 40
3	Greengram	ADT 3, VBN 3, VBN 4, Co (Gg)7 & CO 8 and MH 421
4	Bengal gram	JAKI 9218, NBeg 3, NBeg 47, NBeg 49 and NBeg 119
5	Cow pea	CO (CP) 7 & VBN 3
6	Horse gram	Paiyur1, Paiyur2, GHG 1

It is proposed to cover an area of nine Lakh Ha with the production of 7.50 Lakh Metric Tonnes during 2021-22.

1.3.3.1. Modern Pulses Cultivation Technologies

To increase the productivity and production in pulses, assistance is being provided for production

and distribution of high yielding varieties, cluster demonstrations, Production inputs, rotavators, sprayers, PVC pipes and tarpaulins.

During 2021-22, National Food Security Mission (NFSM)-Pulses is being implemented with a financial allocation of Rs.27.65 crore and Rice Fallow Pulses is being implemented in Delta districts with an outlay of Rs.3.03 crore.

1.3.3.2 National Agricultural Development Programme – Production Improvement Programme in Red gram

During 2021-22, this Scheme is being implemented in 16 major Redgram growing districts with an outlay of Rs.5 crore. A subsidy of Rs. 2,500/- per ha. will be provided to the farmers for the components namely seed distribution, line sowing and DAP foliar spray for an area of 20,000 ha.

1.3.3.3. Augmenting Pulses Production through enhanced subsidy for seeds

A subsidy of Rs. 15 per kg will be given for the production of more than ten year old varieties.

This scheme is implemented during 2021-22 at a allocation of Rs.2.25 crore.

1.3.3.4. Price Support Scheme for Pulses

Government has taken the initiative and started procurement of Pulses in Regulated Markets under Price Support Scheme through National Agricultural Co-operative Marketing Federation (NAFED). The Price Support Scheme is being implemented from the year 2017-18 with a view to ensure Minimum Support Price for Pulses, whenever the Market price falls below the MSP.

A total quantity of 5,545.25 MT of pulses has been procured during 2020-21. It is proposed to procure 61,000 MT of pulses during 2021-22.

1.3.4. Oilseeds

Groundnut, Gingelly, Sunflower & Castor are the major Oilseed crops. Oilseed crops are grown in a normal area of 3.82 Lakh ha with production and productivity of 9.18 Lakh Metric Tonnes and 2,405 Kg per Ha respectively.

It is programmed to cover an area of 5.40 Lakh Ha with the production of 14.06 Lakh Metric Tonnes during 2021-22.

Table: 1.11- Area, Production and Productivity of Oilseeds 2019-20

Sl. No	Crop	Area (Lakh Ha)	Production (Lakh Tonnes)	Productivity (Kg/Ha)
1.	Groundnut	3.466	10.329	2980
2.	Gingelly	0.530	0.365	688
3.	Sunflower	0.042	0.038	901
4.	Castor	0.053	0.016	312
5.	Other Oilseeds	0.003	0.001	214
	Total	**4.094**	**10.749**	**2,625**

Table: 1.12 - Varieties Cultivated in Tamil Nadu under Oilseeds

Sl. No	Crop	Variety
1.	Groundnut	TMV 14, VRI 8, CO(Gn 6),CO 7, VRI (Gn) 6, VRI (Gn) 7, Dharani, TMV 7, TMV 13, VRI2, ICGV 00350, ICGV 91114, Kadiri 6, Kadiri 9, GJG 9, GJG 31, GJG 32
2.	Gingelly	TMV 7, VRI 3,TMV 3, TMV 5, VRI 1, VRI 2, SVPR 1
3.	Sunflower	CO 1, CO 3, CO 4, TNAU SFHy 2, CO(SFV) 5, KBSH 1, DRSF 108, COH 3
4.	Castor	TMV 5, TMV 6, CO 1,YRCH 1, YRCH 2 and YTP1

In order to attain self sufficiency in Oilseeds Production, assistance is being provided for the purchase of breeder seeds, production and distribution of foundation and certified seeds, demonstrations, production inputs, rotavators and sprayers.

During 2021-22, National Food Security Mission (NFSM)-Oilseeds is being implemented in all the districts except Kanyakumari, Chennai and

The Nilgiris, with a financial allocation of Rs.20.83 crore.

Further, Targeting Rice Fallow Area-Oilseeds is being implemented in delta districts with an outlay of Rs.50 lakh.

1.3.4.1. Special Initiatives for Intensification of Castor as pure crop

This Scheme is being implemented during 2021-22 with a Financial allocation of Rs.65 Lakh for 2,500 ha with a subsidy of Rs.2,600 per ha in Salem, Namakkal, Dharmapuri, Krishnagiri, Erode, Trichy, Perambalur, Ariyalur, Theni and Tirupattur districts.

1.3.5. Oil Palm and Tree Borne Oilseeds

With an objective of increasing the edible oil production, the high yielding Oil palm cultivation is taken up in Tamil Nadu. In Tamil Nadu, it is cultivated in an area of 4,500 Hectare. Tree Borne Oilseeds namely Neem and Pungam are very

much ideal for wasteland development and land reclamation.

1.3.5.1. Oil Palm

Under National Food Security Mission - Oil Palm, distribution of planting material, assistance for maintenance up to gestation period and intercropping, distribution of pump set, erection of bore well, distribution of Oil Palm cutter, distribution of Fruit Bunch harvesting equipment and providing Production incentive for the farmers producing more than Eight Metric Tonnes of Fresh Fruit Bunches per Hectare after five years are implemented. In 2021-22, this scheme is implemented under National Food Security Mission - Oil Palm with a financial allocation of Rs.3.50 crore.

1.3.5.2. Tree Borne Oilseeds

In 2021-22, under National Food Security Mission – Tree borne Oilseeds scheme,

components like raising of nurseries, planting of Neem and Pungam tree seedlings in waste lands, maintenance and intercropping in already established plantations are implemented with a financial allocation of Rs.1.08 crore.

1.3.6. Coconut

Coconut is cultivated in an area of 4.39 Lakh Ha with an annual production of 49,474 lakh nuts with a productivity of 11,271 nuts per Ha in Tamil Nadu.

Coconut Development Board assisted schemes are implemented with components, Establishment of Regional Coconut Nurseries, Laying of Demonstration Plots and Replanting and Rejuvenation of Coconut Garden. The Coconut Development Board assisted schemes are implemented in 2021-22 with a financial allocation of Rs.14.71 crore.

Also, in the current year, Special Package for Integrated Nutrient Management in Coconut will be implemented with a financial allocation of Rs.1.50 crore from the State funds. Urea, Super phosphate, Potash along with Bio fertilizers will be distributed to the farmers with full subsidy.

Further, Micro irrigation Scheme is implemented in Coconut in an area of 20,000 Hectare in 2021-22.

1.3.7. Sugarcane:

Sugarcane is one of the important cash crops grown across Tamil Nadu with a normal area of 1.56 Lakh Ha and annual production of 161 Lakh MT.

Improved Cropping System in Sugarcane will be promoted under National Food Security Mission during 2021-22 with a financial outlay of Rs.42 Lakh.

During 2021-22, it has been programmed to provide assistance for additional components to sugarcane farmers who installed drip irrigation to an area of 35,000 Ha in addition to subsidy under drip irrigation Scheme with a financial allocation of Rs.126 crore.

Sugarcane farmers are encouraged to grow High yielding varieties like Co-86032, Co-06030, Co.G-06, Co-09004, Co-11015, and Co.C-13339 to increase the sugarcane productivity and production in Tamil Nadu.

1.3.8. Cotton:

Cotton is an important commercial crop as well as a leading natural fibre crop. Cotton is cultivated normally in 1.62 Lakh Ha with a production of 3.92 Lakh bales and productivity of 411 Kg of lint per hectare in Tamil Nadu.

1.3.8.1. Sustainable Cotton Cultivation Mission

During 2021-22, promotion of Long and Extra Long Staple Cotton Seed Production and Distribution of SVPR-4, SVPR-5, Co-14, Surabhi, Suraj and Co-17 varieties, intercropping in Cotton, Integrated Nutrient, Pest and Disease Management will be implemented under **Sustainable Cotton Cultivation Mission** in an area of 25,000 ha with a financial allocation of Rs.11 crore. Moreover, National Food Security Mission for commercial crops will also be implemented at a financial outlay of Rs.83 Lakh.

1.4. Important Agriculture Schemes

1.4.1 Chief Minister's Dry land Development Mission

"**Chief Minister's Dry land Development Mission",** a special scheme for dry land farmers, is implemented at an outlay of Rs.146.64 crore during 2021-22. Development activities will be carried out in three lakh ha of dry land by forming

3,000 dry land clusters each with 100 ha extent benefiting nearly three lakh dry land farmers in all the districts except Nilgiris, Thiruvarur, Nagappattinam, Mayiladuthurai and Kanyakumari.

Under this scheme, micro watershed management rain water harvesting structures like farm ponds, field bunds will be formed to conserve rain water besides mechanised ploughing which would save the dry land crops from water stress at terminal stage. The farmers would be encouraged to take-up cultivation of highly nutritive millets, pulses, oilseeds and cotton by distributing seeds and inputs with subsidy.

Further, 294 Custom Hiring Centres and 89 Value addition Units will be established in the clusters to reduce the cost of cultivation and fetch additional revenue to the farmers. Planting high value tree saplings in the bunds will also fetch extra income to dry land farmers.

A sum of Rs.2,500 to 4,000 per ha would be saved due to the implementation of the scheme besides, a farmer will get 25 % additional revenue through marketing of value added farm produces.

1.4.2. Special package for bringing Fallow lands into cultivation

During 2021-22, an area of 15,000 ha of fallow lands will be brought into cultivation under National Agriculture Development Programme with a financial allocation of Rs.20.57 crore.

In this scheme, the land preparation activities like bush clearance, removal of debris, levelling, ploughing two times and cultivation of crops are being carried out with an assistance of 50% subsidy to the farmers. Accordingly, an area of 7,000 ha under millets, 6,000 ha under Pulses and 1,500 ha under Gingelly with a subsidy of Rs.13,400 per ha and 500 ha under Groundnut with a subsidy of Rs.22,800 per ha is being implemented.

1.4.3. Palmyra Development Mission

According to the census of Khadi and Village Industries Commission, the State has five crore Palmyra trees. Thoothukudi, Ramnathapuram, Thirunelveli districts have more than 50 % of Palmyra tree population.

As the palmyra population is declining in Tamil Nadu, the Government has taken strenuous steps to protect the existing trees and also to increase the number of palmyra trees. The State Government will issue necessary orders to prevent the cutting of palmyra trees. For cutting of Palmyra trees under unavoidable circumstances, a special permission from the District Collector will be made mandatory.

With this objective, it is programmed to distribute 76 Lakh palmyra seed nuts to farmers with full subsidy covering 30 districts.

Palmyra Development Mission will be implemented with an outlay of Rs.3 crore during 2021-22.

1.4.4. Integrated Farming System (IFS)

Integrated Farming System is a whole farm management system aiming sustainable agriculture. By integrating Agriculture, Animal husbandry and Horticulture activities simultaneously, the farmers will be able to get employment throughout the year, achieve self-sufficiency and generate income round the year. Further, IFS aims at optimal utilization and efficient recycling of available resources within the farm.

The Integrated Farming System is being promoted under two schemes viz., National Agricultural Development Programme and National Mission for Sustainable Agriculture-Rain fed Area Development by the Department of Agriculture. Financial assistance of 50% is being

provided for Crop cultivation, Milch cow/Buffalo, Goats/Sheep, Poultry Birds, Fruit Crop, Fodder crop, Tree seedlings, Apiary units and Nutri garden.

During 2021-22, 8,900 IFS units will be established at an allocation of Rs.40.05 crore.

1.4.5. Organic Farming Development Programme

To promote organic farming in Tamil Nadu, a proactive scheme "**Organic Farming Development Programme"** is being implemented. Under this scheme, the farmers interested in organic farming are grouped as 20 ha clusters and financial assistance is extended for capacity building training, procurement of organic inputs, on farm production of organic inputs, pesticide residue analysis, establishment of Value Addition units and marketing in the brand name of **"Tamil Nadu Organic Product(TOP)".**

During 2020-21, the scheme was implemented in Ramanathapuram and Virudhunagar under the **"Aspirational districts category"** in six clusters covering 120 ha with a financial expenditure of Rs.9.90 lakh benefitting 123 farmers. The second year activities of the scheme will be implemented during 2021-22 at a financial outlay of Rs.20.40 lakh.

1.4.6. Collective Farming:

"Collective Farming" is implemented for the benefit of Small and Marginal Farmers. Under this scheme, 20 Small and Marginal Farmers are integrated to form Farmers Interest Group (FIG). Five such FIGs are integrated into Farmer Producer Group (FPG) comprising of 100 Farmers.

Each FPG consisting of 100 Farmers is provided with a corpus fund of Rs 5 Lakh by the Government of Tamil Nadu for purchase of Farm Machineries. Collective cultivation of Paddy,

Pulses, Oilseeds, Vegetables etc., is being practised by each FPG in a synchronised manner.

This scheme is implemented during 2021-22 with the financial outlay of Rs.59.55 crore.

1.4.7 Empowering Agriculture graduates as Agripreneurs

To make the agriculture graduates into Entrepreneurs in all the block, Government will facilitate and train them in entrepreneurial activities such as preparation of organic manures, growing tree seedlings, nursery, mushroom cultivation, construction of poly green houses, custom hiring centres, distribution of fertilizers and pesticides, establishment of Agri-Clinic, Micro-Irrigation service centres and export of agricultural commodities.

This scheme will be implemented with an outlay of Rs. 1.93 crore.

1.4.8. Establishment of an Agriculture Museum at State Level

An exclusive museum for agriculture will be established in Chennai to portray the glory of our traditional agriculture to the younger generation at an outlay of Rs. 2 crore.

This museum will showcase varieties of paddy, farm implements, traditional land classification models, water management structures and machineries along with video clippings.

1.4.9. Distribution of agricultural implements to farmers

A **"kit of agricultural implements"** which includes shovels, weeders, iron pots, crowbars and sickle will be provided to farmers to carry out daily agricultural activities easily. This scheme will be implemented at an outlay of Rs.15 crore during 2021-22.

1.5. Tamil Nadu State Seed Development Agency (TANSEDA)

Seeds, being the vital input for crop production, key efforts have been taken by the Department of Agriculture for the production and distribution of Quality seeds through **Tamil Nadu State Seed Development Agency** (TANSEDA) from 2015.

The Breeder seed received from various research stations is multiplied into Foundation seed in State Seed Farms and in progressive farmers' field. The Foundation seed is further multiplied as certified seed in farmers' field which are distributed to farmers through 880 Agricultural Extension Centres across the State.

The production and supply of certified seeds of various agricultural crops *viz,* Paddy, Millets, Pulses, Oilseeds and Cotton is ensured by TANSEDA.

Table: 1.13- Seed Procurement and Distribution Plan – 2021-22

Crop	Seed Procurement (Metric Tonnes)	Seed distribution (Metric Tonnes)
Paddy	19,000	19,000
Millets	800	800
Pulses	5,180	5,180
Oilseeds	5,180	5,180
Cotton	20	20
Total	30,180	30,180

1.5.1. Coconut Seedlings Production and Distribution

To ascertain the timely supply of quality Coconut seedlings to the farmers, 23 State Coconut Nurseries and 16 Coconut Crossing Centres are functioning under TANSEDA across the state.

During 2021-22, it is programmed to produce 10 lakh Coconut seedlings in State Coconut Nurseries and to distribute to farmers under general distribution.

1.5.2. Sub Mission on Seeds and Planting Materials (SMSP)

The main objective of the scheme is to enable the farmers to produce quality seeds by themselves and to get higher yield. The Foundation/Certified seeds of Paddy, Millets, Pulses and Oilseeds are distributed to farmers at the subsidized cost. This scheme is being implemented in all districts except Nilgiris and Chennai with an outlay of Rs.29.43 crore during 2021-22.

1.5.3. State Seed Farms and Coconut Nurseries

Improved seeds of paddy, millets, pulses and oilseeds are produced in 40 State Seed Farms situated throughout the State. Quality Coconut Seedlings of Tall, Tall x Dwarf and Dwarf x Tall categories are produced in 23 State Coconut Nurseries and 16 Coconut Crossing Centres and are being distributed to farmers.

Table: 1.14 - State Seed Farms and State Coconut Nurseries

S.No	District	Name of the State Seed farm	State Coconut Nurseries	Coconut Crossing Centres
1	Kancheepuram	Panjupettai	Pichivakkam	
2	Thiruvallur	Kolandalur	Madhavaram	Madhavaram
3	Cuddalore	Miralur	Neyveli	
		Vandurayanpattu		
4	Villupuram	Kakuppam		Marakkanam
		Iruvelpattu		
		Vanur		
5	Kallakurichi	Vadakanandal		
6	Thiruvannamalai	Athiyandal	Valavachanur	
		Valavachanur		
7	Salem	Danishpet	Danishpet	Sukkampatti
		Mettur		
8	Erode	Bhavani	Bhavanisagar	Ayyam palayam
		Sathyamangalam		
9	Dharmapuri	Papparapatti		
10	Tiruppur	Pappankulam		
11	Pudukkottai	Annapannai	Vellalaviduthi	
12	Tiruchirapalli	Pudurpalayam	Thiruva rangam	Thiruva rangam
		Neikuppaipudur		
13	Karur	Inungur		
14	Thanjavur	Sakkottai	Pattukottai	Pattukottai
15	Mayiladuthurai	Nagamangalam	Malliyam	
		Thirukadaiyur		
16	Tiruvarur	Keeranthi	Vaduvur	

		Kanchikudikadu		
		Devambalpattinam		
		Nedumbalam		
		Moongilkudi		
17	Madurai	Vinayagapuram		
18	Theni	Keezhakudalur	Vaigai dam	Bodinayakanur
19	Virudhunagar	Devadanam	Devadanam	Devadanam
20	Tirunelveli	Karaiyiruppu		
21	Kanniyakumari	Thirupathisaram	Puthalam	Agasthees waram
22	Krishnagiri		B.G.Pudur	Kaveri pattinam
23	Ranipet		Navlock	Navlock
24	Coimbatore		Aliyarnagar	S.G.Palayam
25	Ramanatha puram		Uchipuli	Uchipuli
			Devipattinam	
26	Sivagangai		Sathuravedi mangalam	Ladanenthal
27	Tenkasi		Senkottai	Vadakarai
			vadakarai	
28	Thoothukudi		Killikulam	Udangudi

Further, six State Oil Seed Farms are functioning in Musarawakkam, Neyveli, Bhavanisagar, Vellalaviduthi, Agasipalli and Navlock and State Pulses Multiplication Farm is functioning in Vamban.

1.5.4. Seed Processing Units

In order to process the field run seeds produced from the State Seed Farms and Seed

Farms of farmers and to store the seeds safely, 125 Seed Processing Units along with storage Godowns are functioning.

Table: 1.15 - Seed Processing Units

S. No	District	No. of Units			
		Major	Medium	Mini	Total
1	Kancheepuram	2	0	1	3
2	Chengalpattu	0	0	2	2
3	Tiruvallur	3	0	4	7
4	Cuddalore	0	0	3	3
5	Kallakurichi	0	4	0	4
6	Villupuram	1	3	1	5
7	Vellore	0	0	1	1
8	Ranipet	1	0	2	3
9	Tiruvannamalai	3	0	6	9
10	Salem	2	1	0	3
11	Namakkal	1	0	2	3
12	Dharmapuri	1	0	2	3
13	Krishnagiri	1	0	2	3
14	Coimbatore	1	0	1	2
15	Tiruppur	1	0	2	3
16	Erode	2	0	2	4

S. No	District	No. of Units			
		Major	Medium	Mini	Total
17	Tiruchirapalli	2	0	3	5
18	Perambalur	0	0	1	1
19	Ariyalur	2	0	1	3
20	Karur	1	1	0	2
21	Pudukottai	2	0	3	5
22	Thanjavore	6	0	1	7
23	Mayiladuthurai	2	0	5	7
24	Tiruvarur	3	2	2	7
25	Madurai	4	2	0	6
26	Theni	0	0	2	2
27	Dindigul	1	0	0	1
28	Ramanathapuram	2	1	0	3
29	Sivagangai	1	0	2	3
30	Virudhunagar	1	3	1	5
31	Tenkasi	0	1	0	1
32	Tirunelveli	1	3	0	4
33	Thoothukudi	2	0	1	3
34	Kannyakumari	1	0	1	2
TOTAL		**50**	**21**	**54**	**125**

1.5.5. Agricultural Extension Centres:

Agricultural Extension Centres act as integration centres for providing advisory services to farmers on agricultural cultivation technology, irrigation aspects, pest and disease management, agricultural welfare schemes, disaster management strategies, agricultural information exchange and also for stocking and distributing agricultural inputs, agricultural implements, plant protection equipments etc.

There are 880 Agricultural Extension centres functioning in Tamil Nadu, including 383 Main Agricultural Extension Centres at Block level and 497 Sub Agricultural Extension Centres at Firka level. During 2021-22, Integrated Agricultural Extension Centres will be constructed in 13 blocks at a cost of Rs.35.60 crore and construction of 237 Sub Agricultural Extension Centres are also in progress.

1.6. Plant Protection

Plant protection is the practice of managing pest & diseases by monitoring weather, weeds and status of pests and diseases, growth stage of the crops etc., By encouraging the farmers to adopt Integrated Pest Management technologies for all the crops, the pest & disease can be controlled in time, besides minimising the cost of cultivation and protecting the environment.

Regular crop specific trainings and awareness programmes are imparted to farmers under various schemes. Management advisories for pest and diseases are being provided through Artificial Intelligence in Uzhavan app via SMS.

The infestation of Pest and Disease is being regularly monitored at block level and precautionary measures are given in advance.

1.6.1 Fall Army Worm Management in Maize

During 2021-22, a scheme namely Integrated Pest Management to control Fall Army Worm in Maize will be implemented in which an assistance of Rs.2,500/- per ha. will be extended for 80,000 ha with the total financial sanction of Rs.20 crore.

1.6.2. Management of Rugose Spiralling Whitefly in Coconut

The infestation of Rugose Spiralling Whitefly in Coconut in major Coconut growing districts will be controlled by extending assistance of Rs.1000/- per Ha towards installation of Yellow sticky trap and Release of Predators. This scheme will be implemented in 2021-22 with a financial allocation of Rs.2 crore.

1.6.3. Production of Bio-control agents

Bio control agents play a major role in adopting Integrated Pest Management technologies to protect the crops from Pest and Diseases. They also play a vital role in protecting

the crops from Pest & Diseases in organic farming. In Tamil Nadu, Bio control agents are produced in 22 Bio-control laboratories and 2 Integrated Pest Management Centres and distributed to the farmers through Agricultural Extension Centres.

Table: 1.16- Distribution of Bio Control Agents for 2020-21 and Production programme in 2021-22

Sl. No	Bio control agent	Quantity distributed (2020-21)	Target (2021-22)
1.	*Trichoderma viride (Kg)*	2,27,488	3,20,000
2.	*Beauveria bassiana (kg)*	85,941	90,000
3.	*Trichogramma chilonis(cc)*	14,902	40,000
4.	*Metarhizium anisopliae (kg)*	1,28,520	1,10,000
5.	*Chrysoperla Sp (Nos)*	77,22,000	1,50,00,000

1.7. Fertiliser

The average annual consumption of all Chemical Fertilisers is around 23 Lakh Metric Tonnes in Tamil Nadu. The State Government is

also encouraging farmers to use Bio-fertilisers and organic fertilisers to maintain optimum Soil Health and reduce the cost of cultivation.

Table: 1.17- Year wise Consumption of Fertilisers

Fertilizer	Consumption of Fertiliser (Lakh Metric Tonnes)	
	2019-20	2020-21
UREA	9.06	8.91
DAP	2.40	2.64
MOP	2.74	2.82
NPK COMPLEX	5.16	5.72
Total	**19.36**	**20.09**

For purchase of all kinds of fertilisers and for prepositioning of fertilisers, the State Government is providing Rs. 135 crore to Tamil Nadu Co-operative Marketing Federation (TANFED) as Interest Free Ways and Means advance.

1.7.1. Fertilizer Quality Control

To ensure sale of quality fertilisers to the farmers, fertiliser samples are analysed in 14 Notified Fertiliser Control labs functioning across the state. 19,600 Fertiliser samples are drawn annually and analysed in Fertiliser Control Labs.

Based on the analytical report and variation noticed in the specification of nutrients, Departmental action and Legal action are taken for non-standard fertilisers. During the year 2020-21, 753 fertiliser samples are declared as 'Non Standard'. Departmental action is initiated for 708 non-standard fertiliser samples and legal action is initiated for 45 non-standard fertiliser samples.

1.8. Soil Health Management Scheme

The scheme aims to increase the production and productivity of the crops and maintain the Soil Health. During 2020-21, to

create awareness on Soil Health among farmers, 2398 demonstrations and 309 Farmers Trainings were conducted. In 2021-22, it is proposed to conduct 5,775 Demonstrations based on Soil Health Card recommendation and 2,783 Farmers trainings.

1.9. Quality Control Laboratories

To ensure the quality supply of Fertilizers and Pesticides, Tamil Nadu Government have established 14 Fertilizer Control Laboratories, 12 Pesticides Testing Laboratories, three State Pesticides Testing Laboratory .cum Coding Centres, Central Control Laboratory at Kudumiyanmalai, Organic Fertilizer Testing Laboratories at Tiruchirapalli and Coimbatore and Biofertilizers quality control laboratory at Tiruchirapalli.

The Fertilizer and Pesticide Inspectors are enforcing the provisions of the Fertilizer (Control) Order, 1985, the Insecticide

Act, 1968 and Insecticide Rules, 1971 respectively to ensure the quality of Fertilizers and Pesticides.

1.10. Soil Testing Laboratories (STL)

There are 32 soil testing laboratories and 16 mobile soil testing laboratories functioning under the Department of Agriculture for analysing pH, EC, Macro and Micro nutrient status of the soil and giving recommendation to the farmers and play vital role in reducing the cost of cultivation.

Soil Testing Laboratories are having analytical capacity of 6.50 lakh soil samples per annum. Besides, establishment of new Soil Testing Laboratories in Chengalpattu, Ranipettai, Tirupathur and Tenkasi are also under progress. In addition to this, Soil Survey and Land use Organization units are functioning at Coimbatore, Thanjavur, Vellore and Tirunelveli.

1.11. Micro Nutrient Mixture Production Centre

Micro nutrient mixture production unit was established at Kudumiyanmalai in Pudukkottai district to produce and supply crop specific, notified micro nutrient mixtures to farmers. During 2020-21, 2,422 metric Tonnes of micro Nutrient mixtures were produced and distributed to farmers.

During 2021-22, it is programmed to produce and distribute 3,000 MT of Micro Nutrient Mixtures.

1.12. Bio-Fertilizers production Units (BFPU)

To promote the use of Bio-Fertilizers by farmers, seven strains of Bio-fertilizers viz., Azospirillum–Paddy, Azospirillum – Others, Rhizobium–Pulses, Rhizobium–Groundnut, Azophos, Potash Mobilizing Bacteria (KMB) and

Phosphobacteria are produced in 22 Bio-fertilizer production units (BFPUs).

During 2021-22, it is aimed to produce and distribute 11 lakh litres of Liquid Bio-Fertlizers.

Table: 1.18- Details of the STLs/MSTLs

S. No	District	Soil Testing Laboratories	Mobile Soil Testing Laboratories
1	Kancheepuram	Kancheepuram	
2	Tiruvallur	Tiruvallur	Tiruvallur
3	Cuddalore	Cuddalore	
4	Villupuram	Villupuram	Villupuram
5	Vellore	Melalathur	
6	Thiruvannamalai	Tiruvannamalai	Tiruvannamalai
7	Salem	Salem	
8	Namakkal	Namakkal	Tiruchengode
9	Dharmapuri	Dharmapuri	
10	Krishnagiri	Krishnagiri	Krishnagiri
11	Coimbatore	Coimbatore	
12	Tiruppur	Tiruppur	Tiruppur
13	Erode	Erode	Erode
14	Tiruchirapalli	Tiruchirappalli	
15	Perambalur	Perambalur	Perambalur
16	Ariyalur	Ariyalur	

S. No	District	Soil Testing Laboratories	Mobile Soil Testing Laboratories
17	Karur	Karur	Karur
18	Pudukkottai	Kudumiyanmalai	
19	Thanjavur	Aduthurai	
20	Nagapattinam	Nagapattinam	Nagapattinam
21	Thiruvarur	Thiruvarur	Thiruvarur
22	Madurai	Madurai	Madurai
23	Theni	Theni	
24	Dindigul	Dindigul	
25	Ramanathapuram	Paramakudi	Paramakudi
26	Sivagangai	Sivagangai	
27	Virudunagar	Virudhunagar	Aruppukkottai
28	Thirunelveli	Thirunelveli	
29	Thoothukudi	Kovilpatti	Kovilpatti
30	Kanyakumari	Nagercoil	Nagercoil
31	The Nilgris	Ooty	
32	Kallakurichi	Chinnasalem	

1.13. Agricultural Technology Management Agency (ATMA)

Support To State Extension Programmes For Extension Reforms (SSEPERS) aims at making extension system, farmer driven and farmer

accountable by way of new institutional arrangements to disseminate the technology by Agricultural Technology Management Agency (ATMA) at district level.

