

**Viksit Krishi Sankalp Abhiyan (VKSA)**  
**State Specific Road Map and Action Plan**  
**Tamil Nadu**



**ICAR Sugarcane Breeding Institute**  
Coimbatore -641 007, Tamil Nadu  
December 2025

**Title of the Publication**

Viksit Krishi Sankalp Abhiyan (VKSA)- State Specific Road Map and Action Plan: Tamil Nadu, ICAR-Sugarcane Breeding Institute, Coimbatore, 127p.

**Compiled and Edited by**

Dr. P. Govindaraj, Director, ICAR-Sugarcane Breeding Institute, Coimbatore  
Dr. A. Velmurugan, ADG (S&WM), ICAR, New Delhi  
Dr. R. Karuppaiyan, Principal Scientist, ICAR-SBI, Coimbatore  
Dr. P. P. Murugan, Director of Extension Education, TNAU, Coimbatore  
Dr. V. Appa Rao, Director of Extension Education, TANUVAS, Chennai  
Dr. V. Gopalakannan, Director of Extension Education, TNJFU, Nagapattinam  
Shri N. Ravichandran, DD (IT & Training), Directorate of Agriculture, Chepauk, Chennai  
Mrs. S. Manamalli, DD (Agri-business), Dept. of Agricultural Marketing, Chennai  
Shri C. Ramprasad, Additional Director of Horticulture (NHM), TANHODA, Chennai  
Mrs. C. Sudha, AD, Dept of Fisheries and Fishermen Welfare, Chennai  
Dr. A. Bhaskaran, Principal Scientist, ICAR-ATARI, Hyderabad  
Dr. A. H. Prakash, Head, ICAR-CICR Regional Centre, Coimbatore  
Dr. A. S. Rajendiran, PS & OIC, ICAR-CSWRI Southern RRC, Mannavanur  
Dr. C. V. Sairam, Principal Scientist, ICAR-CIBA, Chennai  
Dr. Ravindra Naik, PS & i/c, ICAR-CIAE Regional Station, Coimbatore  
Dr. R. Narayana Kumar, PS & i/c, ICAR-CMFRI Regional Station, Chennai  
Dr. K. Vinod, PS & Head, ICAR-CMFRI Regional Centre, Mandapam Camp  
Dr. Loveson Edward L., PS & i/c, ICAR-CMFRI Regional Station, Tuticorin  
Dr. P. Manivel, PS & Head i/c, ICAR-NIRCA Research Station, Veda sandur  
Dr. J. Somasundaram, PS & Head, ICAR-IISWC Research Centre, Udhagamandalam  
Dr. Priyank Mhatre, PS & i/c, ICAR-Central Potato Research Station, Udhagamandalam  
Dr. C. Karpagam, Principal Scientist, ICAR-NRCB, Trichy  
Dr. J. Nanjundan, Senior Scientist, ICAR-IARI Regional Station, Wellington  
Dr. P. Jayaprakash, PS & i/c, IARI-Rice Breeding & Genetics Research Centre, Aduthurai  
Dr. Naveena Kumara K. T., DD & Centre i/c, National Horticultural Board, Chennai  
Dr. K. Thangaraja, DD (Extension), Coffee Board, Bodinayakanur  
Smt. Shylaja K. K., Joint Rubber Production Commissioner, Rubber Board, Kottayam  
Shri Thirumala Rao C., DDM, NABARD, Coimbatore  
Dr. D. M. Govinda Reddy, DAMA, Directorate of Marketing & Inspection, RO Chennai  
Shri S. Senthil Kumaran, AD, Spices Board Regional Office, Bodinayakanur  
Shri Nipun Sarmah, AD- Tea Development, Tea Board, Zonal Office, Coonoor  
Shri E. Aravazhi, Director (Development), Coconut Development Board, RO, Coimbatore  
Mrs. Shobana Kumar, AGM & Regional Head, APEDA, Chennai  
Shri P. Engan Murugan, Production Officer (Seeds), NSC Ltd, Chennai  
Ms. S. Abinaya, JFR (Marketing), IFFCO State Office, Chennai  
Dr. C. Palaniswami, PS and PME i/c, ICAR-SBI, Coimbatore  
Ms. Adhini S. Pazhani, Scientist, ICAR-SBI Coimbatore  
Dr. Kona Praveen, Scientist, ICAR-SBI Coimbatore

**Printed and Published by**

The Director

ICAR-Sugarcane Breeding Institute, Coimbatore - 641 007, Tamil Nadu, India

Email: directorsbiicar@gmail.com, Phone: 0422-2472621

December, 2025

**E-book**

**Copyrights:** All Rights reserved @ ICAR-Sugarcane Breeding Institute, Coimbatore.

ISBN No. 978-93-85267-49-9

## PREFACE

To help farmers learn about better farming practices, agro-technologies suited to their local areas, understand government schemes, and avoid fake seeds, fertilizers, and pesticides, a nationwide programme called 'Viksit Krishi Sankalp Abhiyan (VKSA)' was launched by the ICAR and the Ministry of Agriculture and Farmers' Welfare, Government of India on 29<sup>th</sup> May 2025.

The first VKSA campaign for the Kharif season was organized between 29 May and 12 June 2025 across India, including Tamil Nadu. In Tamil Nadu, 1,728 technical expert teams visited 4,352 villages and interacted with farmers and farm women. For the campaign 159 ICAR scientists, 42 scientists from State Agricultural Universities, 505 government officials, 81 private sector representatives, 84 FPOs, and 387 progressive farmers were involved. They reached out to nearly 7 lakh farmers-3.80 lakh men and 3.18 lakh women, showing strong participation from both genders. The ICAR-ATARI, Hyderabad coordinated the campaign in Southern Zone. This campaign showed how teamwork and expert knowledge can help in improving farmers' livelihood and income.

In view of kharif campaign success, it was decided to continue the VKSA campaign during the upcoming seasons/ years. The ICAR-Sugarcane Breeding Institute in Coimbatore has been nominated as Nodal Office to coordinate forthcoming campaign in Tamil Nadu. Interacting with various stakeholders and VKSA State Coordination Committee, the Nodal Office has prepared a 5-year VKSA Road Map and Action Plan for the State. This document outlines the current farming challenges, district-wise in Tamil Nadu which are grouped into three areas: (i) lack of awareness among farmers, (ii) issues that need research, and (iii) policy-related problems. The document also suggests ways to solve these problems by using the strengths of ICAR Institutes, State Agricultural Universities, KVKs, Commodity Boards, and other stakeholders.

We thank the Hon'ble Minister of Agriculture and Farmers Welfare, Govt of India and the Director General of ICAR, New Delhi for their support. We also thank and appreciate the help of Agriculture and Farmers' Welfare Department Heads of Tamil Nadu, particularly the Agriculture Production Commissioner and Directors of Agriculture, Horticulture, Agriculture Engineering, Animal Husbandry and Dairying, Fisheries and Agriculture Marketing Departments, Vice Chancellors of TNAU, TANUVAS, TNJFU, and scientists from ICAR Institutes, Director-ATARI, Hyderabad and SMS of KVKs in Tamil Nadu. Special thanks to the members of the VKSA TN State Coordination Committee and Secretaries /CEO/ ED of Commodity Boards and organizations, particularly the Coffee Board, Tea Board, Rubber Board, Spices Board, Coconut Development Board, National Horticulture Board, National Seed Corporation, IFFCO, APEDA, NABARD, Directorate of Marketing and Inspection for their active involvement and valuable suggestions.

We hope this document will be useful for extension workers, researchers, policymakers, students, and farmers in planning future efforts to improve agriculture in Tamil Nadu.

Date: 18.12.2025

— Authors

## CONTENT

<b>A</b>	<b>Agrarian Situation in Tamil Nadu</b>	1
<b>B</b>	<b>Current Agrarian Problems and Challenges in the State</b>	
1	General issues	7
2	Issues Related to Policies, Subsidies and including anticipated issues on account of GST reforms in India and Global Trade Agreements	10
3	Challenges in Genetic improvement, Breeding and Seed Production	16
4	Challenges in Soil, Irrigation Water quality and Crop Productivity	18
5	Specific Issues in the Horticulture Sector	22
6	Challenges in Pest and Disease Management	29
7	Challenges in Post-harvest Handling, Storage and Value Chain	30
8	Challenges in Agriculture Marketing	32
9	Challenges in Mechanization	34
10	Challenges in Animal Husbandry and Fisheries Sectors	35
11	Challenges in Application of Frontier Technologies/Cutting edge Technologies in Agriculture Sector	38
12	Challenges in Agriculture Extension, Capacity Building and Entrepreneurship Development	39
<b>C</b>	<b>Way Forward to Address the Challenges</b>	40
<b>D</b>	<b>TN's Strength in Research and Extension Networks</b>	40
<b>E</b>	<b>VKSA Action Plan: 2025-2030</b>	
1	Viksit Krishi Sankalp Abhiyan (VKSA)-An introduction	41
2	Team Formation for VKSA <i>Rabi</i> campaign and Roles	42
3	Number of Villages to be Visited & Farmers to be Contacted	43
4	Scientific Manpower available with ICAR Institutes and KVKs	63
5	Data Collection, Reporting, Monitoring, etc.	63
6	Information to be disseminated during the <i>Rabi</i> 2025 and subsequent campaigns	64
7	District-wise Agro-technological awareness gap, Challenges and Action Plan	65

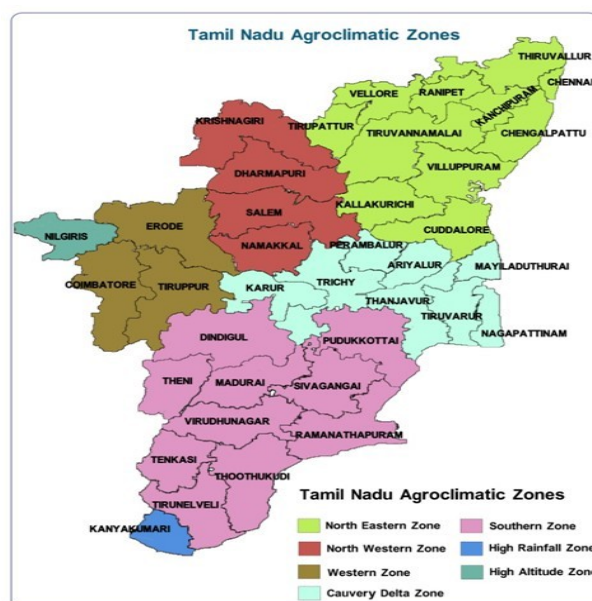
<b>8</b>	<b>State-level Common Problems and Action Plan</b>	<b>81</b>
<b>8.1</b>	<b>Addressing issues related to Policies, Subsidies, etc.</b>	<b>81</b>
<b>8.2</b>	<b>Addressing issues related to research / technological gap</b>	<b>87</b>
1	Theme 1: Issues related to Genetic Improvement of Crop Varieties and Seed Production	87
2	Theme 2: Issues related to crop Productivity through ICM, INM, IPM, etc.	89
3	Theme 3: Addressing Issues Related to Mechanization	98
4	Theme 4: Addressing Issues in the Horticulture Sector	103
5	Theme 5: Issues related to post-harvest processing, value addition and agriculture marketing	108
6	Theme 6: Issues related to Animal Husbandry and the Fisheries Sector	112
7	Theme 7: Addressing Issues related to Frontier technologies / cutting-edge technologies	114
8	Theme 8: Issues related to Agri Extension, Capacity building and Awareness	116
<b>F</b>	<b>Five-year Integrated Action Plan to Address Agrarian Issues in TN through VKSA</b>	<b>117</b>
<b>G</b>	<b>Suggestions to enhance ICAR's visibility and Impact in the State</b>	<b>123</b>
<b>H</b>	<b>Annexure: VKSA State Coordination Committee- Office Order</b>	<b>*</b>

## Viksit Krishi Sankalp Abhiyan (VKSA) State Specific Road Map and Action Plan: Tamil Nadu

### Part A

#### Agrarian Situation in Tamil Nadu

- Tamil Nadu has 7 agro-climatic zones, supporting a wide range of crops, fruits, vegetables, spices, plantation crops, and flowers.
- Agriculture continues to be the most predominant sector of the State economy, and around 60 per cent of the population is engaged in Agriculture and allied activities for their livelihood.
- The State has 79.38 lakh landholders, cultivating a gross cropped area of around 60 lakh ha in 2023-24.
- About 60% of cultivated land is irrigated, largely through groundwater (65%), canals (21%) and tanks (14%). In 2022-23, the irrigated area expanded to 38.33 lakh ha.
- As in other States, agriculture in Tamil Nadu is dominated by small and marginal farmers, with 93% of holdings below 2 ha.
- Agriculture and allied sectors make up around 13% of the state's GSDP.
- Between 2021-24, the sector enjoyed robust growth, averaging 5.66%, far above the previous decade's average of 1.36%. However, in 2024-25, this sector contracted slightly by -0.09% in real terms—marking the first dip in approximately eight years.
- The State receives an annual rainfall of 920 mm, roughly distributed at about 44-49 % during the NW monsoon, 32-34% during the SW monsoon, 13-19 % during summer, and 2-4% during winter



#### Crop Sector Profile

- Tamil Nadu ranks first in the productivity of finger millet (ragi), sugarcane and guava, ranks second in maize, oilseeds, tamarind, tapioca, amla, nutmeg, clove, curry leaves and jasmine and ranks third in groundnut, minor millets, cocoa and marigold (Tables 1 and 2).
- Traditional paddy varieties such as Ramanathapuram Chithiraikar, Mappillai Samba, Thooya malli, Kaatu yaanam, Kancheepuram idli rice, and Karuppu Kavuni have growing demand both in domestic and international markets (to Sri Lanka, the Middle East, and Malaysia).
- The State has sizeable area under millet production, especially in Varagu (Kodo millet), Kuthiraivali (Barnyard millet), Samai (Little millet) and Thinai (Foxtail millet) production.

- TN may be called the ‘Horticultural State of India’ because nearly 20% of gross cropped area is under horticulture (12 lakh ha).
- The State is the leading producer of banana, mango, guava, papaya and jackfruit
- Tamil Nadu ranks first in loose flowers production (Jasmine, Chrysanthemum, Marigold, Tuberose).
- Crops /varieties such as Thanjavur matti rice, Mappillai samba, Thooya malli, Ramanathapuram Chithiraikar, Kanchipuram idli rice, Kodaikanal Malai Poondu, Elavambadi Mullu Kathirikai, Authoor Vetrilai, Sholavandan Vetrilai, Malai Malligai Ooty Lavender, Nanjanagud Banana, Salem Mango, Virupakshi Hill Banana, Sirumalai Hill Banana, Erode Turmeric, Panruti Cashew, Panruti Jack, Pollachi Coconut, Puliyankudi Acid Lime, etc. have GI tags indicating special geographical significance of these crops and varieties in Tamil Nadu
- Tamil Nadu is a major exporter of banana, mango, papaya, loose flowers (jasmine, marigold), turmeric, and tamarind.

### **Livestock, Poultry and Fisheries Sector Profile**

- The State ranks 11<sup>th</sup> in India in milk production (~10.3 million tonnes, in 2023) and contributes ~4.5% of national milk output (Table 3).
- The State has a dedicated Dairy Development Department since 1958, focusing on cross-breeding (Jersey, HF with native cattle) to improve yield as well as preservation of native breeds like Kangayam, Bargur, and Umbalacheri
- The State is the largest producer of poultry and eggs in India, with 20.8 billion eggs annually, accounting for over 16% of national output (Table 3).
- Namakkal district is called the ‘Egg City of India’ due to its intensive layer farming.
- The livestock sector has seen a strong compound growth, with its share in agriculture allied GVA growing to over 30% by 2022–23, contributing roughly 5.5% to total GVA.
- The state is a leading producer of broiler chicken, supplying both domestic and export markets.
- The State stands 6<sup>th</sup> in meat production with 7.68 LMT of meat.
- Tamil Nadu is a major Centre for poultry feed production (maize, soybean meal-based) and has many manufacturing units of poultry medicine, vaccine, and equipment, etc.
- The State has a coastline of 1,076 km, and supports 10.48 lakh marine and 2.36 lakh inland fisherfolk. It has 3 major fishing harbours, 47 fish landing centres, and several minor jetties.
- The State is rich in marine, brackish water, and inland fisheries resources. It ranks 5<sup>th</sup> among Indian states in marine fish production.
- Fisheries exports earning nearly ₹ 7,000 crore per annum.
- Tamil Nadu is a leader in ornamental fish culture and seaweed cultivation.
- The per capita availability of milk in TN is 384 g /day against ICMR recommendations of 300 gm of milk/day, and the availability of eggs is 291 Nos./year against ICMR recommendations of 180 Nos. of eggs/year.

**Table 1. Field Crops Profile: Area, Production & Yield of major crops of TN in 2024-25 in comparison with All India**

<i>Area in Lakh Ha, Production in Lakh Tonnes &amp; Yield in Kg/Ha</i>							
<b>Crop</b>	<b>State</b>	<b>Season</b>	<b>Area (Rank)</b>	<b>Production</b>	<b>Yield</b>		
<b>Rice</b>	<b>Tamil Nadu</b>	Kharif	6.64	22.41	3375		
		Rabi	12.21	38.35	3141		
		Summer	2.76	10.59	3839		
		<b>Total &amp; Rank</b>	<b>21.61 (10<sup>th</sup>)</b>	<b>71.36 (10<sup>th</sup>)</b>	<b>3302 (5<sup>th</sup>)</b>		
	<b>All India</b>	Kharif	434.13	1218.54	2807		
		Rabi	44.74	156.72	3503		
		Summer	35.36	115.48	3265		
		<b>Total</b>	<b>514.23</b>	<b>1490.74</b>	<b>2899</b>		
		<b>Maize</b>	<b>Tamil Nadu</b>	Kharif	2.13	12.75	5999
				Rabi	2.49	12.67	5082
Summer	0.21			1.07	5082		
<b>Total &amp; Rank</b>	<b>4.83 (8<sup>th</sup>)</b>		<b>26.49 (8<sup>th</sup>)</b>	<b>5486 (5<sup>th</sup>)</b>			
<b>All India</b>	Kharif		84.30	248.43	2947		
	Rabi		27.24	136.16	4999		
	Summer		8.64	38.22	4425		
	<b>Total</b>		<b>120.17</b>	<b>422.81</b>	<b>3518</b>		
	<b>Jowar</b>		<b>Tamil Nadu</b>	Kharif	1.38	1.80	1309
		Rabi		1.89	1.89	998	
Summer		0.13		0.10	795		
<b>Total &amp; Rank</b>		<b>3.40 (4<sup>th</sup>)</b>		<b>3.80 (5<sup>th</sup>)</b>	<b>1116 (9<sup>th</sup>)</b>		
<b>All India</b>		Kharif	14.21	17.54	1234		
		Rabi	25.14	30.86	1227		
		Summer	0.48	0.40	830		
		<b>Total</b>	<b>39.84</b>	<b>48.80</b>	<b>1225</b>		
		<b>Ragi</b>	<b>Tamil Nadu</b>	Kharif	0.64	2.41	3758
				<b>Total &amp; Rank</b>	<b>0.64 (4<sup>th</sup>)</b>	<b>2.41 (2<sup>nd</sup>)</b>	<b>3758 (1<sup>st</sup>)</b>
<b>All India</b>	Kharif		12.29	18.34	1492		
	<b>Total</b>		<b>12.29</b>	<b>18.34</b>	<b>1492</b>		
	<b>Cereals</b>		<b>Tamil Nadu</b>	Kharif	11.36	40.66	3578
Rabi		16.60		52.91	3188		
Summer		3.23		11.94	3701		
<b>Total &amp; Rank</b>		<b>31.19 (14<sup>th</sup>)</b>		<b>105.51 (11<sup>th</sup>)</b>	<b>3383 (5<sup>th</sup>)</b>		
<b>All India</b>		Kharif	617.70	1605.71	2599		
		Rabi	430.78	1517.25	3522		
		Summer	48.22	164.25	3406		
		<b>Total</b>	<b>1096.70</b>	<b>3287.21</b>	<b>2997</b>		
		<b>Total Pulses</b>	<b>Tamil Nadu</b>	Kharif	1.79	1.05	586
				Rabi	3.94	2.03	515

		Summer	1.77	0.62	351
		<b>Total &amp; Rank</b>	<b>7.50 (9<sup>th</sup>)</b>	<b>3.70 (13<sup>th</sup>)</b>	<b>493 (21<sup>st</sup>)</b>
	<b>All India</b>	Kharif	113.72	74.95	659
		Rabi	139.02	154.91	1114
		Summer	23.50	22.52	958
		<b>Total</b>	<b>276.24</b>	<b>252.38</b>	<b>914</b>
<b>Total Food Grains</b>	<b>Tamil Nadu</b>	Kharif	13.16	41.71	3170
		Rabi	20.53	54.94	2675
		Summer	4.99	12.56	2516
		<b>Total &amp; Rank</b>	<b>38.68 (14<sup>th</sup>)</b>	<b>109.21 (12<sup>th</sup>)</b>	<b>2823 (9<sup>th</sup>)</b>
	<b>All India</b>	Kharif	731.42	1680.66	2298
		Rabi	569.80	1672.16	2935
		Summer	71.72	186.77	2604
		<b>Total</b>	<b>1372.94</b>	<b>3539.59</b>	<b>2578</b>
<b>Ground nut</b>	<b>Tamil Nadu</b>	Kharif	2.01	3.94	1962
		Rabi	0.73	2.28	3136
		Summer	0.43	1.34	3136
		<b>Total &amp; Rank</b>	<b>3.16 (7<sup>th</sup>)</b>	<b>7.56 (4<sup>th</sup>)</b>	<b>2390 (3<sup>rd</sup>)</b>
	<b>All India</b>	Kharif	49.95	103.68	2076
		Rabi	3.44	6.90	2005
		Summer	4.15	8.38	2019
		<b>Total</b>	<b>57.54</b>	<b>118.96</b>	<b>2067</b>
<b>Sunflower</b>	<b>Tamil Nadu</b>	Kharif	0.00	0.01	1825
		Rabi	0.05	0.04	880
		Summer	0.01	0.01	880
		<b>Total &amp; Rank</b>	<b>0.07 (5<sup>th</sup>)</b>	<b>0.06 (7<sup>th</sup>)</b>	<b>934 (11<sup>th</sup>)</b>
	<b>All India</b>	Kharif	0.79	0.71	906
		Rabi	0.73	0.99	1359
		Summer	0.22	0.26	1171
		<b>Total</b>	<b>1.74</b>	<b>1.96</b>	<b>1129</b>
<b>Total Oil Seeds</b>	<b>Tamil Nadu</b>	Kharif	2.24	4.07	1821
		Rabi	0.82	2.35	2853
		Summer	1.02	1.65	1610
		<b>Total &amp; Rank</b>	<b>4.08 (10<sup>th</sup>)</b>	<b>8.07 (9<sup>th</sup>)</b>	<b>1976 (2<sup>nd</sup>)</b>
	<b>All India</b>	Kharif	200.54	277.90	1386
		Rabi	93.24	135.74	1456
		Summer	8.88	12.44	1402
		<b>Total</b>	<b>302.65</b>	<b>426.09</b>	<b>1408</b>
<b>Sugarcane</b>	<b>Tamil Nadu</b>	Kharif	1.30	132.08	101435
		<b>Total &amp; Rank</b>	<b>1.30 (6<sup>th</sup>)</b>	<b>132.08 (5<sup>th</sup>)</b>	<b>101435 (1<sup>st</sup>)</b>

	<b>All India</b>	Kharif	53.58	4501.16	84006
		<b>Total</b>	<b>53.58</b>	<b>4501.16</b>	<b>84006</b>
<b>Cotton#</b>	<b>Tamil Nadu</b>	Kharif	1.03	2.10	346
		<b>Total &amp; Rank</b>	<b>1.03 (11<sup>th</sup>)</b>	<b>2.10 (11<sup>th</sup>)</b>	<b>346 (13<sup>th</sup>)</b>
	<b>All India</b>	Kharif	112.30	306.92	465
		<b>Total</b>	<b>112.30</b>	<b>306.92</b>	<b>465</b>

Data for the year 2024-25 is of 3<sup>rd</sup> Advance Estimates

Source: DA&FW, GoI

# Cotton Production in Lakh Bales, 1Bale=170 Kg

Values in parentheses reflect the rank among the states

**Table 2a. Horticulture Crops Profile: Area, Production & Yield of major Horti crops of TN**

#	Group	2023-24 (Second Advance Estimate)		
		Area (lakh Ha)	Production (lakh MT)	Productivity (MT/Ha)
1	Fruit crops	3.34	75.29	22.52
2	Vegetable crops	3.63	92.36	25.46
3	Plantation crops	7.59	56.28	7.41
4	Spices & Condiments	1.11	3.30	2.97
5	Medicinal and Aromatic	0.16	1.68	10.52
6	Flower crops	0.47	6.31	13.55
	<b>Total</b>	<b>16.30</b>	<b>235.22</b>	

**Table 2b. Tamil Nadu's position at the National Level with respect to the acreage of various horticultural crops**

First	Second	Third
1. Tapioca	1. Banana	1. Coconut
2. Clove	2. Watermelon	2. Aonla
3. Tamarind	3. Cocoa	3. Elephant foot yam
4. Jasmine	4. Chrysanthemum	4. Black pepper
	5. Tuberose	

Source: Final Estimates 2022-23, Horticulture Statistics Division, Department of A & FW, GoI

**Table 2c. Tamil Nadu's position in National level with respect to the production of various horticultural crops**

First	Second	Third
1. Clove	1. Cocoa	1. Coconut
2. Tamarind	2. Chrysanthemum	2. Aonla
3. Jasmine		3. Banana
4. Tuberose		4. Watermelon
5. Tapioca		5. Elephant foot yam

**Table 3. Profile of TN with respect to the animal husbandry sector**

<b>Livestock</b>	<b>Tamil Nadu</b>	<b>India</b>	<b>Top three States</b>
<b>As per the 20<sup>th</sup> Livestock Census, GoI (2019)</b>			
Cattle (million)	9.52	192.52	WB, UP & MP TN ranks 13 <sup>th</sup> in Cattle population
Buffaloes (million)	0.519	109.85	UP, Rajasthan & Gujarat TN ranks 14 <sup>th</sup> in Buffalo population
Sheep (million)	4.50	74.26	Telangana, AP & Karnataka TN ranks 4 <sup>th</sup> in Sheep population.
Goat (million)	9.89	148.88	Rajasthan, WB & UP
Pigs (million)	0.067	9.06	Assam, Jharkhand & Meghalaya
Poultry (million)	120.8	851.81	TN, AP & Telangana TN ranks 1 <sup>st</sup> in Poultry population
<b>For the year 2023-24</b>			
Milk production (million tons)	10.80 (4.5%)	239.30	UP, Rajasthan & MP TN stand 11 <sup>th</sup> in milk production
Egg production (billion eggs)	22.33 (15.6%)	142.77	AP, TN & Telangana TN is the 1 <sup>st</sup> or 2 <sup>nd</sup> largest egg producer
Meat production (million tons)	0.768 (7.5%)	10.25	WB, UP & MH TN is the 6 <sup>th</sup> largest meat-producing state in India

Source: PIB, 26 Nov 2024, <https://cms.tn.gov.in>, [nddb.coop](https://nddb.coop)

## Part B

### Current Agrarian Problems and Challenges in the State

After discussion with farmers, officials of State line Departments, SAUs, ICAR institutes working in the States, commodity boards, FPOs, etc., the following issues (challenged) faced by farmers and farming community in TN have been identified.

#### 1) General Issues

- **Cost of cultivation:** Rising input and labour costs are a major concern across all districts in the State. Technological interventions for reducing the cost of cultivation and increasing the profitability of farmers must be developed and implemented.
- **Unseasonal rainfall, erratic monsoon:** Heavy, untimely rains in delta areas disrupt harvest, delay paddy procurement or cause grain spoilage and economic losses, particularly in Thanjavur, Nagapattinam, Cuddalore and Thiruvarur districts.
- **Shrinking water resources and declining irrigation water quality:** Deepening water table and salinization of irrigation water in the non-delta region are yet another concern. The State, despite having 17 major river basins, is water-stressed, with per capita availability at only 740 m<sup>3</sup>/year as against the national average of 1,486 m<sup>3</sup>/year. Over-extraction of ground water resource is a rising concern for sustainability.
- **Shrinking crop acreage:** Reduction in the area of major commercial crops like cotton and sugarcane in the State is an emerging concern. Sugarcane area in Tamil Nadu in 2014-15 was 2.63 lakh ha, and it was reduced to 1.30 lakh ha in 2024-25, reflecting a 40 per cent reduction in acreage. Similarly, cotton area in the State has come down to 1.03 lakh ha in 2024-25 from 1.87 lakh ha in 2014-15, reflecting a 44.91 per cent reduction.
- **Increasing menace and damage due to wild animals:** The menace of wild animals like wild boar, peacock, monkey, deer and recently the black heron and the black-legged heron is increasing at an alarming /uncontrolled rate in the State. As these animals are listed under the Wildlife Protection Act or recognized as national birds or due to religious sentiments, culling out the overpopulated animal/birds could not be effectively implemented. Farmers are losing their valuable crops. Effective policy is required to periodically cull out the excessive population of these wild animals.
- **Low productivity of dryland farming and suggestions for alternative income:** Dryland districts like Ramanathapuram, Sivagangai, Virudhunagar, Thoothukudi, Dharmapuri, Krishnagiri, and Thiruvannamalai face frequent droughts. In these dry tracts, rainfed yields of millets, pulses, and oilseeds remain *far below the state average*. Farmers rely on monsoon rains; their incomes are unstable. ***Setting up solar energy units in these dryland districts can transform the rural economy.*** The State receives ~5.5–6.0 kWh/m<sup>2</sup>/day solar radiation with 300+ sunny days/year. Dryland belts are less vegetated and have large stretches of uncultivated or fallow land, ideal for solar farms. Wherever the cost of cultivation exceeds the profitability, in such zones, farmers may be allowed (as a policy initiative) and encouraged to set up a solar energy mill in their dry/unproductive/marginal/waste lands. Land that cannot generate high-value crops can be allowed for **solar parks**, which may give farmers steady annual rent (₹30,000–50,000/acre, depending on the project). The

Governments. may consider promoting **Agrivoltaics**, *i.e.* combining solar panels with millet/pulses/fodder crop cultivations. The PM-KUSUM Scheme of GoI and Tamil Nadu Solar Policy 2019 promote solar pumps and decentralized solar plants (up to 2 MW).

- **Increasing problems due to the proliferation of limestone mining (cement factories) and mining by Brick-kiln industries:** Tamil Nadu has several cement factories concentrated mainly in limestone-rich districts such as Ariyalur, Perambalur, Karur, Tiruchirappalli, Salem, etc., with Ariyalur–Perambalur districts forming the core “cement belt” of the State. Large tracts of agricultural land in these districts were acquired by the industrialists/companies for limestone mining and cement production, leading to a steady decline in cultivable area and traditional farming systems. The top soils overlying the lime deposit are removed for mining, turning them into barren, eroded wastelands which are unsuitable for cultivation. This has displaced traditional farming in all mining districts, including the Ariyalur and Perambalur.

The expansion of cement factories and limestone mining has created serious agricultural, livelihood and environmental problems. Fertile lands have been converted into quarries, and cultivable topsoil has been lost. Dust emissions from crushing and transport operations, smoke (fly ash) from the industries have reduced crop productivity in the factory/mining/transport zone. Many farmers and farming families whose profession is agriculture alone, either left their village or do not engage in farming after selling their land to the factories.

Mining activities have disrupted the traditional rainwater channels and feeder canals (odai, odappu, vaiyakal), resulting in poor groundwater recharge, drying of village tanks, ponds and falling water tables. Local communities have been forced to abandon cultivation, shift to insecure wage labour and face health issues due to air and water pollution, while biodiversity and rural habitats have been severely degraded. Among the districts, Ariyalur and Perambalur, which are called the “Land of Cements” due to their large number of plants, are increasingly affected.

Some factories that acquired lands from farmers were allowing the previous land owners to cultivate their field till mining operation commenced in their fields. However, some factories are forcing the previous land owners to vacate their land. Farmers who lost control over their lands shifted from agriculture to low-skill mining jobs or other jobs in the nearby towns.

While the mining of limestone takes place in relatively drier tracts, mining for making bricks is expanding in the fertile tracts. The brick-kiln operators often mine red soil or sandy loam soil in their own land and clay from adjacent agricultural land or buffer zones; this removes topsoil, flattens micro-relief, destroys ponds/tanks and removes vegetation, thereby reducing land fertility and biodiversity.

Despite the damage, the lands acquired or degraded by cement factories (post-mining lands) can be **reclaimed and re-utilised for productive agriculture** through soil amendment (e.g., adding organic matter and gypsum to neutralise alkalinity) and phased restoration.

Restoration of waterways and water bodies is critical for reviving agriculture in these regions. Original rainwater canals and feeder channels need to be mapped and restored. The reclaimed lands can be put to sustainable and diversified use through integrated farming systems that combine crops, livestock and fodder production. Quarry pits can support inland fish farming and integrated fish-based systems, while

green buffer zones and shelterbelts around factories can reduce pollution and generate biomass. Renewable energy models, such as solar power and *agri-voltaics*, can also be integrated with farming activities to enhance income and sustainability.

To ensure long-term recovery, strong policy support and coordinated action from the Central and State Governments are required. Strict enforcement of mine closure and land reclamation plans, convergence of agriculture, water and forestry schemes, and effective use of CSR funds from cement companies are essential. District-level mechanisms involving local communities should guide post-mining land use, ensuring that cement belt districts are transformed from ecological stress zones into resilient landscapes that support agriculture, livelihoods and environmental restoration.

Futuristic ideas for these lands include biotech-enhanced restoration using genetically improved plants or fungi for reclamation/ cultivation.

## 2) Issues Related to Policies, Subsidies and including anticipated issues on account of GST reforms in India and Global Trade Agreements

- **Likely impact of global trade agreements /tariff revision:** The USA has recently (Sept 2025) raised import duties on Indian goods to as high as 50 %— a combination of a 25 % reciprocal tariff and an additional 25% penalty in response to India's continued oil imports from Russia. The USA imports major Indian agricultural products like cashews, spices, tea, coffee, essential oils, basmati and fine grain rice, sugar, castor oil, marine products, buffalo meat, fresh/processed fruits and vegetables. In 2023–24, India's agricultural exports to the USA totalled ~\$ 48 billion. The Textiles, seafood, jewelry sector hit harder than other sectors.

In 2023–24, India exported 1.8 million tonnes of **seafood** worth ₹ 60,000 crore. In that, Tamil Nadu's contribution was ~5%. Frozen shrimp is a major export. Seafood exporters (especially frozen shrimp, squid, cuttlefish, and octopus), especially in regions like Thoothukudi, are likely to face near-term setbacks due to tariff disruptions and stranded shipments.

The USA is a big buyer of India's **spices**. In 2023–24, Tamil Nadu exported nearly 3.23 lakh tonnes of spices such as chilli, turmeric, cumin, black pepper, cardamom, cloves, and fenugreek, valued at about \$ 237 million. This State also holds several GI-tagged spices such as Erode Turmeric, Ramanathapuram Mundu Chilli, Kodaikanal Malai Poonda, and Kanyakumari Clove. The increased tariff may hit TN's exports, particularly turmeric and clove and may likely create stiff competition with exporters like Vietnam, Indonesia, etc.

India's **mango** exports (fresh and pulp) totalled around ₹ 660 crore (~66,879 metric tonnes) in 2022–23, marking that the exports to the U.S. alone have grown around 19% per year. The fresh mango exports from Tamil Nadu remain modest compared to some other states like Maharashtra and A.P. However, Krishnagiri district, a key mango pulp and processed product hub in Tamil Nadu, exports processed mango pulp mostly to the UAE, EU, Singapore and Malaysia. However, only a small quantity is exported to the USA.

Tamil Nadu is India's largest **banana** producer. However, TN exports are still modest to the U.S., but processed forms like chips are shipped. The Nilgiris **tea** and **speciality coffee**, like the Arabica coffee from Yercaud, Palani hill, have niche USA buyers. Higher tariffs could discourage our growth in the niche USA market.

The State accounts for 40% of India's **leather exports**, such as finished leather, footwear, gloves, garments and upholstery leather. The US market is one of the top 3 destinations for Indian leather exports, along with Germany & UK. India's total leather exports to the USA alone are worth over \$ 600 million annually. A large portion of this originates from Tamil Nadu's tanneries & footwear clusters such as Vellore (Ambur, Vaniyambadi, Ranipet), Dindigul, Erode and Chennai. High U.S. tariffs would hit TN footwear & finished leather exports hard. India has to compete directly with Vietnam, Bangladesh, and China, which already have preferential access in U.S. markets.

