

## **2. HORTICULTURE AND PLANTATION CROPS**

Horticulture sector has emerged as one of the important and vibrant part of Indian agriculture in recent years. Its role in the Country's nutritional security, poverty alleviation and employment generation programme is becoming increasing important. It offers not only a wide range of options to the farmers for crop diversification for making agriculture more profitable through efficient land use, but also provides ample scope for sustaining large number of agro-industries which generate huge employment opportunities. Horticulture crops identified as a means of diversification, optimum utilization of natural resources and creating skilled employment for rural masses especially women folk.

Keeping pace with increase in demand, area and production under horticultural crops have increased considerably over the years. Horticulture is seen as a source for diversification by the farming community since there is a tremendous scope for increasing their income by adopting latest technologies without affecting the food security. Over the last decade, the area under horticulture grew by about 2.7 per cent per annum and annual production increased by 7.0 per cent.

## **2.1. Performance of Horticulture Crops in Tamil Nadu at National Level**

As per the statistics of Government of India 2017, Tamil Nadu is one among the leading Horticultural States in India, contributing 5.88% towards National Horticulture Production and 5.4% in respect of total horticultural crops area at National level. Tamil Nadu accounts for nearly

4.8% of the area under fruits and 2.5% of the area under vegetables in the Country. In terms of production, the State's share is nearly 6.5% in fruits, 3.6% in vegetables and 19% in flowers. The area coverage for fruits and vegetable crops in Tamil Nadu accounts to 5.68 Lakh Ha, fulfilling the growing nutrition demand of the increasing population. Tamil Nadu is the leading producer of Loose Flowers contributing 19% to Nation's production.

**Table 2.1 : Area, Production and Productivity of Horticultural crops in Tamil Nadu (2017-18 and 2018-19)**

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

NAME OF THE CROPS	2017-18 (Estimated)			2018-19 (Programmed)		
	Area	Production	Productivity	Area	Production	Productivity
FRUITS	3.03	61.75	20.38	3.33	69.23	20.79

NAME OF THE CROPS	2017-18 (Estimated)			2018-19 (Programmed)		
	Area	Production	Productivity	Area	Production	Productivity
VEGETABLES	2.28	54.67	23.98	2.74	67.02	24.46
SPICES AND CONDIMENTS	1.06	2.41	2.27	1.24	2.86	2.31
PLANTATION CROPS	7.03	56.59	8.05	7.12	58.46	8.21
MEDICINAL & AROMATIC PLANTS	0.14	1.78	12.69	0.15	1.94	12.94
FLOWERS	0.35	4.83	13.80	0.38	5.35	14.07
<b>TOTAL</b>	<b>13.89</b>	<b>182.03</b>	<b>13.11</b>	<b>14.96</b>	<b>204.86</b>	<b>13.69</b>

The policy of the State mainly focus on **"Doubling the Agricultural production"** and **"Tripling the farmers income"**, making Horticulture **'A Profitable Venture'** through modern technologies, ensuring better livelihood to the Horticulture farmers.

The main strategies of Horticulture department which paves the way for achieving the State's policy are to encourage the use of quality certified varieties / hybrid seeds and quality planting material in area expansion of horticulture crops, promotion of cultivating high value horticultural crops in protected cultivation, high density planting, increased water use efficiency through adoption of Micro irrigation, pollination support through bee keeping for enhancing the production, canopy management and senile orchards rejuvenation, improved horticulture farming practices in rainfed areas, farm mechanization, improved Post Harvest Management techniques and strengthening of infrastructure facilities of State Horticulture Farms for production of quality pedigree planting materials and vegetable seeds.

## **2.2. Tamil Nadu Horticultural Crop Scenario**

Tamil Nadu is in the forefront at the National level in area, production and productivity of horticultural crops due to implementation of various special schemes.

### **2.2.1. Fruits**

Mango and Banana are the leading fruit crops in Tamil Nadu accounting for over 81% of the total fruit production. Mango holds nearly 53% of total area and the major districts reporting cultivation are Dindigul, Krishnagiri, Dharmapuri, Vellore, Tiruvallur and Salem. Off-season production of Mango and round the year production of Grapes is the unique feature of Tamil Nadu.

Tamil Nadu stands second in area under cultivation of Banana (94,990 Ha) next to Karnataka. Further, Tamil Nadu ranks third in the production of Banana (36.41 Lakh MT),

Sapota (2.14 Lakh MT), Amla (1.64 Lakh MT) and Grapes (0.31 Lakh MT).

Tamil Nadu ranks sixth in the production of fruits amounting to 60.80 Lakh MT cultivated under an area of 3.11 Lakh Ha during the year 2016-17.

Tamil Nadu takes the first place in terms of productivity of the fruit crops Papaya (229.74 MT/Ha), Sapota (31.56 MT/Ha) and Pomegranate (27.43 MT/Ha). Also, Tamil Nadu occupies the second place pertaining to productivity of the fruit crop Amla (19.59 MT/Ha) next to Andhra Pradesh and also Pineapple (33.46 MT/Ha) next to Karnataka.

During 2018-19, the State focus will be towards increased production of quality planting materials in SHFs, High density planting and massive promotion of MI, particularly in Banana and other fruit crops.

**Table 2.2 : Major Fruit growing districts**

<b>Sl. No.</b>	<b>Name of the Crop</b>	<b>Area ( Ha)</b>	<b>Major Fruit Growing Districts</b>
1	Mango	1,76,417	Dindigul, Krishnagiri, Dharmapuri, Vellore and Tiruvallur
2	Banana	94,977	Erode, Thoothukudi, Dindigul, Coimbatore and Kanyakumari
3	Lemon	11,741	Dindigul, Thirunelveli, Theni, Thoothukudi and Virudhunagar
4	Guava	10,786	Dindigul, Madurai, Vellore, Virudhunagar and Cuddalore
5	Amla	8,874	Dindigul, Thirunelveli, Tiruppur, Sivagangai and Theni
6	Sapota	7,830	Dindigul, Vellore, Virudhunagar, Thirunelveli and Theni
7	Orange	3,950	Dindigul, Dharmapuri, Theni, The Nilgiris and Coimbatore
8	Jack fruit	3,017	Cuddalore, Dindigul, Kanyakumari, Namakkal and Pudukkottai
9	Grapes	2,487	Theni, Dindigul and Coimbatore
10	Papaya	1,899	Dharmapuri, Erode and Vellore



### **2.2.2. Vegetables**

Tamil Nadu stands second in *area* under cultivation of Tapioca (0.82 Lakh Ha) next to Kerala.