The Extension programmes include Training, Demonstration, Exposure visit, Awards, Information dissemination activities, farmers scientist interaction, joint visits by scientists and extension workers, organisation of kisan gosthies, district level exhibitions, kisan melas, assessment, refinement and validation of short term researchable projects, farm school, innovative activities and innovative technology dissemination are implemented in the State.

During the year 2020-21, the scheme was implemented in all districts except Chennai with the co-ordinated efforts of Tamil Nadu Agricultural University, Tamil Nadu University for Veterinary and Animal Sciences and Tamil Nadu Fisheries University at the cost of Rs. 64.56 crore. During

the year 2021-22, the State Extension Work Plan for ATMA will be implemented at the cost of Rs. 91.66 crores.

1.14. Agriculture Training Centres:

1.14.1. Farmers' Training Centres

There are 22 Farmers Training Centres (FTC) imparting training to 28,820 farmers, farmer council conveners, farm women and rural youths annually on Farm management practices and latest technologies.

Table 1.19: Farmers Training Centres in Tamil Nadu

S. No	District	Location
1	Kancheepuram	Kancheepuram
2	Villupuram	Tindivanam
3	Vellore	Vellore
4	Tiruvannamalai	Tiruvannamalai
5	Salem	Salem
6	Namakkal	Namakkal
7	Dharmapuri	Dharmapuri

S. No	District	Location
8	Krishnagiri	Krishnagiri
9	Erode	Erode
10	Tiruchirapalli	Tiruchirapalli
11	Perambalur	Perambalur
12	Karur	Karur
13	Pudukkottai	Kudumianmalai
14	Thanjavur	Sakkottai
15	Theni	Theni
16	Dindigul	Dindigul
17	Ramanathapuram	Paramakudi
.18	Sivagangai	Sivagangai
19	Virudhunagar	

1.14.2 State Agricultural Extension Management Institute (STAMIN):

Annually 1,100 field Officers of this department are trained through the principal training centre, State Agricultural Extension Management Institute (STAMIN) functioning at Kudumianmalai in Pudukkottai District.

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

To provide consultancy services in areas of project planning, project appraisal and training to extension functionaries etc., State Agricultural Management and Extension Training Institute (SAMETI) was established in the premises of State Agricultural Extension Management Institute (STAMIN). During the year 2020-21, 1350 extension functionaries were trained at a cost of Rs.19.86 lakh. it is also programmed to train the extension functionaries at a cost of Rs.96.04 lakh during 2021-22.

1.14.4. Water Management Training Centre (WMTC)

The Water Management Training Centre functioning at Vinayagapuram, Madurai district, imparts training on irrigation technologies and water use efficiency technologies to field

functionaries and farmers. Annually, 180 field functionaries and 900 farmers are trained through this institution at a cost of Rs.10.47 lakh.

1.15. Uzhavar Aluvalar Thodarbu Thittam (UATT)

To accelerate and strengthen Farmers – officers contact at field level and to disseminate the latest crop cultivation technologies, UATT was implemented throughout the State.

The main aim of the system is to make the field functionaries (AAO, AO / Deputy AO) visiting the village Panchayat level systematically.

Block Technology Team (BTT) allots village Panchayat to AAOs and prepares region and crop specific technical information to the field functionaries and the work done is digitally monitored by **TN Agrisnet** website.

1.16. Tamil Nadu Irrigated Agriculture Modernization (TNIAM) Project

Tamil Nadu Irrigated Agriculture Modernization [TNIAM] Project with the assistance of the World Bank is being implemented with the objectives of enhancing the productivity and marketability of agricultural produces through better irrigation management and climate resilient irrigated agriculture technologies. This project is being implemented in 66 selected sub-basins over a period of 7 years from 2017-18 with an allocation of Rs.84.15 crore.

The project has been implemented in 34 sub-basins with an expenditure of Rs.10.83 crore during 2020-21. The following project interventions will be implemented during 2021-22.

1.16.1. Improved Production Technology (IPT) Demonstrations:

In order to increase the soil fertility, the Demonstrations on three crop sequence of Green manure-System of Rice Intensification (SRI) Paddy -Rice Fallow Pulses, Maize, Ragi, Cholam, Cumbu, Minor Millets, Pulses and Groundnut with high yielding varieties are being implemented.

1.16.2. Other Crop based Components:

Other Crop based Components viz., Farmers Field Schools, establishment of IPM Villages, vermi compost (Silpaulin) Units, Seed Village are to be implemented expeditiously.

1.16.3. Mechanized weeding

To carry out the weeding operation through power/Mechanical cono weeder in System of Rice Intensification (SRI) Paddy fields a financial assistance of Rs.1250/- per ha will be provided.

1.16.4. Information, Education and Communication Activities (IEC) and Capacity Building (CB) Activities:

Trainings will be organized to create awareness to farmers on water saving crop production technologies.

1.16.5. Model villages:

Model Village Programme ensures Community Collaborative Water Management through effective convergence of all line departments of the project including Public Works Department as the nodal Department.

It involves activities like awareness meeting, entry level activity, community water walk, resource mapping and establishment of Single Window Information and Knowledge Centre (SWIKC).

The Project will be implemented with an outlay of an Rs.17.17 crore during 2021-22.

1.17. Special Awards for Farmers

1.17.1. Nel Jayaraman Traditional Paddy Varieties Conservation Mission

In order to collect and conserve the traditional Paddy varieties of Tamil Nadu, it is programmed to produce traditional Paddy Seeds in State Seed Farms in an area of 200 acres with a financial allocation of Rs.25 lakh and will be distributed to the farmers.

1.17.2. Reward for best performing farmers' in Agriculture

Rewards will be awarded to the best performing farmers' who invented local, novel agricultural technology including machineries and cultivation practices.

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

Government is encouraging and motivating the farmers who obtain highest productivity in Paddy

cultivation through the methodology of System of Rice Intensification by awarding a cash price of Rs.5 Lakh along with a medal and citation in the name of System of Rice Intensification during Republic Day function every year since 2011. From 2020-21 onwards, this award was renamed as Thiru.C.Narayansamay Naidu. This award will be provided during this year also.

1.17.4. Bharat Ratna Dr.M.G.R. Traditional Rice variety conservator Award

In order to conserve the traditional paddy varieties, Government is supporting and motivating the traditional paddy variety growing farmers and confer with **"Bharat Ratna Dr.M.G.R. Traditional Rice variety conservator Award"** since 2018-19. This has been awarded to the first three farmers who conserve, cultivate traditional rice varieties for and obtain highest yield in the State with the cash prize of Rs.1,00,000, Rs.75,000 and Rs.50,000,

respectively. This award will be provided for the year 2020-21 also.

1.18. Crop Yield Competition

To increase the production and productivity of Agricultural crops at field level, Government of Tamil Nadu is encouraging farmers by conducting Crop Yield Competitions in various crops, besides promoting innovative scientific technologies.

Farmers recording highest production under Crop Yield Competition at State and District Level are awarded with cash prize.

Table: 1.20- Cash Prizes at State and District Level

Sl. No	Crop	First Prize (Rs.)	Second Prize (Rs.)
1. State Level			
Groundnut, Sugarcane & Cotton		25,000/-	15,000/-
Cholam, Cumbu, Maize, Blackgram, Greengram & Redgram.		15,000/-	10,000/-
2. District Level			
Paddy, Groundnut, Sugarcane & Cotton		15,000/-	10,000/-
Cholam, Cumbu, Maize, Blackgram, Greengram & Redgram.		10,000/-	5,000/-

1.19. Uzhavan Mobile App

The Government of Tamil Nadu is introducing Information Technology in the field of Agriculture in improving the living standards of the farmers. Farmers can get details of schemes, subsidies, seeds, fertilizer stock and price, market price, rainfall and soil fertility details through the AGRISNET Portal. Uzhavan Mobile app introduced in Tamil and English is becoming popular among farmers.

In this app, subsidy schemes, beneficiary registration, crop insurance details, fertilizers / seed stock position and price, agricultural machinery custom hiring centre, daily market price, weather advisories, Uzhavar Aluvalar Thodarbu Thittam, my farm guide, organic farming product details, farmer producer organisation details, reservoir water position, agricultural news, pest and disease monitoring – recommendation service, ATMA training and

demonstration, Uzhavan e-Market, feedback and Agriculture Budget are the 19 services being provided to the farming community.

So far, 77,233 farmers viewed the information about crop insurance through Uzhavan app.

As of now, 10,77,070 farmers have downloaded this app.

1.20 Climate Change Resilient Measures

The Government is taking special efforts to safeguard the livelihood of farmers under State Disaster Response Fund (SDRF) to provide input subsidy to farmers affected by natural calamities such as flood, drought and cyclone.

1.20.1 Disaster Management

During the occurrence of Nivar and Burevi cyclone in November and December 2020 and unseasonal rainfall in January 2021 in Tamil Nadu, Agricultural and Horticultural crops were

severely affected in an area of 9,91,923 Ha covering 34 districts.

The Government has extended Rs.1715 Crore as Agricultural Input Subsidy under State Disaster Response Fund (SDRF) to 17 lakh affected farmers.

1.20.2. Crop Insurance

Tamil Nadu is one of the pioneer states in implementing the “Pradhan Mantri Fasal Bima Yojana (PMFBY)” successfully. In this scheme, compensation claim is settled to farmers enrolling against risks like failed sowing / prevented sowing/planting, Yield loss in standing crop, Mid season adversities, Post harvest losses and Localized calamities. The Agricultural crops are notified as season wise, village wise and Firka wise.

Table: 1.21 - Farmer's share of premium

Crops	Season	Maximum premium payable by farmers
All food grain crops (all cereals, millets & pulses) and Oilseed crops	Kharif (Kuruvai)	2% of sum insured or actuarial rate whichever is less
	Rabi (Samba, Navarai, Kodai)	1.5% sum insured or actuarial rate whichever is less
Annual commercial/ Annual & Perennial Horticultural Crops	Kharif and Rabi	5% of the sum insured or actuarial rate whichever is less

During 2020-2021, about 25.77 lakh farmers have been enrolled and an area of about 42.77 lakh acres has been insured so far for Agricultural crops.

A compensation amount of Rs.107.54 crore has been disbursed so far to 1,64,173 farmers for Kharif, 2020 for Agricultural crops.

During 2021-22, the scheme will be implemented as a co-insurance model of 80:20 proportionate sharing basis with an allocation of Rs.2,327 crore in 14 clusters comprising of 37 districts.

1.21. Pradhan Mantri Kisan Samman Nidhi (PM - KISAN)

Pradhan Mantri Kisan Samman Nidhi (PM-KISAN), a Central Sector scheme with 100% funding is under implementation in Tamil Nadu from 1.12.2018. Under this scheme, an income support of Rs.6,000/- per year is provided directly into the bank accounts through DBT mode in three equal installments to all Farm families having own cultivable lands.

Till date, an amount of Rs.6299.53 crores has been transferred directly into the bank accounts of 38.24 Lakh Farmers through DBT mode in Nine installments. Last year, a sum of Rs.181 Crores has been recovered from ineligible farmers and remitted to PMKISAN account.

In order to strengthen the implementation of PMKISAN scheme, Government of Tamil Nadu in coordination with Government of India have formulated a new Standard Operating Procedure

in such a way that after the registration of farmers in PMKISAN portal, it will be verified by both Agriculture and Revenue Department officials and super checked by Tahsildhar, Revenue Divisional Officer, Assistant Director of Agriculture and Deputy Director of Agriculture. The same will be forwarded with recommendation by District Collector to State Nodal Officer for approval. The registration details will be verified with land records and Family card database using software.

1.22. Kisan Credit Card Scheme (KCC)

Kisan Credit Card Scheme was introduced during the year 1998 in order to provide adequate and timely credit support to farmers through Nationalised Banks, Cooperative Banks and Regional Rural Banks. Individual farmers and Tenant farmers are eligible to avail benefit under KCC Scheme. Based on the extent of land holding and extent of crop cultivation, the farmers can

avail a collateral free loan for an amount of Rs. 1.60 lakh for production related expenses.

Farmers can invest for the purchase of Agricultural inputs, production related expenses and agriculture related activities. So far, 29.74 lakh Kisan Credit Cards have been issued to farmers through Co-operatives and Nationalised Banks.

1.23. Agriculture Staff Structure

The Department of Agriculture is functioning with a total strength of 10,564 staff.

Table: 1.22 - Technical Establishment

Name of the Post	Sanctioned Strength
Additional Director of Agriculture	5
Joint Director of Agriculture	36
Deputy Director of Agriculture	131
Assistant Director of Agriculture	423
Agricultural Officer	1,097
Deputy Agricultural Officer	337
Assistant Seed Officer	509
Assistant Agricultural Officer	2,320
Total Technical Staff	**4,858**

Table: 1.23 - Non-Technical Establishment

Name of the Post	Sanctioned Strength
Deputy Director (Administration)	2
Administrative Officer	34
Superintendent	185
Assistant	649
Junior Assistant	389
Typist	365
Depot Manager(Gr-I)	148
Depot Manager (Gr-II)	249
Depot Manager(Gr-III)	572
Steno-Typist (Gr-I)	1
Steno-Typist (Gr-II)	38
Steno-Typist (Gr-III)	94
Driver	292
Lab Assistant	143
Record Clerk	157
Office Assistant	586
Watchman	1,133
Telephone Operator	2
Other Staff	667
Total Non-Technical Staff	**5,706**

2. HORTICULTURE AND PLANTATION CROPS

The State of Tamil Nadu is endowed with agro-climatic conditions conducive for the growth of wide range of Horticulture crops such as Fruits, Vegetables, Spices, Plantation crops, Flowers, Medicinal and aromatic plants.

The importance of Horticulture sector can be substantiated through its benefits like high yield per unit area and more income, maximum utilization of wasteland, high export value produce, major source of raw materials to agro industries. In addition to this, it provides employment especially to women in rural areas through activities such as processing, flower cultivation, seed production, mushroom cultivation, nursery establishment, etc,.

The Department of Horticulture aims for self sufficiency in supply of fruits and vegetables to growing population, nutritional adequacy to

citizens and to enhance the livelihood of the farmers.

The Department focuses to promote Horticultural activities like Augmentation of area and productivity in Horticulture crops, Organic cultivation, Production and Distribution of Quality planting materials and seeds, Hi-Tech cultivation, Integrated Farming System, Vegetable production in Home gardens, Integrated water management, Post harvest management, Integrated pest and nutrient management and to impart training to farmers in all these aspects.

2.1: CONTRIBUTION OF TAMILNADU IN HORTICULTURE CROPS AT NATIONAL LEVEL

Tamil Nadu contributes 4.9% in area and 5.3% towards production of Horticulture crops at the National level.

In terms of area, Tamil Nadu accounts for 4.6% in fruits, 2.9 % in vegetables, 11.1% in

flowers, 2.3% in spices, 13.7% in plantation crops and 2.4% in Medicinal and aromatic plants at national level.

In addition, Tamil Nadu contributes 5.1% under Fruits, 3.9 % under vegetables, 20.9% in flowers, 1.5 % in spices and 21.5% in plantation crops in terms of production at National level.

Table: 2.1: Area, Production and Productivity of Horticulture crops in Tamil Nadu (2019-20 and 2020-21)

(Area: Lakh Ha, Production: Lakh MT, Productivity: MT/Ha)

Name of the Crop	2019-20 (Final)			*2020-21 (2nd Advance Estimate)		
	Area	Production	Productivity	Area	Production	Productivity
FRUITS	3.13	53.39	17.02	3.27	56.76	17.36
VEGETABLES	3.07	74.75	24.31	3.82	86.94	22.76
SPICES AND CONDIMENTS	1.06	2.84	2.67	1.08	3.42	3.17
PLANTATION CROPS	6.77	55.36	8.17	6.86	56.04	8.17

MEDICINAL & AROMATIC PLANTS	0.16	2.18	13.63	0.16	2.19	13.73
FLOWERS	0.39	4.61	11.75	0.41	5.33	13.02
TOTAL	**14.60**	**193.13**		**15.60**	**219.28**	

2.1.1: Fruits

'Mukkanigal' namely Mango, Jack and Banana are cultivated in an area of 2,53,734 Ha. These three crops contribute 80% of the total area covered under fruit crops. Unlike in other States, in Tamil Nadu, five crops of grapes are harvested in a period of two years. Off-season mangoes are produced in Kanyakumari district from October to January.

Tamil Nadu occupies the fourth place pertaining to area (92,413 Ha) and production (39.86 Lakh MT) of Banana.

At National level, Tamil Nadu ranks third under area (7,459 Ha) and production (1.78 Lakh.MT) of Amla.

Further, Tamil Nadu takes the fourth position in area (13,004 Ha) and third in the production (3.81 Lakh.MT) of Water melon.

With respect to Grapes, Tamil Nadu stands fourth in Production (0.33 Lakh.MT) and fifth in area (1,990 Ha) at the National level.

Table.2.2: Details of major Fruit growing Districts (2019-20)

Sl. No.	Name of the Crops	Area (Ha)	Major Fruit Growing Districts (in Ha)
1	Mango	1,58,199	Krishnagiri (37,571),Dharmapuri (21,666),Dindigul (14,967), Thiruvallur (11,177) and Theni (10,052)
2	Banana	92,413	Erode (14,116),Thoothukudi (8,237), Coimbatore (7,071),Tiruchirapalli (6,335) and Theni (5,966)
3	Guava	11,097	Dindigul (1,822),Madurai (1,476), Virudhunagar (1,135), Cuddalore (995) and Villupuram (869)
4	Lime / Lemon	11,069	Thenkasi (3,015),Dindigul (2,258), Tiruchirapalli (993), Theni (756) and Thoothukudi (662)
5	Watermelon	13,004	Chengalpattu (4,194), Thiruvallur (1,809), Villupuram (1,663), Dharmapuri (772) and Salem (726)
6	Amla	7,459	Tirunelveli (1,190),Thenkasi (1,055), Dindigul (931),Theni (609) and

Sl. No.	Name of the Crops	Area (Ha)	Major Fruit Growing Districts (in Ha)
			Tiruppur (504)
7	Sapota	5,500	Dindigul (1,048),Theni (525), Virudhunagar (407), Thirupathur (372) and Namakkal (304)
8	Jack fruit	3,123	Cuddalore (713), Kanniyakumari (589),Dindigul (453), Pudukkottai (233) and Namakkal (217)
9	Orange	2,511	Dindigul (1,601),Salem (697) and The Nilgiris (108)
10	Grapes	1,988	Theni (1,697) and Dindigul (184)

During 2021-22, an area of 15,820 Ha will be brought under cultivation of Fruits through the area expansion components and production of quality produce is ensured through schemes such as National Horticulture Mission, National Agriculture Development Programme, Integrated Horticulture Development Scheme and Tamil Nadu Irrigated Agriculture Modernization Project at an outlay of Rs.25.21 Crore.

In addition to the normal area expansion component, during the current year, it has been proposed to give special focus to promote

Tropical, Sub-tropical, Dry land and Exotic fruits crops like Avacado, Ber, Fig, Jamun, Manila Tamarind, Mangosteen, Strawberry, Durian, Dragon fruit, Kiwi, Litchi, etc., in 1,180 Ha at an outlay of Rs.3.91 Crore through schemes like National Horticulture Mission and National Agriculture Development Programme.

2.1.2: Vegetables

Tamil Nadu stands first in area (81,143 Ha) and production (30.651 Lakh.MT) of Tapioca. Further, Tamil Nadu takes the fourth place in production (15.92 Lakh.MT) and seventh place in area (52,898 Ha) under Tomato.

To ensure consistent supply of Vegetables, farmers will be encouraged to cultivate vegetables through provision of required seeds, protray seedlings, planting materials and other such inputs or by providing incentives.

Table: 2.3: Details of major vegetable growing Districts-2019-20

Sl. No.	Name of the Crop	Area (Ha)	Major Vegetable Growing Districts (in Ha)
1	Tapioca	81,143	Namakkal (19,236), Dharmapuri (13,786), Salem (9,990), Erode (9,297) and Kallakurichi (7,996)
2	Tomato	52,898	Krishnagiri (26,051),Dharmapuri (10,646),Salem (4,000), Coimbatore (2,031) and Dindigul (1,627)
3	Onion	40,000	Perambalur (6,986), Karur (5,047), Thoothukudi (4,090), Namakkal (3,810) and Tiruchirapalli (3,513)
4	Brinjal	20,380	Dharmapuri (3,657), Salem (2,642),Tiruvannamalai (1,633),Krishnagiri (1,216) and Kallakurichi (991)
5	Bhendi	19,529	Dharmapuri (4,453),Salem (2,965), Tiruvannamalai (1,386), Kallakurichi (1,104) and Villupuram (806)
6	Moringa	16,238	Theni (3,947), Dindigul (3,374), Karur (2,104), Thoothukudi (1,559) and Ariyalur (1,449)

Sl. No.	Name of the Crop	Area (Ha)	Major Vegetable Growing Districts (in Ha)
7	Leafy Vegetables	7,515	Krishnagiri (1,246),Salem (1,213), Tirupur (856), Thiruvallur (685) and Vellore (487)
8	Potato	6,000	Nilgiris (2,791), Dindigul (1,451) and Erode (517)
9	Beans	4,911	Krishnagiri (2,543), Dindigul (2,308), Erode (711), Nilgiris (244) and Salem (214)
10	Carrot	4,480	Nilgiris (2,472), Dindigul (1,451) and Krishnagiri (517)

Considering the growing potential for Vegetable cultivation, during the year 2021-22, Area Expansion under Vegetable crops will be promoted in an area of 36,040 Ha through schemes like National Horticulture Mission, National Agriculture Development Programme, Integrated Horticulture Development Scheme and Tamil Nadu Irrigated Agriculture Modernization Project at an outlay of Rs.81.41 Crore.

Considering the inevitable use of Onion in the daily diet, and its abundant medicinal value, it has been programmed to increase the production of Onion by providing assistance for cultivation through National Agriculture Development Programme in an area of 3,000 Ha at an outlay of Rs.6.00 Crore. Furthur, to ensure that the potential available for year round market for onion is tapped, 1,500 Low cost Onion Storage structures will be provided to farmers at an outlay Rs.13.12 Crore so that they can store the Onions for a period of 3 months.

Moringa serves as an important vegetable and greens in the rainfed areas. To ensure the daily availability of Moringa, consumed as Vegetables and Greens which are rich in nutrients and minerals with innumerable medicinal properties, programmes will be implemented in an area of 2,590 Ha at a financial outlay of Rs.2.59

Crore through National Agriculture Development Programme.

To promote cultivation of greens in all the Districts, area expansion will be carried out in 1,000 Ha at an outlay of One Crore. In addition, to this, assistance will be provided to promote cultivation of vegetables in 2,000 Villages with less Vegetable area by providing seeds and inputs for soil reclamation activities in an area of 1,250 Ha at an outlay of Rs.4 Crore.

To establish Homested gardens and to promote production of Vegetables, two Lakh Vegetable seeds kits consisting of 12 kinds of seeds and one Lakh roof top garden kits consisting of six kinds of Vegetable seeds will be distributed in villages and Urban areas respectively.

2.1.3: Flowers

Tamil Nadu continues to retain the second position in production of loose flowers in the country. The important flower crops grown in Tamil Nadu are Malligai, Mullai, Jathi Malli, Tube rose, Marigold, Chrysanthemum.

Tamil Nadu ranks first in area (13,400 Ha) and production in Jasmine (1.21 Lakh.MT) at National Level. Further, it takes the second place in production (4.86 Lakh.MT) under Loose flowers.

Table.2.4: Details of major Flower cultivating Districts (2019-20)

Sl. No.	Name of the Crop	Area (Ha)	Major Flower Growing Districts (in Ha)
1.	Jasmine	13,400	Dharmapuri (1,775), Madurai (1,732), Erode (1,437), Tiruvannamalai (1,421) and Thiruvallur (1,263).

Sl. No.	Name of the Crop	Area (Ha)	Major Flower Growing Districts (in Ha)
2.	Tube Rose	7,866	Dharmapuri (3,288), Tiruvannamalai (2,108), Erode (391), Dindigul (290) and Thiruvallur (240).
3.	Chrysanthemum	6,295	Dharmapuri (2,362), Krishnagiri (1,335) and Salem (1,272).
4.	Rose	2,867	Krishnagiri (1,093), Dharmapuri (722), Namakkal (136), Dindigul (121).

During 2021-22, area expansion of flowers will be promoted in 1,421 Ha at an outlay of Rs.3.66 Crore through National Horticulture Mission, Integrated Horticulture Development Scheme and Tamil Nadu Irrigated Agriculture Modernization Project.

To ensure quality and year round cultivation of cut flowers like Gerbera, Roses, Carnation and other suitable crops will be cultivated in an area of 4.36 Lakh Sq.m under protected structures like Poly Green Houses, Shade Net houses at an outlay of Rs.18.98 crore through National Horticulture Mission.

2.1.4: Spices

Tamil Nadu takes the first place with regard to area (14,527 Ha) and second position with regard to production of Tamarind (0.62 Lakh.MT) at the National level. In addition, Tamil Nadu ranks sixth in terms of Area (18,432 Ha) and fifth in terms of production (70.63 Lakh MT) under Turmeric.

Table.2.5: Details of major Spices growing Districts (2019-20)

Sl. No.	Name of the Crop	Area (Ha)	Major Growing Districts (in Ha)
1	Chillies	48,816	Ramanathapuram (16,273), Thoothukudi (11,067), Sivagangai (5,239), Tiruvannamalai (1,443) and Dindigul (1,266).
2	Turmeric	18,432	Erode (5,087), Dharmapuri (3,902), Salem (2,765), Karur (1,446) and Namakkal (1,343).
3	Tamarind	14,527	Dindigul (3,273), Theni (1,579), Dharmapuri (1,468), Madurai (1,180) and Kanyakumari (880).
4	Coriander (Seed)	7,408	Thoothukudi (2,622), Virudhunagar (1,361), Ramanathapuram (1,275), Tiruchirapalli (738) and Namakkal (282).
5	Black Pepper	6,080	Namakkal (1,990), Salem (1,160) Dindigul (1,050), The Nilgiris (980)and Kanniyakumari (323).

During 2021-22, to promote the area under cultivation of Spices, it has been planned to implement the area expansion of 1,848 Ha under Spice crops viz.Chillies, Pepper, Turmeric etc., at an outlay of Rs.3.13 Crore through National Horticulture Mission, Integrated Horticulture Development Scheme and Tamil Nadu Irrigated Agriculture Modernization Project.

2.1.5: Plantation Crops

The major plantation crops grown in Tamil Nadu are Cashew, Coconut, Tea, Coffee, Rubber etc., which are grown in an area of 6.77 Lakh Ha. The area and production of Cashew is increased through normal planting, Hi-density planting and rejuvenation of cashew orchards.

Tamil Nadu is the only state in which subsidy is extended for installation of Micro Irrigation system in Tea plantations.

Table.2.6: Details of major Plantation Crops growing Districts (2019-20)

Sl. No.	Name of the Crop	Area (Ha)	Major Growing Districts (in Ha)
1	Cashew nut	83,977	Ariyalur (30,405), Cuddalore (29,175), Pudukkottai (5,526), Villupuram (3,137) and Theni (3,054).
2	Tea	69,268	Nilgiris (55,381), Coimbatore (11,191), Theni (1,677), Tirunelveli (804) and Kanniyakumari (212).
3	Coffee	33,280	Dindigul (11,306), Nilgiris (7,324), Salem (6,991), Theni (3,182) and Coimbatore (2,250).
4	Arecanut	6,843	Coimbatore (2,074), Salem (1,823), Erode (642), Namakkal (620) and Dharmapuri (496).
5	Cocoa	2,275	Coimbatore (800), Dharmapuri (459), Salem (219) and Thanjavur (134).

Under National Horticulture Mission and National Agriculture Development Programme it has been programmed to bring an area of 6,250 Ha under Cashew at an outlay of Rs.9.60 Crore during 2021-22.

To promote and safe guard the State Tree ‘Palmyrah’, it has been planned to distribute one Lakh palmyrah seedlings at an outlay of Rs.50 Lakh under National Agriculture Development Programme.

2.1.6: Medicinal and Aromatic plants

Tamil Nadu occupies second position in terms of Production (2.29 Lakh.MT) and fourth position in terms of Area (15,410 Ha) under Medicinal and Aromatic plants at National Level.