On a broader estimation, around **30% of Tamil Nadu's agri-products exports go to the US markets**. Tamil Nadu ranks first among Indian states in the export of electronic goods, but ranks fourth in agricultural exports after Gujarat, Maharashtra, and Andhra Pradesh. **Therefore, TN's export of agricultural produce will also be affected moderately on account of the higher US tariff.**

**Government of India's efforts:** To face the USA tariff hike, India is countering with GST rate cuts, stimulating domestic demand to cushion external shocks. Relief packages are in planning stages—including credit guarantees for affected exporters. There's a push for export diversification, targeting markets in Europe, Latin America, Africa, and Southeast Asia through FTAs and broader trade dialogues. These substantial increases threaten around 55% of India's exports to the USA compared to competitors like Vietnam, Bangladesh, and China. India's Chief Economic Adviser estimates these tariffs could reduce GDP growth by 0.5–0.6%.

India is countering with GST rate cuts, stimulating domestic demand to cushion external shocks. Relief packages are in planning stages—including credit guarantees for affected exporters. There's a push for export diversification, targeting markets in Europe, Latin America, Africa, and Southeast Asia through FTAs and broader trade dialogues.

- **GST revision and its likely impact:** The recent GST reductions on fertilizers, inputs, machinery, and food products have direct and indirect benefits for both farmers and agri-entrepreneurs across India, including Tamil Nadu.

GST on some **fertilizers** like organic manure, compost, bio-fertilizers, liquid nano-urea, etc., has been reduced from 12 % to 5%. This makes crop nutrition cheaper and reduces the cultivation cost of crops like paddy, sugarcane, banana, and turmeric. This will also encourage organic cultivation.

GST cut on certain **Farm implements, drip irrigation, and solar pumps** has been reduced from 12 % to 5%, which will certainly reduce the investment cost of banana, turmeric, sugarcane, mango, and papaya farmers who adopted drip fertigation. Also boosts water and energy saving technologies like micro-irrigation and solar pump sets in the State. GST reduction would help the State Agriculture Department to procure these items at lower prices and distribute them to a larger number of small & marginal farmers.

GST on **post-harvest service charges** like **warehouses, cold storage, food processing**, etc., have been reduced from 18 % to 5%. This will encourage farmers to store their seasonal surplus & perishable produce like jackfruit, mango, banana and vegetables in the cold storage at lower post-harvest operational cost.

GST cut on **processed fruits** (fruit pulps, fruit juices), **frozen foods and Logistics & Packaging** from 18% to 12% would marginally reduce the tax burden and would benefit Agri Entrepreneurs like Krishnagiri mango pulp units, banana processing units in Trichy, jackfruit processing in Panruti, etc. and also reduce the cost of transporting produce to market.

Reduction in GST on **animal feed, feed supplements** from 18 % to 5% will lower input costs and help TN's large number of poultry growers (Namakkal) and Dairy farmers.

The lower production cost + reduced post-harvest service charges + lower logistic charges would have a positive impact on farmers' income. Also, it will improve the price competitiveness of TN exports (spices from Erode, seafood from Thoothukudi, leather from Vellore) and help in offsetting high import tariffs in foreign markets (like the USA). **This information needs wide spread during the campaign, and the impact may be assessed in monetary terms.**

- **Fertilizer usage and supply shortage:** India is the second-largest consumer of fertilizers in the world, but our fertilizer supply is heavily import-dependent, approximately 30% of India's urea consumption, 90% Phosphatic fertilizers (DAP, DAP) and 100% potash (MOP) are imported. India imports urea from Oman, Qatar, Saudi Arabia, China, DAP from Morocco, Saudi Arabia, Jordan and MOP (Potash): Canada, Belarus, Russia, Jordan, Israel, etc.

TN has urea manufacturing plants like SPIC (Southern Petrochemical Industries Ltd, Thoothukudi (producing Urea), The Madras Fertilizers Ltd (MFL), Manali (manufactures Urea, NPK complexes) and FACT- a Kerala-based plant, with primary distribution at TN. But output from these plants is not sufficient to meet TN's total demand, so rely on central allocation (the Government of India allocates imported fertilizers to each State) & imports remain.

In peak sowing/transplanting season, like Kuruvai, samba paddy season demand suddenly spikes, creating **local shortages**. Sometimes, the State gets a lower allocation from the central pool compared to its seasonal demand. Further, the Russia-Ukraine war and export restrictions from China and Russia created supply gaps.

China is the largest producer of phosphate fertilizers (DAP, MAP). Since 2021, China has imposed export restrictions/curbs on phosphatic fertilizers to protect its domestic supply and control local prices. As a result, India's DAP imports from China fell sharply, and we have to diversify supply sources to Morocco, Jordan, Saudi Arabia, etc.

Russia & Belarus are the key suppliers of potash (MOP) to India. Due to the Ukraine-Russia war & Western sanctions, their exports have been disrupted since 2022. So, India had to increase imports from Canada, Jordan, and Israel as alternatives.

Middle East countries such as Qatar, Saudi Arabia, and Oman supply urea and ammonia to India. But India faces competition from other big buyers like Brazil and the USA, making prices volatile.

Morocco is a major source of rock & DAP for India. Often, price hikes during global shortages affected India's import bill. India signed **long-term supply agreements with Morocco to secure phosphates. This year, India is likely to procure a higher quantity of rock phosphate (RP) from Morocco.**

Tamil Nadu's agriculture, particularly crops like paddy, sugarcane, banana, turmeric, and cotton, depends heavily on DAP & NPK fertilizers. Last month, in many villages, there were shortage of DAP and MOP. The rate of DAP has gone up to ₹1350, SSP ₹ 700 /bag (hiked) and MOP to ₹ 1800 per bag (rate doubled); urea cost remained between ₹ 268 and 320/bag.

Under the above situation, what is best for the farmers should be deliberated. Promoting Integrated Nutrient Management (INM) with emphasis on green manuring and guiding farmers to determine the right dosage of NPK based on soil health cards may be taken up in the campaign. Crop diversification is yet another area for reducing fertilizer consumption. The State of Tamil Nadu is leading the way in the field of crop diversification. However, location-specific crop diversification may be worked out as a means to address the fertilizer shortage.

- **Spreading Awareness of Central and State Government Schemes:** The awareness of Central and State Government schemes among farmers in Tamil Nadu has been studied by TNAU, NABARD (2022-23), the State Agriculture Department and recently

by the ICAR's Kharif VKSA campaign (2025). The awareness levels in TN about Central schemes are 40–50%, and State schemes are about 50–60%. Awareness level is better for popular cash schemes like PM-KISAN, Aavin's Dairy support, input subsidy schemes (seeds, fertilizers, machinery) due to direct benefit transfer and other reasons, but lower penetration of information on insurance, soil health, solar-powered irrigation, and micro-irrigation (<30%). Small, marginal, tenant, and women farmers are the least aware of many schemes. **The VKSA Rabi campaign may address the issue.** In addition, strengthening extension + digital awareness + involving local institutions is the long-term strategy to bridge the awareness gap. KVKs, Uzhavar Sandhai extension kiosks, The Aavin booths, PACCS, Primary Agri Co-op Societies & FPO networks may be used as information hubs or to circulate scheme awareness. Mobile-based apps & WhatsApp-based alerts in Tamil may be issued. SHGs and Makkal Nala Paniyalarkal (Public Welfare Workers) may be involved to create awareness drives.

- **Crop insurance- requires more coverage:** Crop losses due to climatic vagaries such as flood, cyclone are increasing in the State. Although the State/ Centre announces crop insurance for many crops, it is being offered mainly for paddy and ***other major crops are not covered***. Farmers are interested in opting for insurance for many crops and animals. Sugarcane, banana, etc., may be brought under insurance cover. Sometimes, cattle growers face the problem of **death of their milch animals** during calving, due to snake bite, diseases, electricity shock, etc. These losses have to be covered under the insurance scheme.
- **Subsidies for smaller farm implements:** Among the small farm implements, the use of inter-cultivator (power weeder) is increasing appreciably in the State, as this machine is suitable for weeding-cum-intercultivation in many crops planted at 4 feet row spacing. This machine costs around Rs. 1 lakh. The TN Government is giving a 50 to 60% subsidy for this weeder. About 6,000 units of power weeder are planned to be distributed to farmers (in the whole State) during 2025-26. ***A large number of farmers applied for this weeder with a subsidy, but the supply is delayed; sometimes it takes a year.*** For such an item, back-end subsidy and direct benefit transfer would lead to better results.
- **Subsidies for solar pump sets:** The Central and State Governments are promoting solar pump sets in the State. ***The demand is high***, as a high subsidy of 70 to 80% is given to this product. Under the Chief Minister's Scheme of solar-powered pump sets, about 3,171 pump sets have been sanctioned between 2021-22 and 2024-25. ***A large number of farmers are interested to get solar pump set, but the number of beneficiaries is limited*** to ~1000 per year by the government.
- **A re-look into the Oil Palm promotion scheme:** Considering the huge import of palm oil into India, the Central Government has launched the National Mission on Edible Oils -Oil Palm Scheme (NMEO-OP). This scheme focuses on increasing the area and production of oil palm in many states, including Tamil Nadu. A huge budget outlay of ₹ 11,040 crore has been earmarked for this scheme with a Centre and State cost-sharing pattern of 60:40% (CS: ₹ 8,844 cr; SS: ₹ 2,196 cr). The target is to increase the oil palm area to 10 lakh ha in the whole of India by 2025-26, as against the present area of around 5 lakh ha. Under the NMEO-OP, a lot of subsidy-based incentives, right from the import of seedlings, maintenance of plantations, intercropping in oil palm plantations, sinking of borewell in the plantation and up to the first harvest are being

offered. Despite all these promotional activities, the **oil palm area in the State did not expand beyond 150 ha, which is far less for setting up a profitable oil expeller/processing unit. Those who planted the palm are facing less productivity and processing problems.** A lot of unspent funds under NMOE-OP are available, which may be diverted for promoting other oilseed crops befitting the climatic conditions of this State. A re-look at this scheme, not only in TN but in the entire country, is essential to spend the allocated money fruitfully.

- **Central Sector Schemes:** Under the PM KISAN scheme, farmers who have agricultural landholdings are eligible to apply. **Landless farmers are not included as beneficiaries.** There was an appeal from many landless agricultural workers to include them in the scheme. Likewise, the benefit offered under the **Drone Didi** scheme **is restricted to females. Male engineering graduates, hailing from rural areas, may be given the benefits**, so that their income will be ensured, and at the same time, more drone service providers will be made available in rural areas. **Under the Pradhan Mantri Kisan Maandhan Yojana (PM-KMY)**, farmers who have land <2 ha and age < 40 years are eligible to subscribe to the pension scheme. The scheme is liked by many farmers in the State, but after understanding certain conditions, their interest is being reduced. Firstly, landless agricultural workers are not covered under this scheme, but they insist on including them. Secondly, there is a feeling among the farmers that the age limit is narrower and the **upper limit should be increased to 50 years.** Third is the exit condition or death claim. In this scheme, if a subscriber dies before the age of 60 or while making regular premium contributions, his/her spouse may exit by getting the subscriber's contribution + accumulated interest, or if they wish to continue, he/she shall have to make regular premiums until he/she attains the age of 60 years, **which is a discouraging clause.**
- **Back-end subsidy:** Many State Governments providing front end-subsidy to farmers to promote large-scale use of new technologies, environmentally benign technologies/products, etc. It would be better if a back-end subsidy for certain selected products and in certain districts is offered. Eligible farmers may be informed and allowed to purchase the said item by their own purchase arrangement; the Government may later release their eligible subsidy directly to their bank account upon receipt of bills. This will help farmers get certain products as and when he required.
- **Promoting custom hiring of tractors:** The Agri. The Engineering Department, Government of TN, provides tractors, power tillers, and other farm machinery **on hire** at subsidized rates through Agricultural Machinery Hiring Centres (AMHCs) and Custom Hiring Centres (CHCs). This service has an overwhelming response throughout Tamil Nadu. However, there are practical problems in sending tractors promptly to the villages far-away from district / Block offices, due to the limited number of drivers engaged by them. Farmers in remote areas are unaware of the availability of these services. Perhaps, distribution of leaflets just before the start of the agricultural season, focusing on remote areas and engagement of rural youth of remote villages on daily-basis will address these shortfalls.
- **Electricity Fixed charge for processing industry:** The fixed charge levied by the TNEB for LT (Low-Tension) industrial connections was hiked in September 2022, *i.e.* from ₹ 35 per kW per month to ₹160/kW/month for industries with 0–112 kW loads, and ₹ 569/kW/month for loads above 112 kW. Owing to this, monthly fixed charges

for a typical MSME industry, like a fruit processing unit, shot up from ₹3,750 to ₹17,920. These charges are based on **connected load or demand capacity and not actual usage**—making them particularly unfair for units with modest operations. For example, if a mango processing unit, which subscribed for 110 KW connected load, must pay the ₹.160/kW/m throughout the year, even though the unit operates for 3-4 months in a year. The MSME industry feels it is a burden for them and is demanding reclassification of the slab rate.

- **Establishment of ethanol industry near Perambalur / Ariyalur Districts:** The area under maize is expanding in Tamil Nadu, particularly in dry districts like Perambalur and Ariyalur. Farmers are getting better prices (>Rs. 2400/q) for the produce, as there is good demand for maize in the poultry-feed industry and grain-based ethanol industry. To sustain the price, the ethanol industry may be promoted in a dry district like Ariyalur/Perambalur.

### 3) Challenges in Genetic Improvement, Breeding and Seed Production

- **Demand for superfine paddy:** Paddy is a major food crop in the State, grown over an area of 21.61 lakh ha. Short bold, medium bold (matta rice) and fine grain (medium slender) paddy varieties are grown in large scale in the State. However, due to urbanization and change of lifestyle of consumers, fine and super fine grain paddy varieties (long slender grains) are traded in huge quantity than the matta or medium slender rice. TN has considerable area under fine rice varieties such as Samba Masuri or Bapatla variety (BPT 5204), White Ponni, Sona Masoori, etc. ***These varieties are considered outdated by millers and traders as demand for super fine varieties like RNR (Pragathi RNR-15048), Sowbhagya, etc., is increasing. Traders are getting the super fine rice from neighbouring States and selling it in the urban local markets at a high price (> ₹ 65/kg of rice). Market-driven paddy variety is the need of the hour.***
- **Demand for new paddy variety in the high rainfall zone:** In the high rainfall zone, like Kanyakumari district, medium bold grain paddy varieties are grown. As the available varieties like CR 1009, TPS 3, etc., are old, new varieties may be introduced in the zone.
- **Demand for bold-seeded groundnut:** Groundnut is a major oilseed crop in TN, grown over an area of 3.16 lakh ha. The farmer prefers bold seed varieties like GG 20, which fetches ₹ 500-1000/q higher price than normal size local variety. Around 70,000 ha of area during the rabi season is planted with irrigated groundnut, and a huge seed demand for GG 20 exists in TN. Farmers are getting seeds of GG 20 from Gujarat through traders, often at a higher cost. This variety was released from JAU, Gujarat and its seed production system in TN, particularly during rainfed kharif groundnut, is limited or nil. The rabi season groundnut seed will not be suitable for next year's rabi sowing due to poor germination. So, farmers are getting seeds for the Rabi groundnut crop from Gujarat (from the Kharif seed production lot). ***Breeding a bold seed groundnut variety that has market preference or export preference may be undertaken.***
- **Demand for native vegetables:** In Thanjavur and Trichy district markets, the light purple brinjal variety called Manaparai katharikkai fetches at ₹ 2-3/kg higher than other varieties. Likewise, Bhavani katharikkai, Sevanthampatti kathirikai, and Yelavambadi mullu katharikkai are traded at a higher price in the respective local markets. ***These are traditional varieties, and authentic seeds are not available in the production zone.*** Farmers are travelling long distances to get seedlings or seeds of these varieties.
- **Demand for short-duration pulses:** Rice fallow pulses are an important cropping system in the delta area of TN. ***A larger number of short-duration black gram and green gram varieties with bold seed are required for such a cropping system.*** With regard to red gram, long-duration varieties are generally higher-yielding than short-duration varieties. In TN, the subsidy is given for < 10 years of new varieties. None of the existing varieties is eligible for promotion under the scheme, as these are old varieties. Short duration variety with high yield, like those of long-duration varieties, are preferred.
- **Improved sugarcane varieties for the delta area and interior coastal zone:** The popular sugarcane variety Co 86032 has covered about 45% area in the State (2023-24); its performance *vis-à-vis* likeness in the delta area and interior to the coastal zone

is limited. Other new varieties have limited spread in these zones, but the old variety, CoV 09356, is doing well (23% area coverage in TN), although it is susceptible to YLD and Pokkah boeng-Crown mealy bug complex. Kothari sugar factory in Ariyalur district ceased its crushing in the 2024-25 season due to a lack of canes, mainly due to the high incidence of Pokkah boeng- crown mealy bug complex. ***A cane variety suitable for the region and tolerant to the inherent and seasonal problems faced in the zones is required.*** The seed cane quality of CoV 09356 has deteriorated as no agency is involved in tissue culture/quality seed cane production of this variety.

#### 4) Challenges in Soil, Irrigation Water Quality and Crop Productivity

- **Increasing cotton productivity:** Tamil Nadu is a hub of spinning mills, having ~55% of the country's total spinning mills. The State is consuming more cotton than it produces. The mills in TN require around 120 lakh bales of cotton. Approximately, 95% of the cotton used in the state's textile mills is procured from Gujarat, Maharashtra, Telangana and Andhra Pradesh as local production is limited (4.60 lakh bales). ***A significant challenge faced by the cotton industry is the shifting trend among farmers to diversify from cotton to other crops like maize, tapioca, banana, etc.*** A way to enhance cotton production in the State is to increase its productivity by following a high-density planting system (HDPS), reducing labour cost for Kapas picking by introducing small-scale mechanization, etc. The spinning industry needs long, stable cotton, which generally comes from *Gossypium barbadense* varieties (American cotton). Millers prefer long staple (27-32 mm) and extra-long staple (ELS>32 mm) cotton for spinning into fine count yarn (40s–120s). However, local production meets only ~30–35% of mill needs, forcing large imports from Gujarat, the USA, and Egypt. The ELS cotton hybrid Suvin is known as the finest cotton in the world. The ELS cotton does well in Southern India, including TN, more than in Northern India. Therefore, intensive efforts are needed to regain cotton area in irrigated cotton tracts and also to promote ELS cotton varieties like Suvin, MCU 5, and LRA 5166 in Southern districts (Madurai, Ramanathapuram, Virudhunagar, Thoothukudi, and Tirunelveli).
- **Monocropped paddy:** In the Cauvery delta and adjoining zones, if the second crop of paddy is taken after the first crop of paddy or in certain saline-alkaline zones or in areas affected by one weak flood, most of the fine-grain paddy varieties show 'clump degeneration' leading to gappy fields. Farmers not only lose their income but also lose one crop cycle, as intervention after the tillering phase is not practically feasible. The crop is not covered by insurance or other flood relief measures, as half of the plant population remains in the field.
- **Effluent problem:** Multiple use of pond/tank water (for drinking, irrigation, fish farming, cattle drinking and washing, bathing, watering nurseries, etc.) has been the lifestyle of our forefathers. This traditional good ethic of Tamil culture has been at risk, particularly in the urban and peri-urban areas. Ponds and tanks situated in the peri-urban towns and corporations are led-out, often with untreated sewage water, thus making the water unfit for fish farming or pot watering for smaller nurseries, or drinking. Tannery or textile effluent water problem in the districts of Karur, Thiruvallur, Vellore, and Coimbatore is posing a threat to the ecosystem in the region.
- **Improving the quality of water bodies:** The Government of TN has carried out desilting and broadening of tanks/ ponds in the State. This effort will get better realization if the waterways to the tanks/ponds are cleared from individual illegal encroachment and cleaned on yearly-basis (*maramathu*- Government or community-led tank restoration). In the urban area, there are tanks and ponds where the impounded ***water remains in the tank/pond for years together***, creating bad odour, high algal growth and BOD. The water in such ponds is unfit for animal wash and even for fish farming. The banks of a few such ponds/tanks have been improved under the Smart City Project, and people utilizing it for morning walks, ignoring the hazardous odour. One time letting-out of such stagnated water, followed by drying for a few months, desilting and letting-in fresh water, and stopping mixing of untreated sewage water will improve the quality as well as multiple uses of such water.

- **Organic farming:** Organic farming and organic products are becoming the talk of the town. This statement indirectly indicates growing consumer awareness for pesticide/residue-free products and also rises question on whether the products sold in TN as organic are really 'organic' by standard. A lot of promotion scheme is being implemented in the state, but the number of products sold as truly organic and the profit earned by organic farmers have to be taken into account to understand the impact of such schemes. Sikkim was the first state in India to be declared an organic state. Going by the experience gained from true organic states like Sikkim and other North Eastern States, one may confidently say that the **success of organic farming or converting conventional agriculture fields into organic farms is high in remote areas, hilly areas or tribal dominated region** where there is limited access and availability to chemical fertilizers, pesticides, etc. The other logic behind choosing a remote or hilly area is that it wouldn't affect the food production capacity of the State drastically, and even if organic farming does not improve the income of the hill farmers, non-use of pesticides and fertilizers minimizes the risk of water contamination in the downstream villages. The people in the downstream region will continue to get good quality water. This is a great passive service of hill farmers to their plain land neighbours. Secondly, organic farmers' profitability will be higher **if the organic product is linked directly to supermarket / urban markets/ export markets**. Thirdly, the choice of crops for organic farming determines its market demand. In TN, organically grown or village-grown or hill-grown fruits, desi egg, milk of native cows and sprouted pulses, which are food for children, are often bought by parents at a high price. If the product is meant for the export market, millets, traditional rice varieties such as Navara, Kitchili Samba, Mappillai Samba, Karuppu kavuni, turmeric and spices may be the right choice. In Tamil Nadu, initiatives such as the village cluster approach and model organic villages are being promoted in every district. However, not all districts are equally suitable for organic farming. Moreover, when families with few members have differences of opinion, the sustainability of the cluster approach becomes uncertain. Therefore, the long-term viability of this model needs to be carefully re-examined. **Farmers who already practice organic farming and are really interested may be identified and promoted**. Under organic farming, pests are managed with bioproducts, but effective disease management remain at infancy. These lessons may be incorporated suitably into the organic farming policy/action plan of this State.
- **Promoting green leaf manuring:** The practice of collecting green leaves from *Azadirachta* (neem), *Gliricidia* (sirupalai), *Thespesia* (poovarasu), *Tephrosia* (kolunji), *Pongamia* (pungam), *Calotropis* (eruku), etc., and applying them as manure in puddled paddy fields become an obsolete practice. On the other hand, the practice of sowing green manure crops like dhaincha (*Sesbania*) and sunnhemp (*Crotalaria*), and *in situ* incorporation is increasing in the State. The bulk of the daincha and sunnhemp seeds comes from A.P., Karnataka and MH. **Hence, its cost is higher** (₹ 100/kg). Often, spurious seeds with poor germination are sold. **Participatory seed production of these green manures is suggested**. We have to increase green leaf production base in the rural areas, especially in the paddy belt, by growing trees such as neem, poovarasu, pungam, *Gliricidia*, etc., in village wasteland, porampokku, social forest land, etc. **Local farmers residing in the nearby villages may be involved in participatory tree planting in forest/panchayat land, watering and tree maintenance**, etc. In return, the forest Department or Panchayat may allow these farmers to collect leaves from these trees for feeding to goats and green manuring purposes.

- **Increasing incidence of itch grass weeds:** We have been noticing an increasing incidence of the itch grass / sunaipul (*Rottboellia cochinchinensis*) in Coimbatore, Theni, and Perambalur districts of Tamil Nadu in sugarcane, maize, and sorghum fields. This grass initially reported in the Western Ghats and Karnataka, now spreading in Tamil Nadu, Maharashtra and Andhra Pradesh, mostly through implements used for ploughing / interculture and through seeds of green manures, maize, and sorghum produced in the partially weeded fields. It produces spike-like cylindrical inflorescence within a short time of about 45-60 days, and flowers/seeds often mimic the rolled leaves, hence farmers may not notice its seeds. It shatters seeds in the same field and spreads quickly. Moreover, it is difficult to pull out the plants as it has bristly hairs causes itching to the labourers (so-called sunaipul). It is not controlled by commonly used weedicides like Atrazine / Simazine. *Integrated weed management, emphasizing early mechanical control, will help to spread of this weed.*
- **High density planting system (HDPS)-Some challenges:** High density planting is the current concept by which the productivity of the fruit crops can be enhanced per unit area. It is recommended to plant fruit crops like mango, Sapota, banana and commercial crops like cotton. In cotton, the ICAR institutes and SAUs are vigorously recommending HDPS, as the HDPS is giving higher kapas yield (35-45 q/ha) in comparison to the conventional planting (20-25 q/ha). However, the HDPS warrants desired ideotypes/alteration in plant canopy, such as **compact and early varieties, which are still limited in India or TN. Secondly, the nutrient and water stress under HDPS may reduce yields due to high population. Thirdly, pest and disease spread is faster in dense canopies, and lastly, farmers have to use growth regulators or manual pruning, which is essential, or else lodging occurs.** These challenges require the attention of researchers and extension officials to tackle them suitably.
- **Issues related to quality of farm inputs, irrigation water and agricultural produce:** It is a well-established fact that consumption of safe and naturally produced food, fruits, and vegetables plays a vital role in ensuring the physical and mental well-being of the people. Hence, **ensuring the quality and safety of agricultural inputs and farm produce** is a shared responsibility between the **Government**, which regulates production and marketing, and the **stakeholders** involved in the production, processing, and distribution chain.

However, in recent years, there have been growing public concerns and **documented cases of adulteration and contamination in farm inputs and agricultural produce** across India, including Tamil Nadu. Instances of spurious seeds, substandard fertilizers, adulterated pesticides, and misbranded micronutrients and bio-stimulants have been reported. According to data from the Department of Agriculture and Farmers Welfare, Government of India, around 6 to 8% of fertilizer and pesticide samples tested annually across India fail to meet prescribed quality standards. In Tamil Nadu, the State Seed Certification and Quality Control Wing and the Agricultural Marketing and Agri Business Department have periodically detected cases of substandard farm inputs being sold to farmers. *The VKSA campaign aims to spread awareness among farmers on the spurious/adulterated farm inputs and farm produce.*

Similarly, the **quality of irrigation water** used in agriculture has emerged as a major concern. In several districts of Tamil Nadu, particularly in Ramanathapuram,

Sivagangai, and parts of Thoothukudi, groundwater used for irrigation has shown high salinity and total dissolved solids (TDS), which affect soil health, crop yield, and long-term sustainability. The presence of industrial effluents and sewage contamination in peri-urban areas like Coimbatore, Vellore, Ranipettai, Thirupathur and Tiruppur further deteriorates water quality.

The **quality of agricultural produce is another critical area of concern**. Studies by the Food Safety and Standards Authority of India (FSSAI) have revealed the presence of pesticide residues above permissible limits in vegetables and fruits in several markets. The National Residue Control Programme (NRCP) has identified excessive residues in commodities such as okra, chilli, and curry leaves. The Tamil Nadu Agricultural University (TNAU) has also conducted studies indicating residual pesticide presence in selected market samples. These contaminants not only endanger consumer health but also affect the export potential of Indian produce, as importing countries have stringent residue limits.

With the **expansion of intensive agriculture, input markets, and processing chains, the risks of spurious and unsafe materials entering the production and food supply system are increasing**. Therefore, it is essential to strengthen quality control measures through:

1. Regular and periodical inspection of farm inputs such as fertilizers, pesticides, seeds, micronutrients, foliar sprays, bio-stimulants, growth regulators, and hormones available in local markets.
2. Systematic testing of agricultural produce—including food grains, fruits, and vegetables—for pesticide residues, heavy metals, and microbial contaminants under programs like FSSAI’s State Surveillance Scheme.
3. Monitoring and testing of irrigation water quality used for agricultural purposes, with suitable advisories and remedial measures provided to farmers.

**It is also the right time to establish an extensive network of referral laboratories for:**

1. Quality testing of agricultural inputs,
2. Detection of pesticide residues and contaminants in food produce, and
3. Assessment of irrigation water quality.

These labs may be established under Public-Private Partnership (PPP) mode, involving agricultural universities, NABL-accredited private labs, and Krishi Vigyan Kendras (KVKs) for local sample collection and farmer awareness. ***Strengthening these systems will ensure safe food production, environmental protection, and consumer confidence in agricultural markets.***

## 5) Specific Issues in the Horticulture Sector

- **Low productivity of coconut plantation:** The crop is **not regularly manured**; both organic and chemical fertilizers are needed to improve the productivity of the existing plantation. The Horticulture Department in Tamil Nadu and the Coconut Development Board are implementing many development schemes with 100% subsidy. At many places, once planted, it becomes a forgotten crop. An exclusive coconut manuring and supervision scheme may be developed to promote the application of manures and fertilizers once during the monsoon and once during the dry season. Secondly, a lot of organic wastes such as coconut leaf (fronts), inflorescence, etc., are generated in the coconut garden, which need to be recycled in the garden itself. Farmers expect a subsidy **for the purchase of a coconut shredder /pulverizer**. If at least one shredder for 9-10 villages is sanctioned, a considerable quantity of coconut waste can be converted into organic wealth. Thirdly, the incidence of rugose spiralling whitefly has spread to the whole of TN. There are observations that this pest is even attacking bananas in the southern districts. Farmers, Department and Research Institution tried several management measures, but effective control has not happened to date. ***Perhaps the IPM with much emphasis on the identification and release of parasitoids/predators may give the desired result.*** More research is needed in this aspect. Fourthly, the root wilt is increasing in Kanyakumari, Nagercoil, Coimbatore, and Tirupur districts. This require spread of awareness on IPM among farmers.
- **Poor quality of mango fruits and home-grown custard apple and pomegranate:** Many consumers who bought mango at a high rate during this year (₹ 25/fruit) were often disappointed by observing nut weevil or fruit decay. The practice of growing one or two pomegranates or custard apples in the homestead/home gardening is increasing in Tamil Nadu. These homegrown, often organically grown fruits are affected by mealy bug, squirrel, etc., thus making the fruits unfit for marketing. These illustration shows that we are not producing better quality fruits, hence we cannot market them either in domestic or in export markets. This issue needs to be given focus during the VKSA campaign. One of the **good agricultural practices**, which is slowly picking up in Salem, Dharmapuri and Krishnagiri districts of Tamil Nadu, is **covering /bagging mango fruits** with different kinds of bags (paper bags, polythene bags, biodegradable cover, etc.). These bags may cost around ₹. 1.50-2.50 per cover. The cost of bagging per acre may vary from ₹. 15,000 to 40,000, depending on the number of fruits/tree (100-150 fruits per tree) and the number of trees/acre (100 to 300 trees/acre). The bagging prevents fruit fly infestation (*Bactrocera* spp.), minimizes damage from mango hoppers, mealy bugs, and thrips, reduces anthracnose and powdery mildew infection and produces pesticide-free, blemish-free mangoes with better skin colour. This practice helps in producing export-quality mango. Definitely, the cost of bagging would be compensated by the premium price. It is especially beneficial for export varieties like Alphonso, Banganapalli, Imam Pasand, and Totapuri. **Awareness of this practice among mango growers is required. Awareness on IPM practices for managing mealy bug in home-grown custard apple and bagging of fruits of pomegranate is required.**
- **Coffee and Tea plantation:** Coffee is usually grown along with Pepper. Alternative cropping systems specific to each region in the state need to be explored. The use of banned or hazardous chemicals in coffee and tea plantations is limiting the export opportunity of these crops. Awareness camps among plantation owners and small growers are required to address the issue.

- **Area expansion for clove in Kanyakumari district:** Tamil Nadu is the leader in clove production in the country. The Kanyakumari clove is known for its quality, and it got GI tag. Due to increasing demand, the country is importing cloves worth 1953 crores in 2024-25. To curb clove imports, the Government is promoting clove cultivation in the Country. The Nagercoil hills in the Kanyakumari Dist. is having ideal climate for clove cultivation. **There is a possibility of increasing the area in Kanyakumari Dist.** However, there is a hurdle in area expansion **due to the implementation of the Tamil Nadu Forest Act, 1882 and the TN Preservation of Private Forest Act, 1949**, which interprets the 'Patta land' as private forest, which prohibits agricultural activities in the private forest without special permission of the Forest Department. Special permission from the Forest Department/ Government of Tamil Nadu is required to expand the clove area in the private forest Patta Land of Kanyakumari District. Since clove, nutmeg, etc. live long (~60 years) and promote forest cover, their cultivation in the private Patta land may be treated as an afforestation activity. The clove cultivation may be excluded from the list of non-forest activities, and growers should not be penalized under the Forest Act.
- **Problem of plenty:** In certain regions or crop tracts where a particular crop is grown in large scale, like jack fruit in Pudukkottai, Dindigul, Panruti, Dharmapuri; Palmyra in Thoothukudi, Ramanathapuram, Tirunelveli; green chilli, brinjal and tomato in the major vegetable belts are facing the problem of plenty. Due to excess production/harvest, the produce fetches at a low price in the production Centres, cases of unharvested produce in the field/plant/tree itself have been frequently reported, as the cost of harvest is higher than the prevailing market price of that produce. Nonetheless, there are fairly good demand for these perishable commodities in the faraway domestic markets as well as abroad. To illustrate specifically, during the peak production period (Dec to Mar), Palmyrah nongu (ice apple) fetches a low price in Thoothukudi, Ramanathapuram, Tirunelveli, often ₹ 2-3 in these production locations, but fetches 5 times costlier (₹ 10/ice apple) at non-production Centres like Coimbatore town. Likewise, jack fruit fetches a low price (₹ 50/fruit) in the production Centre, but in the urban market, the flesh is sold at ₹10. Initial season harvest of chilli, tomato, etc. fetches a higher price, but peak season and late season harvest fetches a low price, not even sufficient to meet harvesting charges. These problems of plenty shall have to be addressed through establishing a suitable cold storage facility, establishing a facility for long-distance market, creating a strong marketing network, including for export, etc. In the case of jackfruit, ~30% of jackfruit production in India is wasted due to poor handling and lack of storage. Therefore, if a jack fruit processing Centre is established in Panruti and Pudukkottai, etc., which has been a long-standing demand, it can convert surplus produce into value-added products, thus reducing wastage. The Kerala Government has set up a few jackfruit processing plants. Panruti, famously known as the "jackfruit capital of India", and the Panruti jackfruit have got a GI tag in 2025. The State Government, in its 2024–25 budget, announced plans to establish a **value addition Centre in Panruti. More such Centre is needed.** The PM-FME (Pradhan Mantri Formalization of Micro Food Processing Enterprises) scheme support establishment of fruit-based processing clusters.
- **Conservation of fruit genetic resources - a new approach:** The '*Tamizh Nilam*' is bestowed with fairly-rich genetic diversity with respect to food crops, fruits and vegetables. The Chola rulers of Tamil Nadu had the habit of planting along road side (avenue tree) an array of mango and tamarind varieties- neelam, malgoa, senthooram,

pulimanga, juicy mango, inippu puli, sirupuli, kottai puli, etc. These genetic repositories have partly been destroyed in the name of highway development. ***It is time to collect all the available varieties and variabilities in fruit crops (trees) and plant them as avenue trees along the rural roads, on the banks of ponds/lakes and on common lands, porampokku, as done by earlier rulers.*** This would be the genetic resource asset passing to our future generation. It has a lot of values-economic, social, cultural, ecosystem and environmental values. Funds from the NBA, NGOs and manpower from the MNREGA may be explored for the purpose. The Department of Highways, Horticulture, Irrigation, and Panchayat offices may work together in this endeavour. This approach is different from the on-going massive tree planting programme (like planting palmyra on the bank of ponds/tank), in which only one or available variety of tree is planted, whereas in the proposed plan as many as varieties of that crop shall be collected, multiplied and planted in the waste land, road side, etc., so that in one road /one village many varieties of fruits can be seen (fruit crop's varietal cafeteria) and harnessed. If village youth are employed for the collection of seeds and seedling/sapling/nursery raising, they will get gainful employment in the rural area itself. ***This will give international recognition,*** as this approach mimics *in situ* gene bank conservation, without much spending.