Tamil Nadu stands first in *production* of Tapioca (26.03 Lakh MT) and the major districts involved in achieving the first place at National level are Villupuram, Namakkal, Dharmapuri, Salem and Erode.

Tamil Nadu also stands first in the productivity of Tapioca (31.72 MT/Ha), Beans (21.08 MT/Ha) and Cabbage (54.25 MT/Ha) and takes the second place in the productivity of Cauliflower (25.62 MT/Ha). Tamil Nadu produced 63.05 Lakh MT of vegetables during the year 2016-17.

The main vegetables grown in Tamil Nadu are Tapioca, Onion, Tomato, Brinjal & Ladies

finger. These account for over 70% of total area as well as the production of vegetables. Hybrid vegetable cultivation is promoted by providing assistance to cultivation. The hybrid vegetable protray seedlings are being raised in State Horticulture Farms and distributed to farmers at subsidized cost to increase the area under vegetable cultivation.

During 2018-19, action will be initiated for increased Certified Seed production of selected vegetables in selected SHFs for expansion of area and promotion of kitchen garden in Households.

**Table 2.3 : Major vegetable growing districts**

<b>Sl. No.</b>	<b>Name of the Crop</b>	<b>Area ( Ha)</b>	<b>Major Vegetable Growing Districts</b>
1	Tapioca	82,070	Villupuram, Namakkal, Dharmapuri, Salem and Erode
2	Onion	35,579	Perambalur, Dindigul, Tiruchirapalli, Namakkal and Tirunelveli
3	Tomato	26,342	Dharmapuri, Salem, Krishnagiri, Dindigul, and Coimbatore
4	Brinjal	13,971	Dharmapuri, Salem, Dindigul, Vellore and Krishnagiri
5	Ladies Finger (Bhendi)	11,077	Dharmapuri, Salem, Dindigul, Tiruvallur and Tiruvannamalai
6	Beans	7,100	Dindigul, Krishnagiri, Vellore, Theni and Erode
7	Potato	6,447	Dindigul, Erode, Nilgiris, Krishnagiri and Tiruppur
8	Bitter gourd	2,568	Dharmapuri, Coimbatore, Salem, Dindigul and Cuddalore
9	Carrot	2745	Dindigul, The Nilgiris and Krishnagiri
10	Leafy Vegetables	2,345	Salem, Tiruvallur and Dharmapuri

### **2.2.3. Flowers**

Tamil Nadu continues to take the first place in the production of loose flowers in the Country, the production being 4.09 Lakh MT during the year 2016-17. Tamil Nadu takes the third place in regard to area, by cultivating the flowers in an area of 32,290 Ha and Dharmapuri, Salem, Dindigul, Krishnagiri, and Tiruvannamalai districts play a major role in achieving the target. Assistance is extended for cultivation of loose flowers, bulbous flowers and cut flowers. Quality planting materials are being produced in State Horticulture Farms and distributed to farmers in subsidized cost to encourage flower cultivation.

During 2018-19, it is programmed to cover an area of 38,316 Ha. under flower crops.

**Table 2.4 : Major Flower cultivating districts**

<b>Sl. No.</b>	<b>Name of the Crop</b>	<b>Area ( Ha)</b>	<b>Major Flower Growing Districts</b>
1	Jasmine	13,720	Madurai, Dindigul, Erode, Tiruvallur and Tirunelveli
2	Chrysanthemum	5,371	Dharmapuri, Salem, Krishnagiri, Dindigul and Tiruvannamalai
3	Tube Rose	3,134	Dharmapuri, Madurai, Salem, Tiruvallur and Dindigul
4	Rose	2,157	Dharmapuri, Krishnagiri, Dindigul, Thanjavur and Tiruvallur
5	Marigold	1,903	Krishnagiri, Dharmapuri, Tiruchirappalli and Cuddalore

#### **2.2.4. Spices**

In Tamil Nadu major kind of spices like Chillies, Turmeric, Tamarind Coriander, Pepper, Cardamom, Betel vine are grown. Turmeric, a significant spice crop is cultivated in an area of 35,975 Ha and Tamil Nadu catches second position at National level. Tamil Nadu takes the second place with regard to production of Tamarind (48,100 MT) next to Karnataka. Also, Tamil Nadu takes the fourth place in terms of production with a production capacity of 1.49 Lakh MT and the leading districts are Erode, Dharmapuri, Salem Namakkal and Villupuram.

The major districts contributing towards the production of Chillies are Ramanathapuram, Thoothukudi, Sivagangai, Vellore and Dindigul. Attempts are made to bring more area under samba chillies than mundu chillies in Ramnad and Sivaganga Districts through farmers

clusters. This will help farmers to fetch more price due to its high oleoresin content and pave way for establishing value addition unit in that area.

**Table 2.5 : Major Spices growing districts**

<b>Sl. No.</b>	<b>Name of the Crop</b>	<b>Area (Ha)</b>	<b>Major Growing Districts</b>
1	Chillies	44,561	Ramanathapuram, Thootukudi, Sivagangai, Virudhunagar and Vellore
2	Turmeric	35,975	Erode, Dharmapuri, Salem, Namakkal and Villupuram
3	Tamarind	16,224	Dindigul, Theni, Dharmapuri, Madurai and Kanyakumari
4	Coriander	9,212	Thoothukudi, Ramanathapuram, Virudhunagar and Tiruppur
5	Black Pepper	5,112	Namakkal, Salem, Dindigul, The Nilgiris and Kanyakumari
6	Cardamom	2,423	The Nilgiris, Coimbatore Virudhunagar, Salem and Namakkal.
7	Betel vine	997	Namakkal, Karur, Madurai, Cuddalore and Salem

### **2.2.5. Plantation Crops**

Tamil Nadu ranks second next to Kerala in the production of plantation crops with a production of 41.76 Lakh MT during the year 2016-17. Moreover, Tamil Nadu takes the third place in productivity (6.73 MT/Ha) next to Andhra Pradesh and Gujarat. Tamil Nadu also takes the third place pertaining to area with cultivated area of 6.21 Lakh/Ha during the year 2016-17.