The major Medicinal plants grown in Tamil Nadu are Coleus and Gloriosa. These crops alone account for over 57% of the total cultivated area under Medicinal and Aromatic plants.

Table.2.7: Details of major Medicinal plants growing Districts (2019-20)

Sl. No.	Name of the Crop	Area (Ha)	Major Growing Districts (in Ha)
1	Gloriosa	4,442	Dindigul (2,005), Tiruppur (1,779) and Karur (538).
2	Coleus	4,289	Tiruvannamalai (1,713), Kallakurichi (1,340) and Salem (755).
3	Palmarosa	1,485	Tiruvannamalai (842) and Dharmapuri (612).

During 2021-22, cultivation of Medicinal plants will be promoted through National Ayush Mission – Medicinal Plants Scheme in an area of 200 Ha for Amla cultivation at an outlay of Rs.68 Lakh.

To improve immunity and to ensure nutritional security, two lakh kits containing nutritive fruits, Vegetables and Medicinal plants namely., Papaya, Lime, Moringa, Curry leaf,

Karpoora valli, Thippili, Aloe and Mint will be produced in the State Horticulture Farms and distributed at an outlay of Rs.1.50 Crore.

2.2: Organic farming in Horticulture crops

Besides enriching the soil fertility, the pesticide residue level in harvested produce is also reduced under Organic cultivation. Organic farming reduces the cost of inputs in addition to increase in farmers' income. The usage of important techniques like Mulching, Mixed cropping, Intercropping, organic manures and growth promoters like Vermicompost, Farm Yard Manure, compost, green manure, green leaf manure, Jeevamirtham, Beejamirtham, Panchakavya, Dasakavya, Amirthakaraisal, fish amilam, Neem based bio pesticides, traditional and native seeds, bio pesticides will be disseminated to the farmers and the farmers will be educated on the importance of Organic Certification in Organic farming.

During the current year, Organic farming in 57,700 Ha of Vegetables and other Horticulture crops will be promoted at an outlay of Rs.25.83 crore through National Agriculture Development Programme and National Horticulture Mission.

2.3: Focus on Prime Horticulture Districts

Emphasis will be given for cultivation of Horticulture crops such as Greens and Chillies in Thiruvallur district, Cashew and Jack in Cuddalore district, Pepper and Onion in Namakkal district and Acid lime and Amla in Tenkasi district and services right from sowing to marketing of the produce will be rendered by dovetailing funds from the various schemes implemented by the Department along with the additional union and state Government fund of Rs.12.50 crore.

2.4: Activities of Department of Horticulture and Plantation crops in distribution of fruits and vegetable, during COVID-19 lockdown.

During the lock down announced to control the spread of Covid-19, on 22.05.2021, the Hon'ble Chief Minister of Tamil Nadu announced that, in Chennai and other districts, the fruits and vegetables would be distributed by Department of Horticulture in co-ordination with concerned local bodies through vehicles. Following this, fruits and vegetables were procured from the farmers directly and around 3.07 lakh M.T of produce was distributed to public in 42,597 vehicles coordinating departments namely, Agriculture, Agriculture Marketing and local bodies.

2.5: Tamil Nadu Horticulture Development Agency (TANHODA)

Tamil Nadu Horticulture Development Agency registered under Tamil Nadu Societies Registration Act, 1975 started functioning from 18.06.2004 to promote Horticulture development.

This serves as a “Special Purpose Vehicle” for disseminating all the Horticulture techniques involved right from seeds to value addition, by formulating and implementing various schemes, controls the activities of State Horticulture Farms, Parks and Gardens, Horticulture sales centre and Landscape wing.

2.5.1: Schemes implemented

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

National Horticulture Mission is being implemented with the objective of bringing holistic development in Horticulture sector in the State. The Scheme aims for increasing the production and productivity in Horticultural crops by adopting strategies such as Promotion of hybrids, Hi-tech protected cultivation, High density planting, Rejuvenation of old orchards, Bee keeping, provision of infrastructure for Post-Harvest Management etc.,

This scheme is implemented in 26 Districts of Tamil Nadu. This scheme is being implemented with a fund sharing pattern of 60:40 between the Union and State governments from 2015-2016.

During 2021-22, the scheme will be implemented at an outlay of Rs.150.277 Crore.

2.5.1.2: Scheme for Judicious use of irrigation water.

Even though Tamil Nadu is the 11th largest State in India, it has got only three percentage of the nation's water resources. Government is taking concerted efforts to promote Micro Irrigation scheme among the farmers to bring more area under cultivation by judicious usage of irrigation water.

During 2021-22, it has been programmed to implement the scheme in an area of 1.50 Lakh Hectare for Horticulture and Agriculture crops with a financial outlay of Rs.982.48 Crore in cluster approach to enhance the productivity and thus

the income of the farmers. Micro Irrigation is also to be provided to 1,600 Ha of Mulberry crop.

2.5.1.3: National Agriculture Development Programme (NADP)

In Tamil Nadu, the scheme is being implemented with a sharing pattern of 60:40 between Union and State Governments.

The scheme is implemented with components like, incentives for Organic cultivation of Vegetables, cultivation of Minor fruits crops like Avacado, Kiwi, Mangosteen, Litchi, Dragon fruit and important Horticulture crops like Moringa and Onion, establishment of Permanent Pandal structure for gourds, banana bunch sleeves, cultivation of cashew and Crop diversification from tobacco crop to Vegetable crops.

This scheme was implemented at an outlay of Rs.35.92 Crore during 2020-21.

During 2021-22, the scheme will be implemented at an outlay of Rs.61.05 crore.

2.5.1.4: Rainfed Area Development (RAD)

The objective of Rainfed Area Development is to introduce appropriate farming systems by integrating Horticulture with livestock and allied agricultural activities in a cluster approach to enhance the income of farmers.

During 2020-21, the scheme was implemented in 20 Districts at an outlay of Rs.17.50 Crore.

During the year 2021-22, this scheme will be implemented in 4,400 Integrated Farming system Units at an outlay of Rs.20.53 Crore in 23 Districts.

2.5.1.5: National AYUSH Mission - Medicinal Plants (NAM-MP)

This scheme is being implemented with a sharing pattern of 60:40 between Union and State Governments through Ministry of AYUSH, Government of India. In order to promote the cultivation of medicinal plants, assistance of 30%

to 50% in the cost of cultivation based on the crops is extended under the scheme.

During 2020-21, the scheme was implemented at an outlay of Rs.3.06 Crore.

Under this scheme, Amla will be cultivated in an area of 200 Ha during 2021-22.

The medicinal plants produced in farmers field and State Horticulture Farms will be supplied to Tamil Nadu Medicinal Plant Farms and Herbal Medicine Corporation Limited (TAMPCOL) through Memorandum of Understanding.

2.5.1.6: National Bamboo Mission (NBM)

The scheme is implemented with a sharing pattern of 60:40 between Union and State Governments, since 2018- 19 with the objective of increasing the area under cultivation of Bamboo in Non-forest public and private land and to promote post harvest management activities.

During 2020-21, National Bamboo Mission was implemented in an area of 559 Ha at an outlay of Rs.1.49 Crore.

For the year 2021-22, the scheme will be implemented in an area of 1,479 Ha at an outlay of Rs.5.83 Crore.

2.6: Integrated Horticulture Development Scheme (IHDS)

This scheme is being implemented with 100% state fund with an objective to increase the area, production and productivity of Horticulture Crops.

The major components of this scheme are area expansion of Horticultural crops, protected cultivation, distribution of Horticulture tools and equipments, Establishment of Post-harvest management infra structures, promotion of Homested gardens in rural and urban areas.

The scheme is implemented in Non – NHM Districts namely, Tiruvallur, Kancheepuram,

Chengalpattu, Nagapattinam, Karur, Namakkal, Tiruvannamalai, Tiruvarur, Virudhunagar, Thoothukudi, Chennai.

During 2020-21, the scheme was implemented at an outlay of Rs.31.37 Crore.

For the year 2021-22, the scheme will be implemented at an outlay of Rs.41.55 Crore.

2.7: Collective Farming

The scheme is being implemented with 100% state fund by organizing Small and marginal farmers into Farmers Interest Groups and Farmers Producer Groups.

The required machineries will be purchased at an outlay of Rs.25.16 Crore for 500 FPGs that are formed during the year 2021-22.

2.8: Tamil Nadu Irrigated Agriculture Modernization Project - Horticulture (IAMWARM II)

Tamil Nadu Irrigated Agriculture Modernization Project is funded by World Bank for the period of six years from 2018-19 to 2023-24 and being implemented at an outlay of Rs.210 Crore in 33 Districts.

The main objective of the programme is to accelerate crop diversification so as to achieve high remuneration utilizing less water, through promotion of hi-tech cultivation technologies and water conservation technologies in the selected sub basins.

During 2021-22, the scheme will be implemented at an outlay of Rs.35.29 Crore with components viz., crop demonstrations in 5,473 Ha, installation of micro irrigation in 2,073 Ha and model village activities.

2.9: Pradhan Mantri Fasal Bima Yojana (PMFBY)

Notified Horticulture Crops

April to September (Kharif Season) - Banana, Tapioca, Turmeric, Potato, Onion, Red Chillies, Bhendi, Brinjal, Cabbage, Carrot, Garlic, Ginger, and Tomato

October to March (Rabi Season) - Banana, Tapioca, Potato, Onion, Red Chillies, Bhendi, Brinjal, Cabbage, Carrot, Garlic, Ginger, Coriander and Tomato

During 2020-21, Compensation claim is being worked out by the Insurance companies for the notified crops.

For the year 2021-22, the enrollment is in progress for the notified crops.

2.10: Infrastructures facilities in Horticulture

2.10.1: State Horticulture Farms (SHFs)

There are 78 State Horticulture farms functioning under the Department of Horticulture and plantation crops in 35 Districts of Tamil Nadu. The main objective of the State Horticulture Farms is timely production and distribution of quality pedigree planting materials at reasonable price to the farmers. Further, these farms also serve as “Model Demonstration Farms” on the latest technology and modern irrigation technologies to the farmers, besides providing employment opportunities to the labourers.

During the year 2020-21, 34.58 Crore Nos of planting materials, protray Vegetable seedlings and flower seedlings were produced in State Horticulture Farms and Parks & Gardens and distributed to the farmers. It has been programmed to produce 52.69 Crore numbers of planting materials including 32.14 Crore protray

seedlings and 17.17 crore numbers of Onion seedlings in the year 2021-22.

During 2020-21, 328 MT of vegetable seeds were produced and distributed. During 2021-22, it has been planned to produce 400 MT of Vegetable seeds.

2.8: List of State Horticulture Farms

Sl. No	District	Name of the Farm/CoE	Year of Establish-ment	Area in Ha
1.	Ariyalur	Keelapaluvur	2018	7.58
2.	Chennai	Madhavaram	1980	4.38
3.	Coimbatore	Anaikatty	1986	12.00
4.	Coimbatore	Kannampalaya m	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

Sl. No	District	Name of the Farm/CoE	Year of Establish-ment	Area in Ha
13.	Dindigul	Sirumalai	1980	200.04
14.	Dindigul	Centre of Excellence for Vegetables, Reddiyar chatram	2012	5.33
15.	Dindigul	Kottapully	2021	5.87
16.	Erode	Bagudham palayam	2018	10.00
17.	Chengalpattu	Attur	1961	12.24
18.	Kancheepuram	Vichanthangal	1982	23.25
19.	Kancheepuram	Melkadirpur	1982	42.63
20.	Kancheepuram	Melottivakkam	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

Sl. No	District	Name of the Farm/CoE	Year of Establish-ment	Area in Ha
31.	Nagapattinam	Pushpavanam	2021	10.25
32.	Namakkal	Semmedu	1974	11.60
33.	Namakkal	Padasolai	1989	22.67
34.	Perambalur	Vengalam	2018	4.72
35.	Pudukottai	Kudumiyan malai	1974	118.68
36.	Pudukottai	Vallathirakottai	1977	521.20
37.	Pudukottai	Nattumangalam	1985	53.02
38.	Ramnatha puram	Oriyur	2013	14.77
39.	Salem	Giant Orchard, Karumandurai	1981	419.77
40.	Salem	Maniyar kundram	1982	101.21
41.	Salem	SHF, Karumandurai	1981	39.35
42.	Salem	Mulluvadi	1985	48.40
43.	Salem	Sirumalai	1987	8.00
44.	Salem	SHF Yercaud	1975	10.13
45.	Sivagangai	Devakottai	1985	81.19
46.	Sivagangai	Nemam	1979	38.77
47.	Sivagangai	Kilathari	2019	12.81
48.	Thanjavur	Aduthurai	1988	8.90
49.	Thanjavur	Marungulam	1966	10.70
50.	The Nilgiris	Burliar	1871	6.25
51.	The Nilgiris	Kallar	1900	6.77
52.	The Nilgiris	Fruit Preservation Unit, Coonoor	1965	4.05

Sl. No	District	Name of the Farm/CoE	Year of Establish-ment	Area in Ha
53.	The Nilgiris	Pomological Station,Coonoor	1948	10.46
54.	The Nilgiris	SHF,Kattery	1974	16.96
55.	The Nilgiris	Doddabetta	1969	2.52
56.	The Nilgiris	Thummanatty	1956	9.80
57.	The Nilgiris	Nanjanad	1917	64.00
58.	The Nilgiris	Devala	1978	80.00
59.	The Nilgiris	Colgrain	1989	20.40
60.	Theni	Periyakulam	1950	9.32
61.	Thoothukudi	Keelavallanadu	2019	3.09
62.	Thiruvarur	Moovanallur	2018	8.87
63.	Tirupur	Sankarama nallur	2018	10.12
64.	Tirunelveli	Vannikonendal	2018	10.86
65.	Tiruvannamalai	Pudurchekkadi	2018	12.76
66.	Tiruvannamalai	Jamuna marathur (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, Kanjanaicken patti	2019	8.67
70.	Tirupattur	Thagarakuppam	1985	34.40
71.		Kudapattu	1961	10.08

Sl. No	District	Name of the Farm/CoE	Year of Establish-ment	Area in Ha
72.	Thiruvallur	EakaduKandigai	2020	3.62
73.	Ranipet	Navlock	1981	84.42
74.	Kallakurichi	A.Sathanur	2018	10.00
75.	Vellore	Agaramcheri	2020	34.76
76.	Virudhunagar	Poovani	1967	9.46
77.	Virudhunagar	Srivilliputhur	1982	46.27
78.	Virudhunagar	Adithanendhal (Narikudi block)	2020	0.81
			Total	**2736.47**

2.10.2: Parks and Gardens

The Horticulture Department maintains 24 Parks in 8 Districts of the State. Parks act as recreation centres for the visitors and tourists. It also serves as an educational centre for students and Botanists.

2.9:Details of Parks & Gardens

Sl. No	District	Name of the Park / Garden	Year of Establish-ment	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	Ramnathapuram	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
13	Tenkasi	Eco Park, Courtallam	1986	15.07
14	Tiruvannamalai	Tiruvannamalai Park	2021	3.64

Sl. No	District	Name of the Park / Garden	Year of Establish-ment	Area (Ha)
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**

During 2021-22, a new Horticulture park will be established in 3.2 acre at an outlay of Rs.1 Crore at Vadalur town panchayat of Cuddalore District.

2.10.3: Creation of Centre of Excellence (CoE)

Centres of Excellence act as demonstration centres to disseminate Hi-Tech practices adopted in important Horticulture crops to farmers and also impart training to farmers.

Table.2.10: Centre of Excellence

S.No	Centre of Excellence	Location
1.	Cut flowers	Thally, Krishnagiri District.
2.	Vegetables	Reddiyarchatram, Dindigul District.
3.	Hill vegetables	Nanjanadu, The Nilgiris District.
4.	Tropical fruits	Kanchanaickenpatti, Trichy District.
5.	Bee Keeping	Pechiparai, Kanyakumari District.
6.	Traditional Flower crops	Tiruparankundram, Madurai District.

2.10.4: Horticulture Training Centres

The key objective of the four Horticulture Training Centres located at Madhavaram in Chennai District, Kudumiyanmalai in Pudukkottai District, Thally in Krishnagiri District and Ooty in The Nilgiris District under the Department of Horticulture and Plantation Crops is to impart training to farmers in advanced cultivation technologies.

2.10.5: Special Centres for Horticulture crops.

Special Centres are being established to promote major Horticultural Crops grown in the District, by maintaining the gene bank for all varieties of the crop and to train the farmers on Hi-Tech practices.

Table.2.11: Special Centres

S.No	Special Centre	District
1.	Cashew	Cuddalore
2.	Onion	Perambalur
3.	Moringa	Theni
4.	Turmeric	Erode
5.	Chillies	Thoothukudi
6.	Acid lime	Thenkasi
7.	Betel Vine	Thanjavur

2.10.5.1: Special Centre for Jack in Cuddalore district

During the current year, special centre for jack will be established at Panruti block of Cuddalore district, where a gene bank will be established by planting varieties like Panruti pala, Vada kadu, Veli pala, Muttam varukai, Pechiparai, Sembaruti, Singapore pala, Palur 1, Palur 2 and Palur 3. The farmers will be enlightened with demonstrative training right from cultivation to value addition at an outlay of Rs.5 Crore.

2.10.6: Diploma in Horticulture

Two years Diploma in Horticulture is being offered at Tamil Nadu Horticulture Management Institute, Madhavaram, Chennai District, Horticulture Research and Training Centre, Thally, Krishnagiri District and Centre of Excellence for Vegetables- Rediyarchathiram, Dindigul District with the intake of 50 students annually in each centre.

Affiliation for the two years Diploma course have been obtained from Tamil Nadu Agriculture University.

2.11: Staff Strength:

To impart training in Horticultural Technologies, to extend Government schemes to eligible farmers and to coordinate departmental activities, 3,837 Technical and other staff are working in Block, District and State levels under the Horticulture department.

Table 2.12: Sanctioned Strength

S.No	Staff details	Total posting
1	Technical Staff	2,615
2	Non Technical Staff	1,222
Total		3,837

Table 2.13: Cadre detail

Sl.No	Staff details	Total posting
1	Additional Director of Horticulture	2
2	Joint Director of Horticulture	6
3	Deputy Director of Horticulture	44
4	Assistant Director of Horticulture	398
5	Horticultural officer	404
6	Deputy Horticulture officer	123
7	Assistant Horticulture officer	1,633
8	Assistant Seed Officer	5
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		**3,837**

3. Agricultural Engineering

The Agricultural Engineering Department is playing a major role in conserving the soil and water resources for sustainable agriculture, increasing agricultural production and productivity, increasing farmers income and involving rural youth in agricultural activities. The Agricultural Engineering Department has been implementing various schemes to increase sustainable production in agriculture through Agricultural mechanization, Value addition of agricultural produce, promoting the use of solar energy in agriculture and improving agricultural land and water resources.

3.1. Functions of Agricultural Engineering Department

a) Soil and Water Conservation

b) Water Management

c) Agricultural Mechanization

d) Value addition of agriculture produce

e) Solar Energy in Agriculture

f) Strengthening of Infrastructure

3.2. Soil and Water Conservation

Top soil which is essential for agriculture gets eroded during rains and floods resulting in degradation of agricultural lands. To arrest soil erosion and save the fertile top soil, to save rain water and to recharge ground water, Agriculture Engineering Department is implementing schemes namely State funded Kalaignarin Anaithu Grama Orunginaintha Velaan Valarchi Thittam and Chief Minister's Dry Land Development Mission, River Valley Projectunder the Union Government shared National Agriculture Development Programme,State funded Special Area Development Programme,World Bank aided Tamil Nadu Irrigated Agriculture Modernization Project, Dam Rehabilitation and Improvement Project, State funded scheme of creation of Farm Ponds to

catch the rain water in farm lands and Maintenance of water harvesting structures.

3.2.1. Kalaignarin Anaithu Grama Orunginaintha Velaan Valarchi Thittam

As per the announcement made in the Agriculture Budget 2021-2022, it is aimed to increase the cultivable area by bringing fallow lands under cultivation, by creating new water sources, increase the productivity for the benefit of farmers under the Kalaignarin Anaithu Grama Orunginaintha Velaan Valarchi Thittam.

Under this scheme, it is proposed to form farmers groups, to create community bore wells for the benefit of the groups based on hydro-geological investigation, provide pumpsets energised with either solar or electric energy and install conveyance pipes for irrigation. By this, water is provided directly to the individual farmer's field, thereby facilitating the increase of the cultivable area.

Further under this scheme, it is proposed to provide agricultural machinery to individual farmers with subsidy, to establish village level custom hiring centres, to provide value addition machinerywith subsidy and to establish village level value addition machinery facilitation centres by Agricultural Engineering Department in the selected villages of this programme, on an integrated basis along with Agriculture and other allied Departments for the benefit of the farmers.

3.2.2. Chief Minister's Dry land Development Mission

As per the announcement made in the Agriculture Budget 2021-2022, under the scheme of Chief Minister's Dry land Development Mission, development activities namely establishment of Village level Agricultural Machinery Custom Hiring Centres, Block level Agricultural Machinery Custom Hiring Centres, setting up of Value Addition Machinery (VAM) Units and creation of Micro Catchment Water Harvesting measures are

to be taken up by Agricultural Engineering Department.

Dryland farmers are mainly depending on monsoon rains. Due to vagaries of monsoon the farming operations are largely affected. To mitigate this problem and in order to get sustained crop production in dryland areas, the creation of Micro catchment water harvesting measures within the farmer's field *viz*., Field bunding and Farm ponds are the best solution.

During the year 2021-22, it is proposed to establish Micro Catchment Water Harvesting measures viz., 685 Nos.of farm ponds and 1780 Ha of field bunding for a total length of 2,61,550 metre with 100 % subsidy assistance to individual farmers, in the dry land clusters of 32 districts (except Chennai, Tiruvarur, Nagapatinam, Mayiladuthurai, Kanyakumari and The Nilgris districts) with a total outlay of Rs.7.49 crore under State fund.

3.2.3. River Valley Project (RVP)

Under National Agriculture Development Programme,the River Valley Project is implemented in South Pennaiyar and Mettur catchments in Tamil Nadu with the Union Government and State Government share. Reducing siltation of multipurpose reservoirs, improvement of land capability, improvement of soil moisture regime and promotion of land use to match land capability in interstate catchments are the objectives of the scheme.The soil and water conservation measures are executed in community lands with 100%Government assistance and inindividual farmer's field with 50% farmer’s contribution.The scheme is implemented with 60 % Union Government share and 40 % State Government share.

During the year 2021-22, it is proposed to construct 70 Nos.of soil and water conservationstructures and land development

works benefiting 14 Ha to a value of Rs.3.28 crorein Krishangiri and Erode districts.

3.2.4. Special Area Development Programme (SADP)

Ecological restoration, conservation of natural resources in the forest fringe villages of WesternGhats of Tamil Nadu by adopting integrated watershedapproach in a holistic manner,for sustainable livelihoodand enhancing agricultural productivityare the objectives of this scheme.

The soil and water conservation measures are executedin the lands of STfarmers with 90% subsidy, for SC farmers with 80% subsidy and for other category farmers with 50% subsidy. Community based works are carried out with 100% subsidy.

During the year 2021-22,it is programmed to take up soil and water conservation works and land development works at a cost of Rs.20.82

crore with State fund in 11 Districts namely, The Nilgiris, Coimbatore, Erode, Tiruppur, Theni, Dindigul, Madurai, Virudhunagar, Tirunelveli, Tenkasi and Kanyakumari.

3.2.5. Dam Rehabilitation and Improvement Project (DRIP)

The World Bank aided Dam Rehabilitation and Improvement project is implemented in the selected Dams of Water Resource Department and Tamil Nadu Generation and Distribution Corporation Limited (TANGEDCO). Agricultural Engineering Department interventions in Dam Rehabilitation and Improvement project are to prevent siltation of multipurpose reservoirs by adopting multi-disciplinary integrated approach of soil conservation and watershed management practices in catchment areas such as construction of gabion check dams, flood protection walls, masonry check dams, silt detention structures and rain water harvesting structures. Soil conservation and catchment area

management works inKrishnagiri reservoir project of Krishnagiri district and Kundha reservoir project ofThe Nilgiris district were carried out by Agricultural Engineering Department under Phase-I during the period from 2015-16 to 2020-21 at a cost of Rs.15.365 crore.

Under Phase-II, Agricultural Engineering Department has programmed to execute catchment area treatment works in five dams at an outlay of Rs.26.74 crore with world bank aid from the year 2021-22 to 2024-25. During the year 2021-22, it is programmed to implement works at an outlay of Rs.6.53 crore.

3.2.6. World Bank Aided Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP)

(a) Construction of Farm Ponds

The Government of Tamil Nadu has programmed to implement World Bank aided Tamil Nadu Irrigated Agriculture Modernization Project with an outlay of Rs.2962 crore for

developing 66 sub-basins over a project period of Seven years starting from the year 2017-18. Out of the total outlay, Agricultural Engineering Department has been allocated with Rs.15.53 crore for the construction of Farm Ponds.

During the year 2020-21, 53 farm ponds were constructed for an amount of Rs.34.34 lakh. During the year 2021-22, 388 farm ponds for an outlay of Rs.2.96 crore are to be executed.

(b) Model Village Programme

Model villages are established with Multi departmental converged development plans,line departmental interventions, capacity building activities dovetailed with Water UsersAssociations and service providers.Agricultural Engineering Department has been allocated for establishing 12 Model villages during Phase I for an amount of Rs.24 lakh in a total period of three years.

3.2.7. Creation of Farm Ponds to catch the rainwater in farm lands

In order to store the rain water within the farmer's field and to provide lifesaving irrigation during drought period, as per the announcement made in the Agriculture Budget 2021-2022, farm ponds will be created in the farmer's field as per the farmer's requirement in all the districts (except Chennai and The Nilgiris) giving priority to the rainfed farmers.

In addition to providing life saving irrigation to the crops by utilizing the harvested rain water in the farm pond, farmers are getting additional income by way of fish culture and by growing vegetables and greens on the bunds of farm ponds, thereby enhancing their livelihood.

Farm ponds are proposed to be created in different sizes as per the requirement of farmers with a maximum of 28 metre length, 28 metre width, two metre depth with 100 % subsidy assistance upto Rupees One lakh. A farm pond of

above size could be able to harvest 1,568 cubic metre (15,68,000 liters) of rain water in single filling.

During this year, it is proposed to create 500 Nos. of farm ponds in the individual farmer's field with a total outlay of Rupees Five crore using State Government fund.

3.2.7. Maintenance of watershed structures through Agricultural Engineering Department owned machinery

The maintenance workslike desilting and deepening will be takenup to increase the storage capacity of the water harvesting structures created by Tamil Nadu Watershed Development Agency (TAWDEVA) under Drought Prone Areas Programme (DPAP), Integrated Watershed Development Programme (IWDP) and Integrated Watershed Management Programme (IWMP) in 5,010 watersheds. Agricultural Engineering Department (AED) has purchased 20 Nos.of Bull Dozer, 60 Nos.of wheel type Back hoe with front

end loader and 29 Nos.of Tractor operated tipper trailer of five ton capacity in order to take up the above said maintenance works.

The maintenance works will be taken up in the water harvesting structures created in watershed areas across Tamil Nadu, through Agricultural Engineering Department owned machinery in the selected structures by utilising the Watershed Development Fund (WDF) of Rs.35 crore received from TAWDEVA.

During the current financial year 2021-22, in order to carry out the maintenance works in 1,700 water harvesting structures at a cost of Rupees Fivecrore, a district level team with officials from Agricultural Engineering Department and Agriculture Department is constituted for the selection of assets. The selected assets are to be taken up for maintenance by Agricultural Engineering Department after the District Collector approves the list of assets.

3.3. Water Management

Water is an essential natural resource for Agriculture. At present, more than 95 % of surface water is being used, also ground water availability is declining at an alarming rate due to excessive usage of ground water during scarce period as an alternate source of irrigation. Hence, it is need of the hour for the effective management of available water.

In order to improve the production and productivity of cultivable lands, water management activities become essential. For effective use of every drop of water and increase the cultivable area, various schemes through water management are being implemented.

3.3.1. Micro Irrigation under Pradhan Mantri Krishi SinchayeeYojana (PMKSY)-Per Drop More Crop

To improve water use efficiency and reduce wastage, the micro irrigation works are being

carried out in Tamil Nadu under “PMKSY- Per Drop More Crop” component and being implemented by Tamil Nadu Horticulture Development Agency.

For the effective implementation of the scheme, the joint inspection of micro irrigation system installed fields along with Agriculture / Horticulture / Sugar Department officials and recording measurements are carried out by Agricultural Engineering Department. During the year 2021-22, an area of 1,50,000 Ha of joint verification and measurement of Micro Irrigation System installed works are to be carried out at a cost of Rs.982.48 crore.