- **GI tagged native spices need market promotion:** Tamil Nadu's **unique GI spices** such as Kanyakumari Clove, Ramnad Mundu Chilli, Virudhunagar Sannam Chilli and Kodaikanal Hill Garlic require focused promotion and value addition, by establishing linkage between FPOs and exporters, buyer-seller meet (BSM), rendering technical assistance on post-harvest handling and value addition, creating more awareness on CRES Certificate for export offered by the Spices Board (Certificate of Registration as Exporter of Spices), which is like RCMC (Registration-cum-Membership Certificates) in other crops. The European Union's Deforestation Regulation (EUDR) bans the sale or export of certain commodities like Coffee, Tea, Cocoa, Rubber, etc. into European markets if they are linked to deforestation or forest degradation that occurred after Dec 2020. Since we are exporting coffee to European countries, awareness and compliance with this law among coffee growers is required for promoting exports. The Coffee Board has developed an App called the India Coffee App to comply with EUDR. *Registration in this App is essential for confirming that Indian Coffee is deforestation-free.* Awareness of these issues may be raised during the campaign.
- **Promoting GI tagged lemon:** Puliyanakudi and surrounding blocks contribute a major share of acid lime (*Citrus aurantifolia*) production in Tamil Nadu, supplying lemons to Kerala, Karnataka, and northern States and even for Gulf countries. Puliyanakudi is popularly known as the 'lemon city' of Tamil Nadu, and its lemon got the GI tag in 2025. Development of drought-tolerant, disease-resistant lemon varieties, introduction of drip irrigation and fertigation for efficient water use, market promotion activities like establishment of community cold storage with training, formation of FPOs to ensure collective marketing and better bargaining power, linking with e-NAM, contract farming, and direct retail chains, and assistance for export, etc., will boost the income of lemon growers.
- **Promotion of Palmyrah sap (Pathaneer):** The Palmyrah palm (*Borassus flabellifer*), also called the 'tree of life', has deep economic, ecological, social, and cultural significance in Tamil Nadu. Since antiquity, the tree has been serving multiple income sources for thousands of farmers living in the dry districts. It provides neera (sap-pathaneer), jaggery, palm candy (karkandu), toddy/kallu (fermented sap), fruit

(nongu/ice apple), fibre, timber, and leaves. The State has about 5 crore Palmyrah trees, mostly found in Thoothukudi, Ramanathapuram, Tirunelveli, Kanyakumari and Cauvery Delta districts like Thanjavur, Thiruvarur, Mayiladuthurai, etc. Tapping, juice processing, leaf craft, rope making, mat weaving, etc., not only provided employment but also supported the livelihood of lakhs of rural families. In TN, the Palmyrah palm is considered not just a tree alone but a complete ecosystem. It is known as the Poor man's tree because every part is usable – leaves, wood, sap, fruit. In 1978, the Palmyrah tree was declared the State Tree, a symbol of Tamil identity. Palmyrah is revered in folklore, Sangam literature, and village life as “karpaga maram”, and Palmyrah leaf manuscripts helped our ancestors to preserve Tamil literature, knowledge on medicine, etc., over centuries. It is a long-living tree (~100 years), sequesters or stores carbon and contributes to climate resilience. The tree thrives in dry, sandy soils without irrigation. Its roots bind soil, prevent erosion along bunds, tanks, and coastal belts. Over time, palmyrah trees have been cut down for firewood or felled when land-use changes happen. Further, the deepening or depleting groundwater levels affect the survival of palmyrah trees, which depend on certain groundwater and rain patterns. Tapping neera (pathaneer) and harvesting fruits requires climbing tall trees. Younger people are moving out of this profession, and the existing climbers are aged (old generation). Their living conditions are poor (remote groves, minimal public services) and require Government support for their upliftment. The Government of TN has set up the Palmyrah Development Mission to promote cultivation, value addition, and welfare related to palmyra trees. The Government has proposed establishing a Palmyrah Research Station at Killikulam. Recently, the Government has imposed restrictions on the felling of palm trees. For felling the permission of the District Collector is required, and for every palmyrah tree felled under unavoidable circumstances, planting 10 saplings is mandatory. Preparation of palmyrah jaggery and candy (Karuppati and Karkandu) is a profitable business for the tappers when intermediaries do not dominate the market.

Lack of value addition and infrastructure for palmyra sap (pathaneer) is the pressing issue in the sector, besides poor awareness of neera's health and nutritional benefits, both among consumers and producers. Raw sap / pathaneer is highly perishable and ferments quickly. Lack of hygienic collection, processing, and preservation facilities leads to losses. Though neera is non-alcoholic, it is 'sap' that ferments if not handled well; toddy bans have historically discouraged or conflated sap usage. Pathaneer / Neera is the fresh sap tapped from the inflorescence of palmyrah (or coconut / other palms). When collected hygienically and preserved properly (so that it does *not* ferment into toddy), it offers several health and nutritional benefits such as rich in water-soluble vitamins (like vitamin C), minerals (potassium, calcium, iron, magnesium) and phenols, neera sugar or neera-derived sweeteners are lower low glycemic index (GI) compared to table sugar, being sap/juice, it is watery, refreshing, helps with electrolyte balance, presence of phenols and other bioactive compounds (antioxidants) help fight oxidative stress, can help in iron deficiency/anemia due to its iron content and useful in general nourishment. Reviving palmyrah through plantation drives, neera promotion, and value addition can strengthen farmers' livelihoods, rural economy, nutrition security, and ecological resilience in Tamil Nadu.

- **Problems faced by loose flower growers:** In addition to the known problems such as flower cultivation, harvesting, and garland making are labour-intensive, flowers

are highly perishable, losing freshness within hours of harvest, prices of flowers vary drastically day-to-day and season-to-season due to festivals, marriages, and exports, high dependency on middlemen in major flower markets like Madurai, Dindigul, and Salem which reduces farmers' share, inadequate cold storage, pack houses, and refrigerated transport lead to 20–40% loss before reaching market, loose flower growers (Jasmine, Rose, Marigold, Chrysanthemum, Crossandra, Tuberose, etc.) in Tamil Nadu faces the following technical problems. 1) As there is limited availability of certified varieties from research stations (e.g., TNAU's CO series jasmine, rose cultivars), farmers often use vegetative propagation material from unverified sources, leading to yield and quality variation. 2) **Continuous monocropping of malligai, mullai, etc.**, without adequate external supplements of organic manure, leads to low soil fertility and productivity. 3) Lack of awareness about IPM and biological control options is widespread among the growers. **Farmers often use inappropriate growth promoters and indiscriminate pesticides, which cause resistance and residue problems, besides affecting the quality of flowers.** 4) Pests like bud worm (mokkuppuzhu), mites (sempaen), and blossom midge (kurudu) are the major problems in Trichy, Madurai, Pudukkottai, and Ramanathapuram districts, especially in Malli and Mullai. The larvae of budworm (*Hendecasis duplifascialis*) and the maggots of the blossom midge (*Contarinia maculipennis*) enter the buds at the base of the corolla and cause rotting of the **flower stalk** (kaampu azhugal) **and changes colour of the bud into pinkish (unfit for tying and selling)**. Leaves affected by Eriophyid mite (*Aceria jasmine*) produces velvet like hairy growth and blisters on the leaf surface (kurudu), and flower production is suppressed. The Red spider mite/ sempaen (*Tetranychus cinnabarinus*) adults, as well as their nymphs (red in colour), may be seen on the undersides of leaves with a silken web or oily surface. It is spreading occasionally in the jasmine garden. In addition, by seeing a large number of whiteflies in the morning, farmers apply insecticides, often two insecticides, which often affect flower quality and yield. All these reflects lack of awareness among farmers on the IPM or the correct use of pesticides. It is time to conduct training programs for farmers on good agricultural practices, pruning, fertigation, and IPM, including neem oil sprays, bioagents (*Trichoderma*, *Beauveria*, *Metarhizium*), use of pheromone traps, etc.

In places like Trichy and Villupuram, farmers who grow Chrysanthemum are observing **blackening of the lower whorls of chrysanthemum petals**. This is a fungal infection, Botrytis blight, caused by grey mould fungus, which thrives in damp conditions. Overwatering and poor air circulation can also create the ideal environment for fungal problems and lead to rot. Farmers may be advised not to use sprinklers, adopt wider spacing/ aeration, regulate watering and foliar application of Mancozeb @ 2.5g/l.

Another issue in loose flower cultivation is the inefficient irrigation methods: High water requirement crops like jasmine and rose suffer in drought-prone belts. Inefficient irrigation (flood or basin) and overuse of fertilizers affect both yield and soil health. Lack of adoption of **drip irrigation and fertigation** technologies in small holdings is common in the State. Adoption of **drip and fertigation systems** under the TN Horticulture Mission / PMKSY may be encouraged.

**To support the farmers in post-harvest management**, marketing and value addition, establish Flower Collection Centres, Cold Storage, and Pre-cooling Units at the block level under the TN Horticulture Department. Encourage Value Addition

Units for Jasmine oil extraction, Rose water and Gulkand production, Dried / powder flowers for herbal and cosmetic use. Develop Direct Farmer Market Linkages via eNAM and cooperative models (e.g., Madurai Jasmine Producers Society). **Support export clusters with APEDA and TN Agri Export Board for fresh and processed flowers.**

**Promote Mechanized harvesting tools:** Jasmine flowers must be hand-plucked daily, usually early morning (3:30–8:00 AM) to preserve aroma and freshness. Earlier, school dropouts, village youths, etc., were engaged for plucking flowers, often at nominal wages. Due to obvious reasons like urban migration, ageing rural workforce and the young generation prefers non-agricultural jobs acute shortage of skilled labourers during peak flowering (March–October) is reported, especially in districts like Madurai, Dindigul, and Tirunelveli. Labour cost accounts for 40–50% of total production cost, making jasmine cultivation less profitable. As of now, harvesting of jasmine and rose is entirely manual. No efficient mechanical harvester exists due to small flower size, delicate buds, and plant height variability. Farmers face repetitive strain injuries and fatigue from daily bending and hand-plucking. **The TNAU, ICAR-CIAE, Bhopal/Coimbatore and ICAR-IIHR Bengaluru may intensify research on semi-mechanized jasmine harvesters.**

**Pruning and flowering management needs more research and farmers' awareness:** In the case of Gundu Malli (*Jasminum sambac*), Jathi Malli (*Jasminum grandiflorum*) and Mullai (*Jasminum auriculatum*), the peak flowering season is the hot weather period (March to Oct). Flowering ceases with low temperature. Generally, after Deepawali, less / no flowers are formed. November to December is the lean or non-flowering season in major growing districts like Madurai, Dindigul, Pudukkottai, Thanjavur, Villupuram and Tirunelveli. Due to low temperature and shorter day length, Jasmine plants remain semi-dormant during the non-flowering period, hence farmers adopt non-scientific pruning or local practices to manage the crop during the lean season, such as grazing the jasmine garden with sheep, tying and or wrapping the whole plant with banana pseudo stem sheaths. These local practices (ITK) of southern districts need to be validated in terms of flower production in comparison with standard pruning practice, i.e. pruning the bushes at 45-50 cm height from ground level during the last week of Nov (Malligai) or Jan (Mullai) every year. Studies on the application of growth regulators ( $GA_3$  or CCC), which may synchronize flowering and improve harvest scheduling and alternate or staggered pruning methods, such as dividing the comparison field into 3-4 blocks and pruning each block at 3-4 months intervals to ensure continuous flowering and reduce peak load, may be investigated.

**Awareness on the use of foliar spray** of 1% urea + 0.5%  $ZnSO_4$  or  $ZnSO_4$  @ 0.25% +  $MgSO_4$  @ 0.5% +  $FeSO_4$  @ 0.5% or biostimulants such as TNAU Panchagavya 3% + humic acid 0.4% at monthly intervals to maintain uniform flowering may be intensified.

**Standardization of protected cultivation for year-round Jasmine production and increasing number of demos needed:** As mentioned earlier, low temperatures, short day length, high rainfall and dew deposit during November–February led to flowering dormancy in Jasmine. Under the present situation, especially as labour, climate, and price fluctuations make jasmine cultivation increasingly challenging in Tamil Nadu, research on the protected cultivation of jasmine may be intensified. In

polyhouse or shade net houses, temperature and humidity can be regulated to maintain optimal levels for flowering (25–35°C, 60–70% RH). Light transmission can be managed using shade nets (35–50%). We might have observed that some of the Jasmine plants grown under shade or near the household are flowering during winter. Therefore, by protecting Jasmine plants from heavy rain, cold stress and dew deposit, especially in the early morning hours and night, it may be possible to get continuous vegetative and reproductive growth even in non-flowering months, *i.e.* make the jasmine plants not enter into dormancy, so flowering continues even in winter (Nov–Feb). Off-season flowers fetch 1.5–2 times higher price (Dec–Feb). ***More research efforts are needed in this direction.*** The Government of TN is promoting polyhouse jasmine cultivation. The structure has been demonstrated in Madurai, Dindigul, Krishnagiri, and Tirunelveli under TNAU trials or subsidized under NHM or MIDH / State Horticulture Mission (SHM-TN). ***This promotion efforts need upscaling.***

## 6) Challenges in Pest and Disease Management

- **Minor pests becoming major pests:** Hitherto unnoticed or minor pests like Rugose spiralling whitefly in coconut (as well as in banana), stem borer in pulses, mealy bug in sugarcane are posing serious threats to the crops.
- **Increasing incidence of major pests and disease:** Increasing incidence of major pests like Tea Mosquito Bug (*Helopeltis antonii*) in cashew in Panruti, Pudukkottai districts and White stem borer (*Xylotrechus quadripes*) in coffee in Nilgiris, Valparai and parts of Dindigul districts, Banana Pseudo stem borer and rhizome weevil, in Southern districts and coconut root wilt in Southern and Western Tamil Nadu is a cause of concern.
- **Pesticide residues in food grains, fruits and vegetables:** Indiscriminate application (inappropriate dose and chemicals) of pesticides in food crops, fruits and vegetables based on the information farmers got from pesticide dealers, neighbours, etc., led to a lot of health hazards. This is affecting not only the health of consumers but also increasing the cost of cultivation. Therefore, proper awareness among farmers and statutory control of selling pesticides without advice of Agri graduate or an Agriculture Officer of the State is needed.
- **Red wood ant:** The red wood ant or horse ant (*Formica rufa*) builds large soil mounds at the base of trees in the orchards or builds nests on the fruit trees. The ants are often attracted to fruit trees due to a symbiotic relationship with sucking pests like aphids, scale, and mealybugs present on the fruit trees. The ants eat the honeydew secreted by the sucking pests and, in turn, protect the sucking pests from natural predators. In fruit trees like mango, guava, sapota, citrus, etc., we may notice the red ant. They move actively on tree trunks and branches, forming visible trails. Colonies contain thousands of ants, making control difficult once established. Ant trails disturb pollinators like bees and butterflies, lowering pollination and fruit set. Colonies may injure flower buds and young fruits while constructing shelters or collecting honeydew. Red wood ants are aggressive biters. Their bites on humans cause pain, itching, and small pustules on human skin. Orchard workers and harvesters in Tamil Nadu face difficulty in pruning, spraying, or harvesting fruits, especially on infested trees. Therefore, controlling the sucking pest is a key step in controlling the ant and *vice versa*. ***Effective control measures and demo/awareness programmes are needed, which should integrate preventing ants from accessing the tree by blocking trunk access, controlling aphid populations, and creating a less inviting environment for ants.***

## 7) Challenges in Post-harvest Handling, Storage and Value Chain

- **Cold storage godowns:** Vegetables like Bhendi, Tomato, Brinjal, Radish, Drumstick, etc. need to be harvested periodically. Due to market glut, the produce is fetching a low price for a few weeks. If a cold storage facility is established at the village/block level, farmers may store their perishable items for a few days. The Government is supporting the establishment of a **cold storage /godowns** facility for keeping their perishable vegetables temporarily for a few days, before sending them to markets. ***Such a cold storage godown is limited in number or not present in the village or block level production cluster of important vegetables.***
- **Crop or produce specific standardization of cold storage facility:** The Department of Agriculture marketing has created a handful of cold storage vaults in Tamil Nadu. The Government of India is also promoting the establishment of post-harvest processing infrastructure through AIF. Two types of cold storage vaults (+ and – cold storage vaults) are present in Tamil Nadu, which can accommodate a wide range of crops/produce. ***Crop /produce specific standardization/protocol is lacking.*** In addition, the State has to create capacity building on the use of cold storage facilities. Many of the technologies of cold storage are not open or not available in the public domain/for businessmen/entrepreneurs. Perhaps, ***the next generation capacity building/training programmes should focus on value addition, use of cold storage facilities and export of processed products.*** To illustrate the benefit of cold storage, one businessman in the Dharmapuri district has procured mangoes at the end of the season, at a low price this year and stored them in the cold storage godown of the Government of Tamil Nadu. When the season was over and mango rate double in the markets he is selling the produce, thereby doubled his profit. This is the potential of a cold storage facility. ***This success story may be spread*** to other entrepreneurs, so that more users will come forward to avail the facility.
- **Poor drying, winnowing and grading:** Decades ago, when labour was easily available in plenty in rural areas, farmers used to make threshing yards in their field, dry their harvested produce, properly winnowed and bagged after removing shrivelled, light-weight grains. Such produce fetches a fair price in the DPC/RM/Mandis. However, ***due to labour shortage, these post-harvest operations are carried out improperly.*** Even machine-harvested produce is sent to DPC/RM/Mandis without proper drying and winnowing/grading. Such products are bought at a lower price. Farmers are paying an extra price for de-bagging their produce in DPC/RM/Mandis. Spoilage in DPC/RM is high due to poor drying.
- **Promoting cultivation and marketing/export of traditional paddy varieties through cluster approach:** Traditional or heritage or indigenous paddy varieties such as Ramanathapuram Chithiraikar, Mappillai Samba, Thooya Malli, Kaatu Yaanam, Kancheepuram idli rice, Karuppu Kavuni, Kitchili Samba, Mappillai Samba, Karuppu Kavuni, Seeraga Samba, Poongar, Kuzhiyadichan have growing demand both in domestic as well as in international markets (to Sri Lanka, the Middle East, and Malaysia). The Government of TN under the CMMKMKS scheme “*முதலமைச்சரின் மண்ணூயிர் காத்து மண்ணூயிர் காப்போம் திட்டம்*” is promoting cultivation of traditional paddy varieties. However, farmers who grow traditional varieties faces problems in the fields such as pests and disease (traditional varieties are often tall, with long crop duration (140–160 days), making them prone to pests like stem borer, leaf folder, BPH, and diseases like blast and sheath blight, its yields are relatively low (2–3 t/ha)

compared to 5–6 t/ha in improved HYVs), during milling process (most of the rural or modern rice mills are designed for milling short- to medium-grain, high-polish varieties. Long or slender grain traditional varieties break easily during milling, resulting in 15–30% broken rice loss. Husk to rice recovery is often <55% due to unsuitable machinery and outdated processing, and during marketing (as few farmers in a village grow traditional variety, traders are not coming to villages to buy the products, as no local De-husking/ milling units, the farmers often transport paddy to faraway places to process small quantities — increasing cost and reducing profit. ***If farmers wish to sell directly to the mills, the millers demand a minimum supply of 400 bags (of 60 kg) from that particular variety as the minimum processing quantity per lot in the modern mill is 400 bags.*** These issues may be addressed through the formation of a traditional variety grower cluster in the selected villages to get better bargains during marketing.

## 8) Challenges in Agriculture Marketing

- **Procurement-related issues:** According to the TN Planning Commission, 68% of agri households are unaware of the MSP (Minimum Support Price). More awareness is required. A second issue is that low procurement price offered for some commodities. For example, the Government of TN has recently increased MSP for paddy to ₹ 2,500/q for general varieties and 2,545/q for fine varieties. Farmers feel that this rate is insufficient, especially given high input cost inflation. In contrast, other States (Chhattisgarh) offer up to ₹3,100/q. In case of sugarcane, the procurement cost, including FRP+ State Government special incentive for the season 2025-26, is ₹3,500/ton. Farmers feel that this rate is lower when compared to rising labour and input costs. States like Punjab are offering ₹ 3910 to 4010/ ton.

Certain crops do not have direct procurement centres (DPC). For example, coconut and arecanut, but for which there has been pressing demand from the farmers' side to open DPC. The TANFED (Tamil Nadu Co-operative Marketing Federation Limited) has opened a copra procurement Centre in Vazhappadi (Salem Dt) in 2016, but it ceased its operation. The TN Government, in June 2025, announced the opening of a copra procurement Centre in Dharmapuri. The NAFED (National Agricultural Cooperative Marketing Federation of India Ltd.) is the nodal agency of the Government of India for copra procurement under the Price Support Scheme (PSS or MSP). The NAFED is procuring milling copra and ball copra, but **not the unhusked coconut. The NAFED centres are very limited in TN.** With regard to arecanut, **no DPCs are operational** at present, though farmers are clearly demanding them, especially in regions like Coimbatore.

- **Long-distance vegetable marketing:** Vegetable and flower cultivation and sending the produce to urban markets (Koyambedu, Dharasuram, Coimbatore, Madurai, Trichy, Salem markets) is increasing among young generation farmers. However, *the transport cost of long-distance marketing reduces their profit.*
- **Organic products:** The middleman takes a huge share of the price offered to the crop by the procurement agency /consumer, particularly for organic products.
- **Marketing desi chicken eggs:** Desi chicken eggs have increasing demand in urban areas. However, *there are some issues with the genuineness of the local chicken eggs and marketing.*
- **Regulated markets:** Few regulated markets (RM)/Mandis set up by the Government at the block level have been moved or merged with taluk-level RM due to operational reasons. Now, new production clusters are emerging in many blocks wherein crops new to the cluster are grown. *Farmers in the new production area are facing a marketing problem as RM/Mandis are not available.*
- **Value addition and marketing horse gram:** Horse gram (kollu) is a rabi crop & is cultivated in the hilly and tribal belts of Dharmapuri, Krishnagiri, Salem, Namakkal and Virudhunagar as this crop is a climate-resilient crop for drought-prone areas. However, its acreage is limited in this State compared to red gram and black gram. The Government is promoting minor millets and pulses under the National Food Security Mission (NFSM). This will become a forgotten crop in future generation agriculture. However, kollu (kollu rasam/kollu podi) is considered to have anti-obesity and diabetic-friendly properties. Sprouted horse gram flour, ready-to-cook mixes, and health powders have growing export potential in health food and nutraceutical

sectors, as well as in the health-conscious urban markets. *There is scope for GI tagging and selling as Dharmapuri, Krishnagiri Kollu in the supermarket/ export market.* There is no new or popular horse gram variety other than Paiyur 2. Organized procurement, value-chain development and processing units to boost farmer returns and linking to urban markets may boost this crop.

- **Buy-back arrangement:** Buy-back arrangement is getting popular in certain specific pockets of TN, and for certain crops. For instance, in Ariyalur & Perambalur, farmers cultivate medicinal crops like Coleus, Gloriosa, and Senna under buy-back agreements with pharmaceutical companies. Namakkal poultry farms promote maize cultivation under buy-back. Food processing industries tie up with banana farmers (Nendran & Red Banana varieties) for chips and export markets, giving farmers direct, assured purchase. Export firms in the Dindigul region enter into buy-back contracts with farmers for moringa pods, used in the UAE, Europe, and Singapore markets. Recently, a Kerala Farm has agreed to promote the cultivation and marketing of jackfruit in Perambalur district. Farmers are assured a local market and a good price. More such buy back arrangement is needed for this State.

## 9) Challenges in Mechanisation

- **Harvesting charges** in sugarcane and groundnut and **picking charges** in cotton have increased considerably in the State due to a shortage of agricultural labourers and increasing wages of migrant labourers. Mechanical harvest for cotton is not yet available. In the case of sugarcane, the mechanical harvesting charges went to ₹ 700 per ton from ₹ 550 / ton 7 years before, due to increasing diesel cost. In the case of paddy and maize, almost 80 % of the crop is being harvested using a combine harvester. The hiring charges are increasing year by year, due to increasing diesel costs and driver wages, which in turn increase the cost of cultivation. ***If the Government consider providing a diesel subsidy for a combine harvester, it will not escalate the cost of cultivation in the years to come and benefit a large number of farmers.***
- **Standardization of maize seed drill in clay soil:** Due to higher procurement price (> ₹ 2400/q), maize area in TN, particularly in Perambalur and Ariyalur districts, is increasing. In most places, seed-to-seed mechanization is adopted with a high success rate. In a few places, ***farmers experience germination problems if seeds are sown using a seed drill cum fertilizer applicator.***
- **Small-scale mechanization for pulses and oilseeds:** Groundnut is being harvested using a large machine in Gujarat, as a large area of land is planted with groundnut. But in the TN groundnut area is not available, and hence manual harvesting increases the cost of cultivation, besides the non-availability of labour. Therefore, small scale mechanical harvester needs to be evolved for groundnut and all pulses.
- **Retaining the talents of rural artisans:** To mould or reshape or sharpen or repair small farm tools such as spade, sickle, sprayer, etc., farmers are travelling long distances, which doubles the cost of repair, sometimes exceeding the product's original cost. The number of rural artisans, like blacksmiths, carpenters, sprayers/tractor workshop, available in villages is diminishing as they migrate to urban areas. The talented artisans may be provided with improved machinery and training, as well as support to open a modern workshop in the rural area itself, which benefits both the artisan and the rural farming community.

## 10) Challenges in Animal Husbandry and Fisheries Sector

- **Setting up of Dairy unit and Rabbit farming:** Rearing one or two milch animals has been an integral part of the livelihood in villages. The TN Government is supporting the purchase of cows through a loan sanctioned to the Women SHG. Schemes such as Aavin or TABCEDCO's (Tamil Nadu Backwards Classes Economic Development Corporation) Milch Animals Loan Scheme, District Cooperative Milk Producers Union Loan Scheme, Pradhan Mantri Mudra Yojana, etc., offer loans up to ₹ 1.20 lakhs for the purchase of **up to two milch** animals (including buffalo) with an interest rate of 6 or 7%. However, for those who wish to purchase 5-10 cows **for the setting up of a dairy unit in villages, limited financial support is available**. Lower interest rates will benefit the new entrepreneurs. Rabbit Farming in TN is profitable, but needs more promotional efforts.
- **Rabbit farming** in a backyard has several advantages, like very little space and investment requirement compared to cattle, goats, or poultry, and can be managed easily by women, youth, and small farmers. Rabbit meat is high in protein, low in fat and cholesterol, hence it can be marketed as a healthy meat option. Despite these advantages, rabbit farming is not picking up in the State due to low consumer preference for rabbit meat compared to chicken, mutton, or fish and the absence of a processing and marketing chain for rabbit meat and by-products. Nonetheless, **it has potential in urban niche markets, hill stations and restaurants**. Perhaps, separate schemes under TN Animal Husbandry Department, like TN's support for goat & poultry and inclusion/promotion under the National Livestock Mission (NLM) could help.
- **Low usage of roughages for urban milch animals:** The general feeding principle for milch animals recommends that the animal feed should contain 60-70% roughages (dry + green fodder) and 30-40% concentrates. For example, a 400 kg cow giving 10 litres of milk per day requires 14 kg dry matter per day or should be fed with at least 10 kg paddy straw or jowar straw per day. Milch animals reared in urban areas are not fed adequate roughages (paddy straw, jowar straw, etc.) due to the lack of availability of paddy straw in the peri-urban/urban area and problems associated with long-distance transport and storage of paddy straw. We have been seeing that cattle in urban areas often consume waste materials like plastics, papers, spoiled foods, which leads to indigestion, impaction, toxicity and poor milk hygiene. The Government may suitably assist the urban cattle farmers to get an adequate supply of paddy straw and jowar straw by assisting in the transport of roughages from paddy/sorghum cultivation areas and arranging storage of paddy / jowar straw in urban areas.
- **Fish farming in rural areas:** Fish farming in rural areas is picking up well in the State, as local demand is increasing for live fish. Faced with labour shortage and other problems, some paddy farmers are switching to fish farming in villages. However, **the initial cost of digging a pond add burden to such entrepreneurs**. New entrepreneurs face difficulty in getting institutional loans, as fisheries are still treated as a "secondary activity" by banks. This State Government-backed loan supports **inland fishing activities**, including constructing or developing fish ponds. Under this central scheme, Pradhan Mantri Matsya Sampada Yojana (PMMSY)- Inland Fisheries Subsidies, both the Central and State governments provide back-ended subsidies for fish pond construction and related inputs. The turnaround period has to be minimized. The State Government is assisting them, but **more awareness about these schemes among**

**rural entrepreneurs is required. Fish seeds are not available in nearby places,** and fish farmers are dependent on a few suppliers, located in faraway places. Many small farmers lack training in scientific aquaculture practices, feed management, water quality monitoring, and disease prevention.

- **Issues in seaweed farming: Ice-ice disease** is one of the most common and serious diseases affecting cultivated seaweeds, especially *Kappaphycus alverizii*, the most preferred species for seaweed farming among the coastal fishers/farmers. Triggered by environmental stress such as changes in salinity, temperature, light intensity, and nutrient deficiency, the disease reduces growth rate and or carrageenan yield or ultimately causes economic losses in commercial seaweed farming.

**Grazing of seaweeds by herbivorous fishes** is a serious challenge in seaweed raft culture systems, especially in coastal waters of India and Southeast Asia. This reduces economic returns, increases maintenance costs as farmers need to frequently re-tie seedlings, and leads to uneven growth across the raft. Effective management is needed to address these two issues.

Fish productivity in the pond is decreasing due to the quick spread of water hyacinth (*Eichhornia crassipes*) weed. Effective management is needed.

- **Management of fish and poultry wastes:** Out-dining habits during holidays and large-scale slaughtering and processing of broilers and fish, especially during Sunday, festival times, generates large quantity of poultry and fish wastes in the urban and peri-urban area. **Often these wastes/carcasses/ litter are dumped on road sides, street corners and on the bank of water bodies, leading to bad odour, environmental pollution, health hazards, an increase in the stray dog population, vis-à-vis accidents/dog bites.** If these wastes are collected by an effective means, a large number of products such as fish meal, fish oils, silage, organic manure, biogas, poultry manure, blood meal, feather meal, etc., may be generated. The ICAR-CMFRI (Central Marine Fisheries Research Institute, Cochin) and ICAR-CIFT (Central Institute of Fisheries Technology, Cochin) have developed technologies for fish waste utilization. Similarly, the ICAR-CARI (Central Avian Research Institute) and TANUVAS (Tamil Nadu Veterinary & Animal Sciences University) are working on waste utilization technologies. In Tamil Nadu, a few fish meal plants operate in Nagapattinam, Thoothukudi, and Chennai. Still, **a large proportion is discarded** in open, particularly in towns. Poultry farms such as Suguna and Venky's have their own Rendering plants (Feed manufacturing units), which convert carcass and slaughter waste into by-products like fats and protein meals, which can be fed as feed to poultry. **Technologies to convert these wastes into wealth are available, but collection and logistics remain weak points.** The Swachh Bharat programmes place emphasis on Waste-to-Wealth, but organized waste collection from towns and town panchayats, decentralized processing, and farmer/entrepreneur awareness are needed now.
- **Fish export standards:** Many fish export consignments face rejection due to **antibiotic residues, bacterial contamination,** or poor handling. International buyers demand strict **traceability,** which small farmers struggle to maintain. The lengthy procedures for getting MPEDA (Marine Products Export Development Authority) certification and EU/US approvals, and frequent tightening of EU/US food safety standards, creates compliance burden. Issues related to antibiotic residues, bacterial contamination and traceability gaps need to be addressed to promote exports of fish and fishery products.

- **Establishment of fodder seed nurseries at the taluk level:** After the introduction of cross-bred cows, the practice of allowing cattle for open field grazing is diminishing in rural areas. Farmers are interested to rise fodder crops on their lands. However, they have to travel long in search of seeds/ slips of fodder. *Therefore, it is essential to establish a fodder seed nursery at each taluk.*
- **Problems in Marine fisheries:** Unsustainable fishing practices and over-exploitation threaten marine resources. Therefore, scientific resource management through ranching, craft and gear regulations, fishing ban periods, and expansion of mariculture need to be promoted. Traditional fishers face declining catches and limited access to high-value fisheries. It is necessary to protect the livelihoods of traditional fishermen while enabling species-specific, sustainable fishing (*e.g.*, tuna, oceanic squids) by regulating fleet size, introducing modern technology, and providing training for long-distance voyages. Fishermen lack access to institutional credit, insurance, and organized support systems. Moreover, weak integration of fisheries with allied sectors limits socio-economic opportunities. Poor post-harvest handling and limited value addition reduce profitability and market potential. It is necessary to improve infrastructure for hygienic handling, cold chain, and processing, while promoting value-added fishery products for domestic and export markets. Expand credit, insurance, cooperatives, FFPOs, and entrepreneurship support.
- **Problems in Brackish water aquaculture:** Some of the challenges faced in Brackish water/ coastal aquaculture are the limited area and species diversity, underutilization of State fisheries ponds and infrastructure, poor water exchange due to blocked creeks/estuaries which reduces productivity, inadequate financial support and weak marketing of shrimp/fishes, shrimp farming not recognized as an agricultural activity thereby limiting benefits, limited scope for inland and low-salinity farming, etc. Some of the suggested solutions are the expansion of farming areas and promote species diversification by establishing finfish and mud crab hatcheries and nursery units to ensure continuous seed supply, repurpose and strengthen existing government ponds/infrastructure for aquaculture and fisheries development, ensuring year-round opening of bar mouths for uninterrupted water flow and efficient use of open water resources, facilitate institutional credit, crop insurance, promote domestic consumption, and develop organized marketing systems, granting farming status to aquaculture for subsidized electricity and disaster relief, promoting shrimp culture in inland low-saline waters and utilize saline soils effectively.
- **Problems in Inland capture and aquaculture:** Low productivity in reservoirs and weak governance of riverine fisheries, limited integration of aquaculture with farming systems, underutilization of community tanks for fish production, low domestic consumption of fish despite high nutritional value, etc. These issues may be addressed through adopting culture-based fisheries, strengthening reservoir governance, and involving inland fishermen in management, promoting integrated aquaculture–agriculture models to improve farmers’ income and nutritional security, enabling local bodies to manage and utilize tanks efficiently for fisheries development and conducting awareness campaigns and promoting fish as a healthy protein source to boost local consumption.

## 11) Challenges in the Application of Frontier Technologies / Cutting-edge Technologies in the Agriculture Sector

- **Crop Area Survey:** The TN Government has recently initiated digital Crop Survey (DCS), aiming to digitize and modernize crop area reporting. Crop-sowing data is captured by field-level officers or farmers using a mobile App. Land parcels are verified using GIS and GPS mapping. Sometimes, remote sensing or Satellite data is integrated for the validation of crop insurance claims. A lot of manual operations are involved in the DCS. **Digital crop survey using a drone may be explored or standardized.** Awareness among field-level staff on the use of digital devices is required.
- **Other areas:** The AI technology may be integrated with an automated weather station (AWS) to predict or **forecast the water requirement** of upland crops where well water/ground water is limited. The **cost of soil sample analysis**, especially micro nutrients, is high, and the Agriculture Department is facing financial problems in analyzing a large number of samples. Low-cost equipment, or a soil probe, is required for analyzing micro nutrients. **Mobile Scanner** may be developed for identifying nutrient deficiency in plants, like SPAD. **An AI-based mobile App to identify crop varieties** is needed. Mobile based irrigation **water quality testing kit (Sensor)** may be developed. It is time to develop a driverless power tiller for puddling operation.

## 12) Challenges in Agriculture Extension, Capacity Building and Entrepreneurship Development

- **High-tech training:** There is an increased need to train farmers and businessmen/entrepreneurs on the export potential of competitive crops. The APEDA is displaying the export potential of crops; this information is partial or delayed. Often, we are surprised to know the demand by listening to the export demand from friends involved in the export of agriculture and processed commodities or after hearing a lecture from an expert. Taking our small-scale commercial agriculture one step ahead into value addition, post-harvest processing, marketing and exporting our own produce to the international market will bring prosperity. Periodical publicity of demand, training, video clippings, YouTube videos, etc., will assist the new entrepreneurs greatly.
- **Opening of a dedicated Agri TV channel and Government YouTube Streaming Platform:** This is the need of the day to disseminate all agriculture technologies, including information on marketing, post-harvest processing, and value addition, which will help to reshape our traditional agriculture marketing pattern into a global competitor. Common people watch a YouTube channel that often carries unauthenticated/unverified claims/ information, which confuses farmers. On the other hand, a government run or supervised or supervised by a team of Experts in the field of Agri/Hort/AH/Fisheries/Agri marketing/ Agri Engineering will provide authentic information to the end users.
- **IPM:** Indiscriminate use of pesticides is increasing. The use of weedicide in field crops has been increasing in India. To use weedicide, many farmers forego intercrops. Vegetable farmers often use high doses of pesticides to deliver pest-free products in the markets. During the 1980s, IPM, which placed much emphasis on predators, parasitoids, intercropping, etc., lost its footing in the 2000s. **It is time to re-emphasize IPM practices throughout the State.**
- **Awareness of BMPs among fishers:** Many farmers lack awareness of Best Management Practices (BMPs) such as pond preparation, optimal stocking density, feeding regimes, and disease monitoring. Training on BMPs can reduce mortality, improve yields, and lower production costs. Fishers have a limited understanding of effluent discharge norms, site selection criteria, and sustainable harvesting practices. Campaign / Extension programs can help farmers adopt eco-friendly practices, comply with coastal regulations, and prevent habitat degradation.