Area expansion and rejuvenation/ replacement of Cashew will be promoted. Tea plantation is provided with a subsidy for installation of Micro Irrigation System from the year 2016-17.



**Table 2.6 : Major Plantation Crops growing districts**

<b>Sl. No.</b>	<b>Name of the Crop</b>	<b>Area (Ha)</b>	<b>Major Growing Districts</b>
1	Cashew nut	90,958	Ariyalur, Cuddalore, Villupuram, Pudukottai and Theni
2	Tea	69,026	The Nilgiris, Coimbatore, Theni, Tirunelveli and Kanyakumari
3	Coffee	33,055	Dindigul, The Nilgiris, Salem, Theni and Coimbatore
4	Arecanut	7,262	Salem, Coimbatore, Namakkal, Erode and The Nilgiris
5	Cocoa	2,651	Dharmapuri, Salem, Dindigul, Kanyakumari and Erode.

During the year 2018-19, it is programmed to extend the benefits of GOI schemes to the Tribals in coffee growing area in coordination with Coffee Board.

## **2.3. Horticulture Department Activities**

### **2.3.1. “Per Drop More Crop” - Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)**

Water is a critical input in agriculture in nearly all its aspect. How much, at what time and how plants are watered has determining effect on the eventual yield. Micro-Irrigation technology is increasingly seen as a means of addressing the growing competition for scarce water resources. The use of Micro Irrigation technology results in a significant yield improvement over traditional irrigation practices. Periodical and uniform discharge of water through Micro Irrigation system not only helps in enhancing crop productivity and water use efficiency but also reduces the labour cost and controls the weed. Fertigation done through Micro Irrigation not only increases the fertilizer

use efficiency but also increases the quality of the produce. Being water starved State, the State focuses on massive promotion of MI in Agriculture and Horticulture crops particularly in high water consuming Sugarcane and Banana crops.

The scheme is being implemented under “Per Drop More Crop” component of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) with a subsidy sharing pattern of 60:40 between the Central and State. **Tamil Nadu is the only state in the country extending 100% subsidy to Small and Marginal farmers and 75% subsidy to Other category farmers. During the year 2017-18, the State Government has taken efforts to absorb the GST in the State share in respect of Micro Irrigation systems so as to reduce the financial burden on the farmers.**

During the last six years (2011-12 to 2016-17), an area of 4,72,027 Acre was brought under Micro Irrigation with a financial expenditure of Rs 1170.88 crore benefitting 1,52,459 Small and Marginal farmers and 53,514 other farmers, totalling to 2,05,973 farmers. In the year 2017-18, efforts are being made to implement MI in an area of 3,01,661 Acre at a financial outlay of Rs.692.26 Crore.

For implementing Micro Irrigation scheme under PMKSY, new software namely **Micro Irrigation Management Information System (MIMIS)** has been launched by the Department of Horticulture and Plantation Crops from the year 2017-18 onwards. The **MIMIS** software was developed in a user friendly way so that the farmers who are willing to avail the Micro Irrigation scheme benefits can register themselves in the common service centres

without any difficulty. The software has been developed both in Tamil and English to enable the farmers to access the information in understandable language. The officials can also monitor the scheme right from registration of the beneficiaries till final subsidy release. The software aids in maintaining transparency in the implementation of the Micro Irrigation scheme.

**Table 2.7 : Micro Irrigation – 2017-18  
Physical and Financial Target**

S. No	Department	Physical (Area in Acre)	Finance (Rs.in Crore)		
			GOI Share	GOTN Share	Total
1	Horticulture	1,41,136	112.84	223.40	336.24
2	Agriculture	1,60,525	112.84	223.39	336.23
	Admin Cost	-	11.87	7.92	19.79
	<b>Total</b>	<b>3,01,661</b>	<b>237.55</b>	<b>454.71</b>	<b>692.26</b>

During 2018-19, it has been planned to bring 3,57,945 acres of area under Micro Irrigation at a financial outlay of Rs.982.18 Crore.

### **2.3.2. National Horticulture Mission (NHM)**

National Horticulture Mission with the objective of bringing holistic development of Horticulture in the State is being implemented from 2005-2006 onwards. Focused attention is given to increase the production and productivity of Horticultural crops by adopting strategies such as promotion of hybrids, diversification of traditional cropping system into Hi-tech protected cultivation, high density planting, Rejuvenation of old senile and unproductive Plantation/Orchards, supply of quality planting materials, encouraging pollination through bee keeping, development of infrastructure for Post Harvest Managements, crop specific programmes and intervention of suitable scientific technologies through extension functionaries etc.,

This scheme is implemented in 22 districts of Tamil Nadu viz., Ariyalur, Coimbatore, Cuddalore, Dharmapuri, Dindigul, Erode, Kanyakumari, Krishnagiri, Kodaikanal block, Madurai, Perambalur, Pudukottai, Ramanathapuram, Salem, Sivagangai, Thanjavur, The Nilgiris, Theni, Tirunelveli, Tiruppur, Tiruchirapalli, Vellore and Villupuram. National Horticulture Mission is implemented with fund sharing pattern of 60:40 between the Centre and State from 2015-16 as a sub scheme under the Mission for Integrated Development of Horticulture (MIDH).

In 2016-17, the scheme was implemented at an outlay of Rs.77.43 Crore. During the year 2017-18, the scheme was implemented with a budget allocation of Rs.108.108 Crore. The significant components implemented includes, new area expansion of horticultural crops in

31,000 Acre, Poly Green House, Shade Net House and mulching under protected cultivation in an area of 4,650 acre, distribution of 1,18,940 Nos. of Bee Keeping equipments, establishment of Centre of Excellence for Bee Keeping at State Horticulture Farm, Kanyakumari, promotion of value addition chain for Moringa leaf production at Theni and Dindigul Districts to an extent of 500 Acres.