3.3.2. Supplementary Water Management Activities

Supplementary Water Management Activities scheme is being implemented to propagate Micro Irrigation Technology among the farming community by filling the gaps for creation

of water source for Micro Irrigation near farm gate level through the following activities,

a) Sinking of Shallow Tube Wells/Bore wells/Wells - in Safe Firkas
b) Installation of diesel pumpset/ electric motorpumpset
c) Laying of conveyance pipes
d) Construction of Ground Level Storage Structures

This scheme is implemented by the Agriculture and Horticulture Departments. The joint verification of the above completed components are carried out by Agricultural Engineering Department along with Agriculture and Horticulture Department block officials.

During the year 2021-22, joint verification of 1,89,592Nos.ofscheme works at a value of Rs.303.35 crore will be carried out by AgriculturalEngineering Department.

3.3.3. Reclamation of Problem soils

Entry of sea water, shallow poor quality aquifer, residual effect of fertilizer application lead to the formation of problem soils. This resulted in reduction in area under irrigation, agricultural production and productivity, migration of farmers to other professions. It is necessary to increase production by bringing the problematic area back into cultivation. Hence, a scheme on “Reclamation of Problem soils” as a sub-scheme of National Agriculture Development Programme is implemented.

Under this scheme, the following reclamation works namely, creation of water harvesting structures, construction of weir to prevent sea water intrusion, improvement of drainage systems, deep ploughing, green manuring and mixing with soil by rotavators, supply of inputs, imparting training to farmers are taken up.This scheme is implemented with 60 %

Union Government share and 40 % State Government share.

In the year 2020-21, 870 Ha of saline affected areas in Cuddalore, Mayiladuthurai and Pudukkottai Districts were reclaimed for an amount of Rs.4.51 crore.

During the year 2021-22, thisscheme is being implemented in Mayiladuthurai and Pudukkottai districts to reclaim saline affected area of 573 Ha for the benefit of 915 farmers at an outlay of Rs.3.41 crore.

3.3.4. Pradhan Mantri Krishi Sinchayee Yojana –Har Khet Ko Pani- Ground Water Irrigation

Assured or protective irrigation encourages farmers to invest more in farming technology and inputs leading to productivity enhancement and increased farm income.

In Tamil Nadu, under Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) a scheme on

Ground Water Irrigation is implemented for the benefit ofsmall and marginal farmers with priority to Adi dravidarand women farmers.

Under this scheme, drilling of wells with Solar or Electrical pumping systems and water conveyance pipe works are carried out in safe firkas. This enhances the physical access of water to the farm and to expand cultivable area under assured irrigation. The subsidy assistance for the above works will be provided to the farmers with the maximum ceiling amount as prescribed by the Union Government guidelines. The scheme will be implemented only in safe firkas following the UnionGovernment guidelines,

a) Average annual rainfall should be 750 mm or more.
b) Stage of Ground water development (SOD) should be less than 60 %.
c) Project area should not be irrigated by any other irrigation source.

In order to save the irrigation water, the farmers in the project areas are encouraged to install Micro Irrigation System availing the full Government subsidy.

(a) For Farmers Groups

During the year 2020-21, 115 wells and other related works were taken up for an outlay of Rs.6.10 crore to benefit 866 farmers in Ariyalur, Cuddalore, Chengalpattu, Kanyakumari, Madurai, Pudukkottai, Salem, Sivagangai, Tiruvallur, Krishnagiri, Ramanathapuram, Virudhunagar and Villupuram districts.

During the year 2021-22, 51 wells and other above mentioned works are to be taken up for an outlay of Rs.3.02 crore in eight districts of Tamil Nadu viz., Cuddalore, Pudukkottai, Kallakurichi, Sivagangai, Tiruvallur, Krishnagiri, Ramanathapuram and Salem districts.

(b) For Individual farmers

During 2021-22, a scheme is to be implemented in safe firkas of 11 districts viz.,

Ariyalur, Cuddalore, Chengalpattu, Kancheepuram, Krishnagiri, Pudukkottai, Madurai, Ramanathapuram, Sivagangai, Theni and Virudhunagar for the benefit of 958 individual small and marginal farmers at an outlay of Rs.44.90 crore.

3.3.5. Scheme for providing electric motor pumpsets to the farmers with subsidy

In Tamil Nadu more than 26 lakh electric motor pumpsets are in use for irrigating the areas through ground water. In most of the cases very old inefficient electric motor pumpsets are being continuously used by the farmers. The usage of inefficient electric motor pumpsets continuously causes more power consumption and increase in financial burden to the Government.

Hence, in order to facilitate pumping of irrigation water from the wells,to the small and marginal farmers having power connection,own uptothree acres of land and not afford to buynew electric motor pumpsets, a scheme is proposed to

provide subsidy assistance as per the announcement made in the Agriculture Budget 2021-2022, benefitting 1,000 farmers at an outlay of Rupees One crore under the State fund allocation for the purchase of new efficient electric motor pumpsets or for the replacement of inefficient old electric motor pumpsets.

The subsidy assistance is to be provided to the farmers at the rate of Rs.10,000 or 50 % of the cost of electric motor pumpsets whichever is less, to purchase new electric motor pumpsets during the year 2021-22.

3.4. Agricultural Mechanization

Agricultural Mechanization programme plays a vital role in agriculture to take up variousfarming operations in time, to reduce the cost of cultivation, to increase the farm power availability, to mitigate the labour shortage, to attract the youth in Agriculture and to introduce latest technologies for the development of

Agriculture. The optimum application of seeds, manures, fertilizers, weedicides and pesticides at right time, besides reduction in duration for agricultural activities, elimination of hazards and drudgery of different farming operations are possible through Agricultural Mechanization resulting in higher net income of the farmers.

3.4.1. Hiring of Department owned machinery

Agricultural Engineering Department is hiring out various agricultural machinery and implements to the needy farmers under Land Development scheme and Minor Irrigation scheme at nominal hire charges fixed by the Government.

3.4.1.1. Land Development Machinery

Agricultural Engineering Department has a Land Development fleet strength of 87 Bull Dozers for land levelling and land shaping, 275 Tractors for ploughing and other farming operations and

47 Paddy Combine harvesters. These machinery are hired out to the needy farmers at nominal hire charges fixed by the Government.

The district wise details of Land Development Machinery available for farmers at nominal hire charges are furnished in Table.3.1.

Table.3.1. District wise availability of Land Development Machinery

Sl.No.	District	Bull Dozer	Tractor
1	Kancheepuram	3	8
2	Chengalpattu	1	5
3	Tiruvallur Tiruvallur	3	10
4	Cuddalore	5	15
5	Villupuram	3	9
6	Kallakurichi	2	7
7	Vellore	1	3
8	Ranipet	1	3
9	Tirupathur	1	4
10	Tiruvannamalai	2	8
11	Dharmapuri	2	7
12	Krishnagiri	2	7
13	Salem	5	12
14	Namakkal	3	6
15	Coimbatore	3	8
16	Erode	3	9

Sl.No.	District	Bull Dozer	Tractor
17	Tiruppur	4	9
18	Trichy	3	11
19	Ariyalur	2	8
20	Perambalur	1	3
21	Karur	2	7
22	Pudukkottai	2	7
23	Tiruvarur	2	15
24	Thanjavur	3	15
25	Nagapattinam	1	8
26	Mayiladuthurai	1	5
27	Dindigul	4	7
28	Madurai	4	7
29	Theni	3	8
30	Sivagangai	2	6
31	Ramanathapuram	3	7
32	Virudhunagar	2	7
33	Thoothukudi	4	11
34	Tirunelveli	2	8
35	Tenkasi	1	4
36	The Nilgiris	1	1
Total		**87**	**275**

Paddy Combine harvesters are available in Thanjavur, Tiruvarur, Nagapattinam, Chengalpattu, Madurai, Tirunelveli, Tenkasi, Erode, Ariyalur, Trichy, Cuddalore and Pudukkottai districts for hiring out to the paddy

growing farmers at nominal hire charges fixed by the Government.

3.4.1.2. Minor Irrigation Machinery

To cater the needs of the farmers, Agricultural Engineering Department hires out 25 Rotary drills for sinking of tube wells in alluvial soil areas of Kancheepuram, Tiruvallur, Cuddalore, Pudukkottai, Thanjavur and Tiruvarur districts, Four Percussion drills to work in selected alluvial areas and hard rock areas of Tiruvallur district and 22 Mini Drills for sinking of tube wells in shallow areas of Tiruvarur, Thanjavur and Nagapattinam districts.

Further, Agricultural Engineering Department owns several Minor Irrigation Machinery such as 20 Hand Boring sets for sinking of shallow tube wells, 10 Rock Blasting Units for deepening of open wells as well as for blasting and removing rock out crops in farm lands, 21 Digital Resistivity Meters for assessing the

lithology and for exploring ground water availability for drilling tube wells and bore wells and two Electrical Loggers for analysing the quantity and quality of ground water, for utilisation by the farmers.

3.4.1.3. Disaster Management Machinery

Agricultural Engineering Department has 20 Tractor operated water pumpsets and 805 Heavy duty chain saws for carrying out relief operation during floods and other natural calamities. These Tractor operated pumpsets and Heavy duty chain saws are hired out to the farmers in addition to Bulldozers and Tractors for disaster relief works.

The district wise details of Disaster Management Machinery available in the Department are furnished in Table.3.2.

Table.3.2. District wise availability of Disaster Management Machinery

Sl.No.	District	Heavy duty Chainsaw
1	Kancheepuram	25
2	Chengalpattu	25
3	Tiruvallur	50
4	Cuddalore	150
5	Villupuram	50
6	Pudukkottai	100
7	Tiruvarur	100
8	Thanjavur	150
9	Nagapattinam	155
Total		**805**

3.4.1.4. New and Innovative Agricultural Machinery

Agricultural Engineering Department has procured new and innovative agricultural machinery to hire out at nominal hire charges to the farmers who cannot afford to buy high cost agricultural machinery, for carrying out various farming operations.

Agricultural Engineering Department is hiring out 87 Bull Dozers, 60 Backhoe with front end loaders and 10 Crawler excavators at nominal hire charges to the needy farmers for the maintenance, improvement and deepening of water bodies, to strengthen their bunds and to improve their storage capacity.

To strengthen the hiring activities of Agricultural Engineering Department and to carryout various farming operations like ploughing, sowing, weeding, harvesting, threshing, and crop residue management, 610 tractor operated implements, to promote mechanisation in sugarcane cultivation areas 29 machinery and implements altogether639 Agricultural machinery and implements have been procured to hire out to the needy farmers at nominal hire charges fixed by the Government.

3.4.1.5. Procurement of new Agricultural machinery and implements

During the current year, to strengthen the custom hiring activity of Agricultural Engineering Department at block level by hiring out the agricultural machinery and implements at nominal hire charges and to facilitate the farmers to carry out the farming operations easily, new Agricultural Machinery / Implements viz., 185 Tractors for ploughing and other agricultural activities, 185 Rotavators to uproot the plant residues, cut them into pieces and incorporate into the soil in order to prepare manure, 185 Tractor operated cultivators for primary tillage operations of breaking the hard pans, loosening and aerating the soil, 120 Cage wheels for puddling operations and Four Drones for precision aerial spraying of pesticides will be procured for the Agricultural Engineering Department at a cost of Rs.23.29 crore, as per the announcement made in the Agriculture Budget 2021-2022. By hiring

out the above mentioned new agricultural machinery and implements at Government fixed nominal hire charges, about 23,250 farmers will be benefitted every year.

3.4.1.6. Agricultural Engineering Department owned workshops

The Scheduled Maintenance Programme and Breakdown maintenance of all Land Development machinery and Minor Irrigation machinery are taken up in six tractor workshops of Agricultural Engineering Department situated at Coimbatore, Vellore, Trichy, Tiruvarur, Madurai and Tirunelveli. These workshops are equipped with required infrastructure facilities to attend immediately the repair and maintenance of agricultural machinery and implements in order to continuously engage them in different farming operations. In addition to this, Apprenticeship trainings are imparted in these workshops to train the unemployed rural youth and to assist them for getting employment.

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

At present, agricultural machinery are available at Revenue division level in Agricultural Engineering Department. As per the announcement made in the Agriculture Budget 2021-2022, to benefit the farmers at the block level, the agricultural machinery and implements will be hired out to the needy farmers at block level for nominal hire charges in the Delta districts as first phase from the current year.

Further, in order to facilitate the farmers to avail the above services, steps will be taken to develop online application to enable the farmers to book the required agricultural machinery and implements through online easily from home itself and to enable the farmers to pay advance hire charges through suitable webbased services or Apps. About 45,000 farmers will be benefitted by this facility every year.

3.4.1.8. Agricultural Machinery Maintenance sheds

During the current year, in order to safely keep the Agricultural Engineering Department owned machinery, implements which are hired out to the farmers at nominal hire charges and to ensure the effective utilization of the machinery and implements by repairing immediately, 40 Agricultural Machinery Maintenance sheds will be established under National Agriculture Development Programme at a cost of Rs.20 lakh per shed at a total cost of Rupees Eight crore.

3.4.2. Promotion of Agricultural Mechanization

To increase the farm power availability by promoting agricultural mechanization among the farming community, assistance is extended for the purchase of agricultural machinery and implements to the individual farmers, establishment of different types Custom Hiring

Centres under Union Government sponsored scheme of “Sub Mission on Agricultural Mechanization (SMAM)”. The scheme is implemented with 60 % Union Government share and 40 % State Government share.

The distribution of agricultural machinery and implements to the individual farmers with subsidy assistance is implemented through Direct Benefit Transfer (DBT) in the Union Government’s website www.agrimachinery.nic.in.

The beneficiaries can select any type, make and model of empanelled and approved agricultural machinery and implements by the Agricultural Engineering Department in the above said DBT portal as per their choice for getting benefit.

3.4.2.1. Distribution of Agricultural Machinery and Implements to the Individual Farmers

Under the scheme of Sub Mission on Agricultural Mechanization (SMAM), for the

purchase of Agricultural Machinery and Implements, subsidy assistance of 50 % to SC, ST, Small, Marginal and Women farmers and 40 % to other farmers or the maximum permissible subsidy prescribed by Government whichever is less will be given for the distribution of agricultural machinery and implements like Tractor, Power Tiller, Rotavator, Paddy Transplanter, Tractor and Power Tiller driven implements, Power Weeder, Chaff Cutter, Brush Cutter, Multi Crop Thresher, Baler,Coconut Frond Chopper, Sugarcane Detrashing Machine, Sugarcane Trash cutter and Combine Harvester etc.

During the year 2021-22, as per the Agriculture Budget 2021-2022, it is proposed to distribute 7,106 Nos.of agricultural machinery and implements with the subsidy assistance of Rs.113.43crore giving priority to small machinery and implements for the benefit of small and

marginal farmersunder Agricultural Mechanization programme.

3.4.3. Establishment of Agricultural Machinery Custom Hiring Centres

To ensure the availability of agricultural machinery without shortage, to improve the agriculture by introducing innovative technology and to help the Small and Marginal farmers who are not in a position to purchase and maintain Hi-tech and costly farm machinery on their own, block level and village level custom hiring centres, Hi-Tech and Sugarcane based Custom Hiring Centres are established by Rural Entrepreneurs, Registered farmers societies and Farmer Producer Organizations (FPOs) with subsidy assistance. These Custom Hiring Centres are hiring out the agricultural machinery, implements and equipments to the needy farmers.

3.4.3.1. Block based Custom Hiring Centres

The Custom Hiring Centres are established at block level by Rural Entrepreneurs, Registered Farmers Societies and Farmer Producer Organisations with a set of agricultural machinery, implements and equipments for hiring to the farmers to meet out the agricultural machinery demand. The unit cost for forming a Custom Hiring Centre is Rs.25 lakh. The subsidy assistance for forming Custom Hiring Centre is 40%of the total cost or a maximum amount of Rs.10 lakh and the balance 60 % is the beneficiary contribution.

As per the Agriculture Budget 2021-2022, during the year 2021-22, it is proposed to establish 36 block level Custom Hiring Centres with subsidy assistance of Rs.3.6 crore.

3.4.3.2. Village based Custom Hiring Centres

In low farm power availability districts, in order to take up the farming operations in time and to increase the net income of the farmers,subsidy assistance is provided for the establishment of Village level Custom Hiring Centres to the Small and marginal farmers combined as a group like Registered Farmers Societies and Farmer Producer Organisations to purchase various types of required Agricultural machinery, implements and equipments. Priority is given to the cluster villages under this scheme of Chief Minister's Dry Land Development Mission. The unit cost for forming a village based custom hiring centre is Rs.10 lakh. The subsidy assistance for a custom hiring centre is 80 % of the total cost subject to a maximum of Rupees Eight lakh.

As per the Agriculture Budget 2021-2022, during the year 2021-22, it is proposed to

establish 146 village based custom hiring centres with the subsidy assistance of Rs.11.68 crore.

3.4.3.3. Sugarcane based Custom Hiring Centres

To promote the mechanization activity in Sugarcane cultivation, the custom hiring centres with suitable machinery are proposed to be established at a project cost of Rs.150 lakh per centre through Sugar mills and Entrepreneurs with 40 % subsidy assistance to a maximum limit of Rs.60 lakh. These centres hire out the sugarcane cultivation machinery to the farmers.

During the year 2021-22, as per the announcement made in the Agriculture Budget 2021-2022, it is proposed to establish 11 sugarcane cultivation based Custom Hiring Centres with the subsidy assistance of Rs.6.5 crore.

3.4.3.4. Establishment of Service Centre for repair and maintenance of Agricultural Machinery and Solar Pumpsets

To avail the services of repair and maintenance of Agricultural machinery, implements and Solar pumpsets at the farm level, to take up timely farming operations, to create employment opportunity to rural youth and to improve their economic status, Service Centres for Agricultural Machinery and Solar pumpsets will be established at a project cost of Rupees Eight lakh to the Rural Youth, Entrepreneur, Farmers Groups and Farmer Producer Organisation (FPO)s with 50 % subsidy assistance upto a maximum amount of Rupees Four lakh.

During the year 2021-22, in the first phase, 19 Agricultural Machinery and Solar Pumpsets Service Centres with a total subsidy assistance of Rs.75 lakh will be established.

3.4.3.5. Training to Rural Youth on Agricultural Machinery Maintenance

To mitigate the labour shortage, government of Tamil Nadu is promoting agricultural mechanization in a massive way.Now a days most of the agricultural practices are carried out by machinery only. So repair and maintenance of agricultural machinery and implements becomes veryimportant. But, the service for repair and maintenance of agricultural machinery and implements in village itself is not adequately available now. So the farmers have to move to the nearby town to service their machinery.

In order to ensure the service of agriculture machinery and implements in the village itself and to mitigate the migration of rural youth to urban areas for jobs, during the year 2021-22 as per the announcement made in the Agriculture Budget 2021-2022 under the topic

“Rural Youth Agricultural Skill Development Mission”,it is proposed to conduct 30 training programmesfor the benefit of 600 rural youth who have passed 12th standard on “Operation and maintenance of agricultural machinery and implements” in the sixGovernment Tractor Workshops of Agricultural Engineering Department, located at Tiruvarur, Trichy, Tirunelveli, Madurai, Vellore and Coimbatore at a cost of Rs.30.5 lakh.

3.4.3.6. Kuruvai Package – 2021-22

In the current Kuruvai Package under the scheme of Sub Mission on Agricultural Mechanization, 100 Nos.offour row walk behind type Paddy Transplanters, 10 Nos.of Ride on typefour to eight rows PaddyTransplanters,50 Paddy Power Weeders,50 Paddy Combine Harvesters and 50 Balers, totally 260 Nos.of agricultural machinery and implements to the individual farmers in the Delta Districts of

Thanjavur, Tiruvarur, Nagapattinam, Mayiladuthurai, Cuddalore, Ariyalur and Trichy are distributed with 50% subsidy assistance of Rs.10.43 crore by the Agricultural Engineering Department.

Under World Bank aided Tamil Nadu Irrigated Agriculture Modernisation Project scheme, 89 farm ponds are created in the farmers fields with the subsidy assistance of Rs.66.75 lakh in the sub basins namely Paravanar, Maruthaiyar, Cauvery delta and Nandhiyar- Kulaiyar of delta districts.

3.5. Value Addition of Agricultural Produce

By using the value addition machinery, farmers can value add their agricultural produce and also extend the shelf life of agricultural produce thereby increasing their income at their farm gate level.

3.5.1. Distribution of Value Addition Machinery with subsidy assistance

In order to reduce the loss of agricultural produce, to extend the shelf life of the produce and to increase the income by adding value to the agricultural produce, for the purchase of Value Addition Machinery by individual farmers, Farmer Producer Organization(FPOs), Self Help Groups, Users Groups and Entrepreneur etc., 40 % subsidy or the maximum permissible subsidy amount prescribed by Government whichever is less will be given.

Under National Agriculture Development Programme (NADP), 169 Nos.of Value Addition Machinery were distributed with subsidy assistance of Rs.1.52 crore following Sub Mission on Agricultural Mechanisation guidelines.

During the year 2021-22, it is proposed to distribute 600 value addition machinery with subsidy assistance of Rs.5.48 crore under NADP.

3.5.2. Value Addition Machinery Facilitation Centres

To improve the shelf life of the produce, reduce the quantitative loss and to fetch additional income by value addition of agriculture produce at farm gate level, the Value Addition Machinery Facilitation Centres will be established in low farm power available districts to the farmers groups at a project cost of Rs.10 lakh with subsidy assistance of 50 % of the total cost or a maximum amount of Rupees Five lakh per centre.

During the year 2021-22, as a new scheme, it is proposed to establish 89 Value Addition Machinery Facilitation Centres with subsidy assistance of Rs.4.45 crore under National Agriculture Development Programme (NADP) and State fund by giving priority to the farmers groups of Chief Minister's Dry land Development Mission.

3.6. Solar Energy in Agriculture

To carry out various Agricultural operations such as pumping water for irrigation, drying of agricultural produce, protecting the crops in agricultural lands from animals using the naturally available solar energy, Agricultural Engineering Department is promoting appropriate technologies with subsidy assistance to farmers. These techniques help in reducing the cost of the fuel, increasing the farmer's net income besides reducing the environmental pollution.

3.6.1. Chief Minister's Scheme of Solar Powered Pumpsets

To meet the electricity requirement of the farmers for pumping the water for irrigation, to ensure the availability of power for irrigation to the farmers in remote hilly and forest areas without grid connectivity, to get sustained agricultural production, to promote solar energy utilization, as a renewable energy in agriculture the 'Chief Minister's Scheme of Solar Powered

Pumpsets' as announced in the Agriculture Budget 2021-2022 is to be implemented during the year 2021-22.

Under the 'Chief Minister's Scheme of Solar Powered Pumpsets', 5000 Nos.of Off-grid, Standalone Solar Powered Pumpsets upto 10 hp capacity (Submersible Pumpsets and Surface Mounted Pumpsets) with 70% subsidy assistance (Ministry of New and Renewable Energy (MNRE), Union Government, PM-KUSUM scheme fund 30% + State fund 40%) at a subsidy outlay of Rs.114.68 crore will be provided to the farmers during the year 2021-22. The solar powered pumpsets are to be installed under the scheme with five years maintenance and insurance.

The scheme is proposed to be implemented, after getting the approval of rates and companies from the Union Government. On getting the fund allocation from Union Government, the scheme will be implemented with allocation from State

Government. The identification of beneficiaries for the scheme is under progress.

3.6.2. Installation of Solar drying units

To help the farmers in reducing the post harvest losses of agricultural produce, to value add the produce and to get more profit the scheme of providing solar drying units with subsidy assistance is being implemented. The solar drying units are very useful for the farmers to dry various agricultural produce viz., Oil seeds like Copra, Groundnut, Gingelly etc., fruits like Banana, Amla etc., Spices like Clove, Ginger etc., Chillies, Moringa leaves, Curry leaves, Herbal leaves etc., in a hygienic manner, to dry faster, to ensure the quality, to increase the shelf life of agricultural produce, to value add the produce and to sell at higher price in the market enabling to get more profit.

During the year 2020-21, poly carbonate sheet covered green house type solar drying units

were installed to 93 farmers / farmer's group at a total subsidy of Rs.2.40 crore.

In the current year 2021-22, it is proposed to install 175 poly carbonate sheet covered green house type solar drying units of various sizes ranging from 400 sq.ft to 1,000 sq.ft with 40% subsidy assistance under National Agriculture Development Programme (NADP) and Sub Mission on Agricultural Mechanisation (SMAM) scheme (Union Government share 60%, State share 40%) at a total subsidy outlay of Rs.3.50 crore to the farmers / farmer's groups. The identification of beneficiaries for the scheme is under progress.

3.6.3. Installation of Solar Fencing Units

To help the farmers in different topographical areas in different parts of the state, to protect their agricultural lands from animals like Goat, Cow, Wild boar, Bison,Deer, Elephant etc., and to avoid human and wild animal conflict, the scheme of provision of solar fencing unit is implemented. Solar fencing unit enables the

control of animals by giving them a short, sharp but safe shock which is sufficiently memorable that they never forget it.

Under the scheme, basically two types of fencing units *viz.,* Normal type for animals excluding elephants and Hanging type for all animals including elephants with five lines, seven lines and ten lines of fence wires are to be adopted.

During the year 2020-21, the solar fencing units were provided to 111 farmers at a total subsidy of Rs.81.60 lakh.In the current year, solar fencing units are to be provided in the fields of the individual farmers under National Agriculture Development Programme (NADP)(Union Government share 60%, State share 40%). A farmer is eligible for the subsidy assistance upto two ha area for maximum length of 566 metres. The maximum subsidy assistance to the individual farmer is Rs.1.12 lakh.

During the year 2021-22, it is proposed to install the solar fencing unit for 510 farmers with a total subsidy assistance of Rs.5.68 crore.

3.7. Strengthening of Infrastructure

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

3.7.1. Agricultural Engineering Extension Centre (AEEC)

Under National Agriculture Development Programme (NADP), the construction of Tenkasi, Agricultural Engineering Extension Centre is under progress at a cost of Rupees One crore.

During the year 2021- 22, in order to promote the Agricultural Engineering techniques and to popularize the innovative agricultural machinery among the farming community, it is proposed to establish two numbers of Agricultural Engineering Extension Centres at a total cost of Rupees Two crore under Sub Mission on Agricultural Mechanisation.

To strengthen the existing facilities of Agricultural Engineering Training Centre (AETC) at Trichy, an amount of Rupees Twocrore has been allocated under NADP and the work is under progress.

3.7.2. Integrated Agricultural Extension Centre (IAEC)

The Integrated Agricultural Extension Centres (IAEC) are createdto make farmers aware of all farmer welfare schemes of agriculture and allied departments, distribution of input as well as

to get the agricultural technologies at block level as a single access point for farmers.

Agricultural Engineering Department is entrusted with the construction of 60 IAECs under NADP and the works are under progress.

3.7.3. Soil Testing Laboratory, Pesticide Testing Laboratory and Liquid Biofertiliser Production unit

Agricultural Engineering Department is entrusted with the construction of Laboratories, Soil Testing Laboratories, Pesticide Testing Laboratories, Fertiliser Control Laboratories and Liquid Biofertiliser Production Unit under National Agriculture Development Programme (NADP) for Agriculture Department and seven works are in progress.

3.7.4. Strengthening of State Seed Farm

Creation of infrastructure and maintenance works to strengthen the State Seed Farms (SSF) and Coconut Nursery Farms have been entrusted

to Agricultural Engineering Department under National Agriculture Development Programme (NADP) for Agriculture Department and the works are under progress in six State Seed Farms.

3.7.5. Storage Infrastructure Development

Agricultural Engineering Department is taking up the construction of 13 Seed Storage Godown works for Agriculture Department under Sub Mission on Seeds and Planting Material and the works are under progress.

3.7.6. Infrastructure Development in Horticulture Department

Creation and maintenance of State Horticulture Farms, Parks and Gardens and construction of Offices and Staff Quarters has been entrusted with Agricultural Engineering Department under National Agriculture Development Programme (NADP), Farm Receipt Account (FRA), National Horticulture Mission

(NHM) and NABARD assistance.The works are under progress.

3.7.7. Infrastructure Development in Seed Certification Department

Agricultural Engineering Department has been entrusted with the construction of one Integrated Seed Certification Complex at Thanjavur at a cost of Rs.2.35 crore under National Agriculture Development Programme (NADP) by Seed Certification Department and the work is under progress.

3.7.8. Sub Agricultural Extension Centre (SAEC)

For providing extension services, distribution of input as well as implementation of all farmer welfare schemes of Agriculture Department, the Sub Agricultural Extension Centres (IAEC) are positioned at Village level.

Agricultural Engineering Department is entrusted with the construction of 233 SAECs

under NADP and NABARD assistance and the works are under progress.

3.8. Agricultural Engineering Training Centre

During the year 2021-22, it is proposed to impart training to 575 beneficiaries in Agricultural Engineering Training Centre, Trichy through 27 training sessions, including 25 training sessions for AED officials and two special training sessions for farmers at atotal cost of Rupees nine lakh.