## Part C

### Way Forward to Address the Challenges

Tamil Nadu remains one of India's strongest agrarian states—excelling in crop productivity, dairy, and fishery infrastructure. Yet, the slight downturn in 2024–25 highlights emerging vulnerabilities. Addressing MSP awareness gaps, improving procurement systems, enhancing climate-resilient infrastructure, and tackling input cost pressures are essential to sustain and protect rural livelihoods. This is possible through the coordination, convergence and implementation of programmes /schemes of the Central and State Government and disseminating technologies to the farmers and end users by the strong network of ICAR, SAUs, KVK, State line Departments, commodity Boards and financial institutions working in the State.

## Part D

### TN's Strength in Research and Extension Networks

- **The State has a fairly good NARS network** – 3 State Agricultural Universities (TNAU, TANUVAS, TNJFU), 3 ICAR Institutes-Main (ICAR-SBI, ICAR-CIBA, ICAR-NRCB), 12 Research Stations/ Centres of ICAR.
- **KVK network:** The State has 31 KVKs in total, except for 6 districts and 1 urban district (Chennai).
- **The TN State Department of Agriculture is having a strong extension network**- over 880 Agriculture extension centres, 24 Farmers training centres, 3 Horticulture-Diploma college and training centres, 76 agriculture engineering sub-offices, 1 agriculture marketing training Centre spanning over 38 districts in the State.
- **Tamil Nadu AAVIN network** (Tamil Nadu Co-operative Milk Producers' Federation Ltd.) is one of the largest milk cooperatives in India, with daily procurement of 35–40 lakh litres of milk, supported by 12,585 village-level societies and 19 district unions.
- The State has over 400 Farmers Producer Organisations (FPO) and over 6,000 inland fish farmers' groups.

## Part E

### VKSA - Action Plan: 2025-2030

#### 1) Viksit Krishi Sankalp Abhiyan (VKSA)-An introduction

The Viksit Krishi Sankalp Abhiyan (VKSA) /வேளாண்மை வளர்ச்சிக்கான பிரச்சார இயக்கம் is a pan-India agricultural outreach campaign of the Indian Council of Agricultural Research (ICAR) and the Ministry of Agriculture & Farmers' Welfare (M/o A&FW), Government of India, launched by the Hon'ble Minister of Agriculture and Farmers' Welfare, Shri Shivraj Singh Chouhan, on 29<sup>th</sup> May 2025. The campaign aims to ensure critical information related to agriculture and allied sectors, Government Schemes, etc. reaches farmer's doorstep ahead of the crop season (kharif/rabi/summer), through coordinated and participation of the scientists of ICAR institutes in the respective State, subject matter specialist (SMS) of KVKs in each district, Scientists of the SAUs, officials of the State line Departments (Agri/Hort/Agril. Engg/Animal Husbandry/Fisheries), commodity Boards, NSC, APEDA, MPEDA, NABARD, fertilizers and seed firms, FPOs, NGOs, etc. With better coordination, convergence of the programmes/schemes/activities of the line Departments, ICAR, SAUs, Commodity Boards, etc. and frequent farmers-scientist interaction, the VKSA will ensure that the agricultural technologies are reaching every nook and corner of the country.

#### Objectives of the VKSA:

- To create awareness among farmers about location-specific modern technologies related to major field crops and horticultural crops grown during kharif, Rabi and Summer season, farm mechanization, livestock management, fisheries and related technologies.
- To sensitize farmers about spurious, adulterated seeds, pesticides and fertilizers.
- To share knowledge of Scientists with farmers, farm women, rural youth and entrepreneurs on climate-friendly technologies, especially crop residue management, natural farming, agri-drone application, post-harvest management, value addition and export potential of crops and processed products.
- To promote sustainable, profitable, and climate-resilient agriculture, strengthen farmers' knowledge on input use efficiency, soil health, crop diversification, and value addition and bridge the gap between research, extension, and farmer adoption.
- To make farmers aware of various Central and State government schemes/ policies, recent declaration of GST benefits, National Pest Surveillance System (NPSS) and complaint redressal system to sort out farmers' problems and grievances.
- To collect feedback from farmers to formulate demand-driven research and to make scientific validation of the farmer-led innovations for out-scaling to other farmers.

#### VKSA activities include:

- Scientist-farmers meets, village level workshops & field visit and demonstrations.
- Technology exhibitions (seeds, drones, farm machinery, biostimulants, etc.).
- Awareness drives on schemes like PM Eng Dhan-Dhanya Krishi Yojan, PMFBY, PM-KISAN, e-NAM, MSP policies, National Pest Surveillance System (NPSS), Farmers' Grievances Redressal Mechanism, etc.
- Skill-upgradation and incubation training for FPOs, SHGs, and youth.
- Press/media coverage to spread awareness widely.

**Campaign period:**

- The VKSA *kharif* campaign was held from 29<sup>th</sup> May 2025 to 12<sup>th</sup> June 2025 across India, and the *rabi* campaign is scheduled during 3-18 Oct 2025 (postponed now).
- Each campaign spans over 15-16 days.

**Focus Areas include:**

- Improved Varieties & Seeds – High-yielding, stress-tolerant crops.
- Smart Inputs – Nano-fertilizers, bio-fertilizers, organic farming practices.
- Mechanization – Drone spraying, precision farming tools.
- Climate-Resilient Farming – Soil health, water-use efficiency, natural farming.
- Value Chain Development – Post-harvest management, processing, and export.
- Livestock & Fisheries – Productivity improvement, disease management, inland & cage aquaculture.

**Expected impact:**

- Enhanced awareness among farmers about the improved agricultural technologies
- Wider adoption of modern technologies.
- Reduction in the cost of cultivation and increase in farmers' income.
- Better awareness of Government schemes, subsidies, and export opportunities.
- Strengthening of farmers' groups, FPOs and entrepreneurship.
- Contribution to the goal of a self-reliant, globally competitive agriculture sector.
- Learning about grassroots innovations and farmers' feedback will help the NARS to strengthen demand-driven research and make policies of the Government of India and respective states more inclusive.

## **2) Team Formation for VKSA Rabi Campaign and Roles**

1. Dr. P. Govindaraj, Director, ICAR-Sugarcane Breeding Institute in Coimbatore, has been nominated as State Nodal Officer to coordinate the forthcoming campaign in Tamil Nadu *vide* F. No 13(7)/2025 Cdn (Tech) of the AGD (Coordination), ICAR, dt 14 July 2025. Dr. A. Velmurugan, ADG (S&WM), ICAR, New Delhi, was nominated as State Co-Nodal Officer *vide* F. No 13(7)/2025 Cdn (Tech) of the AGD (Coordination), ICAR dt 29 Aug 2025.
2. The Nodal and Co-Nodal Officers nominated by the ICAR in each State are responsible for planning and implementation of VKSA Rabi 2025 in the respective States. They will coordinate and mobilize the Scientists of ICAR Institutes for VKSA in the State.
3. The State Nodal Officers nominated by the DA&FW, New Delhi, will mobilize the State Department Officials of the respective States for support and involvement of district-level officers in the VKSA campaign.
4. The *modus operandi* for the VKSA Rabi campaign will be fixed by the ATARI, Hyderabad, in consultation with the TN State Nodal Officer and will be executed by the KVKs with the support of participating institutions.
5. As followed in the *kharif* VKSA campaign, the ATARI will arrange logistics, gather farmers and lead the VKSA *rabi* campaign in the State through KVKs situated in Tamil Nadu. The ATARI will coordinate with State Nodal and Co-Nodal Officers, ICAR Institutes, AUs, and State Departments for the formation of the teams and preparation of the route map, etc.
6. Tamil Nadu has 38 districts, but has 31 KVKs.

7. Seven districts in the State, namely, Chennai (fully urban district), Kancheepuram, Mayiladuthurai, Ranipettai, Thanjavur, Tirunelveli and Thirupathur, do not have KVK. The remaining 31 districts have one KVK each.
8. Each KVK will form 3 teams each, totaling  $31 \times 3 = 93$  teams in the State.
9. Each team will be led by one SMS (subject matter specialist) of the respective KVK.
10. Each team will have one SMS of KVK, one scientist of ICAR institute or SAU, one official from the State line Departments, and, wherever possible, one representative from the other participating institutes like the commodity boards, APEDA, IFFCO, FPO, drone operator, etc.
11. Officials of Agencies like IFFCO, MFL, Commodity Boards, banking / financial institutions like NABARD, FPOs, SHGs, Progressive Farmers, Agriculture/ Horticulture/Agril. Engg- PG students, RAWEP students, etc., will join the campaign depending on the availability of staff and other situations.

### 3) Number of Villages to be Visited & Farmers to be Contacted

1. Each team will visit one (if larger village) to three nearby villages (if villages are small and the number of farmers is lesser) in a district and conduct an awareness meeting in one village every day for 15 or 16 days in the forenoon of the campaign. In total, the entire team in Tamil Nadu will reach a minimum of **1,395 villages** in 31 districts, @ three villages per KVK per day x 31 districts or KVKs x 15 days. The maximum number of villages visited in a district during the 15-day campaign shall not exceed **4,000** (if 3 villages are visited by a team).
2. Each team will reach out to a minimum of 100 and maximum of **400 farmers** each day (depending on the weather particularly rain, farmers availability and other factors) covering a minimum of **9,300 farmers per day in Tamil Nadu** @ 100 farmers/team x 93 team and maximum number of farmers contacted will be around 37,000 per days in the whole State per day. The total number of farmers to be contacted during the 15-day campaign in the State will range from **~1.39 lakhs** (if 100 farmers are contacted per day) to **~5.80 lakhs** (if 400 farmers are contacted per day).
3. In the post-lunch session, each KVK or team will conduct farmers-scientists interaction meetings with selected/progressive farmers, *i.e.* focused group discussion (FGDs).
4. The target w.r.t. the number of Blocks and Villages to be covered in each VKSA Campaign, starting from Rabi 2025 to Kharif / Rabi 2026, is given below. In a nutshell, about 243 Blocks and 1395 to 1438 Villages in 31 districts of Tamil Nadu will be covered during Rabi 2025 campaign; about 311 Blocks and about 1395 to 1774 Villages will be covered during Kharif 2026 campaign.

S.No	District	Rabi 2025		Kharif 2026		Rabi 2026	
		Blocks	Villages	Blocks	Villages	Blocks	Villages
1	Ariyalur	6	48	6	45	6	48
2	Chengalpattu	5	48			5	48
3	Coimbatore	13	48	13	45	13	48
4	Cuddalore	14	48	5	45	14	48
5	Dharmapuri	8	48	8	45	8	48
6	Dindigul	8	48	12	45	8	48
7	Erode	14	48	14	45	14	48

8	Kallakurichi	5	48	5	45	5	48
9	Kanyakumari	9	48	17	101	9	48
10	Karur	8	48	8	45	8	48
11	Krishnagiri	4	48	8	45	4	48
12	Madurai	5	48	3	45	5	48
13	Nagapattinam	2	45	6	45	2	45
14	Namakkal	6	48	11	90	6	48
15	Perambalur	4	48	4	45	4	48
16	Pudukkottai	17	49	15	80	17	49
17	Ramanathapuram	3	48	41	44	3	48
18	Salem			15	140		
19	Sivagangai	11	48	11	45	11	48
20	The Nilgiris	4	48	4	45	4	48
21	Theni	8	48	8	45	8	48
22	Tenkasi	11	48			11	48
23	Thiruvallur	12	48	12	45	12	48
24	Thiruvannamalai	5	48	5	45	5	48
25	Thiruvarur	10	48	10	45	10	48
26	Thoothukudi	5	48	12	135	5	48
27	Tiruchirappalli	14	48	18	133	14	48
28	Tiruppur	9	48	10	135	9	48
29	Vellore	8	48	10		8	48
30	Villupuram	10	48	9	60	10	48
31	Virudhunagar	5	48	11	46	5	48
	<b>Total</b>	<b>243</b>	<b>1438</b>	<b>311</b>	<b>1774</b>	<b>243</b>	<b>1438</b>

5. The KVK or the team will take care to avoid visiting villages covered in the previous VKSA campaign, so that the VKSA team will visit as many villages as possible in a district during the 5-year campaign period.

6. The blocks / Taluks and villages to be covered during the Rabi 2025 campaign in TN are listed below.

Blocks	Village	Name of the Villages
<b>1. Ariyalur District</b>		
T. Palur	10	Edankanni, Erugaiyur, Nayaganipriyal, Udayanatham, Chinnthamani, Kodankudi, Porpothinthanallur, Thenkatchiperumalnatham, T. Palur, Kaduvettankuruchy
Jayankondam	11	Kazhumangalam, Eravankudi, Amanganthondi, Angarayanallur, Thularankuruchy, Thandalai, Utkottai, Kazhuvanthoni, Katchiperumal, Kallathur, Pitchanur
Andimadam	6	Andimadam, Rangium, Anikuthichan, Kavarapalayam, Koovathur, Vilanthai
Sendurai	6	Azaveerankudikadu, Kulumur, Periyakuruchi, Manapathur, Maruvathur, Ayanthathanur
Thirumanur	6	Vetriyur, Melapalur, Sathamangalam, Poondi, Keezhapalur, Keelaiyur
Ariyalur	9	Nagamangalam, Kallankuruchy, Rayampuram, Thelur, Periyanaalur, Thamaraikulam, Vilankudi, Reddipalayam, Ootakovil
<b>2. Coimbatore District</b>		
Sarkarsamakulam	6	Keeranatham, Kalipalayam, Athipalayam, Thottipalayam, Vellanaipatty, AS Kulam
Perianaikenpalayam	3	Selvapuram, Kasthurinaikenpalayam, Naikenpalyam
Annur	6	Allapalayam, Ellapalayam, Masagoundenpalayam, Sengapalli, Kunnathur, Vadavalli

Karamadai	6	Kalampalayam, Athikdavu, Pethikuttai, Odanthurai, Nellithurai, Muthukallur
Madukkari	3	Patchapalayam, Valukuparai, Palathurai
Sulur	3	Athapagoundanpudhur, Kalangal, KaravalliMathapur
Thondamuthur	3	Moolapalayam, Vellimalaipattinam, Pulagoundapudhur
Sultanpet	3	Varapatti, Lakshiminaikenpalayam, Pacharpalayam
Kinathukadavu	3	Seniyur, Sattakalpudhur, Sokkanur
Pollachi South	3	Samathur, Veeralpatti, Kanjapatti
Anamalai	3	Thenchithur, Somanthurai, Kariyanchettipalayam
Madukkarai	3	Arisipalayam, Bodipalayam, Kumarapalayam
Pollachi North	3	Achipatty, Devampadi, Vadakkipalayam
<b>3. Cuddalore District</b>		
Vridhachalam	6	Aladi, Pallipattu, Mathur, Rubanarayananallur, Puliur, Kattuparur
Kammapuram	6	Arasakuli, Kunankurichi, U. Agaram, Vadakkuvellur, U. Mangalam, Ammeri
Mangalur	3	Kazhuthur, Thondakuruchi, Mangalur
Nallur	3	Periyanesalur, Kattumayilur, Veppur
Srimushnam	3	Palayamkottai Melpathy, Solatharam, Kaanur
Kattumanarkoil	3	Ma Mangalam, Agarpudhur, Sithamallai
Komaratchi	3	Veeranatham, Elleri, Thirunaraiyur
Melbhuvanagiri	3	Alichikudi, Miralur, Boothavarayanpettai
Keerapalayam	3	Pannapattu, Perungalur, Mugaiyur
Parangipettai	3	B. Mutlur, Ayipuram, Adhivaraganallur
Cuddalore	3	Seddapalayam, Annavalli, Karaikadu
Kurinjipadi	3	Karunguzhi, Kolakkudi, Maruvai
Annagramam	3	Sanniyasipettai, Keelarungunam, Chitharasur
Panruti	3	Vegakollai, A.P. Kuppam, Azagappasamundiram
<b>4. Dharmapuri Dt</b>		
Pennagaram	6	Gettur, Panaikulam, Poonjolai, Narasingapuram, Rengapuram, Periyur
Harur	7	Vallimadunai, Ponneri, Kalladipatti, Settrapatti, Keerapatti, H. Agraharam, Parayapattypudhur
Pappireddypatti	3	Molayanur, Aghikarapatti, Pallipatti
Morappur	3	Echampadi, Agraharam, Maniyampadi
Dharmapuri	7	Noolahalli, Semmandakuppam, Vathalmalai, Thippireddihalli, Konankinaikanahalli, Adhagapadi, Ungarahalli
Nallampalli	9	Pangunatham, Bolanahalli, Konenegihalli, Palavadi, Mittathinnahalli, Nathahalli, Thavaihalli, Balajangamanahalli, Echanahalli
Palacode	7	K. Chettihalli, Somanahalli, Moongapatti, Pappinaickanahalli, Pavili, Belanahalli, Javthalar
Karimangalm	6	Adilam, Bantharahalli, Baisuhalli, Murukkampatti, Thindal, Hanumandhapuram
<b>5. Dindigul District</b>		
Vadamadurai	7	Velvarkottai, Sukkappatty, Thennampatti, Morepatty, Kanapadi, Komberipatti, Velayuthampalayam
Nilakottai	7	Pallapatti, Pachamalayankottai, Ramarajapuram, Pillayarnatham, Mariyaepalayam, Koolampatty, K. Thoppupatti
Oddanchatiram	5	Parumarathupatty, O.M. Ayyampalayam, Kollapatty, Kapiliapatty
Aathoor	10	0, Perumalkovilpatty, Gandhigram, Oothupatty, Chinnagoundanpatty, Palayankottai, Ayyampalayam, Indira Colony, Veerasikkampatti, Ayyankottai
Reddiyarchatiram	6	Dharumathampatty, Gurunathannaickanur, T. Pannaipatty, Neelamalaikottai, Alagupatty, Ammapatty
Vedasandur	5	Vellampatty, E. Chitoor, Pudhur Road, Srirampuram, Thattarapatty

Sanarpatty	6	Avilipatty, Thavasimadai, Marunoothu, Thimmanallur, Kosavapatty, Anjukulipatty
Natham	2	Puthur, Sirankaatupatty
<b>6. Erode District</b>		
Kodumudi	6	Ichipalayam, Anjur, Avudaiyarparai, Kongadaiyanpalayam, Nagama Naikkanpalayam, Elunoothimangalam
Perundurai	3	Pappampalayam, Polanaikkanpalayam, Thingalur
Erode	3	Puthurputhupalayam, Koorapalayam, Kathirampatti
TN Palayam	3	Nanjaipuliampatti, Mothur, Kolathukadu
Anthiyur	3	Kollapalayam, Sembulichampalayam, Nagalur
Bhavani	3	Varadhanallur, Sanyasipatti, Thalakulam
Ammapet	3	Kannapalli, Kesarimangalam, Mathur
Sathy	3	Ukkaram, Makkinakombai, Sadhumugai
Gobichettipalayam	6	Vellalpalayam, Ayalur, Pariyur, Alukkuli, Kullampalayam, Modachur
Chennimalai	3	Sirukolinji, Basuvapatti, Kupichipalayam
Bhavanisagar	3	Uthandiyur, Rajan Nagar, Pungampalli
Talavadi	3	Thingalur, Talamalai, Iggalore
Modakurichi	3	Poonthuraismur, Enjampalayam, Kulavilakku
Nambiyur	3	Kurumanthur, Olalakovil, Polavapalayam
<b>7. Chengalpattu District</b>		
Thirukazhkundram	10	Pudupakkam, Korapattu, Pakkam, Amanapakkam, Punnappattu, Mullikolathur, Adavilagam, Elumichampattu, Pandur, Nallur
Madhuranthagam	10	Janakipuram, Meyyur, Kunnathur, Sithandi, Viralur, Arungunam, Gendirachery, Nallur, Padalam, Vettur
Chitamur	15	Irumbuli, Periyakalakkadi, Pondur, Vannianallur, Arapedu, Essur, Perambakkam, Puthur, Vedal, Sonnambedu, Indalur, Kalpakkam, Puthirankottai, Sirumailur, Amanthangaranai
Lathur	10	Siruvangunam, Nerkunapattu, Anaikattu, Paramankeni, Paramesvaramangalam, Neelamangalam, Perumbakkam, Vadakkuvayalur, Thiruvathur, Aakkinampattu
Acharapakkam	3	Thenpakkam, Puragal, Orathi
<b>8. Kanyakumari District</b>		
Agastheeswaram	6	Karkad, Andarkulam, North Thamaraiikulam, Nalloor, Kulasekarapuram, Eravipudur
Thovalai	10	Shanmugapuram, Keerkulam, Esanthimanagalam, Puliyanvillai, Rethinapuram, Arumanalloor, Thovalai, Udayadi, Erachakulam, Gnam
Kurunthancode	6	Nettacode, Manavalakurichi, Melapuruvillai, Lekshmpuram, Villukuri, Kallukootam
Thuckalay	6	Muthalakurichi, Appattuvillai, Kolenvillai, Karavillai, Kappirarrai, Maruthurkurichi
Killiyur	3	Karungal, Palur, Mullankinavillai
Rajakkamangalam	8	Parakkai, Ganapathipuram, Kaniyakulam, Puthalam, Vembanoor, Putheri, Melakrishnanaputhur, Elluvillai
Thiruvattar	3	Cherukole, Aruvikarai, Yettacode
Melpuram	3	Malayadi, Maruthancode, Manjalumoodu
Munchirai	3	Arudesam, Methukumal, Vavarai
<b>9. Karur District</b>		
Krishnarayapuram	7	Panpapatti, Mayanur, Pothuravathanpatti, Pappakkapatti, Veeriyapalayam, Shivayam, Balrajapuram
Kadavur	15	Papayambadi, Varavanai, Mullipadi, Valvarmangalam, Thennilai, Vadavambadi, Pannapatty, Sembianatham, Tharagampatti, Aadhanur, Vellapatti, Muthurenganpatti, Kadavur, Keelapaguthi, Mathagiri
Thogamalai	3	Chinniyampalayam, Kalugur, Pillur
Kulithalai	4	Poyyamani, Inungur, Thimmampatti, Vathiyam

Thanthoni	6	Nanniyur, Kombupalayam, Kadambankurichi, Thirukattuthurai, Manmangalam, N. Pugalur
Aravakurichi	3	Venjamangoodalur, Esanatham, Ammapatti
K. Paramathi	9	Thokkupatti, Punjakalakurichi, Anjur, Elavanur, Soodamani, Monjanur, Chinnadharapuram, Nadandhai, Kodanthur
Manmangalam	1	Melapalayam
<b>10. Krishnagiri District</b>		
Krishnagiri	15	Kammampalli, Sembadamuthur, Thippanapalli, Moramadugu, Peththathaapalli, Mekalachinnampalli, Gooliam, Jinjupalli, Sokkaadi, Kallukurukki, Baiyanapalli, Kondepalli, Chikkapoovathi, Velagalhalli, Devasamuthiram
Kaveripattanam	20	Avathavadi, Thimmapuram, Paiyur, Gundalapatti, Thalihalli, Maruderi, Penneswaramadam, Vilangamudi, Malaiyandahalli, Kaveripattinam, Chaparthi, Erumampatti, Veeramalai, Velampatti, Sundekuppam, Errahalli, Mittahalli, Marichettihalli, Agaram, Nedungal
Bargur	10	Santhoor, Kandhikuppam, Jagadevi, Veppalampatti, Madepalli, Anchoor, Balinayanapalli, Pochampalli, Achamangalam, Mahadevagollahalli
Veppanapalli	3	Kundarapalli, Kurubarapalli, V. Madepalli
<b>11. Madurai District</b>		
Madurai East	11	Edayapatti, Isalani, Karseri, Sakkudi, Elamanur, Kadaikinaru, Karuppayurani, Tirumohur, Elangiyendal, Andarkottaram, Sakkimangalam
Melur	7	Panangadi, Navinipatti, Kottanathampatty, Kurichipatti, Amoor, E. Malampatti, Pathinettankudi
Madurai west	9	Petchikulam, Vagaikulam, Adalai, Podumbu, Vairavanatham, Ambalathadi, Thenur, Vayaloor, Ariyur
Thiruparankundram	9	Panaiyur, Valaiyankulam, Paraipathi, Silaiman, Sholankuruni, Perunkudi, Periya Alankulam, Samanatham, Soorakkulam
Alanganallur	12	Athanoor, Vadugapatti, Thanichiyam, Achampatti, Alagapuri, Thandalai, Chinnailanthaikulam, Pannaikudi, Muduvarpatti, Maniyanji, Kondayampatti, Vavidamaruthur
<b>12. Nagapattinam District</b>		
Thirumarugal	22	Narimanam, Gopurajapuram, Marungur, Keelathanjavur, Kuthalam, Virkudi, Kattumavadi, Ediyathankudi, Uthamacholapuram, Karaiyur, Thirumarugal, Pillali, Ervancheri, Agarakonthagai, Seeyathamangai, Panangudi, Valkudi, Kottarakudi, Thirupayathangudi, Kanganancheri, Kothamangalam, Seshamoolai
Kilvelur	23	Kohoore, Anaimangalam, Athipuliyur, Eluppur, Venmani, Kakkazhani, Anthakudi, Venkidangal, Okkur, Kurumanankudi, Eravanchery, Pattamangalam, Erukkai, Serunallur, Therkupanaiyur, Vadakarai, Thevur, Kurukkathi, Koothur, Radamangalam, Manallur, Sigar, Anakudi
<b>13. Namakkal District</b>		
Mohanur	9	Ladduvadi, Kutlamparai, Andapuram, Aniyapuram, Kalipalayam, Arur, Tholur, Pettapalayam, Mettupatty
Erumapatty	8	Vazhavanthi, Pudukkottai, Reddipatty, Kavakkarapatty, Singiliyankombai, Sivanayakkanpatty, Konangipatty, Pottireddipatty
Sendamangalam	4	Uthirakidikaval, Pallipatty, Nadukombai, Melapatty
Namagripet	2	Pachudayampalayam, Perumagoundampalayam
Rasipuram	13	Chandrasekarampuram, Bodinayakkanpatty, Murungapatty, Koonavelampatty, Goundampalayam, Singalandapuram, Muthukalipatty, Kurukkapuram, Kanagabommampatty, Anaipalayam, Molapalayam, Kakkaveri, 85R Komarapalayam
Vennandur	12	Kallankulam, Minnakkal, Palanthinnipatty, Mathiyampatty, R. Pudupalayam, Nachipatty, Alavaipatty, Thottiyapatty, Moolakkadu, Ponparappipatty, O. Sowdapuram, Akkaraipatty
<b>14. Perambalur District</b>		

Perambalur	12	Siruvachur, Ammapalayam, Vadakku madhevi, Nochiyam, Ayyalur, Pommanapadi, Koneripalayam, Pudhunuvalur, Kalpadi, Kalarampatti, Keelakarai, Velur
Alathur	12	Varagupadi, Therani, Kottarai, Kulathur, Siruganpur, Aynapuram, Athanur, Timmur, Kurumbapalayam, Kolakkanatham, Koothur, Sillakudi
Veppur	12	Athiyur, Sithali, Tirumandurai, Murukkankudi, Kizhamathur, Perali, Pennakonam, Sirumathur, Ogalur, Sirukudal, Aduthurai, Ponnagaram
Veppanthattai	12	Periyavadagarai, Ayanperaiyur, Pasumbalur, Vengalam, Pandagapady, V. Kalathur, Thiruvalandurai, Udumbium, Venbavur, Agaramseekur, Pimbalur, Periyampalayam
<b>15. Pudukkottai District</b>		
Thiruvarangulam	2	Sendakudi, Kovilur
Thiruvarnagulam	1	Vadakadu
Thruvarangulam	10	Meikalpatti, Nallur, Keeramanagalam, Thoppupatti, Kummangulam, Vengidakulam, Arasampatti, Malavarayanpatti, Manjanviduthi, Pachikkottai
Arimalam	2	Perungudi, Mirattunilai
Ponnamaravathi	3	Varpattu, Alavayal, Koppanapatti
Annavasal	2	Ilupur, Melur
Ghandarvakottai	1	Perambur
Avadaiyarkoil	1	Perunavalur
Viralimalai	9	Avur, Sengalakudi, Neerpalani, Malaikudipatti, Mandaiyur, Pakkudi, Venmani, Vangarampatti, Sengathankuruchi
Ponnamaravati	1	Idaiyathur
Arantangi	4	Paravakkottai, Melamangalam, Aliyanilai, Mookudi
Aranthangi	1	Avanathankottai
Pudukkottai	2	Varappur, Pudukkottai
Karambakudi	5	Ambukoil, Palayapatti, Puduviduthi, Pathikadu
Gandarvakottai	1	Nerkuppai
Kunnandarkoil	3	Minnathur, Pallathupatti, Andakulam
Ghandarvakottai	1	Veeradipatti
<b>16. Ramanathapuram District</b>		
Kamuthi	16	Kottaiyur, KM Kottai Colony, Neeravi AD Colony, N. Veppangulam, C. Karisalkulam, N. Valasubramaniyapuram, Gopalapuram, Ayyanarkulam, Indira Nagar Colony, Korappallam, Rettaipuli, Kavadiyatti, Ramasampatti, Keelaramanathi, Merkuusilangulam, Pullvaikkulam
Kadaladi	16	Muthuramalingapuram, Kadugusandhai Sathiram, Meenagudi A D Colony, Vellangulam, Kidakulam, Orivayal, Panaikulam, Keelaselvanur, Kottaiyendal, Melaselvanur, Kadaiyankulam, N. Pudhuvendal, Pappankulam, Pasumponnagar, S. Alangulam, Therankulam
Thiruppullani	16	Vadavalankulam, Nallangudi, Melaseethai, Akkalur, Kalimangundu, Koraiyattam, Thathanendhal, Mallal, Methalodai, Uthirakosamangai, Mayakulam, Utharavai, Sethukarai, Chinnadivalasai, Thillaiyendal, Nallirukkai
<b>17. Sivagangai District</b>		
Sakottai	9	Periakottagudi, Ariyakudi, Sengathangudi, Pirambuvayal, Amaravathiputhur, Jeyankondan, Mithravayal, Mathur, Ambakudi
Kallal	10	Siravayal, S.R. Pattinam, Kandramanickam, Koothalor, Nachiyarpuram, Sembanur, K. Athangudi, Thattati, Keezhapattamangalam, Veliyathur
Thirupattur	7	Ranasingapuram, Alampatti, Vadamavali, Thiruudayaratti, Karuppur, Kottaiyiruppu, Thirukostiyur
Kalayarkoil	8	Gowripatti, Erivayal, Kanjipatti, Muthurvaniyangudi, Melamarungoor, Mudikarai, Maranthai, Silukapatti
Manamadurai	3	Chinnakannur, Annavasal, Karisalkulam

Ilayangudi	2	Salaigramam, Muthur
Thiruppuvanam	2	Konthagai, Keezhadi
Singampunari	2	Sivapuripatti, Melapatti
Kannangudi	2	Pusalagudi, Theralappur
Devakottai	2	Keezhauchani, Mupaiyur
Sivaganga	1	Idaiyamelur
<b>18. The Nilgiris District</b>		
Coonoor	12	Yedappalli, Bandishola, Hubbathalai, Selaas, Kodamalai, Beratti, Kethorai, Thudormattam, Mallikorai, Jegathala, Denalai, Kolakambai
Gudalur	12	Nanthatti, Uppati, Devarsolai, Killur, Nadugani, Kolapalli, Kuchumuchi, Thorapalli, Nelliyalam, Pantalur, Bithrkadu, Allur
Kotagiri	12	Billikombai, Deenatti, Kambatti, Aravenu, Kattabettu, Masakkal, Morigal, Kolikarai, Miliden, Kookalthorai, T Manihatti, Thattapallam
Ooty	12	Ebbanadu, Kadanadu, Bikkatti, Nanjanadu, Annikorai, Ullathi, Mulligoor, Kuruthukuli, Denadukambai, Adasholai, Yedakadu, Kelkowatty
<b>19. Theni District</b>		
Chinnamanur	6	S. Alagapuri, Thimminayakkanpatti, Kallapatti, Sankarapuram, Erakkottaipatti, Pottipuram
Theni	11	Srengapuram, Govindhanagaram, Aranmanaipudur, Ambasamuthiram, Thadichery, Gopalapuram, Pallapatti, Nagalapuram, Thappukundu, Sivalinganayakanpatti, Vengadasalapuram
Aundipatti	13	Rajadhani, Kothapatti, Mottanuthu, Pitchampatti, Kathirnarasingapuram, Kothaluthu, Koppayampatti, Maravapatti, Amachiyapuram, Kanniyappapillaiipatti, Okkarapatti, Marikundu, Sithayagoundanpatti
K-Mayiladumparai	3	Mayiladumparai, Manthisunai-Moolakadai, Muthalamparai
Periyakulam	3	Lakshmipuram, Thamaraiikulam, Kailasapatti
Bodinayakkanur	6	Palarpatti, Silamalai, Kondalnayakkanpatti, Maniyampatti, Dombucherry, Silamarathupatti
Uthamapalayam	5	T. Bomminyakkanpatti, T. Mettupatti, U. Ammapatti, Malingapuram, U ambasamuthiram
Chunnamanur	1	Ellapatti
<b>20. Thiruvallur District</b>		
Tiruvallur	6	Ayyathur, Ikkadukandigai, Vishnuvakkam, Karikalavakkam, Punnappakkam, Sivanvoyal
Kadambathur	6	Mappedu, Videiyur, Perambakkam, Irulancheri, Kondancheri, Pudupettai
Poondi	3	Vellathukottai, Ramanjeri, Pattaraiperumbudur
Minjur	6	Medhur, Medhur, Illupakkam, Arasur, Panapakkam, Guduvancheri
RK pet	3	Vellathur, Ayyaneri, Aswarevanthapuram
Gummidipoondi	3	Kannankottai, Nelvoy, karadipudur
Sholavaram	3	Mafuskhanpettai, Arumandai, Gnayiru
Ellapuram	3	Athangikavanoor, Kilambakkam, Vengal
Tirutani	6	Sathranjeyapuram, V.K.N. Kandigai, Mathur, T.C. Kandigai, Velancheri, Sirugumi
Tiruvalangadu	3	Kanchipadi, Arcotkuppam, Nabalur
Poonamallee	3	Tiruninravur, Thandurai, Voyalanallur
Pallipet	3	Kesavarajakuppam, Punniyam, pollalakuppam
<b>21. Thiruvannamalai District</b>		
Vembakkam	12	Perungattur, Rantham, Natteri, Kuthanur, Kodaiyambakkam, Vadamanapakkam, Brammadesam, Azhividaihangai, Hasanamapet, Moranam, Ariyur, Thennampattu
Cheyar	12	Parasur, Eraiyur, Kalanipakkam, Korukkai, Mukkur, Thozhupedu, Naval, Kaduganoor, Madhurai, Thandarai, Vakkadai, Kilpalandai