For the year 2018-19 Government of India has allocated 51% of additional fund because of the best implementation of NHM scheme during the previous year in Tamil Nadu. It is programmed to implement National Horticulture Mission in the year 2018-19 at an outlay of Rs.163.333 Crore with special focus on new components.



### **2.3.2.1. Creation of Centre of Excellences (CoE)**

**Under National Horticulture Mission scheme two Centre of Excellence has been established by adopting Israel techniques. Centre of Excellence for Cut flowers at Thally, Krishnagiri district at a project cost of Rs.8.80 crore and Centre of Excellence for Vegetables at Reddiyarchatram, Dindigul District at a project cost of and Rs.10.18 are being established. The Centre of Excellence for Cut flowers Thally, Krishnagiri district was inaugurated on 6<sup>th</sup> December, 2017.**

Action is being taken to establish another four Centre of Excellences at a total financial outlay of Rs. 14.50 Crore. (**Centre of Excellence for Hilly vegetables in Nanjanadu, The Nilgiris, Centre of Excellence for Tropical fruits in Tiruchirapalli** district,

**Centre of Excellence for Bee Keeping at State Horticulture Farm, Kanyakumari and Centre of Excellence for Traditional Flower crops at Madurai District)**

### **2.3.3. National Agricultural Development Programme (NADP)**

With the objective to increase productivity of important crops through focused interventions and maximizing returns to farmers, the National Agricultural Development Programme is implemented in the State with 60:40 sharing pattern between Central and State Government.

From 2011-12 to 2017-18, an amount of Rs.296.61 crore was spent towards the activities like Area expansion of Horticulture crops in 44,152.40 Ha, precision farming in 10,994 Ha, pandal cultivation in 1,647 Ha protected cultivation in 41.80 Ha, distribution of Banana bunch sleeves for 1500 Ha, crop specific

activities like distribution of 88 Nos of Turmeric boilers, 8,688 Nos. of Tapioca sett cutters, 1267 Aluminium ladders, 5029 Plastic crates, 699 Five layered Polythene spread sheets, Distribution of 7,50,000 homestead vegetable seed kits and medicinal plants kit and 96,364 numbers of Moringa and Papaya plants to the Anganwadi and Noon meal centres, construction of 8,390 MT capacity low cost onion storage structures, distribution of light traps, pheromone traps and yellow sticky traps in 38,338 Ha., pollination support through distribution of 6,250 Nos. honey bee hives with bee colonies, assistance for 150 Nos. Turmeric protrait nurseries, 105 Nos. permanent vermi compost units, 135 Nos. vermi beds, 912 nos. farmers training, modernization of State Horticulture Farms and establishment of seven new State Horticulture Farms.

During the year 2018-19, Development of Infra structure facilities at Horticulture Research and Training Centre, Thally - Phase-III, Assistance for quality production and risk mitigation in Horticulture crop production in Tamil Nadu, Additional income generation activities, Establishment of New Gardens – Area expansion in Horticulture crops, Onion Development programme, Vegetable seed kit distribution will be implemented at an outlay of Rs.17.88 crore in all Districts.

#### **2.3.4. Perimetro Vegetable Cluster Development Programme**

With the main objective of reducing the gap between the producer and consumer, ensuring supply of quality vegetables at lesser price to the urban population besides enabling cluster farmers to derive higher income, Perimetro Programme was implemented from 2011-12 to

2015-16 with the budget allocation of Rs.56.02 Crore. A sum of Rs.35.30 crore was spent towards the implementation of the scheme in the components like Area Expansion, Protected Cultivation, Organic Farming and Human Resource Development.

During the current year 2018-19, from the available balance funds this scheme will be implemented with the financial outlay of Rs.20.72 crore in the components like Area Expansion, Protected Cultivation, Organic Farming and Human Resource Development through Cluster Farmers.

The scheme will be implemented in 28 districts in 6 clusters namely Chennai, Coimbatore, Tiruchirapalli, Madurai, Salem and East Coastal Districts.

**Table 2.8 : Details of Cluster wise Fund Allotment**

<b>Sl. No</b>	<b>Region</b>	<b>Districts</b>	<b>Fund Allocated (Rs in Crore)</b>
1	Chennai	Kancheepuram, Vellore, Tiruvallur, Villupuram and Tiruvanamalai	6.21
2	Coimbatore	Coimbatore, Erode, The Nilgris and Tiruppur	5.07
3	Tiruchirapalli	Tiruchirapalli, Ariyalur, Perambalur, Karur, Pudukottai and Dindigul	5.11
4	Madurai	Madurai, Theni, Sivagagai, Virudhunagar, and Ramanathapuram	0.99
5	Salem	Salem, Krishnagiri, Dharmapuri, and Namakkal	0.75
6	East Coast Districts	Cuddalore, Tirunelveli, Tuticorin and Kanyakumari	2.59
<b>Total</b>			<b>20.72</b>

### **2.3.5. National Mission on Sustainable Agriculture (NMSA)**

Bringing agriculture sustainable, more productive and remunerative besides climate resilient by promoting location specific Integrated/Composite Farming Systems are the focus of NMSA. Rainfed Area Development and Paramparagat Krishi Vikas Yojana are the components implemented under this scheme.

#### **2.3.5.1. Rainfed Area Development (RAD)**

The objective of the scheme is to promote Integrated Farming System (IFS) with emphasis on multitier-cropping, rotational cropping, inter-cropping, mixed-cropping practices with allied activities like horticulture, livestock, fisheries, agro-forestry, apiculture, conservation/promotion of Non-Timber Forest Products etc. to enable farmers not only in maximizing the farm returns for sustaining livelihood, but also to

mitigate the impacts of drought, flood or other extreme weather events. This scheme is implemented with a sharing pattern of 60:40 between Centre and State.

Horticulture Based farming in 15,085 Ha, 835 Nos of Vermi compost units, 2,232 Nos of Vermi beds and protected cultivation in 59.77 Ha, 96 Demonstrations, 345 Trainings and four numbers of Post harvest storage structure has been achieved with an expenditure of Rs.50.16 crore from 2014-15 to 2017-18 through this scheme .