3.9. State Agricultural Machinery Information Data Centre

To promote the Agricultural Mechanization in Tamil Nadu and to popularise the technologies as a solution for labour scarcity, the State Agricultural Machinery Information Data Centre is functioning in the State headquarters of Agricultural Engineering Department. Traditional agricultural tools used by the farmers from different places of Tamil Nadu are exhibited in this centre. Also, modern and new agricultural machinery, value addition machinery, Irrigation

system and pumpsets are exhibited with audio visual aids.

Moreover, live models of Solar powered pumpsets, Solar drier, Solar fencing and automated irrigation systems are also displayed for farmers. This centre is the first of its kind in India established in Tamil Nadu by integrating all the agricultural machinery and technologies for display to the farmers. This centre acts as unique and self-sustainable centre by generating its own revenue. Farmers, Students of schools and colleges, Educated youth, Academicians and Public can visit this centre at free of cost and get benefitted.

3.10. Establishment

One Chief Engineer (Agricultural Engineering), one Chief Engineer (Agricultural Engineering) - River Valley Project, ThreeSuperintending Engineers and Two Executive Engineers are at Headquarter level to monitor various farmer welfare schemes being

implemented in Agricultural Engineering Department.

There are 11 Superintending Engineers at regional level, 31 Executive Engineers at district level, Five Executive Engineers for special schemes, 125 Assistant Executive Engineers, 850 Assistant Engineers / Junior Engineers at revenue division level and for special schemes, and 1120 Administrative staff and 1866 fieldstaff in the department.

Table 3.3. 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	1120
8	Field staff	1866
	Total	**4,015**

The Superintending Engineers are incharge of the administrative and technical control of the departmental activities in the region. The Executive Engineers areincharge of all the departmental activities of the respective districts and the Assistant Executive Engineers are responsible for the implementation of departmental activities at the revenue division level.

4. AGRICULTURAL EDUCATION, RESEARCH AND EXTENSION EDUCATION

Tamil Nadu Agricultural University began as an Agricultural School at Saidapet, Chennai in 1876 and blossomed as a College in Coimbatore in 1906. In 1920, the college was affiliated to the University of Madras with the introduction of a three-year degree program. Till 1946, the Agricultural College and Research Institute, Coimbatore was the only institute for agricultural education for the whole of South India. In 1958, it was recognized as a Postgraduate Centre for offering Masters' and Doctoral degrees. The Agricultural College and Research Institute, Madurai was established in 1965. These two colleges formed the nucleus of the Tamil Nadu Agricultural University when it was established in 1971 to offer four years B.Sc. (Agriculture) degree program. In the year 1972, two more

programs i.e., B.Sc. (Horticulture) and B.E. (Agriculture) were started.

Tamil Nadu Agricultural University is focusing its activities in six major domains such as Education, Research, Extension Education, Agri business Development, Policy support and Open and Distance learning on skill development to meet the global challenges of food production and to run farming as a profitable venture.

Apart from its mandated functions, TNAU is involved in production and supply of quality seeds, biofertilizers, growth promoters and biocontrol agents, Precision farming, Integrated Farming systems, Improved crop husbandry, Price forecasting, Weather forecasting, e-Agriculture led Market extension and Agri business promotion.

The food industry has the potential to become a principal industry in India, as there is increase in agricultural production, established storage facilities, more food processing industries

and evolving consumer preference. If the surplus food production are processed and marketed both inside and outside the country, there will be greater opportunities for the growth of the food processing industries and agribusinesses.

4.1. Tamil Nadu Agricultural University Budget allocation

The University has an annual budgetary provision of Rs. 573.24 Crores for its mandated functions of teaching, research and extension through various constituent colleges and research stations in order to achieve higher agricultural education and to improve farmers' welfare.

4.2. Infrastructure

New buildings with financial assistance from NADP and NABARD for a total outlay of Rs.129.35 crores were inaugurated during the year 2020-21 which includes Lecture halls, Examination halls and laboratories, Boys and girls

students study centre, Office and godown building, Trainees hostel, Trainees Hall and Faculty Centre, Cauvery River water for drinking Scheme, South Vellar River Irrigation Water Scheme, Library building / Browsing Center / Audio Visual Lab, Housing Truss structure for Establishment of Pilot Industrial water soluble fertilizer production unit, Modernized Kitchen cum Dining hall, Laboratory complex in colleges *viz.,*Coimbatore, Madurai, Thiruvannamalai, Pudukottai, Thanjavur, Trichy, Killikulam; research stations *viz.,* Citrus Research Station (Sankaran koil), Floriculture Research Station (Thovalai), Sugarcane Research Station (Cuddalore) and Horticultural Research Station (Ooty).

4.3. Agricultural Education

Tamil Nadu Agricultural University offers 10 Under-Graduate, 35 Masters and 29 Doctoral degree programmes through its constituent colleges and three constituent diploma institutes

are functioning to offer Diploma in Agriculture / Horticulture.

The number of applicants received for the admittance to various Under-Graduate programmes has increased multifold from 9652 during 2011-12 to 35,040 during 2020-21. A new Horticulture College to be inaugurated in an area of 150 acre at Krishnagiri district by Tamil Nadu Agriculture University with 40 students from this year onwards for which an amount of RS.10.00 crore has been allotted.

Table 4.1. Student Admission and Passed out

Education Details	Admission	Passed out
Under Graduate	4441	2233
Post Graduate	461	245
Doctoral Degree	181	103
Diploma	340	138

Table: 4.2. District wise constituent colleges

Sl. No.	District	Name of the College
1	Coimbatore	Agricultural College and Research Institute, Coimbatore
2		Horticultural College and Research Institute, Coimbatore
3		Agricultural Engineering College and Research Institute, Coimbatore
4		Forest College and Research Institute, Mettupalayam
5	Madurai	Agricultural College and Research Institute, Madurai
6		Community Science College and Research Institute, Madurai
7	Tiruchirapalli	Anbil Dharmalingam Agricultural College and Research Institute, Navalur Kuttappattu
8		Horticultural College and Research Institute for Women, Navalur Kuttappattu
9		Agricultural Engineering College and Research Institute, Kumulur
10	Thanjavur	Agricultural College and Research Institute, Eachangkottai
11	Pudukkottai	Agricultural College and Research Institute, Kudumiyanmalai
12	Tiruvannamalai	Agricultural College and Research Institute, Vazhavachanur
13	Theni	Horticultural College and Research Institute, Periyakulam
14	Thoothukudi	Agricultural College and Research Institute, Killikulam

Table: 4.3. District wise constituent Diploma Institutes

Sl.No.	District	Name of the College
1	Tiruchirapalli	Institute of Agriculture (English Medium), Agricultural Engineering College & Research Institute, Kumulur
2	Pudukkottai	Institute of Agriculture (Tamil Medium), National Pulses Research Centre, Vamban
3	Kanyakumari	Institute of Horticulture (English Medium), Horticultural Research Station.

4.4. New initiatives

1. The State tree Palmyrah is promoted for various palm related industrial activities by Integrated research projects on palms are being carried out at the Agricultural College and Research Station, Killikulam, Thoothukudi District. To enhance the research of palms through the collection

of genetic resources, identification of high yielding palm varieties and improved nursery techniques.

2. Agricultural Zonal Committees will be formed for ensuring Farmers' Welfare in which TNAU may participate in Zonal Advisory Committee.
3. Special drive will be initiated for the popularization of new varieties released by TNAU among the farmers.
4. Agri Business will be promoted by giving more focus on Entrepreneurship development courses including export potentials in Under graduate teaching so as to make the students as Job Providers instead of Job Seekers.
5. Scheme for Export Promotion through three laboratories under the control of the Tamil Nadu Agricultural University, will facilitate for detection of pesticide residues will be upgraded as "Agricultural

Processed Food Export Development Authority (APEDA) certified laboratories" and will be ensured to take up testing on non-profit basis.

6. For the introduction of Agriculture and Horticulture education in Tamil at Tamil Nadu Agricultural University for the convenience of Tamil medium students, Rs. 25 lakhs is allocated. In this academic year Agriculture and Horticulture education will be offered in Tamil with a batch of 40 students respectively.
7. Application Research of Remote Sensing Techniques in Agriculture will be strengthened through generation of information for crop insurance, village level crop area and yield assessment, impact assessment of agricultural disasters, soil mapping through remote sensing technology.

8. In Erode district, Turmeric Research Station will be set up at Bhavani Sagar for which Rs. Two crore has been allocated. Tamil Nadu Agricultural University, Coimbatore will coordinate all research projects related to Turmeric Research at Agricultural Research Station, Bhavanisagar.
9. A research centre in the name of Natural farming scientist Nammazhvar to be established at Department of Sustainable Organic Agriculture functioning under Tamil Nadu Agricultural University, Coimbatore for an amount of Rs. Three crore.
10. Strengthening of Research on Dry Land Crops will be implemented at Regional Research Station at Aruppukottai in Virudhunagar district and Centre of Excellence for dry land farming in

Chettinad, Sivagangai District with a budget of Rs.50 lakhs.

11. An exclusive Centre for Jackfruit will be set up at the Vegetable Research Station, Palur near Banruti, which is run by the Tamil Nadu Agricultural University. Genetic resources will be collected from various parts of the center and research will be carried out for Jack fruit.

4.5. Students welfare, Career counselling and placement

The Centre for Students Welfare organizes motivational lectures, coaching classes for competitive examinations, mock group discussions and interviews and trainings to improve the soft skill of students. Students are also involved in various NSS/NCC activities. The students participated in a number of online events organized by various organizations.

In the year 2020-21, a total of 188 students have joined higher education and 58 students have been placed in various organizations like agro industries (82%) and government sector (15%). This year twelve students have been admitted for Dual Degree programme at Dalhousie University, Canada.

4.6. Agricultural Research

The research is being conducted in 14 colleges and 39 research stations across the State, to cater the location specific and crop specific problems. Research is being funded by mobilizing collaborative, networking and innovative projects from Government, International funding agencies and Indian Council of Agricultural Research.

4.6.1. Newly released crop varieties

Tamil Nadu Agricultural University has released 11 new crop varieties during the year 2020-21 as given below:

Table 4.4. Crop variety release

S.No.	Crop & Variety	Special Characters
1.	Rice CO 54	Medium tall rice variety with a duration of 110-115 days; High yielding with mean grain yield of 6354 kg/ha, Moderately resistant to Blast, Sheath rot, brown spot and BPH; White Medium slender rice with high milling percentage; suitable for all early duration rice cultivating tracts of Tamil Nadu.
2.	Rice ADT 55	Semi – dwarf, erect growing habit and non lodging with 115 days duration; Mean grain yield of 5929 kg/ha, Moderately resistant to blast, sheath rot and leaf folder; Medium slender, white rice with good quality characteristics; suitable for *Kar* / *Kuruvai* and Summer seasons.
3.	Rice TRY 4	Mid early duration (127 days), Moderately tolerant to sodicity with higher grain yield of 5761 kg/ha; Multiple resistance to major pests *viz.,* Leaf folder, Stem borer and gall midge and Resistant to major diseases *viz.,* Blast and Brown spot; good cooking and organoleptic characters; suitable for Late *Samba* / *Thaladi* / Late *Thaladi* seasons.

4.	Finger Millet ATL 1	Has a duration of 110 days; Grain yield under rainfed conditions is 2879 kg/ha and under irrigated conditions is 3128 kg/ha Drought tolerant; Moderately Resistant to leaf, neck and finger blasts; Suitable for value addition with consumer preference
5.	Varagu ATL 1	Plant stature is medium – tall with 110 days duration; average yield of 2506 kg/ha and 4394 kg/ha of grain and straw respectively under rainfed condition; Drought tolerant; No serious pest and disease occurrence; sturdy culm, uniform maturity, non lodging, suitable for mechanized harvesting
6.	Blackgram Co 7	Determinate plant type with synchronized maturity with duration of 60 – 65 days; average yield of 881 kg/ha; Resistant to Mungbean Yellow Mosaic disease (MYMV) and moderately resistant to leaf crinkle and stem necrosis diseases; Suitable for cultivation in *Kharif* and *rabi* seasons.
7.	Brinjal VRM 2	It matures in 140 – 150 days with high yield (50-55 t/ha.); fruits are oval in shape with deep purple colour; Tolerant to drought conditions and high temperature prevailing during summer months; Moderately resistant to major insect pests *viz*., Epilachna beetle, whiteflies and shoot and fruit borer and diseases *viz*., Little leaf and mosaic disease and suitable to cultivate in all the three seasons (*Kharif, Rabi* and Summer)

8.	Jackfruit PLR 3	Perennial crop with mean yield of 212 fruits/tree/year; Small to medium size fruit; Carpels with very good taste; Attractive shape with pale yellow crispy flakes; No/Few drops of latex in central core alone; Suitable for commercial and home gardens
9.	Kudampuli / Malabar Tamarind PPI(K) 1	Perennial crop suitable for cultivation in the areas receiving annual rainfall of more than 750 mm; Grafts come to bearing from the third year onwards with a mean yield of 120 kg/tree; extract obtained from the matured fruit rind has rich source of Hydroxy Citric Acid (28.67%); Hot aqueous extracts of Kudumpuli is used as a preservative
10.	Wood Apple PKM 1	Perennial crop, clonal selection from germplasm; matures in 210 - 240 days after flowering; mean yield of 140 kg/tree and 28.72 t/ha; grayish white skin and light brown coloured pulp; Starts bearing 4-5 years after planting.
11.	Melia MTP 3	Medium rotation clone amenable for harvest between 8-10 years; Best suited for bund planting and sporadic planting with mean wood yield of 50 – 70 t/ha (2500 – 3000 cft/ha); Leaves are excellent fodder.

4.6.2. Research Schemes

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

4.6.2.1. National Agricultural Development Project (NADP)

The Government has sanctioned the following five projects under National Agricultural Development Project (NADP) during 2020-21 with a financial outlay of Rs. 704.60 lakhs.

1. Augmenting Flower Production in Tamil Nadu Through Elite Seeds / seedlings (Rs. 300.00 lakhs)
2. Augmentation of Seed Replacement Rate in Pulses and Oilseeds through Farmers Participatory Seed Production (Rs. 136.70 lakhs)
3. Farmers Participatory Demonstration and seed production of seed propagated

Aggregatum onion in Tamil Nadu (Rs.35.00 lakhs).

4. Establishment of Centre of Excellence in Groundnut (Rs. 172.90 lakhs)
5. Production and supply of quality planting materials of moringa through vegetative propagation (Rs.60.00 lakhs).

4.6.2.2. National Mission for Sustainable Agriculture (NMSA)

The Government has sanctioned the project Strengthening Soil Analytical Laboratories of TNAU at various Agro-climatic zones for Sustaining Soil Health and Farm Income under National Mission for Sustainable Agriculture (NMSA) during 2020-21 with a financial outlay of Rs. 228.80 lakhs.

4.6.2.3. World bank scheme

World Bank funded Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP) is

implemented at TNAU for the period 2017-24 at a total outlay of Rs.8746.00 lakhs with overall objective of promoting climate resilient activities and market led agriculture in 40 river sub basins across the state.

4.7. Agricultural Extension Education

4.7.1. Krishi Vigyan Kendras (KVK)

There are 14 Krishi Vigyan Kendras (KVK) functioning under Tamil Nadu Agricultural University. During 2020-21, 132 On-Farm Testing (OFTs) and 246 Front Line Demonstrations (FLDs) were conducted by the KVKs, besides organizing training programmes for farmers and extension functionaries.

Table: 4.5. Krishi Vigya Kendra under TNAU

Sl. No.	District	Location
1	Cuddalore	Virudhachalam
2	Dharmapuri	Papparapatty
3	Kanyakumari	Thirupathisaram

4	Madurai	Madurai
5	Pudukkottai	Vamban
6	Ramanathapuram	Ramanathapuram
7	Salem	Sandhiyur
8	Thiruvallur	Tirur
9	Thiruvarur	Needamangalam
10	Tiruchirappalli	Sirugamani
11	Vellore	Virunjipuram
12	Villupuram	Tindivanam
13	Virudhunagar	Aruppukottai
14.	Tiruppur	Pongalur

4.7.2. Educational Media Centre (EMC)

The Educational Media Centre of TNAU produced 64 video programmes, conducted 98 video shows for dissemination of technology to farmers. Around 79 Video programmes have been uploaded in TNAU TV YouTube Channel to infuse the concept of seeing is believing for farmers/public during the year 2020-21.

4.7.3. TNAU Agritech Portal (http://agritech.tnau.ac.in)

The Agritech portal contains about 11 lakhs pages of information related to agriculture and allied sciences in Tamil and English.

Table 4.6. Details of usage of the Agri-tech portal

S.No.	Particulars	Achievements (Nos.)
1.	Users / year	3,24,060
2.	New Users / year	3,17,119
3.	Sessions	6,64,683
5.	Number of sessions per user	2.05
6.	No. of pages / session	2.32

4.7.4. Android Apps on Expert System

Android Apps on Expert System has been developed in Tamil and English languages for

crops *viz.*, paddy, sugarcane, ragi, coconut, banana and for animal husbandry enterprises like cow and buffalo, goat rearing and poultry. Android Apps were uploaded in the Google Play Store and m-Gov.

4.7.5. Agricultural Technology Information Centre (ATIC)

Agricultural Technology Information Centre (ATIC) provides information on agriculture technologies, advisory services in addition to providing inputs like seeds, plant materials etc. through single window system. Seeds of Vegetables, Greens, VAM, Crop boosters, Coconut tonic, Biofertilizers and other products of TNAU are sold to the farmers.

4.7.6. Uzhavarin Valarum Velanmai

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

Uzhavarin Valarum velanmai has a total of 11,250 subscribers. During the year 2020-21, 4,422 annual subscribers and 32 life subscribers were newly enrolled.

4.7.7. Farmers Mela / Exhibitions

Krishi Vigyan Kendras of TNAU successfully organized large scale special awareness campaigns namely World Water Day, World Soil Day, Tree Planting Drive, Swachhta Pakhwada and the Celebration of 150th Birth Anniversary of Mahatma Gandhi. A total of 24,686 farmers participated in these awareness campaigns and benefitted.

4.7.8. Kisan Call Centre (KCC)

It provides yeoman service to the farmers through a toll-free number 1551 or 1800-180-1551. The caller can interact in their local language with the experts. This Centre functions on all working days between 7.00 am and 10.00 pm. During the year 2020-21, totally, 1,95,412

calls were attended and technical advice rendered.

4.7.9. Community Radio Station

The community radio station 'TNAU Vivasayee FM 107.4' is functioning since 2010 catering to the needs of 10,000 farm families, youth, self help group and general public that serve the geographic communities of 10 km radius from TNAU. The CRS broadcast agricultural content relevant to the farmers of the Coimbatore region from Monday to Friday between 10 am to 12 pm. Totally 1,436 programmes were broadcasted through Community Radio.

4.8. TNAU – Information and Training Centre, Chennai

The TNAU Information and Training Centre functioning at Chennai are involved in conduct of various training programmes related to Agricultural sciences and its allied sector. During

the year 2020-21, the centre has conducted 12 training programmes *viz*., Roof gardening, composting technology, mushroom cultivation, organic farming, Soil and water quality assessment and management technologies. A total of 153 participants were benefitted including 77 women participants.

4.9. Seed Production Programme

During 2020-21, a total quantity of 153 tonnes of breeder seeds, 4861 quintals of foundation seeds, 3082 quintals of certified seeds, 4439 quintals of Truthful Labelled Seeds (TFL) and 22.89 seedlings of various crops were produced and distributed.

During 2021-22, it is targeted to produce approximately 181 tonnes of breeder seeds, 5104 quintals of foundation seeds, 3235 quintals of certified seeds, 5464 quintals of Truthful Labelled Seeds (TFL) and 24 Lakh seedlings and

other planting materials of various crops for distribution.

4.10. The Agro Climate Research Centre

The Agro Climate Research Centre of TNAU is an advanced centre for climate research pertaining to agricultural productivity. The centre under the aegis of India Meteorological Department (IMD), Ministry of Earth Sciences, Government of India has been implementing a scheme called “Gramin Krishi Mausam Sewa” (GKMS) in Tamil Nadu in which the weather based agro advisories are prepared and issued to the farmers at block level. There are 11 Agro Meteorological Field Units (AMFU) covering 7 agroclimatic regions of Tamil Nadu providing bi-weekly agro advisories to the farmers at district and block level.

In addition to AMFUs, 14 District Agro Meteorological Units (DAMU) have been initiated in the KVKs of different districts from where the

block level advisories are being given to the farmers. These centres also disseminate the extreme weather events in order to protect their crops and animal husbandry. The Agro Climate Research Centre has been predicting the district wise South West Monsoon and North East Monsoon rainfall and provides the forecast well in advance before start of respective monsoon which is highly useful for the farmers and planners.

The Agro Climate Research Centre has automated the delivery of agro advisories through an automated app “TNAU AAS” through which crop based weather advisories are issued seamlessly to the registered farmers free of cost. The advisories have been developed based on the weather perils prevailing at farmers’ holdings.

4.11. Price Forecast and Market Intelligence

Domestic and Export Market Intelligence Cell (DEMIC) functioning at Centre for Agricultural and Rural Development Studies, generates price

forecasts for major agricultural and horticultural crops grown by farmers in Irrigated Agriculture Modernization Project (TN–IAMP) basins of Tamil Nadu. Under the scheme, price forecasts for 14 major crops including cereals, pulses, oilseeds, fruits, vegetables, spices and condiments are disseminated to the farmers. The market advisories are given well before sowing and before harvest of these crops, which help farmers to take appropriate sowing, selling/storing decision on a scientific basis. These advisories are disseminated through print and electronic media well in time.

4.12. Agri-Business Development

Directorate of Agri- Business Development is involved in Agribusiness Incubation, technology, hybrids and machinery commercialization, consultancy services, Venture

Capital Scheme, student entrepreneurship, Executive Development Programme, Institutional Development Plan and Unnat Bharat Abhiyan 2.0.

During 2020-21, 273 new incubates were enrolled in all the six Agri-Incubation Forums of TNAU. In TNAU –Private Seed Sector Research and Technology Consortium**,** a company was enrolled as member by paying Rs.1.00 lakh as membership fee. Rice hybrid CO(R) H -4 was licensed to a seed company for Rs. 5.00 lakhs for commercial seed production. Malai Vembu MTP 2 (*Melia dubia*) was commercialized for Rs. 2.00 lakhs. Five technologies were commercialized to six firms through which Rs.31.10 lakhs was generated as revenue. Also, there are 172 Venture Capital Schemes being operated by TNAU and has generated Rs.9.50 crores as revenue.

Consultancy services are co-ordinated by DABD on Water demand management in Bhavani river basin, TNAU- InAgMA Integrated Agro-Project on Smart Farming in Malaysia, Economic impact of poultry development scheme on the livelihood enhancement of the beneficiaries and promotion in entrepreneurship in rural areas in Tamil Nadu, Impact evaluation of joint liability groups and Increasing accuracy of paddy yield prediction in the cauvery river basin, using spatial methodologies through machine learning, data integration and automation.

Unnat Bharat Abhiyan (UBA) is a flagship national program of Ministry of Human Resource Development (MHRD), Government of India. The Directorate of Agri Business Development (DABD), is functioning as the Regional Coordinating Institute (RCI) to guide, monitor and facilitate the activities of 167 Participating Institutes (PIs) of ten districts of Tamil Nadu *viz.,*

Coimbatore, Erode, Karur, Tiruppur, Tiruchirappalli, Nagapattinam, Namakkal, Thanjavur, The Nilgiris and Tiruvarur.

4.13. Intellectual Property Rights

Tamil Nadu Agricultural University has so far filed 75 inventions and obtained 16 patents. Tamil Nadu Agricultural University has received two Copyrights. Geographical Indications on Ramanathapuram Mundu Chilli has been filed.

5. SUGAR DEPARTMENT

5.1. Status of Sugar Industry

Sugar industry is the backbone of the rural economy and it provides direct, indirect employment to thousands of people in rural area. Sugarcane production and productivity has declined sharply in recent years due to various factors viz., failure of monsoon, increase in cost of cultivation, static sugar price, mounting cane payment arrears and non availability of alternate high yielding sugarcane varieties to the existing Co-86032 variety. The sugar mills are facing severe financial crunch due to steadily increasing cost of production of sugar, static/declining sugar price which resulted in non-settlement of timely payment of cane supplied by farmers.

5.2. Area under sugarcane cultivation

The area under sugarcane registered by the sugar mills during 2019-20 planting season was

0.96 Lakh Ha only. However, by taking advantage of the good rainfall of 984.6 mm received during the year 2020, efforts are being made to increase the area under sugarcane registered by the sugar mills to 1.25 Lakh Ha in 2020-21 planting season.

5.3. Steps taken by the Government to increase the sugarcane production and productivity

5.3.1 Micro Irrigation

The area under sugarcane cultivation needs to be increased to improve the overall sugarcane production and productivity of the State. Tamil Nadu, in general, is water starved State whereas sugarcane is a water guzzling crop. In order to maximize the area under sugarcane cultivation and to reap maximum yield per drop of water, top most priority is given for implementation of Micro Irrigation Scheme for sugarcane crop. The Small, Marginal (S&M) farmers implementing Micro Irrigation Scheme are eligible for assistance with

100% subsidy and other farmers are eligible for assistance with 75% subsidy under Pradhan Mandri Krishi Sinchayee Yojana (PMKSY) Scheme. Apart from that the State Government has specially allocated Rs.126 Crore to provide financial assistance to the farmers for purchasing other essential components for effective functioning of the Micro Irrigation System. By this, sugarcane farmers will receive Rs.24,711 to Rs. 49,758 as additional subsidy per hectare. In addition to improvement in area of cane cultivation, micro irrigation enables mechanization in cane cultivation, fertigation, mechanical cane harvesting, etc.

5.3.2 Cane Development Activities

Sugarcane yield, quality are determined by the quality seed cane used for planting. The supply of quality seed cane to the sugarcane farmers of the mills are ensured by adoption of three-tier nursery programme in all the sugar mills.

The method of wider row planting is given special emphasis to facilitate mechanization in cane cultivation, reducing the dependency on manual labour ensuring the implementation of all cane development technologies in time and reducing the cost of cultivation.

Model plots with all latest technologies are laid out at all cane sections of sugar mills so as to encourage the farmers to implement the advanced cultivation technologies in their fields to improve yield and to obtain better monetary returns.

The bio-inputs are promoted and farmers are encouraged to apply bio-inputs in their fields to conserve soil fertility, to save expenses on chemical inputs and to avoid environmental and health hazards.

The tissue culture laboratory established in Kallakurichi-I Co-operative Sugar Mill has

commenced its tissue culture seedling production from June 2021 and the seedlings produced will be distributed to Co-operative and Public Sector Sugarcane farmers at nominal cost.

The Government has extended various subsidies under National Agricultural Development Programme (NADP) and Pradhan Mandhri Krishi Sinchayee Yojana (PMKSY) by implementing the vital cane development technologies viz., Sustainable Sugarcane Initiative (SSI) scheme, distribution of breeder seed cane, tissue culture seedlings for the rejuvenation of Co-86032, trash shredding, distribution of quality bud-chip seedlings, inter cropping, bio-control measures, distribution of manual de-trashing tools, installation of hydraulic tipplers, micro irrigation to increase the sugarcane production.

5.3.3 Mechanization in Sugarcane Cultivation

Mechanization in cane cultivation right from land preparation to cane harvesting, post-harvest technologies is emphasized to bring down the ever increasing cost of cultivation by reducing the dependency on manual labour. Various farm implements viz., Power tillers, Power weeders, Rotary mulchers, Trash shredders and Sugarcane harvesters are being distributed to sugarcane farmers at subsidized rates under Sub-Mission on Agricultural Mechanization (SMAM) scheme through Agricultural Engineering Department.

5.3.4 Identification of New Sugarcane Varieties

Sugarcane varietal trials are being carried out in various locations of the State in co-ordination with Sugarcane Breeding Institute/Tamil Nadu Agricultural University, Coimbatore to identify location specific varieties for the command area of each sugar mill to improve yield and sugar

recovery. A new Sugarcane variety Co-11015 is reported as superior to the existing Co-86032 variety both in quality and in yield at the age of 8 to 12 months from the varietal trials conducted by the Sugarcane Breeding Institute, Coimbatore. The necessary efforts are being taken to cover an area of 20,000 Ha under Co-11015 variety in Tamil Nadu Sugar Mills.

Further, two new sugarcane varieties viz., CoG-6 and CoC-13339 have been released from Sugarcane Research Stations, Melalathur & Cuddalore respectively. The above varieties are reported as better varieties in comparison with the existing Co-86032 variety both in yield and quality as per the trails conducted by Tamil Nadu Agricultural University, Coimbatore. These varieties are under multiplication in the area of all the sugar mills for evaluation of commercial performance of the varieties.