Anakkavoor	12	Cheyyatraivendran, Thavasi, Arasur, Anapathur, Vellai, Sengadu, Erumaivetti, Thenthandalam, Anakkavoor, Irungal, Perumbalai, Chithamoor
Vandavasi	6	Mummuni, Ariyathur, Vengundram, Villangadu, Ammayapattu, Vizudupattu
Pernamallur	6	Injimedu, Villanallur, Chandrambadi, Anaibogi, Alliyandal, Ayalavadi
<b>22. Thiruvarur District</b>		
Needamangalam	9	Edamelaiyur Kandiyar Street, Kalangimedu, Sonapettai, Edamelayur Nadu Street, Rayapuram, Chettichathiram Ayyampettai, Edamelayur West, Poovanoor, Vaduvur Agraharam
Valangaiman	6	Pappakudi, Chandrasekarapuram, Poonayiruppu, Therkkupattam, Poonthottam, Vadakkupattam
Koradacherry	6	Thirukkalambar, Ammaiappan, Sellur, Thirukannamangai, Elaiyur, Kattur
Mannargudi	6	Neduvaakkottai, Maravakkadu, Edayar Natham, Serankulam, Ashesham, Vadapathi
Kottur	6	Adhichapuram, Kottur Thottam, Nemmeli, Kottur, Malavarayanallur, Cheri
Nannilam	3	Annaikupam, Salippery, Moolangudi
Thiruthraipoondi	3	Vilakudi, Thiruvalansuli, Keerakkalur
Thiruvarur	3	Adiyakkamangalam, Alivalam, Palavanakudi
Muthupettai	3	Ariyalur, Edaiyur, Vadasangenthi
Kudavaasal	3	Kadalangudi, Koondhalur, Sarguneswarapuram
<b>23. Thoothukudi District</b>		
Thoothukudi	9	Therkkusilukkanpatti, Keelathattaparai, Servaikaranmadam, Vadakkusilukkanpatti, Korampallam, Mullakadu, Melathattaparai, Ayyanadaippu, Kulayankarisal
Ottapidaram	12	Mullur, Kulasekaranallur, K. Thalavaipuram, Kodiyankulam, Kollambarambu, Araikulam, Parivallikottai, Kellakottai, Chandiragiri, Jambulingapuram, Malaipatti, Kothali
Alwarthirunagari	6	Sethukkuvaithan, Alagappapuram, Suganthalai, Angamangalam, Varandiavel, Nalumavadi
Karunkulam	9	Thathankulam, Vittilapuram kovilpathu, Aligudi, Therkku Karaseri, Vittilapuram, Vasavappapuram, Vallakulam, Muthalamkurichi, Keela puthaneri
Srivaikundam	12	Manjalneerkayal, Thirupannichettikulam, Tholappan Pannai, Umarikadu, Kovankadu, Siruthondanallur, Padmanabamangalam, Valavallan, Korkai, Soolaiyaikal, Srimoolakarai, Mangalakurichi
<b>24. Tiruchirappalli District</b>		
Andanallur	6	Posampatti, Perugamani, Perur, Kulumani, Periyakarapur, Andanallur
Manachanallur	3	Irungalur, Manpidimangalam, Ayyampalayam
Manikandam	3	Allithurai, Mekkudi, Navalurkuttapattu
Vaiyampatti	3	Inampudur, Pudukkottai, Pudevadi
Pullambadi	3	Punjaisengenthi, Peruvalapur, Varakuppai
Musiri	3	Seventhalingapuram, Perur, Thandalaiputhur
Manapparai	3	Vadugapatti, Vengai kurichi, Malaiyadipatti
Lalgudi	6	Sembarai, Adikudi, Tirumanamedu East, T. Kalvikudi, Tirumanamedu West, Maruthur
Thiruverumbur	3	Solamadevi, Arasankudi, Natarajapuram
Marungapuri	3	Ayanpudupatti, Kodumbapatti, Kannukuli
Thathaiyankarpettai	3	M.Pudupatti, Valaiyedupu, Thumbalam
Uppliyapuram	3	E. Baderpettai, Sirunavalur, Alathudaiyanpatti
Thottiyam	3	Alagarai, Manamedu, M. Kalathur
Thuraiyur	3	Pagalavadi, Ponnusangampatti, Veeramachanpatti
<b>26. Tenkasi District</b>		

Keelapavoor	6	Gunaramanallur, Thuthikulam, Kurumbalaperi, Kaluneerkulam, V. K. Pudhur, Sivagurunathapuram
Tenkasi	6	Kottakulam, Thenpothai, Meenatchipuram, Mathalamparai, Vallam, Puliur
Kadayanallur	6	Duraisamyapuram, Poigai, Valasai, Velayuthapuram, Achampatti, Urmelalagian
Kadayam	6	Govindaperi, Pulavanoor, Katheripatti, Asirvathapuram, Ramalingapuram, Muppuliyoor
Kuruvikullam	3	Vellakulam, Umaiyathalaivanpatty, Thiruvenkadam
Sankarankovil	3	Kuvalaikanni, Perumpathur, Punnaivanam
Melaneelithanallur	3	Maruthankinaru, Melaneelithanallur, Naduvakurichi Major
Shenkottai	5	Kampuli, Bagavathipuram, Vayakattu Colony, Seevanallur, Mattuchinanpoigai
Alangulam	3	Kuthapanchan, Pudupatti, Sivalarkulam
Vasudevanallur	6	Gudalur, Ariyur, Sanganaperi, Ullar Thalavaipuram, Naranapuram, Therkuchathiram
Shenottai	1	Poolankudiyiruppu
<b>27. Tiruppur District</b>		
Pongalur	9	Kattur, Avinashipalayam, Kallipalayam, Pongalur, Kethanur, Vadamalaipalayam, Madhapur, Vavipalayam, Elavanthi
Uthukuli	6	Chettykuttai, Sengapalli, Kuruchi, Muthampalayam, Valayapalayam, Vadamugam Kangeyampalayam
Kangeyam	9	Thammareddipalayam, Pappanni, Marudurai, Vattamalai, Palayakottai, Maravampalayam, Kaadayur, Kuttapalayam, Alambadi
Gudimangalam	3	Aathukinathupatti, Poolavaadi, Virugalpatti
Dharapuram	9	Thalavaipatinam, Govindhapuram, Thoppampatti, Uthuppalayam, Chinnapudur, Varappalayam, Veerachimangalam, Madthupalayam, Nandhiyampalayam
Kundadam	3	Jothiyampatti, Mandavanampalayam, Velayuthampalayam
Moolanur	3	Mulanur, Ponnivadi, Mulayampoondi
vellakoil	3	Mettupalayam, Mangalapatty, Poomandanvalasu
Vellakoil	3	Pachapalayam, Veeracholapuram, Valliarachal
<b>28. Vellore District</b>		
Vellore	4	Athiyur, Thellur, Karugamputhur, Kilmonavur
Kaniyambadi	5	Thuthikadu, Kaniyambadi, Veppampattu, Munjurpattu, Vallam
Anaicut	7	Genganallore, Poigai, Virinchipuram, Erayangadu, Sathiyamangalam, Peenjamandai, Seduvalai
Madhanur	8	Agaramcheri, Solur, Agaram, Kilmurungai, Vinnamangalam, Asanampattu, Periyankuppam, Minnur
Katpadi	5	Bramapuram, Senur, Jabbrapet, Vandaranthangal, Karigiri
KV Kuppam	8	Cholamur, Melmoil, Senji, Kilvaithinankuppam, Pazhayakrishnapuram, Kavanur, Latheri, Vaduganthanga
Gudiyatham	6	Kondasamudram, Seevur, Agrapharam, Kallapadi, Erthangal, Paradarami
Pernambut	5	Sathakar, Erikuthi, Devalapuram, Rajakkal, Kailasagiri
<b>29. Villupuram District</b>		
Mailam	6	Agoor, Kutteripattu, Alagramam East, Mailam, Alagrammam, Muppuli
Vanur	9	Akasampattu, Katrambakkam, Siruvai, Irumbai, Kodippakkam (Ten), Tailapuram, Karasanur, Kunnam, Uppuvelur
Vallam	3	Irumbuli, Kadambur, Kalaiyur
Marakkanam	6	Molasur, Omipper, Munnur South, Ommandur, Murukeri, Palamukkal
Olakkur	6	Atchipakkam, Taniyal, Attipakkam, Ural, Avanipur, Vempundi
Gingee	3	Konai, Pakkam, Palappattu
Vikravandi	3	Aasur North, Asur, Ayyur Agaram
Kolliyanur	3	Naraiyur, Orukodi, Panampattu

Kanai	3	Kanjanur, Kedar, Siruvalai
Kandamangalam	6	Kondur, Rampakkam, Kumulam, Seshanganur, Mathur, Siruvandadu
<b>30. Kallakurichi District</b>		
Chinnasalem	18	Pethanur, Melnariyappanur, Kadathur, V. Alambalam, Rayappanur, Thenchettiyandhal, Rayarpalayam, Ammaiyagaram, Nallathur, Thagamtheerthapuram, A. Vasudevanur, Thengiyatham, Kaniyamoor, Poondi, Eliyathur, Pethasamuthiram, Thottapadi, Mattigaikurichi
Kallakurichi	12	Thandalai, Manmalai, Eduthavainatham, Varadappanur, Vaniyandhal, Mathur, Ka. Chellampattu, Pukkiravari, V. Palayam, Parigam, Karadichittur, Malaikottalam
Sankarapuram	6	Kosapady, S. Kolathur, Seshasamudram, Devapandalam, Soundravallipuram, Viriyur
Rshivandhiyam	9	Vanapuram, Odiyandhal, Porppalampattu, Endhal, Eduthanur, Yal, Periyapagandai, Kariampalayam, Maiyanur
Thiyagadurugam	3	Varanjaram, Velakurichi, Kandachimangalam
<b>31. Virudhunagar District</b>		
Aruppukottai	12	Ramanujapuram, Sukkulanatham, Sempatti, Valvanki, Kanjanayakkanpatti, Malaipatti, Kattankudi, Chettipatti, Ramasamipuram, T. Meenatchipuram, Kurinchankulam, Sethurajapuram
Thiruchuli	9	Pannaimoondrataippu, Kathalampatti, Bommakottai, Pillaiyanthottiyankulam, Erachinnampatti, Muthuramalingapuram, Vadapalai, Aladipatti, Kaloorani
Kariyapatti	9	Valaiyankulam, Kalkurichi, Melathulukkankulam, Chandrenkulam, Thonugal, Nanthikundu, Mutiyanur, Vakkanankundu, Alakiyanallur
Virudhunagar	9	Ellinganayakkanpatti, Thathampatti, Mettukundu, Sengundrapuram, Meesalur, Kadampankulam, Moolipatti, M. Sevalpatti, Sennilkudi
Narikudi	9	Thimmapuram, Salailupaikulam, Varisaiyur, A. Mukkulam, Nalur, Velankudi, Pulvaikarai, Panaikudi, Nayannethal

7. The blocks/Taluks and villages to be covered during the Kharif and Rabi 2026 campaigns in TN are listed below.

Blocks	Villages	Villages
<b>1. Ariyalur District</b>		
Jayankondam	9	Vanathirayanpattinam, Guruvalapparkovil, Devamangalam, Pilichikuzhi, Periyavalayam, Edayar, Gangaikondacholapuram, T. Cholankuruchy, Elayaperumalnallur
Sendurai	12	Sendurai, Pilakuruchy, Ponparappi, Paranam, Vanjinapuram, Irumbulikuluruchy, Sirukalathur, Veerakan, Nakkampadi, Sirukadambur, Keelamaligai, Nagalkuzhi
Andimadam	9	Kattathur, Kovilvazhkai, Marudhur, Devanur, Thirukalapur, Variankaval, Periyakrishnapuram, Elaiyur, Ayyur
Ariyalur	3	Oriyur, Alanthuraiyarkattalai, Arungal
Thirumanur	3	Sembiyakudi, Kulamanikam, Aranmanikuruchy
T. Palur	9	Naduvalur, Cholamadevi, Suthamalli, Anaikudam, Parukkal, Ulliyakudi, Kadambur, Keelanatham, Kodalikaruppur
<b>2. Coimbatore District</b>		
Myleripalayam	1	Elur
Pollachi South	3	Jameen Kottampatty, Ambarampalayam, Kolarpatty
Pollachi North	3	R Ponnavaaram, Achipatty, Puravipalayam
Sarkarasamakulam	6	Vellanapatty, Athipalayam, Keeranatham, Vellamadai, Idikarai, Thottipalayam
Periyanaickenpalayam	3	Pannimadai, Kuppichipalayam, Onnipalayam

Karamadai	7	Tholampalayam, Kemmarampalayam, Marudhur, Chikkarampalayam, Bhellathi, Thekkampatty, Velliangadu
Thondamuthur	3	Thennamanallur, Sennanur, Pullagoundanpudur
Kinathukadavu	4	Sokkanur, Perumpathi, Vadapudur, Govindapuram
Sulur	4	Paduvampalli, Arasur, Kaduvettipalayam, Kannampalayam
Annur	3	Kanuvakkarai, Allapalayam, Pasur
Sultanpet	3	Pappampatty, Selakaraichal, Sencheripudur
Anaimalai	3	Ramanimuthalipudur, Thenchittur, Periyapodu
Madukkarai	2	Thirumalampalayam, Nachipalayam
<b>3. Cuddalore District</b>		
Kattumanarkoil	9	Eiyalur, Reddiyur, Atcahipuram, Mamangalam, Kondasamudram, Vanamadevi, Aayankathan, Kunjamedu, Veerachaozhapuram
Vridhachalam	9	TV Puthur, Vannankudigadu, Vettaikudi, Pudhukooripettai, Kandiakuppam, Kuppanatham, Periyavadavadi, Chinnavadavadi, Erumanoor
Nallur	9	Niramani, Poolambadi, Kaliyamedu, Elangiyanoor, Nallur, Vannathur, T. Agaram, Okeeranur, Ariyaravi
Mangalur	9	Adari, Sirupakkam, Mangalur, Thozhuthur, Avati, Kazhuthur, Pattur, Edaiseruvai, Ramanatham
Srimushnam	9	Karmangudi, Valliam, Melapalaiyur, Kallipadi, Melpuliyangudi, C. Sathamangalam, Thethampatti, Nagarapadi, Adhivaraganallur
<b>4. Dharmapuri District</b>		
Karimangalam	1	Adilam
Morappur	3	Irumathur, Vagurappampatty, Thippampatti
Pennagaram	14	Anjehalli, Kalapampadi, Paruvadhanahalli, Kadamadai, Thithiopanahalli, Chinnampalli, Bikkampatty, Pallipatti, Ettiyampatti, Gendenahalli, Papparapatty, Bikkili, Vellampatti, Kariyapanahalli
Palacode	15	Karagadhahalli, Dhomalahalli, Bathalahalli, Palacode, Pulikarai, Erranahalli, Selliyampatti, Bevuhalli, Belamaranahalli, Modugulahalli, Samanur, Athimutlu, Sekkodi, Thirumalvadi, Nallur
Karimangalam	3	Begarahalli, Boomandahalli, Murukkampatty
Nallampalli	5	Mookamahalli, Sirugalur, Errabainahalli, Bandahalli, Somanahalli
Pappireddipatti	3	Bairanatham, Pilparuthi, Bommidu
Dharmapuri	1	Pulithikarai
<b>5. Dindigul District</b>		
Vedasanthur	4	Malvarpatty, Nallamanarkottai, Marampadi, Alaghapuri
Sanarpatty	7	Rajakapatty, T. Panjampatty, Silluvathur, Sanarpatty, Nathavadipatty, Thavsimidai, Koovanuthu
Reddiyarchathiram	3	Palaniyur, T. Pudhupatty, Naavapatty
Aathoor	7	Kalikkampatty, Chettiyapatty, N. Panjampatty, S. Paraipatty, Alamarathupatty, Ambathurai, Thoppampatty
Gujilamparai	1	Kovilur
Oddanchathiram	3	Kaalanjipatty, Thangachiammapatty, Kedhaiarumbu
Nilakottai	5	Ethilodu, Sangalpatty, Silukkuvarpatty, Vilampatty, Michealpalayam
Batlagundu	1	P. Viralipatty
Natham	3	Aavichipatty, Sendurai, Reddiyapatty
Dindigul	6	Thamaraipadi, Periyakottai, Aavarpatty, Chathirapatty, Chettianayakkanpatty, A. Vellodu
Vadamadurai	2	Kulathur, P. Kosavapatty
Kodaikanal	3	Poondi, Poomburai, Mannavanur
<b>6. Erode District</b>		

TN Palayam	6	Kongarpalayam, Kallipatti, Singiripalayam, Akkaraikodiveri, Kasipalayam, Kallipatti
Sathy	3	Arasur, Kothukadu, Komarapalayam
Modakurichi	3	Kulur, Vilakethi, Arachalur
Nambiyur	3	Karapadi, Vettaianpalayam, Kadathur
Gobi	3	Avvaiyarpalayam, Nanjagobi, Kadukkamapalayam
Bhavani	3	Pappankattur, Perunthaliyur, Minnavettuvampalayam
Chennimalai	3	Vadamugamvellod, Ekatampalayam, Pungampadi
Erode	3	Mettunasuvampalayam, Nochipalayam, Perode
Talavadi	3	Mallanguli, Talavadi, Arepalayam
Perundurai	3	Sullipalayam, Pattakaranpalayam, Vettaiyankinaru
Anthiyur	3	Gettisamudram, Bargur, Michelpalayam
Ammapet	3	Ramachipalayam, Vellitirupur, Boothapadi
Bhavanisagar	3	Panayampalli, Nallur, Uthandiyur
Kodumudi	3	Kombanaipudur, Kodhalam, Karanampalayam
<b>7. Chengalpattu District</b>		
Thirukazhkundram	10	Pudupakkam, Korapattu, Pakkam, Amanapakkam, Punnappattu, Mullikolathur, Adavilagam, Elumichampattu, Pandur, Nallur
Madhuranthagam	10	Janakipuram, Meyyur, Kunnathur, Sithandi, Viralur, Arungunam, Gendirachery, Nallur, Padalam, Vettur
Chitamur	15	Irumbuli, Periyakalakkadi, Pondur, Vannianallur, Arapedu, Essur, Perambakkam, Puthur, Vedal, Sonnambedu, Indalur, Kalpakkam, Puthirankottai, Sirumailur, Amanthangaranai
Lathur	10	Siruvangunam, Nerkunapattu, Anaikattu, Paramankeni, Paramesvaramangalam, Neelamangalam, Perumbakkam, Vadakkuvayalur, Thiruvathur, Aakkinampattu
Acharapakkam	3	Thenpakkam, Puragal, Orathi
<b>8. Kanyakumari District</b>		
Kurunthancodu, Thuckalay	3	Kakotuthalai, Thalakulam, Nullivillai
Killiyur	5	Kollenchi, Nattalam, Mullankinavillai, Midalam, Palur
Kurunthancodu	7	Kurunthancode, Kattimancode, Nettancode, Thenkarai, Vellichanthai, Simoncolony
Kurunthancodu, Killiyur	2	Muttom, Inayamputhanthurai
Thiruvattar, Munchirai	2	Kannanoor, Thuthoor
Melpuram, Munchirai	4	Muzhucode, Choozhal, Mancode, Vavarai
Killyur, Melpuram	2	Thippiramalai, Manjalumoodu
Thuckalay, Killiyur	2	Maruthurkurichi, Mathicode
Melpuram, Thiruvattar	2	Puliyoorsalai, Aruvikarai
Thovalai, Thiruvattar	3	Thadikarankonam, Surulodu, Balamore
Munchirai	7	Munchirai, Mankadu, Painkulam, Kulappuram, Vilathurai, Methukummal, Nadaikkavu
Agastheeswaram	17	Nalloor, Norththamaraikulam, Panjalingapuram, Swamithoppu, Leepuram, Maharajapuram, Kulasekarapuram, Ramapuram, Therekalputhur, Kovalam, Dharmapuram, Kesavaputhanthurai, Eravipudur, Karumpattoor, Azhagappapuram, Kanyakumari
Thiruvattar	6	Yettacode, Pechiparai, Aayacode, Cherukole, Kaatathurai, Kumarankudi
Rajakkamangalam	10	Parakkai, Manakudi, Aathikatuvillai, Pallamthurai, Rajakkamangalam, Elluvillai, Melasankarankuzhi, Melakrishnanaputhur, Kaniyakulam, Putheri
Melpuram	6	Vanniyoor, Devicode, Vilvancode, Vellamcode, Malayadi, Maruthancode

Thovalai	15	Vilathurai, Painkkulam, Thirupathisaram, Derisanamcope, Thovalai, Erachakulam, Arumanalloor, Esanthimanagalam, Thellanathi, Beemanagari, Sahayanager, Kaatupudur, Gnam, Thidal, Kadukarai
Thuckalay	8	Muthalakurichi, Thickenamcode, Chdayamangalam, Athivillai, Kalkurichi, Chadayamangalam, Muthalakurichi, Thikanamcode
<b>9. Karur District</b>		
Thanthoni	4	Uppidamangalam, Vellyanai, Pallapalayam, Jegathabi
Thogamalai	15	Porunthalur, Gudalur, Chinnaputhur, Seplapatti, Muthalaipatti, R.T. Malai, Vadaseri, Neithalur South, Thogamalai, Neithalur North, Pulutheri, Kallai, Keelaveliyur, Alathur, Thalingi
Krishnarayapuram	7	Sengal, Sivayam, Kattalai, Korakuthi, Vengampatti, Punavasipatti, Mahathanapuram South
Kulithalai	9	Nachalur, Nangavarm, Kotamedu, Kosur, Nallur, Kumaramangalam, Rajendram, Panikampatti, Sooriyanur
Kadavur	7	Thondamankinam, Manjanaickenpatti, Palaviduthi, Paganatham, Maavathur, Veeranampatti, D. Seethapatti
K. Paramathi	1	Rajapuram
Karur	1	Nanjakalukuruchi
Thanthoni	1	Paganatham
<b>10. Krishnagiri District</b>		
Pochampalli	8	Patrahalli, Pannandur, Arasampatti, Gendigampatti, Papparappatti, Kottapatti, Keelkuppam, Barur
Thali	3	Devarulimangalam, Devaganapalli, Madhagondapalli
Krishnagiri	15	Nachikuppam, Kattigaanapalli, Alapatti, Jagadab, Naduvanapalli, Naaralapalli, Gangaleri, Kalvehalli, Veppanapalli, Mallinaayanapalli, Periyakottapalli, Ittikkal Agaram, Sökkadi, Bellaraampalli, Periyamuthur
Uthangarai	3	Kadavani, Keelmathur, Maganurpatti
Shoolagiri	3	A. Settipalli, Menasamdotti, Athimugam
Hosur	3	Muthuganapalli, Nagondapalli, Achettipalli
Kelamangalam	3	Anekollu, Porthipalli, Jakkeri
Bargur	7	Guruvinayanapalli, Nagampatti, Belavarthy, Chinnamattarapalli, Palepalli, Varattanapalli, Orappam
<b>11. Madurai District</b>		
Madurai East	18	Kodikulam, Porusupatty, Mathur, Kallandiri, Tamaraipatti, Varichiyur, Ayliangudi, Meenakshipuram, Appanthirupathi, Poyyakaraipatty, Rajakkur, Kunnathur, Arumbanur, Mangulam, Velliankundram, Malayathanpatti, Panaikulam, Kalimanglam
Melur	15	Vellarippatti, Thiruvathavur, Keelayur, Pudusukkampatti, Narasingampatti, Kallampatti, Kidaripatti, Soorakkundu, T. vellalapatti, Poonjuthi, Vellalur, Pulipatti, Therkkutheru, Veppadappu, Thaniyamangalam
Madurai West	12	Alathur, Manjampatti, Velichanatham, Kulamangulam, Veerapandi, Kavanur, Chinnapatti, Kovilpappakudi, Chettikulam, Periyapatti, Malaipatti, Boothakudi
<b>12. Nagapattinam District</b>		
Vedharanyam	3	Agasthampalli, Sembodai, Ottaitthatai
Kilvelur	2	Vadakalathur, Thirukanangudi
Keelaiyur	3	Keelaiyur, Vilunthamavadi, Chozhavidyapuram
Nagapattinam	28	Azhiyur, Muttam, Vadavur, Karuvelankadai, Vettaikaraniruppu, Pnnaimedu, Serunallur, Manjakollai, Vadakkupoigainallur, Ponveli, Palaiyur, Melakaraiyiruppu-Sikkal, Avarani, Orathur, Thannilampadi, Sangamangalam, Pappakoil, Themangalam, Thethi, Nagaloor, Agaraorathur, Anthanapettai, Kameshwaram, Sithaimoor, Sembiyanmahadevi, Vadugacheri, Kadenthethi, Kadambaravalkai

Thalainayar	8	Nathapallam, Aymoor, Thiruvaidaimarthur, Naluvadapathy, Neermulai, Pannaitheru, Vellapallam, Kovilpathu
Thirumarugal	1	Thiruchankattangudi
<b>13. Namakkal District</b>		
Namagiripettai	10	Naraikkinaru, Pilippakuttai, Unandhangal, Mullukurichi, Ondikkadai, Kattur, Seerappalli, Vadugamuniyappampalayam, Thoppapatty, T. Jedarpalayam
Puduchthiram	16	Elur, Lakkapuram, Karakurichipudur, Tirumalaipatty, Sarkar Uduppam, Karadipatty, Sellappampatty, Thalampatty, Pachal, AK Samuthiram, Kalyani, Thatthaiyangarpatty, Navani, Kathiranallur, Minnampalli, Thatthathiripuram
Paramathi Velur	6	Pilikkalpalayam, Kopanampalayam, Thidumal, Nadanthai, Irukkur, Manikkanatham
Senthamangalam	2	Anaikkattu, Kalkurichi
Erumapatty	16	Thusur, Palapatty, Varagur, Kavakarapatty, Muttanchetty, Pavithiram, Palayapalayam, Muthugapatty, Varatharajapuram, Devarayapuram, Bodinaikkanpatty, Alanganatham, Pavithiram, Pavithiram Pudur, Vadavathur, Jambumadai
Puduchthiram and Senda Mangalam	2	Kalangani, Bommasamuthiram
Sendamangalam	6	Sendamangalam, Pachudaiyampatty, Periakulam, Thuthikulam, Akkiyampatty, Kondamanaikkanpatty
Namakkal	18	Keelsathampur, Thindamangalam, Vittamanaikkanpatty, Marurpatty, Aniyaru, Marappanaikkanpatty, Keerambur, Konur, Veesanam, Vettampadi, Kathapalli, Siluvampatty, Thaligai, Ernapuram, Singilipatty, Vallipuram, Vagurampatty, Valayapatty
Elachipalayam	4	Periamanali, Chinnamanali, Kokkai, Elachipalayam
Mohanur	8	Ganapathipalayam, Arasanatham, Peramandapalayam, Madakasampatty, N. Pudupatty, Arur, Oruvandhur, Palapatty
Mallasamudram	2	Iluppuli, Agaram
<b>14. Perambalur District</b>		
Alathur	12	Chettikulam, Iluppaikudi, Naranamangalam, Kannapadi, Kurur, Pilimisai, Irur, Elanthalapatti, Nattarmangalam, Sathanur, Karai, Thenur
Perambalur	9	Alambadi, Kurumbalur S, Melapuliyur E, Essani, Palayam, Ladapuram, Kilakarai, Kurumbalur N, Melapuliyur W
Veppanthattai	15	Mettupalayam, Thondapadi, Nerunam, Veppanthattai, Kaikalathur W, Valikandapuram, Neikuppai, Bramadesham, Anukkur, Kadambur, Kaikalathur E, Kariyanur, Eraiyur, Mangalamedu, Thevaiyur
Veppur	9	Nannai E, Paravai, Asur, Vadakalur, Keelapuliyur, Varagur, Perumathur N, Kargudi, Kolapadi
<b>15. Pudukkottai District</b>		
Thiruvarangulam	1	Sendakudi
Thiruvarnagulam	1	Vadakadu
Thruvarangulam	13	Meikalpatti, Nallur, Keeramanagalam, Thoppupatti, Kummangulam, Pappanpatti, Maniambalam, Manjanviduthi, Vengidakulam, Arasampatti, Malavarayanpatti, Arasadipatti, Kulamangalam
Ghandarvakottai	1	Perambur
Karambakudi	7	Pathikadu, Ambukoil, Maruthankonviduthy, Melapatti, Palayapatti, Kurumpoondi, Sanoorapatti
Ghandarvakkottai	5	Veeradipatti, Manttantal, Perungalur, Kulathur, Athanakkottai
Perungalur, Kulathur	3	Kambarkoil, Kandichankadu, Avdaiyarkoil
Aranthangi	1	Avanathankottai
Arimalam	8	Vadakkupatti, Vanniyampatti, Oottupalapatti, Neyvasalpatti, Vallanadu, Onangudi, Perungudi, Mirattunilai

Ponnamaravathi	7	Varpattu, Panayapatti, Devanpatti, Koppanapatti, Kovanur, Alampatti, Alavayal
Annavasal	6	Ilupur, Vanthirayanpatti, Veerapatti, Narthamalai, Kaikurichi, Thoppukollai
Viralimalai	18	Sooriyur, Viralimalai, Melaboothakudi, Nammambatti, Mandaiyur, Pakkudi, Venmani, Avaiyarpatti, Vangarampatti, Pidarpatti, Aatukaranpatti, Sengathankuruchi, Rasipuram, Kumaramangalam, Sengalakudi, Neerpalani, Sithampur, Malaikudipatti
Rasipuram, Kumaramangalam	4	Minnathur, Seemanur, Pallathupatti, Elaiyavayal
Pudukkottai	4	Pudukkottai, Varappur, Manaviduthi, Podukkottai
Thirumayam	1	Rasimangalam
<b>16. Ramanathapuram District</b>		
Mandapam	5	Alagankulam, Enmanankondan, Karan, Manangudi, Maraikayarattinam
Bogalur	5	A. Puthur, Bogalur, Deivendranallur, Ettivayal, Kamankottai
Ramanathapuram	5	Achadipirambu, Devipattinam, Pirappan Valasai, Thirupalaikudi, Valinokkam
Paramakudi	5	Sayalkudi, Sundarapandiyapuram, Vazhuthur, Mudukulathur, Ekkakudi
Mudukulathur	5	Erwadi, Sayalkudi South, Muthuramalingapuram, Muthukulathur, Vellaloor
Kadaladi	5	Solandur, Puduvalasai, Singampunari, Puthuvalasai, Irumeni
Tiruvadana		Thondi, Regunathapuram, Kattumavadi, Perunali, Sundarapandian Pattinam
Kamuthi	5	Nainarkoil, Kamuthi, Seyyur, P. Pudupatti, Parthibanur
<b>17. Sivagangai District</b>		
Tiruppuvanam	5	Malavarayanandal, Palaiyanur, Ladanandal, Thirupachethi, Thoothai
Sakottai	6	Kothamangalam, Nemam, Kottaiyur, Oyyakondan Siruvayal, Kanadukathan, Illupakkudi
Tirupattur	2	Keelachevalpatti, Aavinipatti
S. Pudur	4	Neduvayal, Musundapatti, Manaloor, Mathagudipatti
Kalayarkoil	8	Puliadithammam, Palkulam, Paruthikanmoi, Silukkapatti, Kalayarkoil main, Sevaorani, Marakkathur, Vittneri
Manamadurai	2	Vagudi, Idaikkattur
Kannangudi	5	Unjanai, Mathur, Kodakudi, Vengalur, Thirupakkottai
Kallal	6	Sambanur, Pananvayal, Vetriyur, P. Nerpugapatti, Aranmanai Siruvayal, Panangudi
Ilayangudi	2	Valayanandal, T. Pudukkottai
Singampunari	4	Sirumadhur, Soorakudi, A. Kalapur, Piranmalai
S. Pudur	1	Ulagampatti
<b>18. The Nilgiris District</b>		
Ooty	27	Thummanatty, Appukodu, Mallikorai, Karapillu, Kadaiyatti, Thittukal, Indhunagar, Emerald, Kappachi, Porthi, Kavaratty, Manthalatti, Melkowitz, Thiruchikadi, Surendar Nagar, Kenthorai, Kookalthorai, Paigamandu, Thuneri, Kadasolai, Kavilorai, Thottani, Kulisholai, Anna Nagar, Thummanatty, Ithalar, Dhavani
Gudalur	9	Padanthurai, Puliamparai, Manvayal, Mavanallah, Puliamparai, Vazhithottam, Erumad, Chokkanalli, Puthurvayal
Coonoor	4	Thambatti, Kamarajapuram, Anniyada, Adikkaratty
Kotagiri	5	Nedugula, Bettatty, Kelkothathagiri, Kadinamala, Kothimukku
<b>19. Theni District</b>		
Chinnamanur	9	Kamatchipuram, Pulikuthi, Poolanandhapuram, Kanniservaiyapatti, Veppampatti, Easakkanayakkanur, Seepalakottai, Chinnaovulapuram, Ayampatti

Uthamapayalm	6	Royappanpatti, Melasindhalaichery, Gokilapuram, T. Sindhalaichery, Anaimalaiyanpatti, Pallavarayanpatti
K Mayiladumparai	3	Duraisampuram, Kadamalaikundu, Gandamanur
Priyakulam	6	Jallipatti, Silvarpatti, Sarathupatti, Jeyamanagalam, Vadaputhupatti, Melmanagalam
Bodinayakkanur	3	Rasingapuram, Kulaiyanur, Uppukottai
Andipatty	9	Ramakrsihnapuram, Theppampatti, Thekkampatti, Ethakovil, M. Subbulapuram, Bodidhasanpatti, Palacombai, Adaikkampatti, Anupappatti
Cumbum	3	Karunakkamuthampatti, Narayanadevanpatti, Kullapagoudenpatti
Theni	6	Jankalpatti, Seelayampatti, Poomalaikundu, Kottur, Kuppinaikkanpatti, Dharmapuri
<b>20. Thiruvallur District</b>		
Tiruthani	3	Agoor, Cherukkanur, Thadur
Kadambuthur	3	Koppur, Perampakkam, Paparampakkam
Uthukottai	1	Alapakkam
Poonamallee	3	Vellavedu, Sorenjeri, Nemam
Sholavaram	3	Natham, Mallingkuppam, Budur
Poondi	3	Kaivandur, Meyyur, Nelvoy
Gummidipoondi	2	Old Gumidipoondi, Puduvoiyal
Pallipet	3	Gollalakuppam, Tirumalrajupettai, Kothakuppam
Tiruvallur	15	Ammanampakkam, Tirur, Kalambakkam, Thalakanjeri, Elavur, Guruvoyal, Veppambattu, Palayanur, Kilambakkam, Thamaraipakkam, Aranvoiyal, Orathur, Punnapakkam, Velliur, Kanchipadi
Minjur	3	Chinnakavanam, Thirupalaivanam, Medhur
Raa. Kee. Pettai	3	Sagasrapadmapuram, Mylarwada, Paivalasa
Kadambathur	3	Periyakuppam, Kumaranjeri, Pudumavilangai
<b>21. Thiruvannamalai District</b>		
Anakkavur	9	Akkur, Thethurai, Kunnaavakkam, Madipakkam, Veerambakkam, Ukkal, Karanai, Melma, Kulamandai
Arani	9	Mattathari, S.V. Nagaram, Agrapalayam, Irumbedu, Mamandur, Sevoor, Adanur, Panaiyur, Rattinamangalam
Vembakkam	9	Pillanthangal, Namandi, Thiruppanangadu, Chithathur, Hariyarpakkam, Arasankuppam, Kizhnelli, Vellakulam, Vembakkam
Cheyyar	9	Aradrivelur, Kazhiyur, Enthavadi, Vinnavadi, Siruveliyallur, Duli, Mariyanallur, Palli, Puliarampakkam
Vandavasi	9	Kavaniyathur, Vazhur-agaram, Padhiri, Kilsembedu, Marudadu, Thensenthamangalam, Osur, Kallanguthu, Birudur
<b>22. Thiruvarur District</b>		
Koradacherry	6	Abivirtheeswaram, Engan, Pathur, Arasavanankadu, Kappanamangalam, Viswanathapuram
Thiruthraipoondi	3	Kattimedu, Melamaruthur, Mettupalayamm
Mannargudi	6	Sundarakkottai, Mannargudi, Ullikkottai, Kandithampettai, Mahadevapattinam, Melathirupalakkudi
Valangaiman	6	Padagacheri, Kottaiyur, Tholuvur, Alangudy, Narthangudi, Thiruvonamangalam
Kottur	3	Sithamalli, Keluvathur, Perukavazhnan
Kudavaasal	3	Sarabojiraapuram, Vilaagam, Vadugakudi
Needamangalam	9	Chitthamalli melpathi, Pullavarayan kudikadu, Munnavalkottai, Vaduvur Thenpathi, Aathanur, Kalachery, Kovil Venni, Eda Keelayur, Nagar
Nannilam	3	Vaazhaikkai, Thiruvaanchiyam, Senganoor
Thiruvarur	3	Pulivalam, Mangudi, Kallikudi
Muthupettai	3	Alangadu, Uppur, Udhayamarthandapuram
<b>23. Thoothukudi District</b>		