During the year 2018-19, Horticultural Based Farming, Protected cultivation and Vermi Compost production Structures, Village Level Storage/ Packing/ Processing units and Farmers training and Demonstrations will be implemented in 28 districts viz., Ariyalur, Coimbatore, Cuddalore, Dindigul, Dharmapuri,



Erode, Kancheepuram, Kanyakumari, Karur, Krishnagiri, Madurai, Nagapattinam, Namakkal, Perambalur, Pudukkottai, Ramnad, Salem, Sivagangai, Tanjore, Theni, Tirunelveli, Tiruppur, Tiruvannamalai, Tiruchirapalli, Tuticorin, Vellore, Villupuram and Virudhunagar at an outlay of Rs.21.24 Crore.

### **2.3.5.2. Paramparagat Krishi VikasYojana (PKVY)**

Organic farming, certification by Participatory Guarantee System (PGS) and marketing the produces in the local market are encouraged in this scheme by cluster approach. This is a Government of India and the State government shared scheme with a sharing pattern of 60:40. This is a three year continuous programme.

The scheme is implemented in 26 districts namely Ariyalur, Coimbatore, Cuddalore, Dharmapuri, Dindigul (including Kodaikanal),

Erode, Kancheepuram, Karur, Krishnagiri, Madurai, Namakkal, Pudukkottai, Salem, Sivagangai, Tiruvannamalai, Thanjavur, The Nilgiris, Theni, Tiruppur, Tirunelveli, Tiruvallur, Tiruchirapalli, Thoothukudi, Vellore Villupuram and Virudhunagar districts of the state.

The scheme implementation started in the year 2015-16 to bring an area of 2,550 acre of horticultural crops under Organic cultivation and PGS Certification. In the first year (2015-16), it was implemented in 51 clusters in 26 districts at an outlay of Rs.3.60 Crore. During the year 2016-17, the second year programme was implemented at an outlay of Rs.2.54 crore in the same clusters.

During third year ie., 2017-18, assistance for residue analysis, crop cultivation conversion of land to organic, biological nitrogen harvest planting, packaging, labelling and branding of

organic produce, custom hiring of agriculture implements etc., are being implemented at an outlay of Rs.0.74 crore and an additional area 550 Acre was brought under organic cultivation and PGS certification by forming 11 new clusters at an outlay of Rs.39 Lakh.

### **2.3.6. Integrated Horticulture Development Scheme (IHDS)**

Area expansion of Horticultural Crops is the main objective of this scheme. Hybrid vegetable seeds and quality planting materials are distributed at 40-50% subsidy in total cost of cultivation upto a maximum of 4 Ha/ beneficiary for Fruits and 2 Ha/beneficiary for Hybrid vegetables flowers through this scheme. This scheme is being implemented in 9 non National Horticulture Mission districts viz., Karur, Kancheepuram, Namakkal, Nagapattinam,

Tiruvarur, Tiruvannamalai, Tiruvallur, Tuticorin and Virudhunagar.

From 2011-12 to 2016-17 area expansion of Horticultural crops was carried out in an area of 78,323 Ha at an outlay of Rs.27.47 Crore. During the year 2017-18, this scheme was implemented at a financial outlay of Rs.4.12 crore with an area expansion of 4,581 Ha in Horticultural crops.

The scheme is proposed to be continued to bring an area of 4,861 Ha under Horticultural crops with an outlay of Rs.4.98 crore in 2018-19.

### **2.3.7. National AYUSH Mission - Medicinal Plants (NAM-MP)**

The objective of the programme is to shift the supply of medicinal plants from forests to farmer's field for long term sustainability.

This scheme is being implemented with a sharing pattern of 60:40 between Centre and State through Ministry of AYUSH, Government of India.

Under this scheme, assistance of 30% and 50% in the cost of cultivation is extended for growing medicinal plant species such as Marunthukoorkan (Coleus), Kanvalikilangu (Gloriosa), Nelli (Amla), Thippili (Indian long Pepper), Manathakkali (Black night shade), and Vasambu (Acorus).

For the year 2016-17, the scheme was implemented with an outlay of Rs.2.53 crore to cover an area of 960 Ha under Medicinal Plants namely Coleus, Gloriosa and Amla.

During the year 2017-18, this scheme was implemented with an outlay of Rs.2.28 crore to cover an area of 748 Ha under medicinal plants namely Marunthukoorkan, Kanvalikilangu,

Thippili, Kokum and Manathakkali and Amla for second year maintenance in the Districts of Cuddalore, Namakkal, Salem, Tiruvannamalai, Tiruchirapalli, Villupuram, Kanyakumari, Kancheepuram, Dindugul, Karur, Tiruppur, Nagapattinam, Coimbatore, Sivagangai, Tirunelveli and Theni. In 2018-19 this scheme will be continued.

### **2.3.8. TNIAMP (IAMWARM II) Project (Tamil Nadu Irrigated Agriculture Modernization Project - Horticulture)**

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

In phase-I of IAMWARM Project, which was implemented from 2007-08 to 2014-15, area expansion of horticultural crops was carried out in an area of 49,850 Ha in 61 sub basins at an outlay of Rs. 77.47 Crore. It is programmed to cover an area of 41,916 Ha under Fruits, Hybrid vegetables, Spices and Flowers cultivation at an outlay Rs.210 crore in 66 sub basins of 30 Districts in next 6 years from 2018-19 to 2023-24.

During the first year (2018-19), it is programmed to cover an area of 2,600 Ha under Horticulture crops with an outlay of Rs.17.91 crore in 18 sub basins of 22 districts. The proposed innovative interventions are Horticultural crop demonstration, Promotion of pesticide free vegetables production, Promotion of Micro irrigation, Climate resilience technology of protected cultivation and Mulching in TNIAMP.

## **2.4. Supply Chain Management**

Supply Chain Management Project is implemented at an outlay of Rs. 398.754 crore in 10 districts viz, The Nilgiris, Krishnagiri, Coimbatore, Dharmapuri, Dindigul, Theni, Tirunelveli, Tiruchirapalli, Ramnathapuram and Thoothukudi.

Supply Chain Infrastructure for focus crops will be developed in an integrated manner from farm level till it reaches the ultimate consumer. The project is implemented in-coordination with the Department of Agriculture Marketing & Agri business.