5.3.5 Transitional Production Incentive:

The State Government has switched over to Revenue Sharing based cane price fixation policy from 2017-18 crushing season in order to ensure the timely payment of Fair and Remunerative Price (FRP) to the farmers. Further to protect the interests of the sugarcane farmers, Transitional Production Incentive is being disbursed to farmers directly to meet the difference between the FRP announced by Union Government and the sugarcane price of Rs.2750 received during 2016-17 crushing season. The State Government has allocated an amount of Rs.40 crore for disbursement of Transitional Production Incentive for sugarcane for the 2020-21 crushing season @ Rs.42.50 per MT to the sugarcane farmers who have supplied the sugarcane to the sugar mills. Union Government has fixed Fair and Remenarative Price as Rs.2707.50 per MT for sugarcane for 2020-21 crushing season.

5.3.6 Special Incentive to Sugarcane farmers

Based on the repeated representations of the sugarcane farmers, Government has announced in the Agriculture Budget to sanction Rs.150/- per MT of sugarcane as Special Incentive directly to the bank account of sugarcane farmers for 2020-21 crushing season and allocated Rs.138.83 crore for this purpose. Thus, nearly one lakh sugarcane farmers will be benefited by getting Rs.2900/- per MT as cane price for the 2020-21 crushing season.

5.3.7 Special Scheme for Sugarcane Production

The special scheme for sugarcane production is implemented for the benefit of sugarcane farmers and to increase the efficiency of the sugar mills. Under this scheme, financial assistance will be given for distribution of breeder seed cane of high yielding varieties, promotion of new varieties through supply of budchip seedlings

and distribution of tissue culture seedlings. This intervention will not only increase the area under sugarcane but also help in achieving better sugar recovery by sugar mills. This scheme will be implemented at an outlay of Rs.2 crore from State Government funds.

6. DEPARTMENT OF SEED CERTIFICATION AND ORGANIC CERTIFICATION

Indian Economy is majorly driven by Agriculture sector. Seed is the basic and primary input for increasing Agricultural Production. The quality of seed determines long-term sustained growth of agriculture and increasing the income of farmers. Thus the income of the farmer totally depends upon the use of quality certified seeds.

Seed is the fundamental input that determines the final yield, quality and uniformity of the produce finally decides the market price. Only quality seeds can bring self sufficiency in food production and fulfill the demands of people.

The Department of Seed Certification and Organic Certification has been encouraging the participation of Government, Quasi Government and Private producers to take up certified seed production in Paddy, Millets, Pulses, Oilseed and

Vegetables crops to bridge the gap between the demand and supply of quality seeds.

Department of Seed Certification and Organic Certification is functioning with the following divisions to enhance the availability of quality seeds to farmers and encouraging the usage of organic produce & products.

1. Seed Certification
2. Seed Quality Control
3. Seed Testing
4. Training Division
5. Organic Certification

6.1 Seed Certification:

The Directorate of the certification wing is functioning with the provisions laid in the Seeds Act 1966 and the Seeds Rule 1968. The major functions of the certification wing are to certify and regulate the seeds of notified crop varieties intended for the purpose of Sowing. The

certification of the seeds is carried out based on the quality parameters viz, Germination, Physical Purity and Genetic Purity as mentioned in the IMSCS (Indian Minimum Seed Certification Standards).

This department has rendered concerted efforts to increase the production of certified seeds in Pulses, Oilseeds and Vegetables. It had achieved an overwhelming production of certified seeds in Paddy and millets

Out of the total area of 65,822 hectares of seed farms registered under various crops during the year 2020-2021, highest registration of seed farms was done in Thanjavur (8756 Ha), Tiruppur (8486 Ha), Thiruvarur (7431 Ha), Villupuram (3695 Ha) and Nagapattinam (3165 Ha). The remaining 34,289 Hectares was registered in other districts.

A total quantity of 1,35,657 Metric Tonnes of seeds have been certified under various crops during the year 2020-2021 in which highest quantity of certified seeds was tagged in Tiruppur (71694 Mt.), Villupuram (9611 Mt.), Madurai (5783 Mt.), Tirunelveli (4408 Mt.) and Namakkal (3661 Mt.). The remaining 40,500 Metric tonnes of certified seeds was tagged in other districts.

In last five years an average area of 56,165 Ha of seed farms has been registered and 1,02,028 Metric tonnes of certified seeds has been produced. During 2021-2022, it is targetted to register 57,000 hectares of seed farms and to produce 1,10,000 metric tonnes of certified seeds.

Annexure – 6.1 : DISTRICTWISE SEED PRODUCERS (Numbers)

Sl. No.	District	Govt. Producers	Quasi Govt Producers	Private Producers	Total
1	Kanchipuram	8	0	4	12
2	Chengalpattu	12	1	1	14
3	Chennai	0	0	0	0
4	Coimbatore	15	5	5	25
5	Nilgiris	0	0	0	0
6	Cuddalore	20	2	4	26
7	Dharmapuri	10	0	0	10
8	Dindigul	15	0	3	18
9	Erode	28	2	5	35
10	Villupuram	21	2	7	30
11	Kallakurichi	11	0	10	21
12	Kanyakumari	11	1	0	12
13	Karur	12	0	1	13
14	Krishnagiri	2	16	1	19
15	Madurai	20	6	5	31
16	Nagapattinam	2	0	3	5
17	Myladuthurai	4	4	1	9
18	Namakkal	28	0	2	30
19	Perambulur	6	0	2	8
20	Ariyalur	9	0	1	10
21	Pudukkottai	21	2	9	32
22	Ramanatha puram	15	0	0	15
23	Salem	31	3	13	47
24	Sivagangai	15	1	1	17
25	Tirunelveli	15	1	5	21
26	Thenkasi	15	0	11	26
27	Thanjavur	18	5	11	34
28	Theni	12	2	4	18
29	Thiruvallur	24	3	2	29
30	Thiruvarur	9	1	7	17
31	Thoothukkudi	14	1	11	26

32	Thirupur	17	0	60	77
33	Thiruvanamalai	42	1	5	48
34	Thiruchirapalli	23	8	3	34
35	Vellore	9	2	1	12
36	Ranipet	16	0	3	19
37	Tirupattur	7	0	0	7
38	Virudhunagar	17	3	14	34
	TOTAL	**554**	**72**	**215**	**841**

6.2 Seed Quality Control:

To ensure timely availability of quality seeds to the farmers in Tamil Nadu, various seed legislations viz., The Seeds Act 1966, The Seeds Rules 1968, The Seeds (Control) Order 1983 and The Environment (Protection) Act 1986 are being enforced by the seed Quality control Wing.

So far, 12,731 Government, Quasi Government and Private Seed dealers have been issued seed selling licenses under the Seeds (Control) Order 1983. It is mandatory to inspect the seed selling point once in three months by the seed inspectors and seed samples are drawn for quality check from the seed lots kept for sale.

These samples are analysed in the notified Government seed testing laboratories. Based on seed testing reports, either department or legal actions are initiated against the sub standard seed lots.

During the year 2020-2021, a total of 73,630 seed selling points have been inspected and 79,168 seed samples were drawn for quality check. Based on the seed testing reports, 1580 samples were identified as sub standard, of which departmental action was taken for 1320 samples and legal action has been initiated for 260 samples. Also 2,223 Metric tonnes of seeds, worth Rs.1624 lakhs have been issued stop sale order for sub standard and other violations.

During the year 2021-2022, it is programmed to inspect 68,500 seed selling points and to draw 69,500 seed samples for quality check.

Annexure – 6.2 : DISTRICTWISE LICENCED SEED SELLERS (Numbers)

Sl. No.	District	Govt Seed Sellers	Quasi Govt Seed Sellers	Private Seed Sellers	Total
1	Kanchipuram	30	4	97	131
2	Chengalpattu	25	3	156	184
3	Chennai	5	1	55	61
4	Coimbatore	50	115	375	540
5	Nilgiris	26	17	113	156
6	Cuddalore	49	22	425	496
7	Dharmapuri	28	3	340	371
8	Dindigul	48	11	465	524
9	Erode	56	19	473	548
10	Villupuram	36	9	370	415
11	Kallakurichi	20	8	279	307
12	Kanyakumari	33	17	45	95
13	Karur	20	59	87	166
14	Krishnagiri	33	3	585	621
15	Madurai	49	16	265	330
16	Nagapattinam	50	14	205	269
17	Myladuthurai	30	7	190	227
18	Namakkal	53	113	158	324
19	Perambulur	14	2	260	276
20	Ariyalur	19	8	232	259
21	Pudukkottai	46	33	325	404
22	Ramanathapuram	36	41	135	212
23	Salem	69	120	600	789
24	Sivagangai	41	4	139	184
25	Tirunelveli	43	29	199	271
26	Thenkasi	41	46	278	365
27	Thanjavur	74	45	443	562
28	Theni	31	5	245	281
29	Thiruvallur	64	51	143	258
30	Thiruvarur	37	8	256	301
31	Thoothukkudi	43	132	245	420
32	Thirupur	42	38	475	555

33	Thiruvanamalai	65	64	441	570
34	Thiruchirapalli	51	19	383	453
35	Vellore	29	7	122	158
36	Ranipet	22	3	125	150
37	Tirupattur	21	0	95	116
38	Virudhunagar	40	112	230	382
	TOTAL	**1469**	**1208**	**10054**	**12731**

6.3 Seed Testing:

Seed testing is essential to confirm the seed quality standards of the seed lots for sale. The quality of seed is determined by quality parameters such as Physical purity, Moisture, Germination and Other distinguishable varieties. The seed testing laboratory is the hub of seed quality control. Seed testing services ensure the quality of seed lots, thereby the quality of seeds is assured to seed producers, dealers and farmers.

There are 33 notified Government seed testing laboratories functioning in Tamilnadu. The Certification Samples from seed certification wing (CS), Official Samples (OS) from seed enforcement wing and Service Samples (SS) from

farmers, seed producers and seed dealers are being tested in notified Seed testing Laboratories. Moreover, seed testing is carried out as per the Indian Minimum Seed Certification Standards (IMSCS).

A total number of 1,10,502 seed samples were analysed for quality check during 2020-21 and it is proposed to analyse 1,10,000 seed samples for the year 2021-22.

6.3.1 ISTA accreditated seed testing laboratory:

The Coimbatore seed testing laboratory has been notably awarded the "Best Seed Testing Laboratory" by the Government of India. The laboratory is upgraded as an ISTA accreditated seed testing laboratory in the year 2014 by International Seed Testing Association (ISTA). This is the only public sector seed testing laboratory in India to secure ISTA accreditation.

This laboratory is accreditated for the scope of sampling from the seed lots, to analyse Physical purity, Other Crop Seeds (OCS), Germination and Moisture for cereals, pulses and vegetables crops. In ISTA accredited laboratory seeds have been tested by internationally accepted methods, to indicate the quality of seeds lot is acceptable for international trade of seeds.

ISTA accreditated laboratory is eligible to issue “Orange International Seed lot Certificate” (OIC) and “Blue International Seed sample Certificate” (BIC) to the seed exporters for easy passage of seeds from one country to another country. In some countries export of seed is permitted only if the seed lot is accompanied by an ISTA Certificate. Since the OECD seed scheme is in booting stage, the ISTA accreditated laboratories are the only approved agency to test the seeds produced under the supervision of seed

certification wing which is mandatory for international movement of seeds.

6.3.2 Grow Out Test Farm:

A state notified Grow Out Test farm attached to the Directorate of Seed Certification and Organic Certification is functioning at Kannampalayam, Coimbatore. It was established vide G.O.Ms.No.523 Agriculture (AP-V) 2nd December 1997. The objective is to determine the genetic purity of a given seed lot of notified cultivar and the extent to which the submitted samples conforms to the Indian Minimum Seed Certification Standards. In crop varieties/hybrids grow out test is conducted throughout the growing season with a special emphasis during flowering to maturity, plants are examined for the distinguishing morphological characters and screened for genetic purity. On an average of 2500 samples were analysed for Grow out test.

During 2020-2021, 3569 samples were tested for genetic purity, among them 33 samples were declared as substandard and action initiated. During 2021-22 it is targeted to test 3500 samples.

6.3.3 DNA Finger Print Laboratory:

In order to enhance the production and distribution of quality seeds to the farming community, DNA Finger Print Laboratory has been established in the Directorate of Seed Certification and Organic Certification, Coimbatore, under Central Sector Schemes during the year 2007. DNA Finger Print technique helps in detection of genetic purity of Paddy variety within a short span of time (4-5 days) against the Grow out test which will take 3 - 4 months to complete the genetic test. This is first of its kind in the country and notified during 2014 as “State DNA Finger Print Laboratory” by Tamil

Nadu Government. This laboratory tests Genetic Purity of 21 notified paddy varieties predominately cultivated in our state by using SSR (Simple Sequence Repeat) markers.

6.4 Training:

The training wing of this Department imparts special training programmes on Certification, Inspection and Testing to field level functionaries, officials, Seed producers and Seed dealers. The following training programmes are organised to enhance the technical knowledge regarding the activities of the Department.

6.4.1 Orientation Training :

In order to become conversant with the activities of the department, the newly positioned technical officers of this Department are imparted with training on seed certification procedures, field inspections, identification of crop varieties,

processing, sampling, tagging, seed law enforcement, seed testing.

6.4.2 Refresher Training :

The technical officers working in this department are being given training on seed production, seed testing, new amendments in seed legislations.

6.4.3 Training to Seed Producers/Seed Dealers

Seed producers are being imparted training on various fields, seed standards to produce quality seeds and scientific storage.

The seed dealers are being given training on quality seed distribution, scientific storage of seeds and seed legislations.

In 2020-21, a sum of 47,320 seed producers, seed dealers, and department officials were trained. It is programmed to conduct

training for 47,320 stake holders of seed certification department during the year 2021-2022.

6.5 Organic Certification :

Tamilnadu Organic Certification Department was established during the year 2007. This department has obtained Government of India APEDA accreditation in the year 2009. This department carries out the Inspection and Certification of the Organic production system in accordance with the standards of NPOP (National Programme for Organic Production).

6.5.1 Certification carried out in TNOCD :

1. Crop production.
2. Processing of Agricultural produce
3. Trade and Export.

TNOCD has the unique status of having the largest number of certified individual farmers

among the 33 certification bodies functioning in the country. The certification carried out by this department is on par with the standards of European Union and Swiss Organic farming ordinance.

The certificate issued by this department is valid for one year. The Certification is extended to 1220 individual Farmers, 73 Grower groups, four traders and seven Processors throughout the State during 2021.

TNOCD has certified the Wild collection Organic produce of Kaani Tribal group of Tirunelveli District for the first time in June-2021.This certification helps in enhancing the livelihood of the Kaani tribal farming community.

TNOCD has catered to the export of organic produce by issuance of Transaction Certificate for a quantity of 433 metric tonnes with value of Rs.1.97crores Organic Certification for processing

units of virgin coconut oil, Coffee, Moringa, Tea and Cocoa in the year 2021.

During the year 2020 - 2021, an area of 93,334 acres has been registered under organic certification of which highest area was registered in Dharmapuri (7687 Acre), Krishnagiri (7064 Acre), Nilgiris (6447 Acre), Tiruppur (4360 Acre) and Madurai (4194 Acre) districts. The remaining area of 63,582 acres was registered in other districts.

During 2021-22 it is proposed to register an area of 1,00,000 acres under Organic Certification.

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

Exclusive software "SPECS" was developed by the IT wing of the Directorate of Agriculture. This software facilitates the department officials and other stake holders in all technical activities

and to monitors the activities in real time basis. Tamilnadu is the first state in the country to operate and follow Seed Certification system in online mode.

Now, all the stake holders have posses the knowledge of “SPECS” software and receiving all technical services quickly, transparently and accurately.

6.7 Infrastructure Development :

Under TANII 2019-2020, a sum of Rs.10.00 Lakhs was allotted and Servers were purchased for the purpose of usage of SPECS software and hosted in Tamilnadu State Data Centre.

For taking up quality seed analysis and to sustain the accuracy in seed testing a sum of Rs. 35.0 lakhs has been sanctioned for renovation of two Seed Testing Laboratories viz., Tirunelveli and Dharmapuri under NADP 2020-2021.

6.8 Establishment :

This Department has employed with 345 technical and 500 ministerial staff. Director of Seed Certification and Organic Certification is the head of the department with headquarter at Coimbatore. Under the control of Director of Seed Certification and Organic Certification, one Joint Director of Seed Certification, one Joint Director of Seed Inspection, one Quality Manager, 15 Deputy Directors of Seed Inspection, 38 Assistant Directors of Seed Certification, 119 Seed Certification Officers, 26 Seed Certification Officer and Organic Certification Inspectors, 70 Seed Inspectors, 63 Agricultural Officers (Seed Testing), and 10 Organic Certification Inspectors are working in this department as technical Officers.

7. AGRICULTURAL MARKETING AND AGRI BUSINESS

Farmers are getting high yields through modern technologies. The Department of Agricultural Marketing provides facilitating platform for selling of agricultural produce. The field of Agri Marketing and Agri Business took a new dimension in 2001 with an aim to transform farmers into entrepreneurs by promoting and assisting them in value-added marketing of produce.

The Agricultural Marketing wing helps farmers to sell their produce transparently at reasonable prices at the right weight. An electronic pricing system is currently in place to ensure remunerative prices for produces. Regulated Markets are usually engaged in the sale of products such as paddy, cereals, pulses, oilseeds, cotton and copra.

In Tamil Nadu, farmers used to approach private markets to sell their vegetables and fruits. The Uzhavar Sandhai Scheme was launched in 1999 by the then Chief Minister of Tamil Nadu, Dr. Kalaignar, to reduce the market cost to farmers, and aid them to sell their produce directly to consumers and make more profit. The main features of this scheme include free bus service and free sales.

Independent sale of produce by farmers increases intermediate costs and deprives them of getting a fair price for their produce. Moreover, there are no opportunities for value addition of the product before selling it. Keeping this in mind, farmers are organized into groups at the village level and Farmer Producer Companies are formed by uniting those groups at the block level.

To expedite the sale of Fruits, Vegetables and other perishables, Supply Chain Management Project is being implemented. Under this project,

the Farmers' produces are marketed by Farmer Producer Companies after aggregating, cleaning and grading.

During harvest season, to prevent wastage of produce due to fall in price, food processing programme come in handy to add value to the produce for sale. By taking up processing, farmers transform themselves into entrepreneurs. Besides, Price Support Scheme is implemented for procuring Pulses and Copra from farmers.

As there is value and good demand in foreign markets for the products produced in Tamil Nadu, an Agro Export Promotion Cell has been created to create awareness among the farmers about export opportunities and to teach them the procedures required for export. As the market led production approach is expected to give better results in respect of farm planning,

awareness about market intelligence will be created among farmers.

The Department of Agricultural Marketing and Agri Business is working towards increasing the income of farmers by integrating all the activities from post harvest management to export.

Table:7.1- Infrastructures Created and FPOs formed in Department of Agricultural Marketing and Agri Business

(Unit in Nos.)

S. No	District	Uzhavar Sandhai	Primary Processing Centre	Godowns	Total Capacity of Godowns (MT)	Cold Storages	Total Capacity of Cold Storages (MT)	Transaction Shed	Traders shop	Drying yard	Specialised Market Complex	No of FPOs
1	Kanchee puram	4	--	5	3000	--	--	6	--	7	--	5
2	Chengal pattu	10	--	2	2600	1	2	1	--	2	--	7
3	Tiruvallur	6	--	4	3800	--	--	5	--	7	--	9
4	Cuddalore	5	--	12	17600	4	77	29	10	15	--	14
5	Villupu ram	3	--	17	41100	2	40	38	--	11	--	9
6	Kalla kuruchi	3	--	14	20000	2	50	29	--	7	--	7

S. No	District	Uzhavar Sandhai	Primary Processing Centre	Godowns	Total Capacity of Godowns (MT)	Cold Storages	Total Capacity of Cold Storages (MT)	Transaction Shed	Traders shop	Drying yard	Specialised Market Complex	No of FPOs
7	Vellore	4	--	8	5000	2	27	4	--	3	--	4
8	Ranipet	2	--	10	8500	--	--	10	--	6	--	4
9	Thiruppathur	3	--	8	7250	4	77	1	--	2	--	5
10	Tiruvannamalai	8	--	26	31100	7	175	47	10	12	--	14
11	Dharmapuri	5	5	8	7600	7	1310	6	10	10	1	13
12	Krishnagiri	5	10	8	7600	21	1547	3	--	10	1	11
13	Salem	11	--	17	15000	12	260	17	--	16	--	12
14	Namakkal	6	--	8	7600	6	84	4	--	5	1	12
15	Erode	5	--	38	46601	7	1225	36	10	34	3	14
16	Thiruppur	6	--	59	81650	6	152	33	--	45	2	7
17	Coimbatore	8	7	30	25405	20	1694	19	10	30	3	10
18	Nilgiris	4	9	--	--	9	592	1	--	--	--	6
19	Perambalur	2	--	2	2500	2	75	1	--	1	1	6
20	Ariyalur	2	--	5	5500	1	25	14	--	7	--	7
21	Trichirappalli	7	12	14	13000	12	3282	15	--	20	4	12
22	Karur	5	--	2	1000	2	27	1	--	--	--	9
23	Thanjavur	5	--	27	40150	3	127	22	--	5	2	13
24	Thiruvarur	7	--	16	14100	1	2	9	--	8	--	7
25	Nagapattinam	1	--	12	9320	--	--	4	--	--	--	4

S. No	District	Uzhavar Sandhai	Primary Processing Centre	Godowns	Total Capacity of Godowns (MT)	Cold Storages	Total Capacity of Cold Storages (MT)	Transaction Shed	Traders shop	Drying yard	Specialised Market Complex	No of FPOs
26	Mayiladuthurai	2	--	4	3500	--	--	7	--	5	--	6
27	Pudukottai	6	--	4	2850	2	125	3	--	4	1	11
28	Madurai	7	--	13	15900	3	29	4	--	7	1	12
29	Dindigul	5	5	9	11200	9	1115	6	--	8	1	10
30	Theni	7	5	12	13500	12	722	8	--	7	3	8
31	Virudhunagar	8	--	12	14200	3	150	5	--	5	--	10
32	Sivagangai	5	--	12	13950	1	25	3	--	7	--	9
33	Ramnad	3	3	9	13050	6	2155	3	25	9	1	7
34	Tirunelveli	4	2	8	10800	5	72	4	--	5	2	6
35	Tenkasi	2	3	6	12000	9	1980	6	10	5	--	6
36	Thoothukudi	2	3	17	19100	11	277	7	--	5	1	7
37	Kaniyakumari	2	--	11	10500	2	27	3	--	4	2	5
	Total	180	64	469	557526	194	17527	414	85	334	30	318

7.1. AGRICULTURAL MARKETING - ACTIVITIES

7.1.1 Market Committees and Regulated Markets

In Tamil Nadu, 282 Regulated Markets are functioning under 26 Market Committees for better regulation of buying and selling of Agricultural produce as per the provisions of Tamil Nadu Agricultural Produce Marketing (Regulation) Act 1987, and its Rules 1991 **(Annexure I).**

For trading of Agricultural produce, Regulated Markets act as a common platform between farmers and traders. Agricultural produce brought to Regulated Markets by farmers are sold by adopting closed bid system. **No fee is collected from farmers for the services rendered. One percent of the sale value of the produce is collected as market fee from Traders.** Besides, license fee is also collected from traders and weigh men. **During 2020-21 about 16.53 Lakh MT of agricultural produce**

were sold by farmers and Rs.84.75 Crore was collected as revenue.

Facilities like storage godowns, transaction sheds, drying yard, traders shop, cold storages, market complex with cold storages, farmers' rest room etc., are provided in the Regulated Markets.

Projects to be implemented during 2021-22

i. In Tamil Nadu, for 282 Regulated Markets functioning under 26 Market committees, 40 commodities alone have been notified and there is no uniform notification. Hence, these 40 commodities will now be notified uniformly and implemented.

ii. It is planned to provide storage and transaction facilities for agricultural produce in Village and Town Panchayat areas near 10 Regulated Markets at a total outlay of Rs.10 crore with the funds from Tamil Nadu State Agricultural Marketing Board. Further, to facilitate the farmers

to dry their produce to the desired moisture content and sell them at Regulated Markets, it is planned to construct 28 drying yards at a cost of Rs.3.5 crore.

iii. Infrastructure such as storage godown, transaction shed, office building with meeting hall, electronic weigh bridge will be created in Thalavadi Regulated Market, Erode District at a cost of Five crore Rupees with State Government funds

iv. For the benefit of cotton farmers of Thiruvarur district, a Cotton Delinting Machine with a capacity of 50 MT per day will be installed at Thiruvarur Regulated market.

v. To make the farmers realize best price for their produce, it is planned to create a special multipurpose software platform including e-auction at a cost of Rs. 10 crore with State Government funds.

To meet the immediate cash requirement of farmers and to protect farmers from distress sale during glut seasons, **pledge loan facility is**

extended at a maximum of Rs. Three Lakh per farmer with interest free period for 15 days and with Five % beyond 15 days. During 2020-21, about 1,880 farmers availed pledge loans to the tune of Rs.35.64 Crore.

Traders can also avail pledge loan to a maximum of Rs.Two Lakh at Nine % interest rate to meet their short term requirements for their business operation. During the year 2020-21, pledge loan was issued to the tune of Rs.3.45 Crore to 210 traders.

7.1.2 e-National Agriculture Market (eNAM)

eNAM (e-National Agriculture Market), is a national level online trading platform administered by Union Government. 1000 Mandis in 18 States and 3 Union Territories are implementing eNAM since April 2016 in three phases. Farmers, traders, buyers, exporters and processors are integrated with a common e-platform to facilitate access to large National level markets. Transparency

in trade, better price discovery to farmers, quick auction process, prices based on the quality of produce and online payment to farmers are ensured in this online trading.

Requisite amendments have been made in the Tamil Nadu Agricultural Produce Marketing (Regulation) Act 1987 and eNAM is being implemented in Tamil Nadu in 63 Regulated Markets since October 2017 **(Annexure II)**.

7.1.2.1 Achievements made in eNAM Markets

In the 63 eNAM Markets of Tamil Nadu, **58.68 Lakh Quintals** of agricultural produce valued at **Rs.926.95 Crore** have been transacted and e-payment **to a tune of Rs.535.85 Crore has been made through eNAM portal to 1,96,408 farmers.**

7.1.2.2 Unified Single License

Unified Single Licence which is a basic requirement for online trading is issued to traders of all the Regulated markets in the state. **So far, 2,549 Unified Single Licences have been issued to the traders** to access all the markets within the State besides carrying out the Interstate Trade.

7.2. AGRI BUSINESS ACTIVITIES

7.2.1 Uzhavar Sandhai

The challenge of farmers, especially small and marginal farmers cultivating vegetables, greens and fruits lies in marketing them at remunerative prices. To provide a facility to enable the farmers to fetch remunerative price for these perishable produce, the concept of **"Uzhavar Sandhai"** was introduced way back in 1999 by Dr. Kalaignar Karunanidhi. Totally 180

Uzhavar Sandhais are functioning in Tamil Nadu. **(Annexure III)**

Since inception, these sandhais have been playing a vibrant role in bringing the farmers and consumers into a structured market system benefitting both of them in terms of service and better price.

Through these markets, the role of the middle man is eliminated by the direct sale of farm produce by small and marginal farmers to consumers, thus benefiting both farmers and consumers. Therefore the role of multiple profit earning intermediaries like Commission Agents, Wholesalers and Retailers were eliminated in the supply chain of fruits and vegetables.

In Uzhavar Sandhais, facilities like Farmers' shops, weighing scale and Weighing Balance are provided at free of cost, besides drinking water and sanitary facilities created for use by farmers.

Cold storage units of 2 MTs capacity are established in 27 Uzhavar Sandhais.

Prices of Vegetables and fruits are fixed daily in each Uzhavar Sandhai, based on the prevailing whole sale price and retail price such that the price fixed is higher than the whole sale market price and less than the retail market price. This is beneficial to both the farmers and consumers. Daily price details of Uzhavar Sandhais are uploaded in the *agrimark.tn.gov.in* portal and are also made available in the Uzhavan app.

On an average, 2,000 MT of fruits and vegetables worth Rs.8.26 Crore are sold per day in the Uzhavar sandhais by 8,000 farmers to four lakh consumers across the State.

During the Corona pandemic, with the announcement of Hon'ble Chief Minister to deliver fruits and vegetables to the consumers at their

doorsteps, the farmers of “Uzhavar Sandhai” have undertaken “Sale of fruits and vegetables through mobile vehicles” like Vans, Autos and Two wheelers in all districts including Chennai.