Villathikulam	9	Poosanur, Vadamalaisamuthiram, Kumarasakkanapuram, Kechilapuram, Ramanathapuram, Ramachandrapuram, Velludipatti, Pillayarnatham, Sokalaingapuram
Alwarthirungari	15	Udayarkullam, Senkullam, Chinamathikudal, Kurukattor, Kottur, Rasangauram, Rajapathi, Manathi, Kuttithottam, Aathinathapuram, Karadiyur, Pudhur, Vellamadam, Mellavellamadam, Pillayanmanai
Karunkullam	18	Chekkarakudi, Meelachekkarakudi, Sockalingapuram, Ramanujamputhur, Cherakullam, Arasakulam, North Karaseri, Kasilingapuram, Singathakurichi, Kongarayakurichi, Manakarai, Arampennai, Poovani, Mellapoovani, Lakshmiapuram, Vallanadu, Killikullam, Manakari
Thiruchendur	9	Nallur, Sasthakovil Vilai, Nagakanniyapuram, Ammanapuram, Kellapudhukudi, Kanavillai, Moolakari, Kanthankudiyiruppu, Nathaikullam
Udankudi	9	Semmarikullam, Kalvilai, Anaithalai, Settiyapathu, Theriyoor, Vathiyarkudiyirupu, Nangaimozhi, Ramasamipuram, Keelarramasamipuram
Shankland	3	Puthukulam, Sankarnkudiyiruppu, Ganiyarkudiyiruppu
Pudur	9	Vembur, V. Kodankiopatti, Alagapuri, Maniyakaranpatti, Thavashilingapuram, Sakkanapuram, Mettilpatti, Perumalpatti, Surapanayakanpatti
Kovilpatti	9	Velliseri, Meithalaivanpatti, Keelavelliseri, Nalatinpudur, Gopalapuram, Duraisamipuram, Keela eral, Manjalnayakanpatti, Nakkalaikottai
Kayathar	9	Kammappatti, Manankathan, Athikulam, Rajaputhukudi, TN Kulam, Therkumayilodai, Panikkarkulam, Nagalapuram, Ramanathapuram
Ottapidaram	9	Ottanatham, Maniyachi, Kollankinaru, Governagiri, Panchalankurichi, Ottapidaram, Akkanayekanpatti, Ottudanpatti, Puliypatti
Srivaikundam	18	Kilpidakaikaspa, Sivagalai, Avarankadu, Edayarkadu, Puthunagar, Sampadi, Kottarakurichi, Sripuram, Ganapathi samuthiram, Kelpiakai varathapuram, Vedanayagapuram, Kadduvetti, Arumugamangalam, Kullankaradiyur, Karadiyur, Thirupuliyankudi, Samiyathu, Perur
Thoothukudi	18	Peruru, Thimarajapuram, Varthagarettipatti, Mudivaithanendal, Kattalankullam, Pudhur, Umarikottai, Varadharajapuram, Chettiyoarani, Kumaragiri, Kuttampuli, Thangammalapuram, Thalavaipuram, Kollanparampu, Magilampuram, Allikulam, Andalnagar, Mella Kuttudankadu
<b>24. Tiruchirappalli District</b>		
Manachanallur, Andanallur,	2	Kiliyanallur, Kilikoodu Panayapuram
Andanallur	16	Pettavaithalai, S. Pudukkottai, Periyakarupur, Sirugamani, S. Pudukkottai, Tiruparaithurai, Periyakarupur, Perugamani, Elamanur, Kulumani, Andanallur, Koppu, Tiruparaithurai, Sirugamani, Kulumani, Ettarai
Tiruverumbur	1	Kumbakudi
Thottiyam	13	Srinivasanallur, Elurpatti, Muthalipatti, Tholurpatti, Kosavampatti, Manamedu, Mahendramangalam, Varadarajapuram, Arungur, Alagarai, Appananallur, Kolakudi, Mullipadi
Musiri, T. Pettai	1	T. Pudupatti and Pillalalayam
Manaparai	8	K. Periyappatty, Vadugajpatti, Chithanatham, Manjampatti, Kalingapatti, Chettiypatti, Malaiyadipatti, Paraipatti
Vaiyampatti	12	Amayapuram, Nadupatti, Elamanam, Kumaravadi, Nallampillai, Veerappur, T. Udaiyapatti, Keelakothanur, Aniyappur, Purathakudi, Dhavalaveeranpatti, K. Pudukkottai
T. Pettai	6	Muthampatti, Serkudi, Sittilarai, Mavilipatti, Thumbalam, Paithambarai
Musiri, Andanallur	4	Neiveli, Kallur, Thandalaiyathur, Mukombu
Musiri, Thuraiyur	2	Ayyampalayam, Kothampatti

Uppliyapuram	1	Okkarai
Musiri,	1	Evur and Amoor
Lalgudi	29	Kumulur, Kannakudi, Mahilambadi North, Purathakudi, Thachankurichi, Komakudi, Esanakorai, Appadurai, Neikuppai North, Pudur Utamanur, Nagar, E. Vellanur, Nanjaisangendi, Sirumaruthur, Punjaisengandhi, Thalakudi, Nagar, Neikuppai South, Edangimangalam, Chinnavalakurichi, Vandalaikudalur, Kanakiliyanallur, Peruvalapur, Reddimankudi, Appadurai, Valadi, Sirumayankudi, Nerunjalakudi, Peruvalanallur East
Thuraiyur	13	Vannadu, Keerambur, Nagalapuram, Senkattupatti, Vankdathanur, Kannanur, Veeramachanpatti, Kottaiyur, Kalingaudaiyanpatti, Ponnusangampatty, Valavanthi, Melakotam, Thulayanatham
Manachanallur	3	Pichandarkovil,
Manikandam	6	Nagamangalam, Alunthur, Pallapatti, Yagapudaiyan Patti, Sethurapatti, Andanallur
Marungapuri	11	Karumalai, Melakurichi, Paraipatti, Kanjanayakanpatti, Saralaipatti, Minikkiyur, Paluvanji East, Paluvanji West, T. Edayapatti, Thottiyapatti, Thathanur
Musiri	4	Gunaseelam, Vathalai, Tiruthalaiyur, Tiruthiyamalai
<b>26. Tenkasi District</b>		
Keelapavoor	6	Gunaramanallur, Thuthikulam, Kurumbalaperi, Kaluneerkulam, V.K. Pudhur, Sivagurunathapuram
Tenkasi	6	Kottakulam, Thenpothai, Meenatchipuram, Mathalamparai, Vallam, Puliyyur
Kadayanallur	6	Duraisamyapuram, Poigai, Valasai, Velayuthapuram, Achampatti, Urmelalagian
Kadayam	6	Govindaperi, Pulavanoor, Katheripatti, Asirvathapuram, Ramalingapuram, Muppuliyoor
Kuruvikullam	3	Vellakulam, Umaiyathalaivanpatty, Thiruvenkadam
Sankarankovil	3	Kuvalaikanni, Perumpathur, Punnaivanam
Melaneelithanallur	3	Maruthankinaru, Melaneelithanallur, Naduvakurichi Major
Shenkottai	5	Kampuli, Bagavathipuram, Vayakattu Colony, Seevanallur, Mattuchinanpoigai
Alangulam	3	Kuthapanchan, Pudupatti, Sivalarkulam
Vasudevanallur	6	Gudalur, Ariyur, Sanganaperi, Ullar Thalavaipuram, Naranapuram, Therkuchathiram
Shenottai	1	Poolankudiyiruppu
<b>27. Tiruppur District</b>		
Kangeyam	24	Mullipuram, Nathakadiyur, Marudhurai, Sivanmalai, Thammarettipalayam, Alambadi, Elavanthi, Thethanur, Vavipalayam, Kangeyampalayam, Chinnakapalayam, Cehlampalayam, Sadayapalayam, Ramapatinam, Neelakattupudur, Veeranampalayam, Vattamalai, Kadaiyur, Pappini, Palayakottai, Kuttapalayam, Kathangani, Ganapathypalayam, Padiyur
Udumalaipettai	9	Ponneri, Poolankinaru, Chinnaverampatti, Deepalapatti, Elayamuthur, Kodingiyam, Kurincheri, Kuralkuttai, Andiyagoundanur
Pongalur	18	South Avinashipalayam, Pongalur, Madapur, Perumthozhvu, Mudalipalayam, Ugayanur, A. Vadamalaipalayam, Karapalayam, Valayapalayam, Kottapalayam, Putharichal, Vellanatham, North Avinashipalayam, Azaghumalai, Kandiyankoil, Kattur, Thottampatti, Kattur Pudur
Avinashi	9	Sevur, Thamaraiikulam, Alathur, Kannur, Ramanathapuram, Kuthagam, Vadachinnaripalayam, Kangeyampalayam, Nizhali
Dharapuram	18	Alankiam, Kongur, Pommanallur, Nallampalayam, Kolathupalayam, Veeratchimangalam, Kokkampalayam, Nanthavanampalayam, Kasilingampalayam, Dharapuram North, Kozhinchivadi, Dharapuram

		South, Uthappalayam, Thalavaipattinam, Manakkadavu, Chitravithanpalayam, Nanjiampalayam, Alampalayam
Kunda dam	18	Rangamati, Manurable, Mathematic, Mathur, Pella Patti. Mathur, Pella, Paliparan, Paliparan, Thakkar, Thakkar, Navaratri, Magarpatta, Jyothiampatti, Kuruvai, Oluwalayomi, Venially, Kethalrev, Kunda dam
Palladam	9	Anupatti, Kethanur, Manasipalayam, Naranapuram, Karadipudur, Ganapathipalayam, Panickampatti, Vadugapalayam, Sitrambalam
Gudimangalam	18	Periyapatti, Ponneri, Kotamangalam, Veethampatti, Kosavapalayam, Moongilthozhvu, Marathur, Navanari, Marapalayam, Kongalnagaram, Vadugapalayam, Somavaripatti, Poolavadi, Aathukinathupatti, Kondampatty, Illupanagarm, Annikadavu, Virugalpatti
Madathukulam	9	Karathozhvu, Kaniyur, Kadathur, Vedapatti, Cholamadevi, Narasingapuram, Thungavi, Ramagoundanpudur, Metrathi
Tiruppur	3	Then Nallur, Nachipalayam, Thonkutipalayam
<b>28. Vellore District</b>		
Vellore	4	Athiyur, Thellur, Karugamputhur, Kilmonavur
Kaniyambadi	5	Thuthikadu, Kaniyambadi, Veppampattu, Munjurpattu, Vallam
Anaicut	7	Genganallore, Poigai, Virinchipuram, Erayangadu, Sathiyamangalam, Peenjamandai, Seduvalai
Madhanur	8	Agaramcheri, Solur, Agaram, Kilmurungai, Vinnamangalam, Asanampattu, Periyankuppam, Minnur
Katpadi	5	Bramapuram, Senur, Jabbrapet, Vandaranthangal, Karigiri
KV Kuppam	8	Cholamur, Melmoil, Senji, Kilvaithinankuppam, Pazhayakrishnapuram, Kavanur, Latheri, Vaduganthanga
Gudiyatham	6	Kondasamudram, Seevur, Agraharam, Kallapadi, Erthangal, Paradarami
Pernambut	5	Sathakar, Erikuthi, Devalapuram, Rajakkal, Kailasagiri
<b>29. Villupuram District</b>		
Markkanam	15	Nagar, Marakanam, Viluppuram, Tamil Nadu, Jaggampettai, Tindivanam, Viluppuram, Tamil Nadu & Mailam, Tindivanam, Viluppuram, Tamil Nadu, Manur, Marakanam, Viluppuram, Tamil Nadu
Vikravandi	6	Kottaiampoondi, Ammanankuppam, Mungilpattu, Mudhaliyarkuppam, Ponnanguppam, Kumulam
Vanur	10	Kiliyanur, Elayur, Perambai, Vanur, Thailapuram, Vinayagapuram, V. Pudhupakkam, Konthamur, Karasanur, Poothurai
Olakkur	9	Konerikuppam, Nangunam, Pattanam, Kilpasar, Andapattu, Ural, Mambakkam, Senal, Neykuppi
Vallam	9	Kalladikuppam, Vallam, Melolakkur, Mudaiyur, Chittamur, Tondur, Vallam, Melathur, Buderu
Gingee	3	Sorattuperiyankuppam, Sathyamangalam, Perungappur
Mailam	4	Deevanur, Naduvananthal, Ilamangalam, Vilukkam
Kandamangalam	2	Pallipudhupattu, Gengarampalayam
Koliyanur	2	Virattikuppam, Alathur
<b>30. Kallakurichi District</b>		
Thiyagadurugam	6	Eyyanur, Thiyagai, Asakalathur, Sithalur, Kanangur, Chinnamampattu
Rshivandhiyam	3	Soolankurichi, Palaiyasiruvangur, Muttiyam
Sankarapuram	3	Pudupalapattu, Arasampattu, Sellampattu
Kallakurichi	12	Siruvathur, Ka. Almbalam, Sirumangalam, Sembadakurichi, Perumangalam, Vilambar, Agarakottalam, Niraimathi, Thenkeeranur, Ulagankathan, Indili, Vinaitheerthapuram
Chinnasalem	21	Koogaiyur, Paithandurai, Eriyur, Nagakuppam, Pakkampadi, Thottiyam, Amakalathur, Elavadi, Kural, Namachivayapuram, Esanthai, Thimmapuram, Principal Scientist, Thagarai, Sadiyampattu, Principal Scientist, Moongilpadi, Kudiraichandal, Senior Scientist, Pandiyankuppam, Ervaipattinam
<b>31. Virudhunagar District</b>		

Kariyapatti	6	Chithu Mundraiduppu, Pisindi, Thoppur, Pambatti, Allikulam, Thonugal
Thiruchuzhi	3	Bommakottai, Kalloorani, R. Kallumadam
Aruppukottai	7	Palayampatti, Chettikurichi, Gopalapuram, Kanchanayakkanpatti, Kovilankulam, Chidampapuram
Narikudi	3	Irunchirai, Iluppaiyur, Esali
Virudhunagar	6	Meesalur, Periaperali, Alagapuri, Pavali, Kooraikundu, Rosalpatti
Sivakasi	6	Kuvundampatti, Sengamalapatti, Erichanatham, Pallapatti, Nadayaneri, Kiltiruthangal
Sattur	3	Pappakudi, Kosukundu, N. Mettupatti
Vembakottai	3	Keelanmarainadu, Appayanaickenpatti, Sevalpatti
Srivilliputhur	3	Pillaiyarnatham, Achankulam, Poovani
Rajapalayam	3	Ilandirai Kondan, Ayankollankondan, Terkuvenganallur
Watrap	3	Moovaraivendran, Ayannathampatti, Thulukkapatti
<b>32. Salem District</b>		
Kadaiyampatti	26	Marakkottai, Kanjanaickenpatti, Pannapatti, Karuvalli, Kongupatti and Theerthagoundan Kattuvalavu, Andikuttai, Theevattipatti, Sandhapettai, Kancherry, Danishpettai, Vadakampatti, Bommiyampatti, Marakkottai, Kanjanaickenpatti, Pannapatti, Karuvalli, Kongupatti and Theerthagoundan Kattuvalavu, Kookuttapatti, Poosaripatti, Chinerikadu, Naduppatti, Theevattipatti, Umblikampatti, Sundakapatti, Andipatti, Danishpettai
Veerapandi	13	Rakkipatti, Sengodanpalayam, chinnaseeragapadi, Ellinaickenpalayam, Kombadipatti, Chennagiri and Senaipalayam, Puthur Agraharam, Kondalampatti, Pudhupalayam, Poolavari, Ariyanur, Nayinampatti, Rajapalayam
Pethanaickenpalayam	7	Sekkadipatti, Perumapalayam Panaimadal, A. Komarapalayam, Kottavadi and Kalyanagiri, Sesansavadi and Kattuveppilaipatti, Idayapatti pudhur,
Sankagiri	9	Pullagoundampatti pudur, Kaalingowndanpalayam, Morur, Koodalur, Sanniyasipatti, Koneripatti, Pullangowndanpatti, Sanyasipatti, Erithottam
Magudanchavadi	2	Vaikundam, Gudalur. Edapadi
Mecheri	6	Sathapadi, Sadasivapuram, Othiyathur, Pallipatti, Chinnanur, Chavadiyur
Salem, Panamarathupatti	4	Erumapalayam, Moovender Nagar, Sandhiyur, Ammapalayam
Panamarathupatti	4	Parapatti, Sandhiyur, Panamarathupatti, Peramanur
Edappadi	8	Vellarivellai, Poolampatti, Aavaniyur, Adaiyur, Dhadhapuram, Edappadi, Poolampatti, Chithoor
Konganapuram	15	Samudhram, Upparapatti, Manikanpatti, Chithrapalayam, Thoppai Valavu, Vellarai, Pothikadu, Pudhupalayam, Konasamudram, Pudhupalayam, Arisipalayam, Koranampatti, Moolapathai, Katchipalli, Morambukadu, and Erumapatti
Mecheri	1	Vellar
Panamarathupatti	16	Kuralnatham, Attayampatti, Amanikondalampatti, Ammapalayam, Sandhiyur, Parapatti, Kalarampatti, Valakuttapatti, Ammapalayam, Panamarathupatti, Nalikalpatti, Nilavarapatti, Sandhiyur, Panamarathupatti, Amman Kovil, Gajalnaickenpatti
Tharamangalam	7	Kadaiyampatti, Elvampatti, Paapanpaadi, Chinnapanpatti, Kondaikaaranur, Thuttampatti, Odakkadu
Kolathur	10	Sanarpalayam, Thelunganur, East Cauveripuramam, Palavadi, Vedikaranur, Kurumbanur, Alamarathupatti, Saveriyarpalayam, Anna Nagar
Yercaud	12	Arangam, Nallur, Periyerikadu, Gundur, Kolahur, Pattipadi Velur, Nadur, Manjakuttai, Karadiyur, Nagalur, Manjakuttai, Thalaisalai

#### **4) Scientific Manpower available with ICAR Institutes and KVKs**

- In Tamil Nadu, 3 main ICAR Institutes (SBI, NRCB and CIBA) and 12 Regional Centres/Stations of ICAR Institutes are present. About 189 Scientists are working in these Institutes.
- Scientists will be allotted to the VKSA campaign on rotation without affecting their regular research activities. Each scientist will stay in the KVK/ Villages for 7-8 days. The Head of Institutes, Regional Centres and Staff on Medical leave will not be disturbed.
- Out of 189 Scientists of ICAR Institutes, 50% of Scientists will be deployed for campaign duty in the first phase (first 7-8 days), and the remaining Scientists will be deployed for campaign duty in the second phase (second 7-8 days).
- The ATARI / KVKs in Tamil Nadu have 140 SMS, of which 93 will be on duty at any point in time and will be shared for the *Rabi* campaign @ one SMS per team for 3 teams per KVK in a day. Additional SMS will also be inducted in the campaign so that all the SMS are actively involved in all the campaign days.
- The SAUs in Tamil Nadu, such as the TNAU (22 Scientists), TANUVAS (6 Scientists), TNJFU (7 Scientists) and Gandhi Gram Rural Institute (2 Scientists), are expected to depute 37+37 Scientists during the first and second phase of the campaign.
- The State Line Departments, such as Agriculture, Horticulture and Plantation Crops, Fisheries and Fishermen Welfare and Agriculture Marketing have joined in the State Coordination Committee. Their staff is expected to join the campaign in each district.
- The Commodity Boards, such as the Spices Board, Tea Board, Coffee Board, Rubber Board, and Coconut Development Board, are willing to join the campaign in one or two districts.
- Similarly, the APEDA, National Seed Corporation, Horticulture Development Board, Directorate of Agriculture Marketing and Inspection, also expressed their willingness to join the campaign for one or two days in identified districts.
- The NABARD and IFFCO are expected to join the campaign along with their products, like drones/Fertilizers or scheme details.

#### **5) Data Collection, Reporting, Monitoring, etc.**

- Reporting to be done through the online portal of ATARI. ATARI, through its KVKs, will facilitate the teams for report submission on the portal
- Reporting of data can also be done through the Kisan Sarathi mobile app, which will also facilitate the uploading of videos, photos, and other forms of communication.
- Questionnaire for collecting issues or challenges of the farmers, technology requirement and gap, researchable issues, policy changes expected by the end user, etc., may be collected during the campaign, scientists-farmers interaction, etc.
- Exhibits, posters, AV aids, method demonstrations, and other extension aids available with the ICAR institutes, SAUs, State Departments, Commodity Boards, etc., that are specific to / suitable for the district may be used in addition to those arranged by the KVKs.

- Social media and mass media shall be used extensively to give adequate promotion to the event, to spread the advisories among farmers, to create awareness on Government schemes and to reach the unreached indirectly.
- Daily reports on the details of team members, VVIP and VIP participation, number of participants (male and female), FDGs conducted, farmers' participation in the interaction meetings, newspaper reports, social media usage, photographs of the event, etc., will be uploaded on the VKSA portal by the Team Leader, *i.e.* SMS of the respective KVK.
- The ICAR-ATARI, Hyderabad, in consultation with the State Nodal Officer, will coordinate the activities, including organizing events and reporting on the VKSA portal.
- A control room has been set up at ICAR-ATARI, Hyderabad, for real-time monitoring, problem solving and reporting during the campaign period, equipped with a real-time data capturing system with a dashboard, round-the-clock two-way AV communication with all the campaign sites. Issues will be solved in real time, and solutions will be provided.
- Live streaming of events at all the camp sites will be provided. State Committee Chairperson and members may get connected with the control room virtually and participate in real-time monitoring and campaign management.
- Dashboard access will be provided for monitoring the conduct of events and participation.
- The Nodal/Co-Nodal Officers, Heads of Institutes/Departments, Directors of Extension Education, State Government Nodal Officer, etc., may visit the campaigns at random and participate in the programme.
- The State Nodal officer, Co-Nodal Officers, Director ICAR-ATARI, the DEE of the Universities, Nodal Officers of State Line Departments and Head of KVK may conduct press briefings periodically during the campaign.
- Each campaign day focuses on a specific theme based on farmers' demand and local relevance. Explore the distribution of seeds/inputs during the campaign through FPO/NGO support, and wherever feasible, link the campaign with skill-upgradation and incubation training for FPOs/SHGs

#### **6) Information to be Disseminated during the *Rabi* 2025 and subsequent campaigns**

- The **crops sown** and area sown **during the *rabi* season** are relatively lesser in Tamil Nadu as the State is experiencing a mostly tropical climate. The major rabi season crops in the State are: Cereals: Rice (Samba/ Thaladi), Ragi, Maize; Pulses: Bengal gram, Horse gram, Black gram and green gram; Oilseeds: Ground nut; Commercial crop: Cotton (limited area); Vegetables: Tomato, Brinjal, Bhendi, Beans, Peas, Cabbage, Cauliflower; Spices: Coriander, etc.
- **In the Kharif season (June to September), about 12–13 lakh hectares** out of 60 lakh ha total cropped area in the State is sown with crops like Paddy (Kuruvai/Thaladi/Early Samba), Sorghum, Cumbu, Maize, Finger Millet, Cotton. Groundnut, Sesamum, Pulses like Red gram, green gram, Black gram, Avarai-Mochai

/ Lablab beans, sugarcane, Tapioca, Chilli, Tomato, Bhendi, Brinjal, etc. Kharif season cropping is mostly rainfall-dependent and also irrigated in some tracts.

- **Information/technologies** related to ideal time of sowing, suitable varieties and seed availability, seed treatment practices, tillage practices, pre-emergence weed management, soil testing, manures and fertilizer application, irrigation management, crop insurance, preventive measures against flood /cyclone during NE monsoon, etc. shared by ICAR institutes, SAUs and other organizations have been compiled (**PI see Booklet on Technologies to be disseminated during VKSA campaign in TN**) and will be passed to the KVKs. State Government, VKSA team for wider dissemination during the campaign. **The Technologies booklet contains 266 technologies and a package of practices (PoP) of 33 important crops of Tamil Nadu, as shown below.**

#	Categories of the Technologies	No. of Technologies
1	New Crop Varieties	101
2	Animal Breed	14
3	Seed Production and Availability	5
4	Crop Production Technologies	59
5	Crop Protection Technologies	27
6	Mechanization	25
7	Post-harvest management, value addition and marketing	12
8	Integrated Farming System	4
9	Animal Husbandry	10
10	Aquaculture and Fisheries	9
	<b>Total</b>	<b>266</b>
11	<b>Package of Practices- Field and Horticultural Crops of TN</b>	<b>33</b>

- Technologies and Schemes Awareness materials like leaflets, bulletins or pamphlets, videos, success stories will be prepared by the ICAR Institutes, SAUs, KVKs and Commodity Boards, NABARD, APEDA, NSC, DAMI, etc. in English and local language (Tamil) for effective dissemination of suitable technologies among stakeholders.
- The *rabi* season **crop advisories**, as well as those prepared by the Extension Division of the ICAR, New Delhi, will be compiled and provided to the team (by the ICAR-ATARI) for dissemination during the campaign.
- Information related to important **ongoing Central and State Government Schemes** will be compiled and shared with the team for disseminating to farmers/target group (**PI see the booklet on Central and State Government Schemes for Farmers**).

## **7) District-wise agro-technological awareness gap, Challenges and Action Plan**

After preliminary discussions with farmers, State Departments of agriculture, horticulture, animal husbandry, fisheries, SAUs, ICAR institutes working in the States, commodity boards, FPOs, KVKs, State VKSA Coordination Committee, and referring to the earlier policy documents, the following district-wise priority issues, challenges, and technology awareness gap have been identified (Table 4). Some of these issues will be deliberated during the campaign.

**Table 4. District-wise major issues/challenges identified in the agricultural sector and possible solutions to address these issues**

Dist. Agriculture Profile	Major Research/extension gaps	Solutions (short-term & Long term)
<b>1) Ariyalur District</b>		
<p>Major agri crops: Dryland cereals (sorghum/millet), pulses, and small area paddy under tank irrigation.</p> <p>Major horticulture crops: Casuarina, coconut pockets, minor fruits.</p> <p>Animal husbandry: Goat/sheep rearing, backyard poultry, dairy (small holders).</p>	<ul style="list-style-type: none"> <li>• Agriculture is mainly rainfed, with crops like paddy, maize, cotton, groundnut, and millets.</li> <li>• Dairy and goat rearing are common, integrated with field crops.</li> <li>• Low awareness/use of drought-tolerant millet varieties.</li> <li>• Inadequate tank de-siltation or repair, lack of awareness of irrigation scheduling.</li> <li>• Limited fodder development programmes for livestock.</li> <li>• Lack of awareness of integrated pest management (IPM) for pulses.</li> <li>• Weak farmer groups/ FPOs for input procurement.</li> <li>• Shrinking sugarcane area.</li> <li>• Large area of culturable land is being converted into unculturable land due to limestone mining</li> </ul>	<ul style="list-style-type: none"> <li>• Promotion of tank modernization, farm ponds, and watershed management can ensure water security.</li> <li>• On-farm demonstrations of drought-tolerant cultivars</li> <li>• Farmer field schools for tank/water body management.</li> <li>• Promoting block-level fodder nurseries and organizing silage demo.</li> <li>• Issue of Pulse IPM leaflets + trainings</li> <li>• Promoting formation of FPOs or farmers groups for timely seed &amp; input supply.</li> <li>• IPM for sugarcane- mealy bug and Pokkah boeng.</li> <li>• Reclamation of mining affected land and promotion of contract farming.</li> </ul>
<b>2) Chengalpattu District</b>		
<p>Major agri crops: Paddy in irrigated tracts, peri-urban vegetable production; floriculture near Chennai suburbs.</p> <p>Major horticulture crops: Flowers (cut-flower units), vegetables and mango.</p> <p>Animal husbandry: Commercial poultry and dairy are linked to urban markets.</p>	<ul style="list-style-type: none"> <li>• Peri-urban agriculture dominates, with paddy, vegetables, banana, and coconut as main crops. Dairy and small poultry units cater to Chennai's urban demand.</li> <li>• Urban encroachment and land fragmentation are reducing farm holding size.</li> <li>• Post-harvest losses for high-value vegetables, cut flowers.</li> <li>• Inadequate cold chain and market linkages.</li> <li>• Limited awareness of protected cultivation (poly houses).</li> <li>• Water quality/ saline groundwater affecting crops.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote urban-rural interface farming like hydroponics, protected vegetable cultivation, and rooftop farming.</li> <li>• Treated wastewater reuse for irrigation and linkages with Chennai's wholesale markets can sustain farming</li> <li>• Training on high-density vegetable farming, vertical farming and protected cultivation</li> <li>• Promoting Small cold-chain cooperatives and mobile chillers</li> <li>• Formation of urban farmer clusters for better marketability.</li> <li>• Extension modules on saline-tolerant varieties and drip fertigation.</li> </ul>

<b>3) Chennai</b>		
<p>Being fully urban, district agriculture is very limited except for roof/gutter farming and gardening, back yard poultry and small-scale dairy in the suburbs.</p>	<ul style="list-style-type: none"> <li>• Highly urbanized district with limited farming activity; small peri-urban zones produce vegetables, flowers, and nurseries. Livestock is largely in commercial dairy and poultry belts near Tambaram and Red Hills.</li> <li>• The main challenges are land scarcity, high input costs, and waste disposal.</li> <li>• Pollution / contaminated soils (heavy metals) in some pockets.</li> <li>• Little awareness of organic/vertical farming profitable models.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote rooftop and kitchen gardening, vertical hydroponics, and community composting.</li> <li>• Encourage peri-urban farmers' clusters supplying fresh produce to city markets, supported by e-marketing and cold logistics.</li> <li>• Promote community cold-rooms and market stalls.</li> </ul>
<b>4) Coimbatore District</b>		
<p>Major agri crops: Paddy in lowland, maize, cotton, seed production, &amp; vegetable cultivation in some taluks. Major horticulture crops: Coconut, banana, mango, vegetables, ornamental plants, &amp; horticulture nurseries for local supply &amp; export. Animal husbandry: Dairy co-ops, poultry, small ruminants</p>	<ul style="list-style-type: none"> <li>• Known as the 'Manchester of South India', it's also a major agricultural district with banana, coconut, turmeric, sugarcane, maize, and vegetables.</li> <li>• Strong dairy and poultry sectors coexist with advanced agro-industries.</li> <li>• Groundwater depletion is the pressing problem.</li> <li>• Seed production and Certification system in this district need further improvement— farmers lack access to certified hybrid seeds.</li> <li>• Pest/disease management in banana and vegetables (lack of localized advisories).</li> <li>• Water management for irrigation (overuse, inefficient scheduling).</li> <li>• Post-harvest and market quality standards for export nursery material.</li> <li>• Low awareness of INM.</li> <li>• Low productivity of coconut due to spiralling whitefly and root wilt.</li> <li>• Low yield and poor marketing networks for arecanut</li> </ul>	<ul style="list-style-type: none"> <li>• Promote precision farming, fertigation, and integrated pest management (IPM) in banana and turmeric.</li> <li>• Strengthen seed certification &amp; distribution <i>via</i> Institutes and KVK tie-ups.</li> <li>• Local pest surveillance + SMS based advisories</li> <li>• Watershed and micro-irrigation subsidy drive with user training.</li> <li>• Quality control training for horticulture nursery exporters.</li> <li>• Soil test-based fertilizer recommendations at the village level.</li> <li>• IPM for coconut pest and diseases.</li> <li>• Campaign on scientific cultivation of Arecanut, including INM, management for spindle bug, bud rot, yellow leaf disease, etc.</li> </ul>
<b>5) Cuddalore District</b>		
<p>Major agri crops: Paddy, groundnut, pulses; coastal agriculture, including cashew pockets.</p>	<ul style="list-style-type: none"> <li>• Fertile deltaic region growing paddy, sugarcane, groundnut, pulses, and casuarina plantations. Farmers also rear cattle, goats, and poultry</li> </ul>	<ul style="list-style-type: none"> <li>• Promote Salt-tolerant varieties + raised bed methods, Coastal shelterbelts, and integrated rice–fish culture.</li> </ul>

<p>Major horticulture crops: Cashew, banana, vegetables, and mango. Animal husbandry: Fisheries (coastal), backyard poultry, dairy</p>	<ul style="list-style-type: none"> <li>• Salinity intrusion in coastal agricultural soils &amp; lack of salinity management measures.</li> <li>• Limited adoption of cashew pruning and GAP for the export market.</li> <li>• Weak cold chain for fish and vegetables.</li> <li>• Gaps in disaster-resilient cropping advisory (cyclone/ sea surge).</li> <li>• Low awareness of INM for paddy.</li> </ul>	<ul style="list-style-type: none"> <li>• Cashew pruning &amp; intercropping demonstrations.</li> <li>• Community LT (low temp) storage for fish.</li> <li>• Local contingency cropping plans + early warning via KVKs and Dist. Administration</li> <li>• Farmer training on INM and micro-nutrient use.</li> </ul>
<b>6) Dharmapuri District</b>		
<p>Major agri crops: Millets, maize, cotton, pulses; rainfed dryland agriculture. Major horticulture crops: Mango, tapioca, minor fruits. Animal husbandry: Goat and sheep breeding and rural dairy rearing.</p>	<ul style="list-style-type: none"> <li>• A dryland horticultural district known for mango orchards and millets.</li> <li>• Groundnut and maize are common field crops, while goats and sheep dominate livestock</li> <li>• Low mechanization for small-holding dryland crops.</li> <li>• Limited varieties befit for low-input conditions.</li> <li>• Weak linkages for mango grading and export compliance.</li> <li>• Fodder scarcity during summer.</li> <li>• Scarce pest surveillance for cotton (recent bollworm trends).</li> <li>• Poor quality of mango fruits and lack of awareness on the utilization of the cold storage facility.</li> <li>• Lack of awareness on pruning mango trees, fruit cover bagging, etc.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote contour bunding, vegetative barriers, and mango-based IFS models.</li> <li>• Encourage the millet value chain</li> <li>• Promote custom hiring Centres for tractors &amp; other farm implements.</li> <li>• On-farm varietal trials for low-input cultivars.</li> <li>• Promoting fruit bagging to produce export-quality mango fruits.</li> <li>• Mango grading training and tie-ups with cold storage units.</li> <li>• Organizing Block-level fodder development &amp; silage training.</li> <li>• Pheromone trap networks and extension alert for cotton pests.</li> <li>• Hands-on training on mango pruning and fruit protective covering.</li> </ul>
<b>7) Dindigul District</b>		
<p>Major agri crops: Millets, paddy, maize, pulses, cotton in parts; chilli &amp; onion in limited pockets. Major horticulture crops: Tomato and vegetable clusters; mango and banana Animal husbandry: Dairy and sheep/goat rearing; small-scale poultry</p>	<ul style="list-style-type: none"> <li>• Agro-diverse district with paddy, cotton, chilli, pulses, vegetables, and banana.</li> <li>• Livestock (dairy, goats, poultry) forms a major livelihood.</li> <li>• Constraints include water scarcity in uplands and poor market linkage for vegetables and spices.</li> <li>• Price volatility for high-value vegetables.</li> <li>• Irrigation scheduling for rainfed uplands.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote micro-irrigation and tank desilting.</li> <li>• Encourage contract farming for chilli, and spice processing centres near Oddanchatram</li> <li>• Formation of FPOs for aggregation and price bargaining.</li> <li>• Soil-moisture indicator demo and training.</li> <li>• Warehouse/dehydration units for onion or linkage with private processors.</li> </ul>

	<ul style="list-style-type: none"> <li>• Post-harvest losses for tomato/onion.</li> <li>• Low adaptation of drip/fertigation.</li> <li>• Lack of cold storage access for small holders.</li> </ul>	<ul style="list-style-type: none"> <li>• Subsidy assistance for drip adoption + hands-on training on drip installation.</li> <li>• Shared cold storage and market linkages.</li> </ul>
<b>8) Erode District</b>		
<p>Major crops: Turmeric, coconut, sugarcane, paddy, banana, tapioca; strong seed and spice production, horticulture nurseries.</p> <p>Animal husbandry: Dairy, poultry, sheep.</p>	<ul style="list-style-type: none"> <li>• Turmeric capital of Tamil Nadu, also grows maize, banana, sugarcane, and paddy.</li> <li>• The livestock sector is strong, especially dairy cooperatives.</li> <li>• Quality control &amp; adulteration issues in the turmeric value chain.</li> <li>• Soil fertility declines due to monocropping of turmeric.</li> <li>• Pests in banana and sugarcane.</li> <li>• Limited value-added units for spices at the village level.</li> <li>• Less awareness of integrated disease management.</li> <li>• Lack of awareness of organic and GI tagged turmeric</li> </ul>	<ul style="list-style-type: none"> <li>• Establish turmeric processing clusters, promote GI branding and export-oriented production.</li> <li>• Promote GAP certification for turmeric.</li> <li>• Crop rotation and green manure demonstrations.</li> <li>• Timely pest advisories <i>via</i> KVK / Mobile SMS/WhatsApp groups</li> <li>• Small spice processing training and micro-credit.</li> <li>• Demo on IPM modules and field school.</li> <li>• Branding and promoting GI-tagged Erode turmeric.</li> </ul>
<b>9) Kallakurichi District</b>		
<p>Major agri crops: Paddy, sugarcane in irrigated tracts; cotton and pulses.</p> <p>Major horticulture crops: Cashew, mango, banana, in certain pockets</p> <p>Animal husbandry: Goat/poultry and dairy (small holder).</p>	<ul style="list-style-type: none"> <li>• Rainfed cropping with paddy, groundnut, sugarcane, tapioca, and maize. Goats and poultry are common.</li> <li>• Low ratoon yield in sugarcane.</li> <li>• Fragmented landholdings limit mechanization.</li> <li>• Weak access to quality planting material for cashew.</li> <li>• Scarcity of organized fodder supply.</li> <li>• Limited extension on micronutrient use.</li> <li>• Borewells are going dry / deeper during summer in some blocks, and surplus water from tanks is overflowing during monsoon, affecting farm lands.</li> <li>• High cost of concentrates of animal feed, low conception rate in buffalo, thus necessitating repeated breeding.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote farm ponds, drip irrigation, and tapioca-based starch industries.</li> <li>• Sugarcane ratoon management demos.</li> <li>• Promoting custom hiring Centres for agricultural machinery.</li> <li>• Promoting certified cashew sapling nurseries.</li> <li>• Community fodder production plots.</li> <li>• Micronutrient correction camps with soil testing.</li> <li>• Proper water management plan (long-term strategy).</li> </ul>
<b>10) Kancheepuram Dist.</b>		
<p>Major agri crops: Paddy (irrigated), millet &amp; pulses, peri-urban vegetables.</p>	<ul style="list-style-type: none"> <li>• Mixed farming zone with paddy, groundnut, coconut, and vegetables, located near Chennai markets. Dairy is significant.</li> </ul>	<ul style="list-style-type: none"> <li>• Encourage peri-urban horticulture clusters, tank rehabilitation, and</li> </ul>