To increase the production of Horticulture crops in the area of Operation, Components like Area Expansion in Fruits, Vegetables and Spices, Micro Irrigation and Adoption & New Technology are implemented by dovetailing the Horticulture schemes.



## **2.5. Pradhan Mantri Fasal Bhima Yojana (PMFBY) for Horticultural crops**

In Tamil Nadu, PMFBY is being implemented since kharif 2016 replacing National Agriculture Insurance Scheme (NAIS) in all districts except Chennai. In this scheme, farmers can insure the notified horticulture crops viz Banana, Tapioca, Turmeric, Onion and Red Chillies in notified revenue villages.

For PMFBY 2016-17, Rs. 52.858 crore has been disbursed as claim compensation to 18,704 farmers for Horticulture crops. For the current year 2018-19 (for both Kharif and Rabi season), it is planned to enroll 50% Gross Cropped area of 2,98,900 acres under Horticulture crops. Under PMFBY 2017-18, during both Kharif and Rabi season, 62,720 farmers have enrolled covering an area of 93,949.8 acres in notified Horticulture crops.

## **2.6. Collective Farming Scheme for Horticulture:**

The Government of Tamil Nadu has announced in Budget speech 2017-18 an innovative programme for organizing small and marginal farmers into Farmer Producer Groups which will be federated into Farmer Producer Organizations to promote collective farming for credit mobilization, better adoption of technology and facilitate effective forward and backward linkages.

In 2017-18, 2,000 Farmer Producer Groups were formed under Agriculture and Horticulture Department with the total allocation of Rs.100 Crore. Out of 2000 FPGs, 505 FPGs were formed under Department of Horticulture.

The Corpus Fund of Rs.24.70 crore was utilized for the purchase of Machineries which

are collectively used for the cultivation purpose of 494 FPGs.

In the current year 2018-19, it is proposed to form 2000 FPGs in the State for both Agriculture and Horticulture Department. Out of 2000 FPGs, 505 FPGs will be formed by the Department of Horticulture.

## **2.7. Special Livelihood Package for "Ockhi" Cyclone affected horticulture crops**

The Cyclone "Ockhi" hit on 29.11.2017 and 30.11.2017 and caused extensive damage to Horticulture crops to an extent of 6,077.56 Ha and affected the livelihood of 28,073 farmers in Kanyakumari, Tirunelveli and Thoothukudi districts. The horticultural crops including Banana, Rubber and Cloves were affected which includes 5467.52 Ha in Kanyakumari, 121.01 Ha

in Tirunelveli and 488.94 Ha in Thoothukudi districts, due to "Ockhi" Cyclone.

Towards rehabilitating the livelihood of affected farmers, Hon'ble Chief Minister has announced a Special Livelihood Package on 11.12.2017 for Banana, Rubber and Clove crops for Rs.21.854 crore. A relief amount of Rs.48,500/- to Rs. 63,500/- per Ha for Banana crop, Rs. 1,00,000/- per Ha for Rubber crop and Rs. 28,500/- per Ha for Clove is being extended as special livelihood package from State Disaster Response Fund (SDRF), State Fund, and also dovetailing from schemes such as MIDH-National Horticulture Mission (NHM), Rainfed Area Development (RAD) under National Mission on Sustainable Agriculture(NMSA) and National Agricultural Development Programme (NADP).

An amount of Rs. 10.20 crore was allocated and so far Rs.9.40 crore was disbursed as input subsidy to affected farmers from State Disaster Response Fund (SDRF). From State Fund, Rs.3.562 crore was allocated to carryout preparatory cultivation works for Rubber (Rs.25,000/Ha) and Clove (Rs. 10,000/Ha).

From MIDH -National Horticulture Mission (NHM) and National Agricultural Development Programme (NADP), an amount of Rs.8.98 crore and Rs. 1.71 crore was diverted respectively for replanting of Banana in 3054.71 Ha at Rs. 35,000/Ha.

Like wise, an amount of Rs. 6.42 crore was diverted from NMSA- Rainfed Area Development for recultivation of Rubber and Rs.8.22 crore was allocated from National Horticulture Mission to promote Bee keeping in Rubber plantations at the rate of Rs.32,000/Ha as subsidy for

purchasing 20 Bee Hives along with Bee colonies. So far, Banana recultivation completed in an area of 1251.78 ha at an outlay of Rs.328.59 Lakhs. For Clove re plantation preparatory work completed and entire allocated amount of Rs.4.22 Lakhs released to the affected farmers. Rubber re plantation completed in an area of 342.36 Ha at an outlay of Rs.85.01 Lakhs.

## **2.8. State Horticulture Farms (SHFs)**

Timely production and distribution of quality pedigree planting materials of Horticulture crops at a reasonable price to the farmers is the objective of the **State Horticulture farms**. Further, these farms also serve as “**Model Demonstration Farms**” on the latest technology, farm mechanization, modern irrigation technologies etc., to the farmers, besides providing employment

opportunities to the landless labourers. There are 61 State Horticulture farms functioning in 29 districts of Tamil Nadu. As a new activity, seed production of high yielding varieties of 10 vegetable crops is being taken up in 17 State Horticulture Farms.

The National Horticulture Board, Government of India has given accreditation to 35 State Horticulture Farms for production of quality planting materials.

Considering the welfare of the farmers of the State and realizing the importance of ensuring the availability of quality planting materials in non farm districts like Thoothukudi and Tiruvannamalai actions are being taken to establish 2 new State Horticulture farms.

Steps are being taken to protect the Pomological Station, Coonoor which is functioning since 1949 and serves as a centre to

study different varieties of pedigree fruit plants and their adaptability in hilly region by construction of compound wall with barbed wire at an expenditure of Rs.1.164 Crore.

During the year 2017-18, 9.26 crore numbers of planting materials were produced in State Horticulture Farms and Parks and Gardens and distributed to the farmers. This includes, 8 crore numbers of protray vegetable and flower seedlings and 11.25 Lakh numbers of Medicinal plants.

It is programmed to produce 11.47 crore No.of planting materials in the year 2018-19.