The Government is taking initiatives to implement the following schemes in 2021-22 to revive the Uzhavar Sandhais.

i. To revive the existing Uzhavar Sandhais, the basic amenities in 50 Uzhavar Sandhais will be improved at a cost of Rs.12.5 crore from the State Government.

ii. Based on the need of farmers and consumers, 10 new Uzhavar Sandhais will be established at a cost of Rs. Six crore with the financial assistance of the State Government.

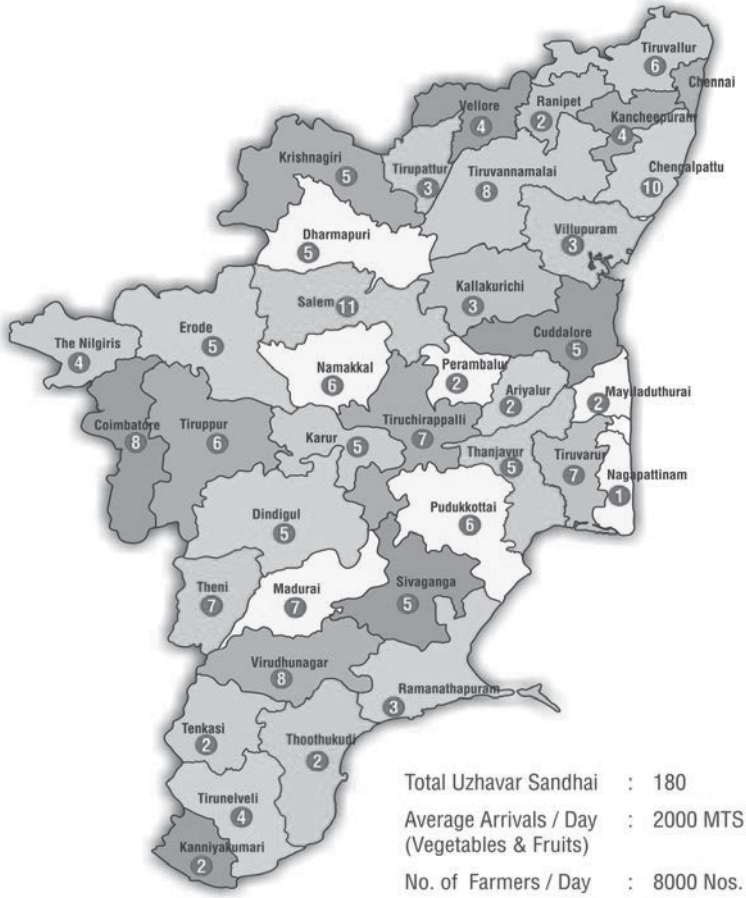
iii. In order to make vegetables easily available in the corporation areas, 30

mobile vegetable shops will be operated in five Corporations, viz, Chennai, Trichy, Coimbatore, Salem and Tiruppur on a pilot basis. Subsidy will be provided to rural agricultural youth to purchase vehicles. The project cost of Rs.60 lakh will be met from the Tamil Nadu State Agricultural Marketing Board fund.

iv. To convert the fruits and vegetable waste collected in the 25 heavy arrival Uzhavar Sandhais into bio compost, Composting units at a cost of Rs.2.75 crore, will be met out from the Market Committee Fund.

v. In the first phase, 50 Uzhavar Sandhais and 50 Regulated Markets with heavy arrivals will be provided with digital boards at a cost of Rs.2.30 crore. This expenditure will be met from the funds of Tamil Nadu Agricultural Marketing Board.

Tamil Nadu - Districtwise Uzhavar Sandhai



Total Uzhavar Sandhai	:	180
Average Arrivals / Day (Vegetables & Fruits)	:	2000 MTS
No. of Farmers / Day	:	8000 Nos.
No. of Consumers / Day	:	4 Lakh Nos.

7.2.2 Promotion of value addition through Specialized Centres under NADP

The State Government strives to promote the concept of value addition among farmers by creating suitable infrastructure specific to the crop cultivated in the region. **The details of such centres established are as follows:**

Table:7.2- Value Addition Centres

S. No	Special Value Addition Centres	Location / District	Estimate (Rs. Crores)	Value Added Products
1.	Maize Market Promotion Centre	Thozhudur/ Cuddalore	3.78	Animal Feed Pellets
2.	Coconut Value Addition Centre	Shenbagaraman pudur/ Kanyakumari	16.00	Virgin Coconut Oil, Desiccated Coconut powder, Coconut Shell Powder, Coconut

				Shell Charcoal, Coconut Mara Chekku Oil.
	Secondary Processing Centres			
3.	Onion	Manachanallur/ Trichy	0.42	Cut Onion
4.	Red Chillies	Mudhukulathur/ Ramanathapuram	0.23	Chillie Powder, Chillie Flakes
5.	Mango	Pochampalli/ Krishnagiri	2.25	Mango Pulp, Squash

During 2021-22, a Minor Millet Processing Centre at a cost of Rs.35 lakh with the financial assistance of Union and State Governments will be established to process the millets produced by Tribal farmers of Kotagiri region in Nilgiris district. A Coconut value addition centre will be set up in Thanjavur district at a cost of Rs.5.2 crore for the benefit of coconut farmers in Delta district. In addition, a Pepper processing centre will be established at a cost of Rs.50 lakh at Karavalli of Kolli Hills in Namakkal District

7.2.3 Cold Storage Facilities:

Cold Storage facilities are created in Tamil Nadu to prevent loss due to deterioration of perishable fruits and vegetables. The shelf life is enhanced at low temperature and the risk of distress sale by farmers is reduced. The farmers and traders are utilizing the cold storage facilities in the districts. So far, **194 cold storage structures with a capacity of 17,527 MTs** have been created.

Table:7.3- Capacity wise Cold Storage Facilities in Tamil Nadu

Capacity (MT)	Number of Units	Total Capacity (MT)
2000	2	4,000
500-1000	12	8,000
100-200	18	2,155
40-75	17	850
13-25	94	2,266
2-10	51	256
Total	**194**	**17,527**

"**Cold Chain**" is the process of providing temperature controlled storage and transport facilities to prevent rotting of easily perishable agricultural products from farm gate till they reach the consumers. As a first step in the creation of this facility, a project "Augmentation of Cold Storages" in Tamil Nadu of total cost of Rs.100 Crore has been sanctioned under NABARD – RIDF fund. Under this project, Mega Cold storage structures are under construction in six places viz., Tiruvallur, Salem, Coimbatore, Dharmapuri and Thoothukudi districts (20,500 MT Capacity). In order to support the farmers to store their produce at farm gate level, 80 nos of Five MT Solar Micro Cold Storage Units (400 MT Capacity) will be installed in various places of Tamil Nadu. On completion of this project an additional capacity of 20,900 MTs will be made available to farmers and traders for storage in Tamil Nadu.

Table:7.4- Location of Mega Cold storage structures

S. No	District	Place	Capacity (MTs)
1	Thiruvallur	Ambattur - TAI Land	5,000
2	Thiruvallur	Red Hills RM	2,000
3	Salem	Salem RM	1,000
4	Coimbatore	Sulur RM	5,000
5	Thoothukudi	Thoothukudi RM	2,500
6	Dharmapuri	Karagathahalli, Palacode	5,000

Based on the request made by farmers, Cold Storages will be established in two places viz., Ottanchathiram and Panruti at a cost of Rs.10 Crore during 2021-22.

7.2.4 Integrated Market Complex – a Single point access to farmers needs

A single market place with access to farmers to meet their various requirements like marketing of produce, purchase of inputs, seeking financial services like Bank, ATM and technical

advisories is the objective behind the establishment of Integrated Farmers Market Complex. One such complex at K.Pudhur of Madurai district is under construction at a cost Rs. 10 Crore.

During 2021-22, in order to enable integrated marketing of vegetables and fruits produced by farmers in Nilgiris district, an "Integrated Rural Agricultural Market Complex" will be established at Edappally village, with necessary infrastructure and other services for supply chain management. This will be established at a cost of Rs.Two crore with Union and State Government funds. In addition, a ‘Modern Agricultural Marketing Centre’ for value added agricultural produce will be set up at Kolathur in Chennai Corporation at a cost of One crore rupees with State Government funds.

7.2.5 Implementation of Supply Chain Management Project for Fruits, Vegetables and Other perishables in 10 Districts of Tamil Nadu

As a part of special initiatives taken by the Government of Tamil Nadu to improve marketing of perishable commodities and for improving the income of farmers, a visionary project namely the Tamil Nadu Supply Chain Management Project for Fruits, Vegetables and Other perishables is implemented in 10 Districts [Krishnagiri, Dharmapuri, Coimbatore, The Nilgiris, Tiruchirappalli, Dindigul, Theni, Ramanathapuram, Thoothukudi and Tirunelveli (Tenkasi)] with a total financial outlay of Rs.482.36 Crore under NABARD Warehouse Infrastructure Fund.

64 Primary Processing Centres (PPCs) with Post harvest infrastructure facilities such as pack house, cold storage, storage godowns and processing lines have been established **(Annexure IV).**

To ensure better livelihood to farmers and to promote Farmer Producer Organisations, the Primary Processing Centres are being operationalised through tender process by Farmer Producer Organisations as Market Integration Partners on concessionary basis. So far 65894.00 MT of vegetables and fruits were handled in Primary Processing Centre. An average volume of 150 to 200 MT of vegetables and fruits were handled per day. An average of 2000 to 2500 number of farmers were supplying the produce to Primary Processing Centre per week and getting benefited.

Status of operationalisation of 64 Primary Processing Centres (PPCs) is as follows:

i. 43 PPCs - Operationalised by Farmer Producer Organisations as Market Integration Partners

ii. Four PPCs - Operationalised by Market Committee.

iii. Ooty Rose Garden PPC is operationalised by the Department of Horticulture and Plantation Crops.

iv. Five PPCs - Operationalised by Cooperative Department.

v. 11 PPCs - Steps are being taken for operationalisation.

To extend the shelf life of fruits & vegetables and to meet the export requirements, specialised infrastructures like Gamma Irradiation Facility, Individually Quick Freezing (IQF) Units, Vapour Heat Treatment Plant, Pack House accredited by APEDA, (Agricultural and Processed Food Products Export Development Authority) have been created in some of the Primary Processing Centres.

Further, a Primary Processing Centre for Flowers cum International Flower Auction Centre at Hosur, Krishnagiri District at a cost of Rs.20.20 Crore is being established with infrastructure

facilities such as auction hall, sorting hall, office building, buyers hall, distribution hall, cold storage, storage godown, shops, farmers training centre are being established for the benefit of flower growers and exporters in the State.

The project is extended to Eight more Districts viz., Salem, Erode, Tiruvallur, Kancheepuram (Chengalpet), Tiruvannamalai, Cuddalore, Villupuram and Karur at an outlay of Rs.102.47 Crore under NABARD Rural Infrastructure Development Fund and the preliminary works are under progress.

7.2.6 Farmer Producer Organisations in Tamil Nadu

Farmer Producer Organisations (FPO) empower small and marginal farmers by ensuring their prosperity and play a significant role to boost their agri-productivity and income.

The Government of Tamil Nadu has been espousing the welfare and growth of the farmers

through various schemes and policy interventions for the promotion of FPOs. Several initiatives have been taken by the Government through this Department for organizing Farmers' Interest Groups consisting of 15-20 members to form FPOs. This Farmer Producer Organizations consist of 500-1000 members.

318 FPOs were formed and promoted between the years 2014 and 2021. Further, 50 FPOs under the Central Sector scheme for 'Formation and Promotion of 10000 FPOs' and 13 FPOs through the Tamil Nadu Irrigated Agriculture Modernization Project are being formed.

7.2.6.1 Financial Assistance to FPOs:

Tamil Nadu Small Farmers Agri-Business Consortium (TNSFAC) is the nodal agency for the implementation of schemes related to Farmer Producer Organizations in Tamil Nadu. FPOs are formed and promoted with Central and State

Government funds at a total budget outlay of Rs.94.91 Crore.

A comprehensive Scheme for providing access to adequate and affordable Financing to Farmer Producer Companies (FPC) through Financial Institutions is implemented with a financial outlay of Rs.266.70 Crore for four years with NABKISAN as implementing partner with the following components**.**

i. **Mezzanine Capital Assistance (MCA)** is provided to augment the capital contribution of the FPC members for their business activities by enhancing their margin money. An FPC can avail assistance up to Rs.10 lakh at a nominal rate of Four % per annum. This is repayable after five years.

ii. **Credit Guarantee Scheme (CGS)** - Credit Guarantee Scheme supports the FPCs in availing mortgage free loans upto Rs.one crore by providing 50%

guarantee cover to the lending institutions by Government.

iii. **Revolving Fund Support (RFS)** – While the lending rates of financial institutions prevail at a rate of 12% to 14%, this scheme provides loans at a concessional rate of Eight % to Nine % to FPCs.

7.2.6.2 Other support to FPOs:

"Tamil Nadu Policy for Promotion of Farmer Producer Organisations" has been framed to support and strengthen FPOs. Support has been provided to FPOs to transform themselves as entrepreneurs by providing 50 Seed processing units, 10 Dhal mill units and three Millet processing units.

7.2.7 Food Processing

7.2.7.1 Tamil Nadu Food Processing Policy:

A separate Food Processing Policy has been framed to strengthen the food processing sector

in the State with an aim to reduce the post harvest losses, especially in Fruits and Vegetables from the current level of 2% to 10% and to increase the income of farmers by providing better marketing opportunities. The Department of Agricultural Marketing and Agri Business is the designated Nodal Agency for implementing Food Processing Policy and Food Park projects.

The incentives and support measures offered to the Food Processing Enterprises in the Food Processing Policy are: Land allotment, Water and Power supply, Capital Subsidy incentive and payroll subsidy, Interest subvention, increased interest subsidy for women/SC/ST entrepreneur, Special subsidy for medium level investment, Stamp duty exemption, Market fee exemption, Quality Certification/ Patent registration facilitation, transportation assistance, Export incentives, Skill development initiatives, Research and Development and Testing Labs, Single window facility etc.

7.2.7.2. Establishment of Food Parks:

Food Park is a place where food processing units are established predominantly for production of processable Agriculture, Horticulture, Animal Husbandry, Meat, Poultry, Dairy and Fisheries products and notified under specific norms as may be prescribed.

Food Park project aims at integrating the agricultural production to the Food Processing Industries, processors and retailers so as to ensure value addition, reducing the wastage, increasing farmers' income and creating employment opportunities particularly in rural area.

The Food Park Scheme envisages the creation of the state of art infrastructure, **basic infrastructure** such as development of industrial plots, boundary wall, roads, drainage, water supply, electricity supply, Effluent Treatment Plant, weighbridges etc., and **Core Processing facilities** like pack house, warehouse, cold

Storage, ripening chamber, laboratory etc., in a well-defined Agri / Horticultural zone for setting up of modern food processing units.

First Phase:

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

A Mega Food Park Project is being established in 50 acres area at SIPCOT Industrial Estate, **Gangaikondan, Tirunelveli District** at a total Cost of Rs.77.02 Crore with grant in aid from Ministry of Food Processing Industries (MoFPI), Government of India under **Mega Food Park** scheme. Tamil Nadu State Agricultural Marketing Board is the Project Implementing Agency for this project.

ii) Establishment of Small Food Parks

Small Food Parks / Agro Processing Clusters are also being established in an extent of around 10 acres each with a financial outlay of

Rs.191.88 Crore in Seven locations viz., **Cuddalore, Theni, Dindigul, Krishnagiri, Tiruvannamalai, Salem and Madurai** availing financial assistance from Ministry of Food Processing Industries (MoFPI), Government of India under the scheme of **"Creation of Agro Processing Clusters".** The respective district Market Committee Secretaries are designated as the Project Execution Agencies for these projects.

Second phase:

It has also been proposed to set up Food Parks in Eight districts namely, **Tiruvarur, Dharmapuri, Ariyalur, Karur, Perambalur, Ramanathapuram, Tenkasi and Nagapattinam.**

A Separate Organization for Food Processing will be established in 2021-22, to give impetus to food processing sector.

7.2.7.3 Pradhan Mantri Formalization of Micro food processing Enterprises (PMFME)

PMFME is a Centrally Sponsored Scheme designed to address the challenges faced by the micro enterprises and to tap the potential of groups and cooperatives in supporting the upgradation and formalization of these enterprises**.** The scheme is being implemented from the year 2020-21 shared in 60:40 ratio by the Union Government and State Government.

It aims to enhance the competitiveness of existing individual micro-enterprises, promote formalization of the sector and support Farmer Producer Organizations (FPOs), Self Help Groups (SHGs) and Producers Cooperatives along their entire value chain.

Programme Components

i. Support to individual and groups of micro enterprises;

ii. Branding and Marketing support;

iii. Support for strengthening of institutions;

iv. Setting up robust project management framework.

The Commissionerate of Agricultural Marketing and Agri Business is the State Nodal Agency (SNA) for this scheme.

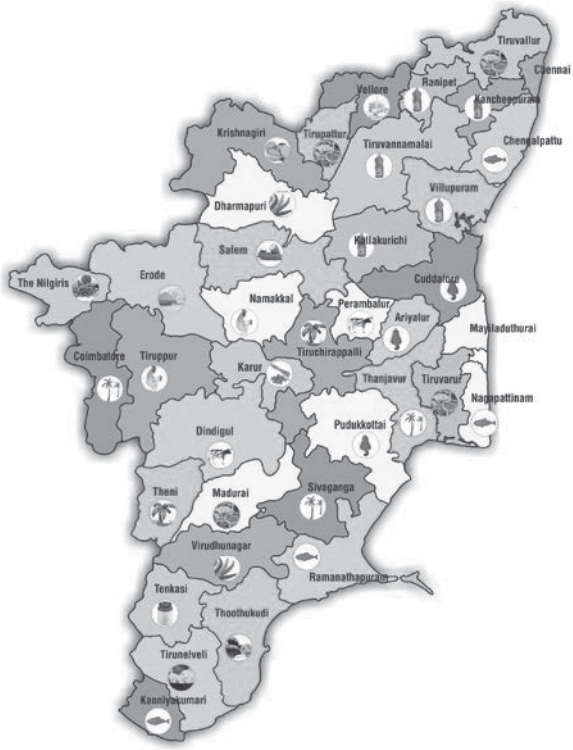
It is proposed to cover 2,729 units in the current year (2021 – 2022) at an outlay of Rs. 125.10 Crore.

The scheme adopts **One District One Product (ODOP)** approach to reap the benefit of scale in terms of procurement of input, availing common services and Marketing of products. The ODOP product can be a perishable agri produce, cereal based products or food product widely produced in a district and their allied sectors. ODOP for 36 districts have been identified and approved by Ministry of Food Processing Industries (MoFPI).

Table:7.5- ONE DISTRICT ONE PRODUCT – TAMIL NADU

S.No	Product	Districts
1	Banana	Theni, Trichy
2	Mango	Krishnagiri
3	Moringa	Karur
4	Palm	Thoothukudi
5	Pickles	Tenkasi
6	Tapiaco	Salem
7	Vegetable	The Nilgiris
8	Dairy	Vellore
9	Edible Oils (Groundnut)	Kallakurichi, Kancheepuram, Ranipet, Tiruvannamalai, Villupuram
10	Fish	Chengalpattu, Kanyakumari, Nagappattinam, Ramanathapuram
11	Animal feed	Dindigul, Perambalur
12	Poultry Feeds and products	Namakkal, Tiruppur
13	Dhal products	Madurai, Thiruvallur, Thiruppathur, Tiruvarur
14	Millet Products (except Maize)	Dharmapuri, Virudhunagar
15	Papad Units	Tirunelveli
16	Cashew Processing	Ariyalur, Cuddalore, Pudukkottai
17	Coconut Products	Coimbatore, Sivagangai, Thanjavur
18	Turmeric based units	Erode

ONE DISTRICT ONE PRODUCT – TAMIL NADU



The details of the scheme are available in the MoFPI (www.mofpi.nic.in) website.

7.2.7.4 Neera

Tamil Nadu Neera Rules was issued during 2017 to provide opportunities for Coconut Farmer Producer Companies to produce Neera from Coconut and licences have so far been issued to 13 Coconut Farmer Producer Companies for Neera tapping. These Coconut Farmer Producer Companies have tapped around Nine lakh litres of Neera. Neera and value added products of Neera namely Palm jaggery, Palm syrup, Palm sugar chocolates, squash, cake etc have been sold for an amount of Rs.13 Crore.

7.2.8. Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP)

Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP) is being implemented for six years from 2017-18 to 2022-23 in 66 sub-basins with a project outlay of Rs.125 Crore.

7.2.8.1. Activities:

1. Under this project the prime activity is formation of 80 New Farmer Producer Organisations at a cost of Rs.32.28 lakh per FPC by engaging consultancy firm.
2. The newly formed FPCs will be provided Rs.20 Lakh per FPC (80:20) as productive investment support.
3. The newly formed FPCs will be provided Rs.30 Lakh per FPC (75:25) as Business expansion Grant support.
4. Support to existing 40 Farmer Producer Companies for expansion of business, grant for Two years (75% TNIAMP Grant & 25% FPC Contribution)
5. Modernisation and Digitization of three Regulated Markets at Srimushnam, Kurinjipadi & Sivagiri
6. Construction of 2,000 MT godown to facilitate e-Negotiable Warehouse Receipt (e-NWR) financing.

7. Facilitating Public Private Partnership mechanism through Interface Workshop, Seminars, Facilitation workshop for Agro entrepreneurs and Capacity building training
8. Promoting Agri enterprises through setting up of Agri Business Promotion Facility (ABPF).

Table:7.6- Project Details

Rs. In Crore

Phase	Sub Basin	Districts	Administrative Sanction for 3 years	Year	No. of FPOs	Allo-cation 2021-22
I	18	20	51.72	2019 - 20	26	20.57
II	16	17	26.38	2020- 21	24	20.48
III	9	9	19.41	2021 - 22	13	14.05

7.2.9 AGMARK Grading

Agmark is a quality certification mark on agricultural products in India and it is legally enforced by the Agricultural Produce (Grading and Marking) Act of 1937 (amended in 1986) by Directorate of Marketing and Inspection of Union

Government. Presently, Agmark standards cover quality specifications for 227 **commodities**. This scheme is a voluntary one. **In Tamil Nadu 30 State Agmark Grading Laboratories (SAGL) and One Principal Laboratory are functioning (Annexure V).**

The food products like rice, pulses, ghee, honey, ground spices, whole spices, sago, vegetable oils, gram flour, compounded asafoetida etc., are graded in Agmark Grading Laboratories.

During 2020-21, agricultural commodities to the tune of **27.11 Lakh quintals** were graded and grading charges of **Rs.80.12 Lakh** has been collected as **State revenue**. This scheme is continued in **2021-22**.

7.3 HUMAN RESOURCE MANAGEMENT

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

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

The Department will be Strengthened and restructured with qualified personnel to identify appropriate export avenues, value addition techniques and for preparation of project proposals.

Table:7.7- 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	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:7.8- Details of Market Committee Staff

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

7.4. TAMIL NADU STATE AGRICULTURAL MARKETING BOARD

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

reconstituted as a Statutory Board. It is functioning with its headquarters at Chennai.

The Board consists of a President appointed by the Government. Chairman of all the Market Committees and 6 Government officials act as its members. Chief Executive Officer post has been created for monitoring the functioning of various wings of the Marketing Board. Chief Executive Officer controls the functioning of Publicity and Propaganda, Engineering, Agro Export Promotion, Food Park Wings besides State level Training Centre.

7.4.1 Source of Income

Market Committees constitute **15% of its revenue under Section 8(1) and 24(1) of the Tamil Nadu Agricultural Produce Marketing (Regulation) Act 1987** to the Tamil Nadu State Agricultural Marketing Board. Of which, 50% amount is allocated for Market Development Fund, which is utilized for the market developmental activities. The balance 50%

amount is allocated as Board fund towards establishment charges.

7.4.2. Functions of the Tamil Nadu State Agricultural Marketing Board

1. Coordinating the working of the Market Committees, planning the Regulated Markets development and conducting market research and surveys.
2. Administering the Board Fund and Market Development Fund
3. Making necessary arrangements for propaganda and publicity on matters related to marketing of agricultural produce
4. Promoting schemes for processing, grading and standardization
5. Organizing capacity building training to farmers and staff of Department of Agricultural Marketing and Agribusiness

6. Arranging seminars, workshops and exhibitions on subjects related to agricultural marketing and agribusiness
7. Collection and dissemination of market information
8. Coordinating Agro Export promotion activities
9. Project Implementing Agency for Mega Food Park and Price Support Scheme

7.4.2.1. Capacity Building Training

The State Level Training Centre is functioning under the control of Tamil Nadu State Agricultural Marketing Board at Salem. The training Centre provides capacity building programme on Grading, Food Processing, Value addition, Grain storage, Agricultural Market Extension and computer applications to the officials and staff of Department of Agricultural Marketing and Agri-Business. Farmers are also

trained in Value addition, Regulated Markets and e-trading. Special training programmes are also conducted for Market Integration Partners of Supply Chain Management Programme and Farmers and Chief Executive Officers of Farmer Producer Organisations in Business planning.

During 2020-21, training programmes were conducted at a cost of Rs.1.93 Lakh for technical staff and farmers on Food processing and Grain storage. It is programmed to organize 30 training programmes for the benefit of 402 staffs and 200 farmers during 2021-22.

7.4.2.2. Construction / Maintenance Works

Tamil Nadu State Agricultural Marketing Board has a dedicated Engineering Wing with divisions at Chennai, Madurai and Vellore. This wing takes up the construction and maintenance of infrastructures like Godowns, Transaction shed, Multi-storey Godowns, Bidding Hall, Drying Yards and Cold storage structures in the Regulated Markets. New infrastructure facilities are

constructed under NADP, WIF/NABARD, eNAM, e-trading and Supply Chain Management. Creation of basic enabling structures and Core infrastructure facilities in Agro Processing Clusters and Mega Food Park are also executed by the Engineering wing.

During the year 2020-21, infrastructures were created for an amount of Rs.509.46 crore. Construction of new Uzhavar Sandhais, upgradation of Uzhavar Sandhai, Cold Storages and Supply Chain Management Phase- II will be taken up during 2021-22.

7.4.2.3 Price Support Scheme (PSS)

Price Support Scheme envisages protecting farmers from price fall during peak harvest season. This scheme is being implemented in the State since 2017-18. Tamil Nadu State Agricultural Marketing Board (TNSAMB) is the designated State Level Agency for this scheme. Regulated Markets act as Primary Procurement Centres (PPCs) and procure the agricultural

produce like Pulses and Copra from the farmers on behalf of National Agricultural Cooperative Marketing Federation (NAFED), which is the Central Procurement Agency designated by Government of India. The produces with Fair Average Quality (FAQ) are procured at Minimum Support Price (MSP) from the farmers for which the payment is made online.

Since inception of the programme, **17,072 MT of Pulses and 354 MT of Copra** were procured at a total cost of **Rs.115.81 crore from 15,378 farmers**.

For the current financial year **2021-22,** it is programmed to procure **50,000 MT of Milling Copra and 1,000 MT of Ball Copra.**

This intervention of the Government facilitates in market stabilization and farmers are protected against the price fall in Pulses and Copra.

7.4.2.4 Agro Export Promotion

Agriculture Export policy was unveiled by Government of India in December 2018 with a vision to double the agricultural exports and farmers' income.

Government of Tamil Nadu is initiating various steps to increase the income of farmers by exploring trade opportunities for the State's agricultural produces in overseas market. 23 commodity clusters with export potential have been identified.

Farmers' awareness programmes will be conducted throughout the State in coordination with Agricultural and Processed Food Products Export Development Authority (APEDA) for the flow of information on global market opportunities for the commodities produced in the State, their quality standards, export procedures etc.,

Also, an **Agro Export Facilitation Centre** will be established in Guindy, Chennai at a cost of Rs.One crore with infrastructure to facilitate promotion of export by farmers and Farmer Producer Organizations. In addition, 50% subsidy on laboratory testing charges will be extended to the first-time exporters. In the first phase, an amount of Rs.10 lakh is allocated for this purpose during the year 2021-22.

Commodity clusters for potential crops such as Moringa, Banana and traditional / native varieties of rice such as Mappillai Samba and Kavuni will be developed for promoting exports from the State. A special **Moringa Export Facilitation Centre** will be created in Madurai with State Government assistance of Rs.One crore to increase the export avenues for Moringa in the first phase during 2021-22.

Considering the increased export avenues available for the Agricultural and processed

products with Geographical Indication (GI) tag, steps will be taken to get GI tags for traditional Agricultural commodities and processed food products of Tamil Nadu with State Government assistance of Rs.50 lakh during 2021-22.