<p>Major horticulture crops: Flowers (near Chennai), mango, and vegetables. Animal husbandry: Poultry and small dairies for urban markets.</p>	<ul style="list-style-type: none"> <li>• Increasing urbanization reduce cultivable land and increases pollution.</li> <li>• Post-harvest handling for cut-flowers.</li> <li>• Lack of extension for protected farming near urban centres.</li> <li>• Water pollution affects vegetable quality.</li> <li>• Weak formation of market linkages with peri-urban growers.</li> </ul>	<p>collective marketing via farmer groups</p> <ul style="list-style-type: none"> <li>• Establishing cold storage units for flowers and grower training.</li> <li>• Incubators for protected cultivation</li> <li>• Water quality testing campaigns.</li> <li>• Formation of a farmers group/ create platforms for peri-urban sales.</li> <li>• Training on chemical residue management.</li> <li>• Promote integrated crop-livestock systems and organic farming for niche Chennai markets.</li> </ul>
<b>11) Kanyakumari Dist.</b>		
<p>Major crops: Coconut, banana, rice, tuber crops, coastal spices (pepper), medicinal plants</p> <p>Animal husbandry: Poultry, goat; inland &amp; coastal fisheries.</p>	<ul style="list-style-type: none"> <li>• High rainfall district, rich in paddy, banana, tapioca, coconut, and rubber.</li> <li>• Dairy and backyard poultry are key livelihoods</li> <li>• Salinity and coastal erosion are impacting crop choices.</li> <li>• Post-harvest processing for coconut and banana is limited.</li> <li>• Limited local R&amp;D on spice/pepper cropping systems.</li> <li>• Small farm sizes reduce the scale of operation.</li> <li>• Gaps in fodder diversification for small holders.</li> <li>• Spread of spiralling whitefly in coconut and banana.</li> <li>• Root wilt in coconut</li> </ul>	<ul style="list-style-type: none"> <li>• Introduce high-yielding banana and coconut hybrids,</li> <li>• Mechanization for smallholders and spice value addition.</li> <li>• Integrate fisheries and horticulture with tourism for income diversification</li> <li>• Coastal-salt management and raised-bed cropping</li> <li>• Support coconut value-addition (copra/desiccated coconut) trainings.</li> <li>• Targeted spice agronomy trials by Universities /KVK</li> <li>• Promote coconut and spice producer cooperatives.</li> <li>• Fodder trials and demonstration plots.</li> <li>• IPM for coconut and banana</li> </ul>
<b>12) Karur District</b>		
<p>Major crops: Cotton, rice, millet, textile-linked cotton production historically prominent, banana and vegetable pockets.</p> <p>Animal husbandry: Dairy, small ruminants and backyard poultry</p>	<ul style="list-style-type: none"> <li>• Located in the Cauvery basin, cultivating banana, paddy, sugarcane, and cotton. Dairy and goat rearing supplement incomes.</li> <li>• Water depletion and textile pollution are major issues.</li> <li>• Cotton pest management (bollworm, whitefly) with limited localized advisories.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote drip irrigation, alternate wetting-drying in paddy, and pollution mitigation. Promote banana fibre and dairy product value addition. Introduce solar pumps for water efficiency</li> <li>• Local pest monitoring and IPM demos.</li> </ul>

	<ul style="list-style-type: none"> <li>• Water scarcity and inefficient irrigation.</li> <li>• Soil salinity/sodicity in parts due to poor irrigation practices.</li> <li>• Weak linkage of cotton growers to seed certification.</li> <li>• Post-harvest handling for bananas.</li> <li>• Low coconut productivity due to poor manuring.</li> <li>• Decline of water bodies (lakes, tanks) <i>vis-a-vis</i> reduction of irrigation sources, for example, Panjapatti Lake, which was a major source of irrigation for 30,000 plus acres, has gone dry over many years due to encroachment, invasion by <i>Prosopis juliflora</i>, reduced rainfall, lack of inflow, etc.</li> <li>• Groundwater contamination in the Amaravathi River due to discharge from dyeing factories, impacting drinking water, irrigation water, and agricultural productivity</li> </ul>	<ul style="list-style-type: none"> <li>• Micro-irrigation demo &amp; subsidies with farmer training.</li> <li>• Reclamation trainings for sodic soils (gypsum + organic matter).</li> <li>• Seed fairs and certified seed access.</li> <li>• Banana grading &amp; packing training.</li> <li>• INM for coconut.</li> <li>• Awareness camp on pollution.</li> </ul>
<b>13) Krishnagiri District</b>		
<p>Major crops: Mango (large producer of Alphonso and local variety), paddy, millets, tomato in some blocks, vegetables and flowers.</p> <p>Animal husbandry: Dairy, goat and poultry</p>	<ul style="list-style-type: none"> <li>• Mango belt of Tamil Nadu, producing Alphonso and Totapuri. Other crops include millets and groundnuts. Sheep and goat rearing are common.</li> <li>• Problems include post-harvest mango losses. Mango disease management (anthracnose).</li> <li>• Post-harvest grading and Cold chain limitations for export.</li> <li>• Lack of good-quality grafted saplings in remote blocks.</li> <li>• Inadequate advisories for tomato pest management.</li> <li>• Limited integrated marketing for mango clusters.</li> <li>• Lack of awareness on use of mango protected cover.</li> </ul>	<ul style="list-style-type: none"> <li>• High-level/ export-oriented training on setting up of mango processing, pulp, and dehydration units, cold chains, grading, and export tie-ups.</li> <li>• Pre- and post-harvest disease management trainings.</li> <li>• Warehouse support and grading lines for mango clusters, including training /awareness on the use of cold storage.</li> <li>• Facilitate FPOs and export linkages for mango.</li> <li>• Certified mango nurseries and sapling distribution</li> <li>• Pest advisory through SMS</li> <li>• Field school on mango fruit covering.</li> </ul>
<b>14) Madurai District</b>		
<p>Major agri crops: Paddy, cotton, maize, groundnut, millets.</p>	<ul style="list-style-type: none"> <li>• Cultivation of paddy, banana, onion, chilli, and cotton.</li> <li>• Dairy and poultry are widespread.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote Tank modernization, community irrigation scheduling, chilli dehydration units, Onion</li> </ul>

Major horticulture crops: Banana, mango, vegetables, and flowers. Animal husbandry: Dairy, inland fisheries, sheep/goat.	<ul style="list-style-type: none"> <li>• Problems include dependence on tank irrigation.</li> <li>• Water scarcity in peri-urban and rainfed areas.</li> <li>• Declining soil fertility in intensively cultivated plots.</li> <li>• Limited mechanization for harvest/processing of pulses.</li> <li>• Weak extension on climate-smart cropping.</li> <li>• Post-harvest losses in small vegetable supply chains.</li> </ul>	<ul style="list-style-type: none"> <li>• cold storage and grading facilities, which may stabilize income.</li> <li>• Micro-irrigation and farm ponds.</li> <li>• Soil test-based nutrient recommendations and organic matter build-up programmes.</li> <li>• Promote custom hiring Centres.</li> <li>• KVK-led climate-smart training modules.</li> <li>• Small warehouses and cold storage for vegetables.</li> </ul>
<b>15) Mayiladuthurai Dist.</b>		
Major agri crops: Paddy (delta area), sugarcane in pockets, pulses Major horticulture crops: Banana, coconut, and betel leaf in some areas. Animal husbandry: Dairy and small ruminants; inland fisheries	<ul style="list-style-type: none"> <li>• A deltaic district growing paddy and coconut. Livestock rearing supports households.</li> <li>• Flooding and salinity are frequent near the coast.</li> <li>• Water-logging and poor drainage in the delta tracts.</li> <li>• Rice blast and sheath blight management gaps.</li> <li>• Lack of mechanized drainage improvement approaches.</li> <li>• Weak farm-level seed replacement for paddy.</li> <li>• Lack of awareness of INM and IPM.</li> <li>• Poor crop diversification, from paddy.</li> </ul>	<ul style="list-style-type: none"> <li>• Village-level drainage programmes, saline soil reclamation programme.</li> <li>• Disease forecasting advisories and seed treatment awareness programmes.</li> <li>• Participatory desilting/drainage maintenance via MGNREGA + Extension</li> <li>• Strengthen certified seed distribution.</li> <li>• IPM/INM trainings and demo plots.</li> <li>• Crop diversification in the delta area.</li> </ul>
<b>16) Nagapattinam Dist.</b>		
Major crops: Paddy (coastal delta), coconut, casuarina, pulses, banana, mangroves for fisheries buffering  Animal husbandry: Fisheries (major coastal), small ruminants, dairy	<ul style="list-style-type: none"> <li>• Salinity and cyclone-related crop damage.</li> <li>• Need for coastal aquaculture best practices for promoting export.</li> <li>• Low access to salt-tolerant paddy varieties.</li> <li>• Post-disaster seed and input supply chain gaps.</li> <li>• Inadequate extension on cage culture, shoreline aquaculture and fish waste management</li> </ul>	<ul style="list-style-type: none"> <li>• Promote salt-tolerant varieties and raised beds.</li> <li>• Training in resilient aquaculture, hatchery and fish waste management.</li> <li>• Disaster preparedness seed banks.</li> <li>• Rapid extension response teams</li> <li>• Coastal buffer plantation programmes.</li> </ul>
<b>17) Namakkal District</b>		
Major crops: Maize, pulses, millet, significant poultry feed/grain production, banana in certain pockets, small-scale vegetable production.	<ul style="list-style-type: none"> <li>• Known as Tamil Nadu's Poultry Hub, with vast broiler and layer farms.</li> <li>• Maize and tapioca are key feed crops.</li> </ul>	<ul style="list-style-type: none"> <li>• Strengthen veterinary extension and biosecurity trainings</li> <li>• Model common treatment/disposal facilities</li> <li>• Local feed mill linkages and quality certification.</li> </ul>

<p>Animal husbandry: Major poultry hub (broiler farming), commercial layer units and dairy.</p>	<ul style="list-style-type: none"> <li>• Biosecurity and disease management in dense poultry clusters.</li> <li>• Litter disposal and environmental compliance.</li> <li>• Feed quality and local feed raw material shortages.</li> <li>• Extension gap for poultry vaccination and management protocols among smallholders.</li> <li>• Limited diversification for small holders away from mono-poultry risk.</li> </ul>	<ul style="list-style-type: none"> <li>• Vaccination drives with cold-chain monitoring</li> <li>• Promote integrated farming (poultry + fodder/horticulture) to diversify.</li> </ul>
<b>18) Nilgiris District</b>		
<p>Major crops: Plantation crops (tea, coffee), temperate fruits &amp; vegetables, millets in higher altitudes, spices, vegetable nurseries.</p> <p>Animal husbandry: Sheep &amp; goat in higher altitudes; smallholder dairy; sericulture in parts.</p>	<ul style="list-style-type: none"> <li>• Hill district, famous for tea, coffee, vegetables, and floriculture.</li> <li>• Dairy is practised on small farms.</li> <li>• Problems are soil erosion, cold injury, and poor farm roads.</li> <li>• Terrace &amp; slope agriculture-led erosion risks.</li> <li>• Pest/disease management in tea &amp; coffee with limited local trials.</li> <li>• Inadequate high-altitude vegetable cultivar trials.</li> <li>• Market access for peri-urban high-value produce.</li> <li>• Human-wildlife conflict impacting crops.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote terracing &amp; contour bunding demonstrations</li> <li>• IPM trials for Tea and coffee</li> <li>• Cold-tolerant vegetable variety trials</li> <li>• Market aggregation through cooperatives</li> <li>• Community wildlife mitigation plans + extension on crop protection.</li> <li>• Promoting tourism-linked agribusiness and eco-labelling can enhance value/ promote local crops' sales.</li> </ul>
<b>19) Perambalur District</b>		
<p>Major agri crops: Millet, maize, pulses, cotton in dry tracts.</p> <p>Major Horti crops: Mango, casuarina, and small fruit orchards.</p> <p>Animal husbandry: Goat, sheep, small dairy units.</p>	<ul style="list-style-type: none"> <li>• A mixed agro-ecosystem with paddy, groundnut, sugarcane, and millets.</li> <li>• Farmers depend on seasonal rainfall; goat and poultry rearing provide resilience.</li> <li>• Low soil organic carbon and nutrient mining.</li> <li>• Lack of mechanization for rainfed farm operations.</li> <li>• Weak access to certified seeds.</li> <li>• Inadequate fodder availability.</li> <li>• Few women-centred extension services.</li> <li>• Shrinking sugarcane area.</li> <li>• High cost of cultivation in cotton</li> </ul>	<ul style="list-style-type: none"> <li>• Expand micro-irrigation, promote drought-tolerant crops, and create village-level processing centres.</li> <li>• Promote green manuring and composting demonstrations.</li> <li>• Custom hiring services.</li> <li>• Seed distribution camps.</li> <li>• Community fodder plots and silage training</li> <li>• Gender-sensitive extension programs and self-help group (SHG) trainings.</li> <li>• IPM and ratoon management in sugarcane.</li> <li>• HDP for cotton and small-scale mechanization for picking bolls/kapas.</li> </ul>

<b>20) Pudukkottai District</b>		
<p>Major agri crops: Paddy (lowland &amp; irrigated), groundnut, millet, pulses</p> <p>Major Horti crops: Banana, coconut, jack fruit, pomegranate in limited pockets.</p> <p>Animal husbandry: Dairy, sheep &amp; goat, poultry.</p>	<ul style="list-style-type: none"> <li>Emerging Groundnut viral diseases and lack of awareness on resistant varieties (pulses and oilseeds).</li> <li>Water management for mixed cropping systems.</li> <li>Lack of empowerment of pulse growers into pulse seed producers with marketing networks (great demand for pulse seed in AP).</li> <li>Limited access to value-addition for jack fruit, pomegranate, etc.</li> <li>Weak extension for soil health card utilization.</li> <li>Post-harvest marketing inefficiencies for jack fruits.</li> <li>Low coconut productivity due to poor fertilization.</li> </ul>	<ul style="list-style-type: none"> <li>Demo/Trials with improved resistant groundnut cultivars and ensuring their seed availability</li> <li>Micro-irrigation + crop diversification advisories</li> <li>Training in fruit grading/packing – Jack fruit, Pomegranate, banana.</li> <li>Village-level soil test camps and promoting INM for coconut.</li> <li>Tie-ups with processors for value-addition, establishing a jackfruit processing Centre.</li> <li>Promoting organic cultivation of traditional paddy varieties.</li> </ul>
<b>21) Ramanathapuram Dist.</b>		
<p>Major crops: Rice (delta), pearl millet, pulses, Palmyra, coconut, banana</p> <p>Animal husbandry: Coastal fisheries, sheep and goat rearing, dairy.</p> <p>Salt Pan in the coastal area</p>	<ul style="list-style-type: none"> <li>Driest district; crops include pearl millet, cotton, pulses, and castor. Goat and sheep rearing are vital; coastal fisheries thrive.</li> <li>Low rainfall, Salinity/water scarcity hampering agriculture.</li> <li>Fish drying/processing quality for market standards.</li> <li>Low adoption of saline-tolerant crops.</li> <li>Limited fodder availability for small ruminants.</li> <li>Inadequate extension for disaster-resilient cropping.</li> </ul>	<ul style="list-style-type: none"> <li>Promote Salt-tolerant crop demonstration, saline soil reclamation.</li> <li>Improved fish processing/hygiene training.</li> <li>Micro-credit for salt pan dryers.</li> <li>Promote salt-resilient fodder and silage</li> <li>Disaster-resilient cropping advisories and seed banks.</li> </ul>
<b>21) Ranipet District</b>		
<p>Major crops: Paddy (irrigated), groundnut, vegetables (peri-urban), and flowers near industrial towns.</p> <p>Animal husbandry: Dairy, small poultry units.</p>	<ul style="list-style-type: none"> <li>This is an industrial district growing paddy and vegetables; dairy and poultry are common.</li> <li>Industrial pollution from the tannin industry is affecting soil/irrigation water in some pockets.</li> <li>Market linkages for peri-urban farmers disrupted by urban land use.</li> <li>Extension gap for safe pesticide uses in vegetables.</li> <li>Lack of clean water for high-value crops.</li> <li>Weak cold chain and aggregation.</li> </ul>	<ul style="list-style-type: none"> <li>Enforce effluent treatment</li> <li>Soil &amp; water testing drives.</li> <li>Cluster marketing and contract farming are tied to nearby industries.</li> <li>Safe-use pesticide awareness and residue testing.</li> <li>Rainwater harvesting and filtration units.</li> <li>Promoting shared cold chain facilities.</li> </ul>

<b>23) Salem District</b>		
<p>Major crops: Mango (special varieties), tapioca for industrial use, coconut, millets, small millets, cashew in parts. Animal husbandry: Poultry and dairy; sheep &amp; goat</p>	<ul style="list-style-type: none"> <li>• Known for mango and turmeric cultivation, along with tapioca and maize.</li> <li>• Erosion in hills, water stress, and market volatility are the major issues.</li> <li>• Soil erosion and declining fertility in upland areas.</li> <li>• Mosaic virus, weak value addition and market linkages for tapioca.</li> <li>• Pest/disease issues in mango and coconut with limited local extension trials.</li> <li>• Limited irrigation infrastructure in uplands.</li> <li>• Branding and quality control for Salem speciality crops like mango.</li> <li>• Promoting scientific cultivation of arecanut along with PoP and seedling distribution, particularly in Pethanaickanpalayam, Yethapur, Vazhappady, Gengavalli, and Attur.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote water harvesting structures and drip irrigation.</li> <li>• Extension on soil conservation &amp; watershed development schemes/measures.</li> <li>• Promote turmeric, tapioca and mango processing units and farmer linkages.</li> <li>• On-farm / KVK trials for pest control.</li> <li>• GI/brand development support and training for Salem mango.</li> <li>• Campaign on scientific cultivation of Arecanut, including management for spindle bug, bud rot, yellow leaf disease, etc.</li> </ul>
<b>24) Sivagangai District</b>		
<p>Major crops: Paddy, groundnut, small millets, sugarcane pockets, mango, coconut, citrus in parts. Animal husbandry: Dairy, goat rearing.</p>	<ul style="list-style-type: none"> <li>• Paddy, pulses, and groundnut are major crops besides goat farming.</li> <li>• Water scarcity and unreliable rainfall.</li> <li>• Limited access to improved varieties and seed systems.</li> <li>• Poor post-harvest handling and market access.</li> <li>• Gaps in extension for INM and soil health improvement.</li> <li>• Weak youth engagement and farm enterprise models.</li> </ul>	<ul style="list-style-type: none"> <li>• Micro-irrigation &amp; farm pond promotion.</li> <li>• Seed fairs and village seed banks</li> <li>• Cold stores and collective marketing.</li> <li>• Soil health camps and INM training</li> <li>• Agri-entrepreneurship programmes for youth (value addition, FPO incubation).</li> </ul>
<b>25) Tenkasi District</b>		
<p>Major crops: Paddy in plains, millets, pulses in uplands, banana, spices (cardamom in nearby hills), and coconut. Animal husbandry: Dairy, goat/sheep in hills, inland fisheries.</p>	<ul style="list-style-type: none"> <li>• A Foothill district with paddy, millets, banana, and spices.</li> <li>• Livestock and inland fisheries are common.</li> <li>• Major Problems: soil erosion, poor roads, and erratic monsoons.</li> <li>• Hilly terrain limits mechanization, and soil conservation is required.</li> </ul>	<ul style="list-style-type: none"> <li>• Contour farming &amp; agroforestry demonstrations</li> <li>• High-altitude variety trials by regional centres</li> <li>• Mobile cluster points &amp; digital marketplaces</li> <li>• Pheromone trap networks for spices</li> <li>• Hill-farming modules and extension camps.</li> </ul>

	<ul style="list-style-type: none"> <li>• Limited research on high-altitude crop/variety trials.</li> <li>• Marketing challenges for remote farmers.</li> <li>• Lack of integrated pest surveillance in spice crops.</li> <li>• Poor penetration of the extension system in remote localities/promotion of sustainable hill farming.</li> <li>• Plastic waste dumping by tourists on cultivable land and more tourist visit to sunflower fields.</li> <li>• Lack of promotion for the export of GI-tagged lemon</li> </ul>	<ul style="list-style-type: none"> <li>• Awareness of plastic pollution among tourists.</li> <li>• Awareness of GI for Puliyanakudi lemon, drip irrigation, e-NAM and export market.</li> </ul>
<b>26) Thanjavur</b>		
<p>Major agri crops: Intensive paddy production (rice bowl), sugarcane &amp; pulses as rotation crops.</p> <p>Major Horti crops: Banana, Coconut, vegetables in the delta and uplands.</p> <p>Animal husbandry: Dairy, inland fisheries; a large extent of aquaculture in adjoining tracts.</p>	<ul style="list-style-type: none"> <li>• Water management: balancing multiple crops and groundwater stress.</li> <li>• Rice monoculture leading to pest/disease pressure and soil fertility decline.</li> <li>• Low mechanized transplanting adoption for labour efficiency.</li> <li>• Need for mechanized harvester and threshers for small holdings of pulses.</li> <li>• Limited diversification from paddy to higher value crops, thus limiting farm income.</li> <li>• Low coconut productivity due to poor fertilization.</li> </ul>	<ul style="list-style-type: none"> <li>• SRI and alternate rice management trials</li> <li>• Mechanized paddy transplanting demonstrations</li> <li>• Promoting rotational cropping and pulses intercropping</li> <li>• Water scheduling &amp; laser land levelling training</li> <li>• Incentives for crop diversification from paddy cultivation and marketing support.</li> <li>• INM for coconut.</li> </ul>
<b>27) Theni district</b>		
<p>Major crops: Cardamom &amp; spice cultivation in higher elevations, paddy and sugarcane in valleys, Cardamom, grapes, coconut, mango, banana and vegetables.</p> <p>Animal husbandry: Dairy, goat, and minor poultry; orchard integration.</p>	<ul style="list-style-type: none"> <li>• A horticulture-rich district growing banana, mango, cardamom, and sugarcane.</li> <li>• Dairy and goat farming integrate well.</li> <li>• Main challenges: post-harvest loss and water management.</li> <li>• Pest/disease management in cardamom and grape with limited extension reach.</li> <li>• Lack of cold chain for perishables (grapes/vegetables).</li> <li>• Soil erosion and slope management for orchards.</li> <li>• Post-harvest losses in smallholder orchards.</li> <li>• Fragmented producer groups limiting market bargaining power.</li> </ul>	<ul style="list-style-type: none"> <li>• Establish fruit processing units, drip irrigation, and cold storage</li> <li>• Targeted IPM &amp; disease management programmes</li> <li>• Warehouse and cold store cooperatives.</li> <li>• Terracing &amp; mulching demonstrations.</li> <li>• Training on post-harvest handling and value addition.</li> <li>• Strengthen FPOs for cluster marketing.</li> <li>• Awareness on integrated disease management, Chemical/pesticide residue and promoting good agriculture practices</li> </ul>

	<ul style="list-style-type: none"> <li>• Theni is known for Muscat Hamburg variety (paneer thiratchai) grapes (GI-tagged). Due to mildew diseases, grey mould, heavy rains, etc., productivity dropped drastically.</li> </ul>	
<b>27) Thiruvarur district</b>		
<p>Major agri crops: Paddy-dominant delta; extensive irrigated agriculture.</p> <p>Major Horti crops: Banana and vegetables in the delta and uplands.</p> <p>Animal husbandry: Dairy and inland fisheries.</p>	<ul style="list-style-type: none"> <li>• Over-dependence on paddy, leading to low cropping intensity and diversification.</li> <li>• Soil salinity in certain pockets due to improper drainage.</li> <li>• Limited extension for alternate livelihoods (Horti &amp; fisheries integration).</li> <li>• Need for better post-harvest facilities for bananas and vegetables.</li> <li>• Pest pressure in continuous paddy cropping and increased use of pesticides in vegetables</li> </ul>	<ul style="list-style-type: none"> <li>• Promote crop rotation and pulse intercropping</li> <li>• Drainage maintenance programs</li> <li>• Integrated farming system demos (paddy + fish + vegetable)</li> <li>• Village-level warehouses.</li> <li>• IPM dashboard and advisories for paddy and vegetables</li> </ul>
<b>29) Thoothukudi Dist.</b>		
<p>Major crops: Banana, coconut, cashew in a few pockets, cotton, millets, paddy in certain pockets.</p> <p>Animal husbandry: Fisheries (marine &amp; aquaculture), mainly coastal salt production and dairy in inland pockets.</p>	<ul style="list-style-type: none"> <li>• Saline water intrusion and land degradation.</li> <li>• Poor fish value-chain and processing hygiene.</li> <li>• Limited research on saline-agriculture systems.</li> <li>• Water scarcity for inland crops and fodder.</li> <li>• Weak extension on sustainable aquaculture practices.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote salt-tolerant crop trials.</li> <li>• Fish processing training &amp; HACCP compliance support.</li> <li>• Saline agriculture R&amp;D plots</li> <li>• Water harvesting and solar desalination pilot schemes</li> <li>• Extension for sustainable feed and aquaculture disease management.</li> </ul>
<b>30) Tirunelveli District</b>		
<p>Major crops: Paddy, tuber crops, millets, horticulture in foothills, banana, mango, tuber crops and spices in some areas.</p> <p>Animal husbandry: Dairy, sheep, coastal &amp; inland fisheries.</p>	<ul style="list-style-type: none"> <li>• Mixed cropping with paddy, banana, and chilli. Dairy and inland fisheries are common</li> <li>• Water stress in rainfed tracts and cyclones in all places.</li> <li>• Limited adoption of improved tuber crops and fruit varieties.</li> <li>• Marketing and grading for hill-grown produce.</li> <li>• Fodder shortages in lean seasons.</li> <li>• Lack of integrated extension for hillside &amp; plains differences.</li> </ul>	<ul style="list-style-type: none"> <li>• Promoting Farm ponds &amp; micro-irrigation</li> <li>• Varietal trials and tree sapling distribution</li> <li>• Cold chain linkages and grading training</li> <li>• Community fodder banks</li> <li>• Tailored extension packages for hill and plain areas.</li> </ul>
<b>31) Thirupathur District</b>		
<p>Major agri crops: Paddy (irrigated), millet, pulses, groundnut, &amp; cotton in drier pockets.</p>	<ul style="list-style-type: none"> <li>• Dryland farming with maize, millet, and groundnut</li> <li>• Erratic rainfall and groundwater decline.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote millet clusters, tank desilting,</li> <li>• Groundwater recharge structures &amp; micro-irrigation</li> </ul>

Major Horti crops: Mango, banana in irrigated pockets. Animal husbandry: Dairy and small ruminants.	<ul style="list-style-type: none"> <li>• Limited certified seed availability.</li> <li>• Lack of value-addition for mango and other fruits.</li> <li>• Scarcity of fodder in dry months.</li> <li>• Extension reaches small, fragmented holdings.</li> </ul>	<ul style="list-style-type: none"> <li>• Seed distribution <i>via</i> extension stalls, cooperative societies, rural outlets</li> <li>• Small fruit processing &amp; FPO support.</li> <li>• Fodder cultivation drives.</li> <li>• Mobile extension units and digital advisories.</li> </ul>
<b>32) Tiruppur District</b>		
Major crops: Cotton belt, maize, pulses in dry tracts, Coconut and Banana, vegetables for local markets. Animal husbandry: Small holder dairy and poultry.	<ul style="list-style-type: none"> <li>• Industrial district with cotton, maize, and some paddy. Dairy is secondary.</li> <li>• Groundwater depletion, fueled by textile industry water demand pressures, and pollution from textile effluents.</li> <li>• Cotton pest cycles and resistance issues.</li> <li>• Labour shortages for peak agricultural operations.</li> <li>• Limited circular economy initiatives for agro-textile waste.</li> <li>• Low coconut productivity due to spiralling whitefly and root wilt.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote water-efficient cropping &amp; industrial-agriculture water audits</li> <li>• IPM programmes and refuge strategies for cotton</li> <li>• High-density planting, mechanization/custom hiring for cotton cultivation</li> <li>• Recycling initiatives connecting agro-residue to industry.</li> <li>• Precision farming (irrigation) advisories.</li> <li>• IPM for coconut.</li> </ul>
<b>33) Tiruchirappalli Dist.</b>		
Major crops: Paddy, banana (major cluster), sugarcane, cotton in upland tracts, vegetables and flowers. Animal husbandry: Dairy, sheep/goat and poultry.	<ul style="list-style-type: none"> <li>• Major crops include paddy, banana, maize, and sugarcane.</li> <li>• Drainage problems affecting banana cultivation</li> <li>• Inadequate pest and disease advisory for bananas.</li> <li>• Cold chain gaps for bananas and vegetables.</li> <li>• Soil health decline in intensively cropped areas.</li> <li>• Limited funds for water body maintenance.</li> <li>• Shrinking sugarcane acreage</li> </ul>	<ul style="list-style-type: none"> <li>• Joint departmental desilting &amp; drainage planning</li> <li>• Banana IPM &amp; pre-harvest treatments</li> <li>• Community cold storage and banana ripening centres</li> <li>• Soil health programs and green manures</li> <li>• Proactive maintenance contracts for channel management.</li> <li>• IPM for sugarcane mealy bug and pokkah boeng</li> </ul>
<b>34) Thiruvallur Dist.</b>		
Major crops: Paddy, peri-urban vegetables, floriculture, and coconut in a few places. Animal husbandry: Dairy, poultry, peri-urban livestock rearing and trade.	<ul style="list-style-type: none"> <li>• It is a peri-urban agriculture growing paddy, vegetables, and flowers</li> <li>• Urban expansion pressure led to faster land conversion.</li> <li>• Pollution of water sources from urban runoff.</li> <li>• Need for extension of protected cultivation best practices.</li> <li>• Market access competition with Chennai.</li> </ul>	<ul style="list-style-type: none"> <li>• Develop peri-urban horticulture hubs,</li> <li>• Zoning advisory &amp; peri-urban farming support</li> <li>• Water filtration and testing programs</li> <li>• Protected cultivation demonstration plots</li> <li>• FPOs for peri-urban market access</li> </ul>

	<ul style="list-style-type: none"> <li>Weak collective marketing for peri-urban growers.</li> </ul>	<ul style="list-style-type: none"> <li>Awareness programmes focused on high-value, low-space crops.</li> </ul>
<b>35) Tiruvannamalai Dist.</b>		
<p>Major agri crops: Paddy, millets, groundnut; rainfed agriculture dominates.</p> <p>Major Horti crops: Mango, cashew, minor fruits.</p> <p>Animal husbandry: Goat/sheep, poultry, dairy.</p>	<ul style="list-style-type: none"> <li>Diverse farming with paddy, groundnut, sugarcane, and millets. Goats and cattle are common.</li> <li>Challenges: low rainfall and input inefficiency. More dependence on the monsoon.</li> <li>Soil fertility declines and erosion.</li> <li>Limited certified planting material for mango/cashew.</li> <li>Poor market linkages for dryland produce.</li> <li>Weak extension reaches in remote villages.</li> </ul>	<ul style="list-style-type: none"> <li>Promote Agroforestry</li> <li>Watershed &amp; farm pond programmes</li> <li>Soil health card follow-ups and organic matter additions</li> <li>Certified nursery promotion.</li> <li>Market aggregation via FPOs and mobile markets.</li> <li>Strengthen cluster-based extension and mobile Agri Department/KVK /University camps.</li> </ul>
<b>36) Vellore District</b>		
<p>Major agri crops: Paddy, mango (special clusters), vegetables, and flowers in peri-urban zones.</p> <p>Major Horti crops: Mango (esp. Banganapalli), vegetables for urban markets.</p> <p>Animal husbandry: Dairy, backyard poultry and goats.</p>	<ul style="list-style-type: none"> <li>Paddy, groundnut, and mango are major crops. Groundwater depletion and poultry disease are major problems.</li> <li>Salinization of soil and water near industrial zones.</li> <li>Need for mango grading, storage, &amp; pest management.</li> <li>Drastic drop in agricultural labour availability near urban centres.</li> <li>Limited access to mechanized harvesting for horticulture.</li> <li>Weak awareness programmes tailored to peri-urban growers.</li> </ul>	<ul style="list-style-type: none"> <li>Create Artificial recharge structures,</li> <li>Evolve micro-irrigation programmes</li> <li>Mango Warehouse, cold storage &amp; IPM training.</li> <li>Mechanization: promote custom hiring centres.</li> <li>Extension modules for peri-urban cropping systems.</li> <li>Market linkages via urban retail partnerships.</li> </ul>
<b>37) Villupuram District</b>		
<p>Major agri crops: Paddy in irrigated tracts, groundnut, pulses, cashew and sugarcane in some zones.</p> <p>Major Horti crops: Cashew, mango, banana in pockets.</p> <p>Animal husbandry: Dairy, goat and poultry; inland fisheries in some blocks.</p>	<ul style="list-style-type: none"> <li>Largest district, cultivating paddy, groundnut, millets, and casuarina.</li> <li>Low input usage (uncertified seeds), poor adoption of improved varieties for pulses and groundnut.</li> <li>Large tracts of degraded soils need rehabilitation.</li> <li>Seed system weakness for cashew and mango saplings.</li> <li>Lack of cluster/FPO/ aggregation and value-addition.</li> <li>Inadequate extension outreach in remote blocks.</li> </ul>	<ul style="list-style-type: none"> <li>Input demonstration plots and seed replacement programs</li> <li>Degraded soil restoration via FYM and green manures</li> <li>Certified nursery support &amp; sapling subsidies for cashew and mango</li> <li>FPO formation and small processing units</li> <li>Mobile extension and KVK satellite clinics.</li> </ul>

<b>38) Virudhunagar District</b>		
<p>Major agri crops: Rainfed and semi-rainfed farming dominates in the district - groundnut, cotton, millets, maize, red gram, &amp; chickpea.</p> <p>Major Horti crops: Mango, guava, banana, aonla, sapota, vegetables, jasmine, &amp; tuberose</p> <p>Animal husbandry: Dairy, goat/sheep rearing and backyard poultry.</p>	<ul style="list-style-type: none"> <li>• Dry district with chilli, pulses, and cotton. Goat rearing is a major livelihood.</li> <li>• Water scarcity, groundwater stress and unreliable tank irrigation.</li> <li>• Low adoption of improved planting material &amp; certified seed (Horti + field crops).</li> <li>• Pest &amp; disease pressure in mango, cotton and vegetables + lack of timely surveillance/advisory.</li> <li>• Fodder scarcity and weak linkages between crop and livestock interventions.</li> <li>• Post-harvest losses, inadequate cold chain &amp; market linkages for high-value horticulture (mango, banana, tomato, onion).</li> <li>• The district is called the Cotton Belt of TN, but the cotton cultivation is diminishing due to labour shortage and high cost of cultivation.</li> </ul>	<ul style="list-style-type: none"> <li>• Promote contract farming for chilli.</li> <li>• Demo for drip fertigation /sprinkler for groundnut, banana, vegetables + drip installation &amp; maintenance.</li> <li>• Small farm waterbody recharge.</li> <li>• Establish/scale-up certified mother-blocks and community nurseries (public-private tie-ups).</li> <li>• Establish a district pest-surveillance network (KVK + Department of Agri) with pheromone traps and weekly risk bulletins <i>via</i> SMS/WhatsApp.</li> <li>• Field schools for mango and vegetables focusing on IPM.</li> <li>• Block-level fodder plots, seed distribution of fast-growing forages.</li> <li>• Promote FPO-led warehouses, mobile cold storage and shared ripening/pre-cooling services.</li> <li>• Cotton promotion through HDP, IPM, INM- advisories,</li> </ul>

Source: <https://des.tn.gov.in>; <https://agritech.tnau.ac.in>; <https://agriwelfare.gov.in>; <https://www.tn.gov.in/> and CARDS-TNAU (2009)

## 8) State-level Common Problems and Action Plan

A perusal of agrarian challenges, extension and technological awareness gap identified at districts level (see Table 4) indicated some of the issues are common, widespread across districts/agroclimatic zones, therefore, necessitating larger planning and drives at the State /Central Government level are sorted out, prioritized and presented in this section

Some of these issues flagged here may require the attention of policy makers/ planners, and some issues shows gap in research, hence require more consultative deliberation with research institutions and stakeholders for addressing the challenges.