**Table 2.9 : List of State Horticulture Farms**

Sl. No	District	Name of the SHF	Year of Establishment	Area (Ha.)
1	Ariyalur	Keelapaluvur	2018	7.58
2	Coimbatore	Anaikatty	1986	12.00
3		Kannampalayam	2001	11.20



<b>Sl. No</b>	<b>District</b>	<b>Name of the SHF</b>	<b>Year of Establishment</b>	<b>Area (Ha.)</b>
4	Cuddalore	Neyveli	1985	39.53
5		Virudhachalam	1975	10.43
6	Dharmapuri	Polayampalli	2013	2.73
7	Dindigul	Sandhaiyur	2013	15.20
8		Kodaikanal	1961	1.73
9		Thandikudi	1985	5.45
10		Sirumalai	1980	200.04
11	Erode	Bagudampalayam	2018	10.00
12	Kancheepuram	Attur	1961	12.24
13		Vitchanthangal	1982	23.25
14		Melkadirpur	1982	42.63
15		Melottivakkam	1982	20.60
16		Pichivakkam	1982	34.00
17	Kanyakumari	Kanyakumari	1922	12.64
18		Pechiparai	1967	6.00
19	Karur	Mudalaipatti	1978	23.96

<b>Sl. No</b>	<b>District</b>	<b>Name of the SHF</b>	<b>Year of Establishment</b>	<b>Area (Ha.)</b>
20	Krishnagiri	Thimmapuram	1952	9.51
21		Jeenur	1980	121.96
22	Madurai	Poonjuthi	2012	5.76
23	Nagapattinam	Vanduvanchery	2018	6.54
24	Namakkal	Semmedu	1974	11.60
25		Padasolai	1989	22.67
26	Perambalur	Vengalam	2018	4.72
27	Pudukottai	Kudumianmalai	1974	118.68
28		Vallathirakottai	1977	521.20
29		Nattumangalam	1985	53.02
30	Salem	G.O. Karumandurai	1981	419.77
31		Maniyarkundram	1982	100.00
32		SHF , Karumandurai	1981	39.35
33		Mulluvadi	1985	48.40
34		Sirumalai	1987	8.00
35	Sivagangai	Devakottai	1985	81.19
36		Nemam	1979	38.77

<b>Sl. No</b>	<b>District</b>	<b>Name of the SHF</b>	<b>Year of Establishment</b>	<b>Area (Ha.)</b>
37	Thanjavur	Aduthurai	1988	8.90
38		Marungulam	1966	10.70
39	The Nilgiris	Burliar	1871	6.25
40		Kallar	1900	8.92
41	The Nilgiris	FPU Coonoor	1965	4.05
42		PS Coonoor	1948	10.46
43		Kottery	1974	16.96
44		Doddabetta	1969	2.52
45		Thummanatty	1956	9.80
46		Nanjanad	1917	64.00
47		Devala	1978	80.00
48		Colgraine	1989	20.40
49	Tiruvarur	Moovanallur	2018	8.87
50	Tiruppur	Sankaramanallur	2018	10.12
51	Theni	Periyakulam	1950	9.32
52	Chennai	Madhavaram	1980	4.38
53	Tiruchirapalli	Thorakudi	2013	4.05
54	Tirunelveli	Vannikonendhal	2018	10.86

Sl. No	District	Name of the SHF	Year of Establishment	Area (Ha.)
55	Vellore	Thagarakuppam	1985	34.40
56		Kudapattu	1961	10.08
57		Navlock	1981	84.42
58	Villupuram	A.Sathanur	2018	10.00
59	Virudhunagar	Poovani	1967	9.46
60		Srivilliputhur	1982	46.27
61	Ramnathapuram	Oriyur	2013	14.77
TOTAL				2,602.31

## 2.9. Parks and Gardens

The Horticulture Department maintains 18 Parks in 7 Districts of the State. These act as recreation centers for the visitors and tourists. It also serves as an educational center for students and Botanists.

The Bryant Park, Kodaikanal was established during 1961 and attracts around 5.5 lakh visitors every year. Face-lifting of Bryant Park

Kodaikanal is being carried out at an amount of Rs.6.80 crore to attract more number of visitors.

Establishment of a Rose garden and Cut flower demo garden at Kodaikanal to act as a cut flower demonstration centre for the farmers of Kodaikanal and surrounding areas is also being carried out with an amount of Rs.11.05 crore during the year 2018-19.

Ecopark at State Horticulture Farm, Kanyakumari was established in an area of 15 acre at a cost of Rs.4.00 crore was inaugurated by Hon'ble Chief Minister on 05.04.2018.

**Table 2.10 : Details of Parks & Gardens**

<b>Sl. No</b>	<b>Name of the Park / Garden</b>	<b>District</b>	<b>Area (Ha)</b>	<b>Year of Establishment</b>
1.	Government Botanical Garden, Ooty	The Nilgiris	22.00	1848

<b>Sl. No</b>	<b>Name of the Park / Garden</b>	<b>District</b>	<b>Area (Ha)</b>	<b>Year of Establishment</b>
2.	Government Rose Garden, Ooty		14.40	1995
3.	Sim's Park, Coonoor		12.14	1969
4.	Kattery Park (SHF, Kattery)		2.00	2011
5.	Tea Park at Doddabetta, Butterfly Park, Devala		1.70	2015
6.	Bryant Park, Anna Park		7.93	1908 2010
7.	Chettiyar Park	Kodaikanal	2.02	1980
8.	Rose Garden & Cut Flowers Demo garden		4.00	2018
9.	Anna Park	Salem	1.87	1999
10.	Lake View Park, Yercaud		1.27	1999
11.	Rose Garden at SHF, Yercaud.		15.14	1975
12.	Genetic Heritage Garden, Yercaud		10.00	2012

<b>Sl. No</b>	<b>Name of the Park / Garden</b>	<b>District</b>	<b>Area (Ha)</b>	<b>Year of Establishment</b>
13.	Government Botanical Garden, Yercaud-1		8.10	2010
14.	Government Botanical Garden, Yercaud-2		8.10	2010
15.	Semmozhi Poonga	Chennai	3.17	2010
16.	ECO Park, Courtallam	Tirunelveli	14.89	2012
17.	Genetic Heritage Garden, Achadipirambu	Ramnathapuram	4.00	2015
18.	Eco Park, Kanayakumari	Kanyakumari	6.00	2018
		<b>Total</b>	<b>138.73</b>	

### **2.9.1. Details of ongoing works:**

1. An Ornamental and Demo Garden at State Horticulture Farm, Madhavaram, Chennai in an area of 20.21 acre at a cost of

Rs.5.73 crore is being developed to impart field training for the students of the Tamil Nadu Horticulture Management Institute (TNHMI) in various ornamental and horticultural gardening practices.