Annexure.I. District and Market Committee wise Regulated Markets

District	Name of the Market Committee
1. Kancheepuram Market Committee	
Kancheepuram(3)	Kancheepuram, Uthiramerur, Sunguvarchatram.
Chengalpet(4)	Madurantagam, Thirukkalukundram, Acharapakkam, Chengalpet.
Tiruvallur(8)	Thiruthani, Tiruvallur, Redhills, Ponneri, Pallipattu,Uthukottai, Gummidipoondi, Nasarethpettai.
2. Cuddalore Market Committee	
Cuddalore(10)	Virudhachalam, Cuddalore, Panruti, Thittakudi, Kattumannarkoil, Chidambaram, Kurinjipadi, Sethiyathope, Srimushnam, Bhuvanagiri.
3. Villupuram Market Committee	
Villupuram(10)	Tindivanam, Thirukovilur, Villupuram, Gingee, Thiruvennainallur, Avalurpet, Marakkanam, Vikravandi, Ananthapuram, Valathi.
Kallakurichi(8)	Ulundurpet, Chinnasalem, Kallakkurichi, Thiyagadurgam, Sankarapuram, Manalurpet, Moongilthuraipattu, Thirunavalur.

District	Name of the Market Committee
4. Vellore Market Committee	
Vellore (3)	Vellore, Gudiyatham, Katpadi.
Tiruppathur (3)	Thirupattur, Vaniyambadi, Ambur.
Ranipet (6)	Arcot,Kaveripakkam, Kalavai, Ammoor, Thimiri, Arakkonam.
5. Tiruvannamalai Market Committee	
Tiruvannamalai (18)	Tiruvannamalai, Arani, Vandavasi, Chetpet, Cheyyar, Polur, Chengam, Pudupalayam, Vanapuram, Vettavalam, Thellar, Mangalamamandoor, Desur, Peranamallur, Dhusi, Kilpennathur, Adamangalampudur, Naidumangalam.
6. Salem Market Committee	
Salem (14)	Salem, Athur, Sankagiri, Konganapuram, Kolathur, Mecheri, Vazhapadi, Thammampatti, Thalaivasal, Omalur, Kadayampatti, Gangavalli, Karumanthurai, Edapadi.
7. Namakkal Market Committee	
Namakkal (6)	Namakkal, Rasipuram, Tiruchengode, Paramathivelur, Namagiripettai, Cholakkadu.
8. Dharmapuri Market Committee	
Dharmapuri (7)	Dharmapuri, Palacode, Pennagaram, Harur, Pappireddipatti, Kambainallur, Papparapatti.
Krishnagiri (9)	Krishnagiri, Hosur, Kelamangalam, Pochampalli, Kaveripattinam, Uthangarai, Bargoor, Rayakottai, Denkanikkottai.

District	Name of the Market Committee
9. Coimbatore Market Committee	
Coimbatore (10)	Annur, Karamadai, Coimbatore, Sulur, Anaimalai, Pollachi, Malayadipalayam, Negamam, Kinathukkadavu, Thondamuthur.
10. Tiruppur Market Committee	
Tiruppur (15)	Kunnathur, Kangayam, Vellakkoil, Dharapuram, Moolanur, Alangiam, Muthur, Tiruppur, Avinashi, Sevur, Palladam, Udumalpet, Madathukkulam, Pethappampatti, Pongalur.
11. Erode Market Committee	
Erode (18)	Erode, Avalpoonthurai, Kodumudi, Sivagiri, Chithode, Bhavani, Boothapadi, Anthiyur, Mylampadi, Kavundhampadi, Gobichettipalayam, Nambiyur, Vellankoil, Sathyamangalam, PunjaiPuliyampatti, Thalavadi, Perundurai, Elumathur.
12. Tiruchirapalli Market Committee	
Tiruchirapalli (10)	Manapparai, Thuraiyur, Lalgudi, Tiruchirapalli, Thottiyam, Manachanallur, Thuvarankurichi, Pullambadi, Thathaiyangarpet, Kattuputhur.
Karur (4)	Kulithalai, Karur, Irumputhipatti, Chinnadharapuram.

District	Name of the Market Committee
13. Perambalur Market Committee	
Perambalur (2)	Perambalur, Poolambadi.
Ariyalur (4)	Ariyalur, Jayankondam, Andimadam, Melanikuzhi.
14. Pudukkottai Market Committee	
Pudukkotai (10)	Alangudi, Aranthangi, Pudukkottai, Gandarvakkottai, Avudayarkoil, Keeranur, Keeramangalam, Ponnamaravathi, Iluppur, Karambakkudi.
15. Thanjavur Market Committee	
Thanjavur (13)	Athiramapattinam, Ammapettai, Budalur, Kumbakonam, Madukkur, Orathanadu, Pattukottai, Papanasam, Peravoorani, Thanjavur, Vallam, Thirupananthal, Pappanadu.
16. Tiruvarur Market Committee	
Tiruvarur (8)	Koradacheri, Kudavasal, Valangaiman, Thiruthuraipoondi, Poonthottam, Mannarkudi, Tiruvarur, Vaduvur.
17. Nagapattinam Market Committee	
Nagapattinam (4)	Keevalur, Nagapattinam, Vedaranyam, Thirupoondi.
Mayiladuthurai(4)	Kuttalam, Mayiladuthurai, Sembanarkoil, Sirkazhi.
18. Madurai Market Committee	
Madurai (6)	Thirumangalam, Usilampatti, Melur, Madurai, T.Kallupatti, Vadipatti.

District	Name of the Market Committee
19. Theni Market Committee	
Theni (7)	Theni, Cumbum, Bodinayakanur, Chinnamanur,Andipatti, Uthamapalayam, Periyakulam.
20. Dindigul Market Committee	
Dindigul (8)	Dindigul, Ottanchatram, Palani, Natham, Batlagundu, Gopalpatti, Vadamadurai, Vedasandur.
21. Ramanathapuram Market Committee	
Ramanathapuram (6)	Ramanathapuram, Paramakudi, Kamuthi, Thiruvadanai, Rajasingamangalam, Mudukulathur.
22. Virudhunagar Market Committee	
Virudhunagar (7)	Virudhunagar, Rajapalayam, Sathur, Aruppukottai, Srivilliputhur, Watrap, Vembakkottai.
23. Sivagangai Market Committee	
Sivagangai (7)	Sivagangai, Thiruppuvanam, Manamadurai, Singampunari, Karaikudi, Ilayankudi, Devakkottai
24. Tirunelveli Market Committee	
Tirunelveli (4)	Ambasamudram, Valliyur, Tirunelveli, Thisayanvilai.
Tenkasi (7)	Tenkasi, Sankarankovil, Pavoorchatram, Thiruvenkadam, Sivagiri, Alangulam, Kadayanallur.
Thoothukudi (9)	Kovilpatti, Thoothukudi, Pudur, Kadambur, Kalugumalai, Srivaikundam, Vilathikulam, Ettayapuram, Sathankulam.

District	Name of the Market Committee
25. The Nilgiris Market Committee	
The Nilgiris (4)	Udagamandalam, Kothagiri, Coonoor, Gudalur.
26. Kanniyakumari Market Committee	
Kanniyakumari (6)	Eathamozhi, Vadaseri, Kaliyakkavilai, MondayMarket, Kulasekaram, Thoduvatti.

Annexure.II. e-NAM Regulated Markets

Districts	e NAM Markets
1.Vellore Market Committee	
Ranipet (2)	Ammoor, Kalavai
Vellore (2)	Vellore, Gudiyatham
Thirupathur (2)	Thirupathur ,Vaniyambadi
2.Coimbatore Market Committee	
Coimbatore (4)	Annur, Anaimalai, Pollachi, Negamam
3.Dindigul Market Committee	
Dindigul (4)	Dindigul, Natham, Palani, Oddanchatram
4.Erode Market Committee	
Erode (5)	Anthiyur, Sathyamangalam, Erode Gobichettipalayam, Perundurai
5.Ramanathapuram Market Committee	
Ramanathapuram (4)	Paramakudi, Mudhukulathur, Kamuthi, Rajasingamangalam

Districts	e NAM Markets
6.Villupuram Market Committee	
Villupuram (6)	Thirukovilur ,Tindivanam, Vikkiravandi, Gingee, Villupuram, Avalurpet
Kallakurichi (4)	Ulundurpettai, Kallakurichi ,Sankarapuram, Thiyagadurgam
7.Tiruppur Market Committee	
Tiruppur (5)	Thiruppur, Udumalpet, Pethappampatti, Vellakoil, Moolanur
8.Theni Market Committee	
Theni (2)	Cumbum, Theni
9.Cuddalore Market Committee	
Cuddalore (2)	Virudhachalam ,Panruti
10.Namakkal Market Committee	
Namakkal (1)	Paramathivelur
11.Trichy Market Committee	
Trichy (1)	Lalgudi
12.Madurai Market Committee	
Madurai (2)	Madurai ,Usilampatti
13.Thiruvannamalai Market Committee	
Thiruvannamalai (8)	Cheyyar, Arani, Desur, Vettavalam, Polur, Chetpet, Kilpennathur, Vandavasi

Districts	e NAM Markets
14.Nagapattinam Market Committee	
Mayiladuthurai (4)	Kuthalam, Mayiladuthurai, Sembanarkoil, Sirkali
15.Kancheepuram Market Committee	
Kancheepuram (1)	Kancheepuram
Chengalpattu (1)	Maduranathangam
16.Virudhunagar Market Committee	
Virudhunagar (2)	Rajapalayam ,Virudhunagar
17.Dharmapuri Market Committee	
Dharmapuri (1)	Harur

Annexure.III. District Wise Details of Uzhavar Sandhais

S. No	District	Uzhavar Sandhais
1	Ariyalur (2)	Ariyalur, Jeyankondam
2	Coimbatore (8)	R.S.Puram, Singanallur, Pollachi, Mettupalayam, Kurichi, Sulur, Vadavalli, Sundarapuram
3	Cuddalore (5)	Cuddalore, Chidambaram, Viruthachalam, Panruti, Vadalur
4	Dharmapuri (5)	Dharmapuri, Pennagaram, Palacode, A.Jattihalli, Harur

S. No	District	Uzhavar Sandhais
5	Dindigul (5)	Dindigul, Palani, Chinnalapatti, Kodaikkanal, Batlagundu
6	Erode (5)	Sampath Nagar, Gobichettipalayam, Sathiyamagalam, Periyar Nagar, Perundurai
7	Kancheepuram (4)	Kancheepuram, Padappai, Sunguvarchatram, Kundrathur
8	Chengelpet (10)	Pallavaram,Chengalpet, Medavakkam, Nanganallur, Madhuranthagam, Keelkattalai, Jameenrayapettai, Guduvancheri, Thirukalukundram, Kannaginagar
9	Kanyakumari (2)	Vadaseri, Myladi
10	Karur (5)	Karur,Kulithalai, Velayuthampalayam, Pallapatti, Vengamedu
11	Krishnagiri (5)	Hosur, Krishnagiri, Kaveripattinam, Denkanikottai, Avallapalli
12	Madurai (7)	Annanagar, Chokkikulam, Palanganatham, Usilampatti, Thirumangalam, Melur, Anaiyur
13	Nagapattinam (1)	Nagapattinam
14	Mayiladuthurai (2)	Mayiladuthurai, Sirkali
15	Namakkal (6)	Namakkal, Tiruchengode, Rasipuram, Kumarapalayam, Paramathivelur, Mohanur

S. No	District	Uzhavar Sandhais
16	Nilgiris (4)	Udhagamandalam,Coonoor, Kothagiri, Gudalur
17	Perambalur (2)	Perambalur, Veppanthattai
18	Pudukottai (6)	Pudukottai, Aranthangi, Alangudi, Gandarvakottai, Karambakkudi, Viralimalai
19	Ramanathapuram (3)	Ramanathapuram, Paramakudi, Kamuthi
20	Salem (11)	Sooramangalam, Ammapet, Athur, Thathakapatti, Mettur, Attayampatti, Hasthampatti, Elampillai, Thammampatti, Jalagandapuram, Edappadi
21	Sivagangai (5)	Sivagangai, Devakottai, Karaikudi, Tirupatthur, Singampunari
22	Thanjavur (5)	Thanjavur, Kumbakonam, Pattukottai, Tirukattupalli, Papanasam
23	Theni (7)	Theni, Cumbum, Bodinayakanur, Periyakulam, Devaram, Andipatti, Chinnamanur
24	Tirunelveli (4)	Palayamkottai, Kandiyaperi, Melapalayam, Ambasamudram
25	Tenkasi (2)	Sankarankoil, Tenkasi
26	Tiruppur (6)	Udumalpet, Tiruppur (North), Tiruppur (South), Palladam, Kangeyam, Dharapuram

S. No	District	Uzhavar Sandhais
27	Tiruvallur (6)	Tiruthani, Tiruvallur, Ambattur, Paruthipattu, Naravarikuppam, Perambakkam
28	Tiruvannamalai (8)	Tiruvannamalai, Polur, Arani, Cheyyar, Chengam, Vandavasi, Keelpennathur, Tamarainagar
29	Tiruvarur (7)	Tiruthuraipoondi, Mannargudi-1, Tiruvarur, Needamangalam, Muthupettai, Mannargudi -2, Valangaiman
30	Trichirappalli (7)	Anna Nagar, K.K.Nagar, Thuraiyur, Manapparai, Musiri, Thuvakudi, Lalgudi
31	Tuticorin (2)	Tuticorin, Kovilpatti
32	Vellore (4)	Vellore, Katpadi, Gudiyatham, Kagithapattarai
33	Ranipet (2)	Ranipet, Arcot
34	Tirupathur (3)	Tirupathur, Natrampalli, Vaniyampadi
35	Villupuram (3)	Tindivanam, Villupuram, Gingee
36	Kallakurichi (3)	Sankarapuram, Ulundurpet, Kallakurichi
37	Virudhunagar (8)	Aruppukottai, Rajapalayam, Srivilliputhur, Virudhunagar, Sivakasi, Sathur, Kariyapatti, Thalavaipuram
TOTAL		**180**

Annexure.IV.
Details of Primary Processing Centres (PPC)

Sl. No.	District	Name of the PPC
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.
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.

Sl. No.	District	Name of the PPC
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)	Ramaiyanpatti, Valliyoor
11	Tenkasi (3)	Pavoorchatram, Sankarankovil, Kadayanallur

Annexure.V.
District-wise AGMARK Grading Laboratories

S.No.	District	Location of 31 AGMARK Grading Laboratory
1	Chennai	Principal Laboratory
2	Kancheepuram(2) (Place Chennai)	Chennai (North), Chennai (South)
3	Vellore	Vellore
4	Cuddalore	Panruti
5	Thanjavur	Thanjavur
6	Tiruchirapalli (2)	Tiruchirapalli–I, Tiruchirapalli–II
7	Karur	Karur
8	Madurai (2)	Madurai (North), Madurai (South)
9	Theni	Theni
10	Dindigul	Dindigul
11	Virudhunagar	Virudhunagar
12	Tirunelveli	Tirunelveli
13	Thenkasi	Thenkasi
14	Thoothukudi	Thoothukudi
15	Kanyakumari (2)	Nagarkoil, Marthandam
16	Salem	Salem
17	Dharmapuri	Dharmapuri
18	Coimbatore	Coimbatore
19	Erode (4)	Perundurai, Erode–I, Erode–II, Chithode
20	Tiruppur (5)	Thiruppur, Palladam, Kangayam–I Kangayam–II, Vellakovil

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) has been 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. Pradhan Mantri Krishi Sinchayee Yojana - Watershed Development (PMKSY-WD)
2. Watershed Development Fund (WDF) - assisted by NABARD
3. Climate Proofing of Rainfed Watersheds in Salem and Virudhunagar Districts of Tamil Nadu under National Adaptation Fund for Climate Change (NAFCC)

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

1. Rashtriya Krishi Vikas Yojana - [National Agriculture Development Programme] - (RKVY/ NADP) - RAFTAAR
2. National Mission for Sustainable Agriculture (NMSA)

3. Pradhan Mantri Krishi Sinchayee Yojana - (PMKSY)
    i. Pradhan Mantri Krishi Sinchayee Yojana - Per Drop More Crop (PMKSY - PDMC)
    ii. Pradhan Mantri Krishi Sinchayee Yojana - Har Khet Ko Pani (PMKSY - HKKP)
    iii. Accelerated Irrigation Benefit Programme (AIBP)
4. Agriculture Infrastructure Fund (AIF)

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

Pradhan Mantri Krishi Sinchayee Yojana - Watershed Development (PMKSY - WD) (Erstwhile Integrated Watershed Management Programme) has been implemented in accordance with the Common Guidelines issued by the Government of India. Based on the selection criteria of a watershed, a total of 270 Projects at an estimated cost of Rs.1,643 crore were sanctioned from the

year 2009-10 onwards and implemented over a period of five to seven years in 26 districts across the State.

The work phase of all 270 Projects have been completed. In total, 2,763 Micro watersheds at a total expenditure of Rs.1509.843 crore have been incurred and an area of 13.693 lakh ha has been treated under this programme. Consolidation phase meant for the maintenance and evaluation of Project activities is under progress. The end-line evaluation activities will be completed before 30th September 2021.

The Evaluation Studies undertaken by Third parties suggest that the overall planning, and implementation of the Projects have been well received among the watershed community. The Natural Resource Management activities like construction of Check Dams, Recharge Shafts, Sunken Ponds, Farm Ponds etc., have created substantial improvement to the ground water

level and the availability of water for irrigation, thereby enhancing irrigation potential and productivity in the watershed areas. Farm Production, Micro enterprises and Livelihood interventions have also helped in the improvement of the Socio - economic parameters among the village community.

8.3. New Generation Watershed Projects

Government of India has communicated its interest to take up New Generation of Watershed Projects to address rainfed and degraded lands and has requested the State to be in all readiness to take up the Projects. Consequently,

i. An area of 7,19,179 ha of Wastelands have been delineated by National Remote Sensing Agency (NRSA) based on 23 fold classifications.
ii. Based on certain criteria indicated by the National Rainfed Area Authority (NRAA), Ministry of Agriculture, Co-operation & Farmers

Welfare (MoAC&FW) Government of India, *viz.* frequency of occurrence of droughts, acuteness of drinking water scarcity, extent of over exploitation of ground water resources, preponderance of wastelands/degraded lands, extent of fallows and current fallows, status of soil health, aquifer characteristics and topography, Hydrological assessment of surplus run-off from watersheds, contiguity to another watershed that has already been developed/ treated, proportion of social and economically backward population, scheduled castes/ scheduled tribes, productivity of major crops to that of district/ state average etc., prioritization of Micro watersheds for all 37 districts has been taken up.

On receipt of detailed guidelines and sanction from the Department of Land Resources, Government of India, New Generation Watershed Projects will be implemented in Tamil Nadu.

8.4 Watershed Development Fund (WDF) assisted by NABARD.

This scheme has been under implementation from the year 2004 onwards and implemented through Non-Governmental Organisations. These watershed Projects are sanctioned by the State Level Steering Committee and after the Capacity Building Phase, they are handed over to TAWDEVA for the Full Implementation Phase.

It is funded by State Government (as 50% loan assistance) and NABARD (50% grant assistance).

8.4.1. Major Components of WDF

i. Physical Area Treatment

Activities like Stone filled bunds, Contour trenches, Water absorption trenches, Dug wells, Recharge pits, Farm ponds, Percolation ponds, Sunken ponds, Agro-Forestry, Agro-Horticulture,

Silvi-pasture and Grass seeding in watershed areas.

ii. Drainage line treatment

Activities like Stone gulley plugs, Renovation of water harvesting structures, Desilting of ponds, tanks and repair of supply channels.

iii. Livelihood Support for landless women

Income generating activities for Self Help Groups and landless women.

iv. Training

Training to Watershed Association Communities and beneficiaries in the Watershed through Participatory Rural Appraisal (PRA) and help them to develop a need based watershed specific plan.

8.4.2. Ongoing WDF Projects

The eight Watershed Development Fund Projects viz., Odukkur and Mampatti in Pudukottai, Koppur in Tiruvallur, Ayyampalayam in Trichy, Karaikadu in Cuddalore, Kesampatti in Madurai, Chetpet in Tiruvannamalai and Idayamelur in Sivangangai districts are in the Full Implementation Phase under TAWDEVA fold in seven districts. Out of the 50% of the total Project cost of Rs.3.47 crore, an amount of Rs.3.11 crore has been released to all the Non-Governmental Organisations and Rs.1.68 Crore has been incurred as expenditure so far. These Projects are proposed to be continued during the year 2021-22 in a concerted manner.

8.5 "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.

8.5.1. Project Objectives

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

8.5.2. 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 & Micro Enterprises like Vermi Compost units and Backyard Poultry are provided to the farmers. As add on activities towards Climate Proofing, Support for alternative crops 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.

During the year 2019-2020, 2020-2021 an amount of Rs.4.01 crore has been released by NABARD out of which Rs.3.64 crore has been incurred as expenditure so far.

During the year 2021-22, an amount of Rs.7.51 crore has been released for implementing the various activities under NAFCC in Salem and Virudhunagar districts.

8.6. Agriculture Infrastructure Fund (AIF)

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

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

The scheme entails provision of financing facility for interest subvention of 3% per annum up to a limit of Rs.2 Crore for a maximum

period of seven years. In case of loans beyond Rs.2 Crore, interest subvention will be limited up to Rs.2 crore. Credit guarantee for loans up to Rs.2 crore are also provided.

A Memorandum of Understanding (MoU) has been signed with 25 scheduled Commercialised banks by Government of India to provide loans @ 9% interest per year with interest subvention of 3% towards the creation of Agriculture Infrastructure. Under this scheme, the State Government has planned to create Agriculture infrastructure with credit facility for a target of Rs.5990 crore over the Project period from 2020-21 to 2032-33.

8.6.1. Eligible beneficiaries

The scheme can be availed by Primary Agricultural Co-operative Credit Societies (PACCS), Farmer Producer Organizations (FPOs), Self Help Groups (SHGs), Farmers, Joint

Liability Groups (JLGs), Multipurpose Cooperative Societies, Agri-entrepreneurs, Start-Ups, Central / State agency or Local Body sponsored Public Private Partnership, State Agencies/Agricultural Produce Marketing Committees (APMCs), National & State Federations of Cooperatives, Federations of FPOs (Farmers Produce Organisations) and Federations of Self Help Groups (SHGs).

During the year 2020-21, out of 327 applications received under AIF, 96 projects worth Rs.15.30 crore have been sanctioned by NABARD to PACCS and ten projects worth Rs.7.24 crore approved by scheduled Commercialised banks have been sanctioned to individual beneficiaries.

During the year 2021-22, Rs.1660 crore has been proposed for the creation of agriculture infrastructure with credit facility under the scheme.

DEMAND 05 – AGRICULTURE AND FARMERS WELFARE DPARTMENT

ESTIMATE OF THE AMOUNT REQUIRED FOR EXPENDITURE IN 2021 – 2022

REVISED BUDGET ESTIMATE 2021 – 2022

(Rs. in thousands)

	Revenue	Capital	Loan	Total
DEMAND FOR GRANT - VOTED	12,249,72,61	549,39,37	130,75,00	12,929,86,98
APPROPRIATION - Charged	1,66	---	---	1,66

Net Expenditure

(Rs. In thousands)

HEAD OF DEPARTMENT		2019 – 2020	2020 – 2021	2021 – 2022	2021 – 2022
		Accounts	Revised Estimate	Interim Budget Estimate	Revised Budget Estimate
2059	PUBLIC WORKS	2,49,46	2,70,00	2,70,75	2,70,75
2401	CROP HUSBANDRY	8,829,13,64	9,532,28,59	10,121,77,23	10,963,39,78
2402	SOIL AND WATER CONSERVATION	96,01,88	148,78,40	172,43,39	166,61,24
2408	FOOD STORAGE AND WAREHOUSING	51,61,85	81,00,18	211,00,00	161,05,01
2415	AGRICULTURAL RESEARCH AND EDUCATION	667,88,88	583,01,43	618,16,50	622,61,44
2435	OTHER AGRICULTURAL PROGRAMMES	296,38,38	258,43,08	274,35,59	275,61,76
2501	SPECIAL PROGRAMMES FOR RURAL DEVELOPMENT	50,98,34	3	6	6
2551	HILL AREAS	84,37	84,58	79,73	73,76

HEAD OF DEPARTMENT		2019 – 2020	2020 – 2021	2021 – 2022	2021 – 2022
		Accounts	Revised Estimate	Interim Budget Estimate	Revised Budget Estimate
2702	MINOR IRRIGATION	7,49,94	8,08,53	7,88,32	7,25,85
2705	COMMAND AREA DEVELOPMENT	---	1	3	3
2810	NEW AND RENEWABLE ENERGY	2,95,91	1	31,62,38	31,62,38
3451	SECRETARIAT – ECONOMIC SERVICES	13,77,70	16,86,02	19,44,10	17,73,94
4401	CAPITAL OUTLAY ON CROP HUSBANDRY	26,19,60	155,84,31	209,17,09	221,17,08
4402	CAPITAL OUTLAY ON SOIL AND WATER CONSERVATION	86,96,73	33,90,30	26,61,01	26,61,01
4435	CAPITAL OUTLAY ON OTHER AGRICULTURAL PROGRAMMES	152,10,34	154,80,50	285,61,28	301,61,28
6401	LOANS FOR CROP HUSBANDRY	----	130,00,00	----	130,00,00
7610	LOANS TO GOVERNMENT SERVANTS ETC.,	21,00	75,00	75,00	75,00

DEMAND 05 AGRICULTURE AND FARMERS WELFARE DEPARTMENT

REVISED BUDGET ESTIMATE 2021-2022

Rupees in Thousand (Gross)

Sl. No	Head of Department			Revenue	Capital	Loan	Total
.	005 01	Agriculture and Farmers Welfare Department - Secretariat	Voted	17,73,94	---	75,00	18,48,94
2.	005 02	Directorate of Agriculture	Charged	1	---	---	1
			Voted	8,593,44,53	200,43,05	130,00,00	8,923,87,58
3.	005 03	Directorate of Agricultural Marketing and Agri Business	Voted	429,37,92	301,61,28	---	730,99,20
4.	005 04	Directorate of Seed Certification	Voted	44,47,78	2,50,00	---	46,97,78
5.	005 05	Directorate of Horticulture and Plantation Crops	Charged	2	---	---	2
			Voted	1,981,42,39	18,24,02	---	1,999,66,41
6.	005 06	Agricultural Engineering Department	Charged	1,63	---	---	1,63
			Voted	574,26,59	26,61,02	---	600,87,61
7.	005 07	Agro Engineering Services	Voted	50,63	---	---	50,63
8.	005 08	Tamil Nadu Agricultural University, Coimbatore	Voted	607,69,13	---	---	607,69,13
9.	005 09	Directorate of Organic Certification	Voted	79,70	---	---	79,70
Total			Charged	1,66	---	---	1,66
			Voted	12,249,72,61	549,39,37	130,75,00	12,929,86,98

Conclusion

As per the orders of the **Hon'ble Chief Minister,** with an objective of overall agricultural development, an exclusive agriculture budget has been presented based on the views of farmers, Farmers' associations, traders, exporters, agri entrepreneurs, scientists and experts in various fields. This Agriculture budget is a milestone in the history of Tamil Nadu. The **Hon'ble Chief Minister of Tamil Nadu** has renamed the Department of Agriculture, as Department of Agriculture and Farmers' Welfare with the aim of protecting the welfare of farmers through suitable policies and by implementing special programmes with new approaches.

In order to transform agriculture into a profitable business enterprise, for reducing input cost and post-harvest losses, increasing the production and productivity, improving value addition of agriculture produce and promote sustainable organic farming, various special

projects viz., Kalaignar's All Village Integrated Agricultural Development Programme, Chief Minister's Dry land Development Mission, Chief Minister's Nutritive vegetable Garden Scheme, Organic Farming Development Programme, Palmyra Development Mission, Integrated Farming System, Collective Farming, Conversion of fallow lands into arable lands, agricultural entrepreneurship programme for rural youth, Micro Irrigation scheme, Separate Organization for Food Processing, Export Facilitation Centre etc. have been announced and the State is taking all efforts to effectively implement these projects.

In order to give a new lease of life to the Uzhavar Santhais created for enabling the farmers to directly market their fruits and vegetables, the existing Uzhavar Santhais will be revamped and new Uzhavar Santhais will be created in needy places.

In addition to this, the Government provides disaster management techniques to farmers at

the time of natural calamities and climate change besides protecting the farmers by providing input subsidy and implementing crop insurance scheme on co-insurance basis.

With a view to accomplish the **Hon'ble Chief Minister's Vision** for the decade, for agriculture sector such as bringing an additional area of 11.75 lakh ha into cultivation and increasing the irrigated area to 20 lakh ha, Government is taking strenuous efforts. Also, it is certain that the new projects based on the new dimensions in agriculture will bring in sustainable growth along with integrated development in agriculture and increase the income of the farm families and agro-based industries in the State and make Tamil Nadu the most accomplished State in India.

M.R.K. Panneerselvam,

Minister for Agriculture and Farmers Welfare.