2. In order to provide quality planting materials of required quantity at appropriate time to farmers, two new State Horticulture Farms are being established in Tiruvannamalai District and Tuticorin district at an outlay of Rs.1 crore & Rs.2 crore respectively.
3. The Government Botanical Garden, Ooty, The Nilgiris is being face lifted to International standards through construction of glass house, fern house, flower galleries and modernization of existing infrastructure facilities at a financial outlay of Rs.8.492 crore to attract more numbers of tourists throughout the year.



4. Modernization works are being carried out in 6 State Horticulture farms namely Melkadirpur in Kancheepuram district, Virudhachalam in Cuddalore district, Sandhaiyur in Dindigul district, Padasolai in Namakkal district, Mudalaipatti in Karur district and Navlock in Vellore district at an amount of Rs.5.83 Crore.
5. For utilizing the unutilized land in 5 State Horticulture Farms viz, Poovani (Virudhunagar district), Mudalaipatti (Karur district), Vallathirakottai (Pudukottai district), Kudumiyanmalai (Pudukottai district) and Jeenur (Krishnagiri district), works are being carried out for an amount of Rs.2.67 Crore.
6. Under NABARD – RIDF Fund, 19 State Horticulture Farms in 10 districts are being strengthened with additional infrastructure utilizing an amount of Rs.20.76 Crore.

## **2.10. Flower and Fruit Shows**

Every year during spring and summer seasons, fruit and Flower Shows are being conducted in Parks and Gardens that attracts tourist from various corners of the world. The summer festival in Nilgiris district is one of the most prominent festival and consists of fairs, carnivals, flower shows, vegetable and spice shows and several cultural activities that catches the eyes of the visitors. The flower show is the major attraction of this festival as it displays more than 15 varieties of flowers from different countries, which is organised at the Botanical garden that is witnessed by the huge number of spectators.

The Rose Show at Government Rose Garden, Ooty is an important event conducted by this Department. This show exhibits popular and attractive structures made out of roses of

different colours. Fruit show at Sim's Park, Coonoor (The Nilgiris), Mango show at Krishnagiri, Vegetables show at Kothagiri (The Nilgiris) and Spice show at Gudalur (The Nilgiris) are very popular among tourists.

Flower shows are also organized in Parks and Gardens at Yercaud and Kodaikanal. The major attractions of these shows are structures made with flowers, various types of Flower arrangements, Vegetable carvings, Flower rangoli, Bonsai Gallery. In addition 'Sara Vizha' is conducted at ECO Park, Courtallam in Tirunelveli District.

### **2.11. Horticulture Training Centres (HTC)**

The prime objective of the four Horticulture Training Centres functioning at Madhavaram in Tiruvallur district, Kudumianmalai in Pudukkottai district, Thally in Krishnagiri district and Ooty in The Nilgiris district is to impart training to

farmers in Hi tech Horticulture crop cultivation technologies. Also to impart, in house training to field functionaries of the department about recent advancement in the field of Horticulture science.

From the year 2011-12 to 2017-18, training in Hi-tech Cultivation of horticulture crops was imparted to 26,800 farmers at an outlay of Rs.63.60 Lakh.

During the year 2018-19, it is proposed to impart training to 4,000 farmers with an expenditure of Rs.32 Lakh.

Apart from farmers training, 2 years Diploma course in Horticulture is being offered at Horticulture Training Centre, Madhavaram for 40 students every year.

From 2018-19 onwards, it is proposed to start two years Diploma in Horticulture at

Horticulture Research and Training Centre, Thally, Krishnagiri district and centre of Excellence for vegetables-Reddiyarchathiram in Dindigul District with an intake of 100 students annually in each under the affiliation of Tamil Nadu Agricultural University.

### **2.12. Tamil Nadu Horticulture Development Agency (TANHODA)**

For implementing various Horticulture Schemes funded by Government of India and Government of Tamil Nadu a “Special Purpose Vehicle” Tamil Nadu Horticulture Development Agency is functioning since 2004. It is a registered society under Tamil Nadu Societies Registration Act, 1975. The major schemes operated through TANHODA are Mission on Integrated Development of Horticulture (National Horticulture Mission and National Agroforestry and Bamboo Mission), Micro Irrigation scheme under Per Drop More Crop

component of Pradhan Mantri Krishi Sinchayee Yojana, National AYUSH Mission - Medicinal Plants, State Horticulture Farms and Tamil Nadu IAMWARM Project.

TANHODA also serves as a Special Purpose Vehicle for procurement and supply of quality Agricultural and Horticultural inputs and Water Soluble Fertilizers. The Governing Council of TANHODA acts as an Empowered Committee for the Special Purpose Vehicle. An interest free amount of Rs. 50 crore as revolving fund is utilized for purchase of seeds and water soluble fertilizers for timely supply to the farmers.

### **2.13. Staff Strength**

To provide Horticultural Technologies and Government schemes to farmers and to coordinate departmental activities, staffs are working in Block, District and State level under the Horticulture department.

**Table 2.11 : Sanctioned Strength**

<b>S.No</b>	<b>Designation</b>	<b>Total posting</b>
1	Technical Staffs	2,610
2	Non Technical Staffs	1,223
3	Total	3,833

**Table 2.12 : Cadre detail**

<b>S. No</b>	<b>Staff details</b>	<b>Total posting</b>
1	Additional Director of Horticulture	2
2	Joint Director of Horticulture	6
3	Deputy Director of Horticulture	39
4	Assistant Director of Horticulture	398
5	Horticulture 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)	1,223
	<b>Total</b>	<b>3,833</b>