### 8.1. Addressing issues related to Policies, Subsidies, etc.

The issues highlighted below may be flagged suitably, following the code of conduct at the appropriate forum and also during the visit of VIPs/administrator/policy makers for the VKSA campaign/workshop.

**Focus:** *Increasing the number of beneficiaries, reducing the turnaround time, providing interest subvention, improving the livelihood of landless agricultural labourers, etc.*

#	Priority Issues or Challenges	Action Plan to Address the Issue
1	Greater demand for <b>power weeder</b> exists in TN, as this small implement works well in 4-foot-wide row crops, and it is a labour-saving implement.	
2	<b>Power-Driven Chaff Cutters</b> find increasing adoption in the State. It is being distributed at 50% subsidy.	The number of beneficiaries under the respective schemes in TN may be increased.
3	The Central and State Governments are promoting <b>solar pump sets</b> in the State. <b><i>The demand for this item is high</i></b> as a subsidy is given to this product, but the sanction is delayed, and the number of beneficiaries is limited, say, <1000 /year.	Back-end subsidy will help to reduce the waiting period or turnover time.
4	The Department of Horticulture and the Spices Board are providing <b>HDPE Tarpaulin sheets</b> at subsidized rate for drying of chilli, black pepper and clove. More spice crops, such as garlic/more beneficiary need to be included in the scheme.	To encourage scientific drying of spices, HDPE Tarpaulin sheets may be provided to many farmers, including Garlic grower.  GAP-Kit, including boosters, may be provided to all GI species.
5	Ensuring the income of dryland farmers by shifting to alternative professions	<b>Setting up of Solar parks to increase the income of dryland farmers.</b>  Retain low-value crops like minor millets and pulses in the dryland.  Land that cannot generate high-value crops can be allowed for <b>solar parks</b> ,

		<p>which may give farmers steady annual rent (₹30,000 to ₹50,000/acre, depending on the project). Power transmission to the National Power Grid from a remote village may be a challenge, but it is a solvable issue.</p> <p>The Government may consider promoting <b>Agrivoltaics</b>, <i>i.e.</i> combining solar panels with millet/pulses/fodder crop cultivations.</p> <p>The PM-KUSUM Scheme of GoI and Tamil Nadu Solar Policy 2019 promote solar pumps and decentralized solar plants (up to 2 MW).</p>
6	<p><b>Tractor hiring:</b> The Agri. The Engineering Department, Government of TN, provides tractors, power tillers, and other farm machinery <b>on hire</b> at subsidized rates through Agricultural Machinery Hiring Centres (AMHCs) and Custom Hiring Centres (CHCs). This service has an overwhelming response throughout Tamil Nadu. Remote areas need to be focused on.</p>	<p>Distribution of leaflets just before the start of agriculture season, <b>focusing on remote areas</b> and engagement of rural youth of remote villages on daily-basis, will address these limitations.</p> <p>More drivers may be engaged.</p>
7	<p>The Government is supporting the establishment of a <b>cold storage /warehouse</b> facility for keeping their perishable vegetables temporarily for a few days, before sending them to markets. <i>Such a cold storage godown is limited in number or not present in the village or block level production cluster of important vegetables.</i></p>	<p>Government support for <b>establishing small-scale cold storage godowns</b> in major vegetable production clusters/block level may be doubled.</p>
8	<p><b>Long-distance transport &amp; marketing:</b> Vegetable and flower cultivation and sending produce to urban markets (Koyambedu, Dharasuram, Coimbatore, Madurai, Trichy, Salem markets) is increasing among young generation farmers. The <b>transport cost of sending their produce to long distance market reduces their profit.</b></p>	<p><b>Financial support to bear the transport cost</b> would help the youth /young generation farmers in retaining their profession in agriculture.</p>

9	Under the <b>PM KISAN scheme</b> , only farmers with agricultural landholdings are covered. <b>Landless farmers are not included as beneficiaries.</b>	The scheme may include landless farmers or agricultural workers having permanent residence in villages. If not, <b>Goats</b> may be given at subsidized rate to the landless workers to start a new business.
10	The benefit offered under the <b>Drone Didi</b> scheme is restricted to females.	<b>Male engineering graduates</b> hailing from rural areas may be given the benefits, so that their income will be ensured, and at the same time, more drone service providers will be available in rural areas.
11	Crop insurance under PM-FBY is being offered to paddy and a few crops. <b>Other major crops are not covered.</b> Sometimes, cattle growers face problems like the <b>death of their milch animals</b> during calving, snake bite, diseases, electricity shock, etc. These losses are not covered in the insurance scheme.	Sugarcane, banana, etc., may be brought under PM-FBY insurance cover.  Unexpected death of <b>milch animals</b> may be brought under a suitable insurance scheme.
12	Considering the huge import of <b>palm oil</b> into India, the National Oilseed Mission was launched. Oil palm has been promoted in Tamil Nadu, but <b>its spread in the State is not appreciably high. Those who planted Oil palm are facing less productivity and processing problems.</b> A lot of unspent funds under the oil palm mission are available.	The unspent budget available under the Oil Palm Promotion Scheme may be diverted for the promotion of other suitable oilseed crops in the State.
13	<b>Conservation of fruit genetic resources - a new approach</b>	Collect all the available varieties and variabilities in fruit crops and plant them as avenue trees <b>along the rural roads, on the banks of ponds/lakes and on common lands</b> - Natham, Porampokku, as done by earlier rulers.  Village youth may be employed for the collection of seeds and seedling/sapling/nursery rising - they will get gainful employment in the rural area itself and at the same time help them in nursery activities.
14	<b>Assistance for setting up Dairy units:</b> The Central and State Government is	Credit for setting up a dairy unit in villages with <b>interest subvention</b> or

	supporting the purchase of <b>milch animal</b> through for less than 2 cows/animals. However, for those who wish to purchase 5-10 cows <b>for setting up a dairy unit in villages, limited financial support with low interest is available.</b>	loan at 4% interest rate may be announced, especially to the new entrepreneurs.  The Department may assist suitably for purchase and or transport of cows from other states or faraway places.
15	<b>Rabbit farming</b> is profitable as it requires very little space and investment, and can be managed easily by women. It <b>requires more promotional activities.</b>	Inclusion of Rabbit Farming in the National Livestock Mission or a separate scheme under the State Department focusing on hill areas could help.
16	<b>Area expansion for clove in Kanyakumari district:</b> Tamil Nadu is the leader in clove production in the country. The Kanyakumari clove is known for its quality, and it got GI tag. Due to increasing demand, the country is importing cloves worth 1953 crores in 2024-25. To curb clove imports, the Government is promoting clove cultivation in the Country. The Nagercoil hills in the Kanyakumari Dist. is having ideal climate for clove cultivation. <b>There is a possibility of increasing the area in Kanyakumari Dist.</b> However, there is a hurdle in area expansion <b>due to the implementation of the Tamil Nadu Forest Act, 1882 and the TN Preservation of Private Forest Act, 1949</b> , which interprets the 'Patta land' as private forest, which prohibits agricultural activities in the private forest without special permission of the Forest Department.	Special permission from the Forest Department/ Government of Tamil Nadu is required to expand the clove area in the private forest Patta Land of Kanyakumari District. Since clove, nutmeg, etc. live long (~60 years) and promote forest cover, their cultivation in the private Patta land may be treated as an afforestation activity.  The clove cultivation may be excluded from the list of non-forest activities, and growers should not be penalized under the Forest Act.
17	The TNAU develops many innovative farm machineries, implements, and processing tools, but adoption at the farm level depends on effective extension. The The TN Agri Engineering Department has a field network, extension staff, and field demonstration platforms, ensuring technologies reach small and marginal farmers quickly. <b>The Department seek sharing of Agricultural Engineering Technology developed by TNAU with</b>	This proposal is agreed subject to establishing a MoUs or formal technology transfer agreements for clear roles and timelines, which will scale the adoption of the implementation among farmers efficiently. Ensuring quality, safety, and standardization. Strengthening feedback loops for future innovation. Promoting sustainable and precision agriculture in Tamil Nadu

	<b>the TN Agri Engineering Department for extension purposes.</b>	
18	<p>The ICAR-Central Institute of Post-Harvest Engineering and Technology (CIPHET)'s Post-Harvest Machinery and Equipment Testing Centre (PHMETC), Ludhiana, conducts <b>tests to ensure the supply of quality agricultural machinery and equipment under government programmes.</b> The testing charges are determined based on the type and complexity of the machinery. The Farm Machinery Training and Testing Institutes (FMTTIs) across India, such as those in Budni, Hisar, and Biswanath Chariali, offer testing services for agricultural machinery. The TNAU provides a schedule of test fees for various types of agricultural equipment. For instance, testing charges for tractors under different standards are as follows:</p> <p>ICT Standard : ₹2,25,000  BT Standard : ₹2,15,000  OECD Standard : ₹1,75,000</p> <p><b>The charges are felt to be high by the Department and new entrepreneurs.</b></p>	Reduce testing charges for Agricultural machinery and implements tested by the Government of India approved Testing institutes.
19	<p><b>Goods and Services Tax (GST)</b> was implemented in India on 1<sup>st</sup> July 2017, replacing multiple indirect taxes such as excise duty, VAT, and service tax. To promote agriculture and reduce input costs for farmers, the Government of India provided GST exemptions on certain agricultural machinery and implements, recognising them as essential for farm production. Later, it was revoked, and GST of 12 to 18% was charged. <b>The GST on agricultural machinery and implements has been reduced from 12%-18% to 5%,</b> effective from September 22, 2025. This is applicable for Tractors and power tillers, Tractor tyres, Ploughs, harrows, cultivators, seed drills, Threshers, combine harvesters, Sprayers, planters, irrigation pumps (including solar-powered), Milking machines, dairy equipment, poultry feeding &amp; watering equipment, Solar dryers for agricultural</p>	The State Department and Farmers demand an exemption from GST for agricultural machinery and implements.

	<p>produce, implements primarily used for harvesting, sowing, planting, or land preparation. The purpose of the GST reduction is to reduce the cost burden on farmers and agricultural entrepreneurs.</p>	
20	<p><b>Issues related to the quality of farm inputs, irrigation water and agricultural produce:</b> It is a fact that the people who eat natural foods, fruits, vegetables, etc., are healthy with good physical and mental well-being. There are cases where some of the food grains/vegetables/fruits/insecticides/micronutrients/organic fertilisers sold in the market are furious/adulterated/contain pesticide residues/residues of chemicals used in the processing chain. If such materials are consumed by the people/utilised in the foodgrains/vegetable/fruit production processes, it may affect the health of consumers/health of soils, ecosystem, etc.</p> <p>Instances of <b>spurious seeds, substandard fertilizers, adulterated pesticides, and misbranded micronutrients and bio-stimulants have been reported.</b> According to DA&amp;FW, around 6–8% of fertilizer and pesticide samples tested annually across India fail to meet prescribed quality standards.</p> <p>The quality of <b>agricultural produce</b> is another critical area of concern. Studies by the <b>FSSAI have revealed the presence of pesticide residues above permissible limits</b> in vegetables and fruits in several markets.</p> <p>The presence of <b>industrial effluents and sewage contamination</b> in peri-urban areas like Coimbatore, Vellore, Ranipettai and Tiruppur further <b>deteriorates irrigation water quality.</b></p>	<p><b>Expand or intensify:</b></p> <p>(i) Periodical inspection on the quality of agriculture inputs such as fertilizers, pesticides, seeds, micronutrients, foliar spray, bio-stimulants, growth regulators, hormones, etc., sold in the local markets.</p> <p>(ii) periodical inspection on the quality of farm products, particularly pesticide residue/ poisonous substances/ designated disease content in food grains, vegetables, fruits, etc., sold in local markets.</p> <p>(iii) periodical testing on irrigation quality used for agricultural purposes and giving suitable alerts/remedies/ advisories for improvement to the growers/ dealers/manufacturers, etc.</p> <p><b>Establishment of as many as possible referral lab for</b></p> <p>(i) testing the quality of fertilizers, pesticides, seeds, micronutrients, foliar spray, bio-stimulants, growth regulators, hormones, etc. sold in the local markets,</p> <p>(ii) for testing the quality or pesticide residues /poisonous substances in foodgrains, vegetables, fruits, etc. sold in local markets,</p> <p>(iii) testing the irrigation water quality, preferably in PPP mode.</p>

## 8.2. Addressing issues related to research / technological gap

Some of the prioritized issues which require considerable time and investment to find a possible solution are presented here under 7 themes. The concerned ICAR institutions, SAUs and other agencies may take up these issues for working out a possible solution, individually or jointly with the Central and State Governments

### Theme 1

#### Issues related to Genetic Improvement of Crop Varieties and Seed Production

**Focus / Intervention:** *Market-driven or demand-driven breeding/crop varieties are the need of the hour. Seeds of improved varieties shall reach farmers before sowing time by expanding seed production capabilities, exploring the PPP mode and coordinating the seed marketing network.*

#	Priority Issues or Challenges	Possible Solution to Address the Issue
1	<b>Regaining Cotton area</b> and productivity in the State by <b>developing suitable varieties/hybrids</b> .	Development of <b>HDPS</b> (high density planting system) <b>ideotypes</b> (compact architecture, synchronous bolling) for mechanical picking.  Dissemination of knowledge on varieties/ hybrids best suited for TN microclimates.
2	The demand for <b>fine and superfine paddy varieties</b> is increasing in the State traded in huge quantity than general or matta rice. Traders and consumers demand varieties like RNR (Pragathi RNR-15048), Sowbhagya, etc.	Development of super fine rice varieties based on market need has many-fold advantages: i) It satisfies consumer needs. ii) The export potential of these varieties is high iii) As these varieties are traded at threefold higher prices than matta rice, farmers will get more profit. iv) Indirectly, it reduces procurement burden at DPC Centres operating in the Centre, as most of the super fine varieties are immediately bought by the millers directly from the farmers.
3	Farmers prefer <b>bold-seeded Groundnut</b> varieties like GG 20, which fetches Rs. 500-1000/q higher rate than normal size variety. Farmers are getting seeds from Gujarat through traders at a high cost. Seed production of this variety in TN is suggested.	Bold-seeded groundnut as good as that of GG 20 is required for the domestic market as well as for boosting exports.  The GG 20 variety may be tested along with TNAU varieties. If it outyields its seed production during the kharif season may be approved/taken up by the concerned institutes/Department.

4	<p><b>Rice fallow pulses</b> are an important cropping system in the delta area of TN. <b>A larger number of short-duration varieties with bold seed are required for such a cropping system.</b></p>	<p>Identification of short-duration <b>black gram</b> with bold seed for rice fallow cropping system is required.</p> <p>A short-duration <b>red gram</b> variety with a high yield similar to that of long-duration varieties may be developed.</p>
5	<p><b>Improved sugarcane varieties</b> with high yield, high sucrose%, combined with tolerance to Pokkah-boeng-crown mealy bug for the <b>delta area and interior coastal zone</b> are required.</p>	<p>Cane variety suitable to the region and tolerant to the inherent and seasonal problems faced in the zones may be evolved in collaboration with the sugar industry.</p>

**Theme 2**  
**Issues related to crop Productivity through ICM, INM, IPM, etc.**

**Focus/Intervention:** *Ensuring site-specific crop planning (right crop, right season, right practices), promoting efficient nutrient and water management, and integrating soil, crop, pest, and nutrient management, aiming for high productivity and farmers' profitability and at the same time reducing input cost and encouraging diversification and crop rotation to maintain soil health.*

#	Priority Issues or Challenges	Possible Solution to Address the Issue
1	Increasing the area under <b>cotton</b> by <b>improving cotton productivity</b> , farmers' profitability and reducing the cost of cultivation	<p><b>Standardizing &amp; Popularizing Improved production technologies</b>, which have increased resource use efficiency, such as:</p> <ul style="list-style-type: none"> <li>• <b>Drip-fertigation schedules</b> for HDPS vs conventional; split-N trials guided by RS and leaf tissue indices.</li> <li>• Deficit irrigation protocols with IoT soil moisture + weather cues for the western belt.</li> <li>• Soil carbon restoration trials: cotton-legume rotations, compost, biochar amendments.</li> </ul> <p><b>Integrated pest and disease management</b></p> <ul style="list-style-type: none"> <li>• AI-enabled surveillance and timely interventions to control insect pests, including control Area-wide PBW (pink bollworm) management trials: pheromone trapping density, mating disruption, and sowing window experiments.</li> <li>• Compatibility studies for biocontrol agents and key botanicals with locally used insecticides.</li> </ul>
2	Tannery or textile effluent problem in districts like Karur, Tiruvallur, Vellore, and Coimbatore is increasing.	Bio-products like Effective Microbes (EM) Solution for the reclamation of industrial effluent are required.
3	The application of green leaf manuring in paddy fields is getting reduced. It is time to increase green leaf production base in the rural areas, especially in the paddy belt, by growing trees such as neem, poovarasu, pungam, gliiricidia,	Local farmers residing in the nearby villages may be involved in participatory tree planting in forest/panchayat land, watering and tree maintenance, etc. In return, the forest Department or Panchayat may allow these farmers to

	etc. in village wasteland, porampokku, social forest land, etc.	collect leaves from these trees for feeding to goats and green manuring purposes.
4	Hitherto unnoticed or <b>minor pests</b> like <b>Rugose spiralling whitefly in coconut</b> , stem borer in pulses, and <b>mealy bug in sugarcane</b> are posing serious threats to the crops.	Effective integrated management practices (IPM) with a greater focus on parasitoids and predators may be taken up on a war footing basis.
5	Problems anticipated in a high-density cotton planting system. The HDPS warrants desired ideotypes/alteration in plant canopy, such as <b>compact and early varieties, which are still limited in India or TN. Secondly, the nutrient and water stress under HDPS may reduce yields due to high population. Thirdly, pest and disease spread is faster in dense canopies, and lastly, farmers have to use growth regulators or manual pruning, which is essential, or else lodging occurs.</b>	These challenges require the attention of researchers and extension officials.
6	<b>Improving the quality of water bodies:</b> In the urban area, there are tanks and ponds where the impounded <b>water remains in the tank/pond for years together</b> , creating bad odour, high algal growth and BOD. The water in such ponds is unfit for animal wash and even for fish farming. The banks of a few such ponds/tanks have been improved under the Smart City Project, and people utilizing it for morning walks, ignoring the hazardous odour.	One time letting-out of such stagnated water, followed by drying for a few months, desilting and letting-in fresh water, and stopping mixing of untreated sewage water will improve the quality as well as multiple uses of such water.
7	<b>Indiscriminate application of Pesticides in agriculture continues in TN.</b> Farmers are using pesticides 5-10 times more than the permissible level in vegetables in some TN districts. Use of long residual pesticides like Methyl Parathion, Furadan, Monocrotophos, which remain in crops long after spraying, is also reported in TN. Some of the pesticides are banned (or restricted) for food grains/ vegetable/fruit crops, yet are still in use. For example, in Tiruppur, Pudukkottai, Salem, etc. Monocrotophos (one among the six banned pesticides) is still being used ( <i>e.g.</i> , on coconut farms, etc.) via online	Below is a list of a few pesticides that are banned or restricted in Tamil Nadu / India.  Monocrotophos – banned in TN for use on vegetables; Profenofos – banned under the TN ban on six hazardous pesticides. Acephate – same group - banned under TN order. Chlorpyrifos, Cypermethrin, mixtures with these – involved in recent bans/restrictions. Yellow Phosphorus (3% paste) – for rodenticide/insecticidal use, permanently banned.

	<p>and informal channels. Overuse of pesticides wastes money on extra pesticides/fungicides, damages beneficial insects, pollutes environments, and residues in foodgrains/ vegetables/fruits exceeding Maximum Residue Limits (MRLs) create consumer health risk and loss of faith in the products. Also, these products are liable for rejections in export markets.</p>	<p><i>More broadly, India's PPQS / DPPQS list includes many banned/refused registration / restricted pesticides: e.g., Alachlor, Aldicarb, Aldrin, BHC (Benzene Hexachloride), Carbaryl, Diazinon, etc.</i></p> <p>Regulation &amp; Enforcement: Strict monitoring of banned or restricted pesticides. Surprise raids/checks on sales outlets. Control the online sale of banned or unsafe pesticides.</p> <p>Farmer Awareness &amp; Training: Training on safe usage: doses, timing, proper protective equipment. Extension services showing examples of misuse and risk. Information campaigns via local languages, through radio/TV/farmer groups. Demonstrations in fields with integrated pest management (IPM).</p> <p>Alternatives &amp; Integrated Pest Management (IPM)/Sustainable Practices: Use of biopesticides, botanical extracts. Cultural practices: crop rotation, trap crops, and resistant varieties. Use pest forecasting/traps to avoid prophylactic spraying. Promote organic/low residue production.</p> <p>Certification &amp; Market Incentives: Certify low-residue or pesticide-safe produce; this can fetch premium prices. Link to markets/exporters that demand residue compliance. Government procurement / public distribution of safe produce to encourage demand.</p> <p>Policy Measures: Inclusion of safe pesticide use in agricultural policy &amp; subsidies. Ban permanently dangerous chemicals. Support for safer alternatives and research. Rewarding best practices and penalising violations.</p>
<p><b>8</b></p>	<p><b>Integrated Farming System (IFS):</b> IFS refers to combining several agricultural and allied enterprises — crops + livestock + fish + agroforestry + beekeeping, etc. — in the same farm in a complementary way so that wastes from one component become inputs for</p>	<p>Demonstration farms or model IFS units in each block so farmers can see, learn and adapt.</p> <p>Regular training programs (technical skills for animal husbandry, fish farming,</p>

<p>another, risks are spread, and overall productivity &amp; income are improved. IFS modules like “crop + dairy” or “crop + dairy + goat + backyard poultry” under IFS improved net income by ~ 49-54% over baseline (no intervention) years. By using manure from livestock, compost, crop residues, etc., the input cost (fertilizer, organic methods) is lowered. Having more than one component (<i>e.g.</i>, dairy + poultry + fish + crops) means that if one fails (say, crop failure due to drought or pest), other components can help cushion the loss. Producing diverse food (vegetables + animal protein + fruits) improves household nutrition and reduces dependency on single crops. Organic inputs reduce chemical exposure, etc. Recently, the Government of Tamil Nadu announced the establishment of <b>14,000 IFS units</b> (crop + dairy + goat + honey bee rearing, etc.) with funding, to diversify and ensure self-sustaining livelihoods.</p> <p>Nonetheless, many farmers in TN are small or marginal, with small parcels. It can be hard to allocate space for multiple enterprises. Land fragmentation results in inefficiencies: travel, infrastructure, etc. Farmers may not have experience with integrating different components (<i>e.g.</i>, managing fish + crop + livestock together). Setting up livestock units, ponds, boundary fencing, shelter for animals, initial breed or fingerlings, etc., needs investment. Many small farmers have limited capital or liquidity. Lack of good extension services, demonstration units, and skill training.</p>	<p>composting, pest management, etc.). ICAR/KVKs can be used.</p> <p>Use of ICT / mobile apps to give advisory services. Subsidies for setting up livestock, fish ponds, poultry, etc.</p> <p>Low-interest credit tailored to IFS, with insurance and risk coverage that considers integrated enterprises.</p> <p>Grant assistance for input supply infrastructure (fodder banks, feed mills).</p> <p>Insurance products tailored for integrated farms (<i>e.g.</i>, when one component fails).</p> <p>Encourage group approach or cooperatives so that infrastructure (ponds, cold storage, feed mills) can be shared.</p> <p>Create Peer learning groups.</p> <p>Use of women SHGs, youth groups for allied components (<i>e.g.</i>, poultry, beekeeping).</p>
<p>9 <b>Technologies that can make chemically contaminated water safe for recharge</b> (used alone or in series, depending on contaminant type) are available in India, such as Soil-Aquifer Treatment (SAT) / Managed Aquifer Recharge (MAR), Constructed (engineered) wetlands/subsurface flow systems, Permeable Reactive Barriers</p>	<p>Develop suitable technologies that can make chemically contaminated water safe for recharge.</p> <p>Contaminant mapping: inventory of industrial discharges and priority contaminants near candidate recharge zones.</p>

	<p>(PRBs), Advanced engineered treatment (tertiary polishing/ membrane filtration /ultrafiltration/RO), and hybrid systems, etc. Are these adopted in Tamil Nadu? Partly Yes for treating municipal wastewater, stormwater and rainwater reuse/recharge (pond restoration, sponge parks, recharge wells in Chennai/Coimbatore), but not for the routine recharge of industrially polluted water without stringent treatment. The Tamil Nadu policy supports wastewater reuse for industrial/agricultural uses, and local ULB projects have implemented recharge infrastructures and polishing. For examples: Chennai Pond/ sponging restoration with recharge wells; Coimbatore rainwater reuse pilot, Research pilots (<i>e.g.</i>, check-dam recharge studies in Krishnagiri) have analysed quality impacts. However, full-scale MAR of chemically contaminated effluents remains limited because of contaminant risks and regulatory safeguards.</p>	<p>Site screening tools: rapid protocols to assess soil, vadose zone, and aquifer vulnerability in TN's diverse geology. Segregate &amp; treat at source: industries must pre-treat to remove priority contaminants (source control is cheaper &amp; safer).</p> <p>Fit-for-purpose treatment trains: design treatment to contaminant type: <i>e.g.</i>, biological + wetlands for nutrients/organics; AOP + activated carbon/RO for recalcitrant organics; PRBs for plumes of specific chemicals. Use SAT/constructed wetlands as a polishing step before infiltration.</p> <p>Pilot MAR sites with strong monitoring: choose low-risk pilot basins (municipal treated wastewater, stormwater, or agricultural drainage) to demonstrate SAT + aquifer response, include upstream lab analyses and borehole monitoring networks.</p>
10	<p><b>Certain technologies can reduce salinity in borewell (ground) water</b>, such as Reverse Osmosis (RO), Electrodialysis, Electrodialysis Reversal (EDR), Forward Osmosis (FO), Dilution+artificial recharge, Ion exchange, Capacitive Deionisation (CDI), Flow-electrode CDI, etc. Some of these technologies have been tried in TN, such as Solar-powered distillation in ECR (East Coast Road, Chennai), Forward Osmosis (FO) system in Narippaiyur, Ramanathapuram, Seawater and brackish water desalination plants in Nemmeli. All these are in the adoption stage, especially for coastal drinking water supply, <b>but less so for farm-scale or borewell salinity treatment for irrigation.</b> <i>Small villages or farms need small-scale systems that are low-cost and low-maintenance. Most technology is for municipal scale. Need modular plants</i></p>	<p>Yes, there are technologies available in TN to reduce salinity, and some have been adopted, especially for drinking water in coastal areas. But for <b>borewell-saline water used in agriculture or domestic uses in non-coastal inland areas, adoption is more limited. Technology that can be adopted at individual farmers' fields, such as the</b> Gypsum bed desalination technique, may work to some extent for small farmers, especially for sodic water (Na-dominant). But it is not effective for highly saline water, so better combined with blending or low-cost reverse osmosis.</p> <p>The reason for the low adoption of these technologies is that many RO and distillation processes require constant power. Perhaps the use of solar/hybrid (solar + backup grid) solutions can reduce running costs. High capex is needed for installing desalination plants; frequent replacement of membranes; need for</p>

		skilled operation are the other bottlenecks. For irrigation, water with some salinity may be acceptable; full purity is not needed. Designing systems that produce "fit-for-purpose" water (for irrigation/livestock / domestic) rather than full potable quality can save cost.
11	<p><b>Red wood ant and Sucking pests in fruit trees:</b> The red wood ant or horse ant (<i>Formica rufa</i>) builds large soil mounds at the base of trees in the orchards or builds nests on the fruit trees. Colonies contain thousands of ants, making control difficult once established. Ant trails disturb pollinators like bees and butterflies, lowering pollination and fruit set. Colonies may injure flower buds and young fruits while constructing shelters or collecting honeydew. Red wood ants are aggressive biters. Their bites on humans cause pain, itching, and small pustules on human skin. Orchard workers and harvesters in Tamil Nadu face difficulty in pruning, spraying, or harvesting fruits, especially on infested trees. Therefore, controlling the sucking pest is a key step in controlling the ant and <i>vice versa</i>. <b><i>Effective control measures and demo/awareness programmes are needed, which should integrate preventing ants from accessing the tree by blocking trunk access, controlling aphid populations, and creating a less inviting environment for ants.</i></b></p>	<p>Create demo/ awareness programme on: Control measures like removal of ant nests near tree bases, wrapping waterproof sticky barrier around the trunk (tree banding) and application of sticky bands such as Tanglefoot or castor oil + grease around the trunk to prevent ants from climbing, use of natural deterrents such as sprinkling food-grade diatomaceous earth around the base of the tree which will damage the exoskeletons of ants that walk over it or sprinkling coffee seeds grounds, Neem-based sprays (5% neem seed kernel extract or 0.5–1% neem oil + soap solution), chilli-garlic extract spray (10 ml chilli extract + 10 ml garlic extract per litre water), Chlorpyrifos drenching around mound or use of bait such as boric acid (1 part) + sugar (10 parts) + water (enough to make a paste).</p> <p><i>Develop an integrated ant-sucking pests control capsule as a long-term measure.</i></p>
12	<p><b>Increasing problems due to the proliferation of limestone mining (cement factories) and mining by Brick-kiln.</b></p> <p>Limestone-rich districts need not remain ecological sacrifice zones. With scientific reclamation, community participation and policy convergence, cement belt districts like Ariyalur, Perambalur and Karur can be</p>	<p>The lands acquired from the farmers by the concerned cement industries, which are fertile and remain un-cultivated, can be re-utilized for sustainable agriculture as suggested below.</p> <p>1) <i>Fertile land that was cultivated before the factory acquired the lands-</i> Growing dryland crops such as sorghum, red gram, horse gram, garden bean, field bean, Castor, Cotton, which are suitable for degraded soils. About 50-60 years ago, Ariyalur and Perambalur districts were</p>

<p>transformed into models of post-mining sustainable landscapes, combining agriculture, water security, livelihoods and ecological restoration.</p>	<p>known for their organic millet (sorghum, cumbu, varagu) and pulses (reg gram, mochai, horse gram) and oilseeds (castor, gingelly) production. Therefore, organic millet and pulse production is suggested in the uncultivated land. Novel approaches include cultivating medicinal plants (neem, aloe vera, etc), bioenergy crops for biodiesel, fodder production or establishing corporate farming, contract farming, etc.</p> <p>2) <i>In undulated topography with water source:</i> Agroforestry with timber trees/ecologically benign or local trees such as bamboo, teak, mahogany, neem, pungam, poovarasu, malai vembu, vambara maram, aala maram, arasa maram, rose wood, palmyrah, vadanarayanana, odhiyan, vanni, acacia (karuvel) and dryland fruit orchards such as ber (elanthai), tamarind, amla (nelli), jamum (naaval), vilvam, vila, fig, wild date palm. These trees, if properly given care during the first three years, will certainly restore greenery in the mines affected zone and provide income to the factory/growers. These crops will also sequester carbon, thereby earning carbon credits.</p> <p>3) <i>Repository of fruit tree genetic resources:</i> If planned properly, with the funds from different sources like- public sources (Central/State budgets, MoEF&amp;CC schemes like CSS-DWH, CAMPA funds, PPV&amp;FRA fund), private sources (CSR funds from companies, foundations like The Habitats Trust, WWF-India, SBI Foundation, and innovative mechanisms like debt-for-nature swaps, green bonds, and tourism revenues) and international partners (GEF, FAO, CGIAR, The Crop Trust, UNDP/BIOFIN, WWF, IUCN, WCS) as much as available germplasm/varieties/landraces of dryland fruit crops may be collected from all over India and planted in the unutilized lands. This will serve as an <i>ex situ</i> field gene bank or germplasm</p>
--	--

	<p>repository/community gene bank for native varieties, which will attract educational agro-tourism, as well as serve as permanent assets/social forest fostering seed sovereignty and agrobiodiversity for the future generation.</p> <p>3) Abandoned quarry pits can be converted into <i>fish farming ponds</i>.</p> <p>4) <i>Lands that are not suitable for agriculture, orchards or agroforestry:</i> Ariyalur and Perambalur districts are dry tracts with scorching sunshine during summer. These districts will serve as an ideal zone for setting up renewable energy projects, such as <i>agri-voltaics</i> systems alone or integrating solar panels (in the top layer) with agroforestry/shaded crops or millets in the bottom layer (futuristic land-use opportunities).</p> <p>5) <i>Restoring the previous generation waterways and water harvesting systems (re-routed/deshaped/blocked/destroyed by mining activities) is essential.</i> This involves reconstructing disrupted canals, desilting tanks, strengthening bunds, and renovation of previously existing recharge structures like oorani, yeri, kulam, kuttai, check dams and percolation ponds.</p> <p>6) <i>Futuristic ideas for these lands</i> include biotech-enhanced restoration using genetically improved plants or fungi for reclamation/ cultivation.</p> <p>6) <i>Policies mandating cement companies to invest in land and water restoration</i> would further strengthen these efforts. Allocate the CSR funds from factories (mandated under the Companies Act) for activities such as land restoration, water rejuvenation and livelihood creation of local people.</p> <p>7) <i>Plant riparian buffers with native species</i> along waterways to filter pollutants.</p>
--	--

		<p>8) <i>Form inter-departmental task forces (Mining, Agriculture, Environment) for annual audits. Enforce 1 or 2% cess on mining revenue for a dedicated "Mining Land Restoration Fund."</i></p> <p>9) <i>Community Land Banks: Pool unused lands for collective farming and cooperative ventures.</i></p> <p>10) <i>Cement Industry–Farmer Partnership Model: With suitable agreements, the industry may lease the reclaimed land to farmer groups. Contract farming of millets/timber/biomass crops may be promoted.</i></p>
--	--	---

**Theme 3**  
**Addressing Issues Related to Mechanization**

**Focus /Intervention:** *Light-weight or small machines with low cost of operation befit to smaller landholdings (small-scale mechanization) and shall be given priority to assist over 60% of smallholders practising agriculture in the State.*

#	Priority Issues or Challenge	Possible Solution to Address the Issue
1	<p><b>Mechanization in cotton</b>, from sowing to harvest, is still a distant dream. Unless the issue is addressed cotton area in TN will not increase, as labour shortage and cost of cultivation keep on increasing.</p>	<p>Development of a cotton harvester to suit local varieties may be taken up as a priority issue.</p> <p>In addition, standardization of Geometry × variety × PGR packages for synchronized boll opening and machine harvest.</p> <p>On-farm demonstrations comparing picker vs hand harvest: lint quality, trash %, losses and net returns.</p> <p>Pre-cleaning and ginning optimisation trials for machine-picked HDPS cotton to reduce foreign matter and maintain fibre length.</p>
2	<p><b>Harvesting charges in sugarcane</b> have increased considerably due to a shortage of agricultural labourers and increasing wages of migrant labourers.</p> <p>Sugarcane strippers/leaf removers / peeling/detopping equipment developed in India, such as by Unicus India/IISR-Lucknow/OUAT Bhubaneswar/ Gaarwa (Pune)/ Penguin Engineering, etc., are available. But many are rudimentary, semi-manual, or imported, and there is substantial scope for improvement.</p>	<p>Small-size-All field harvester (which harvests lodged canes in small fields) for sugarcane needs to be designed and evaluated.</p> <p>There is a need to design or improve the existing sugarcane stripper machine that can strip large lots of cane quickly (<i>e.g.</i>, multi-tons per hour) with minimal labour and minimum damage to buds.</p>
3	<p>The <b>cost of soil sample analysis</b>, especially micro nutrients, is high and the Agri. The department is facing financial problems to analyses large number of samples.</p>	<p>Low-cost equipment, or a soil probe, is required for analyzing micro nutrients.</p>
4	<p><b>Retaining the talents of rural artisans:</b> The number of rural artisans like blacksmith, carpenter, sprayer/tractor workshop operators, available in villages</p>	<p>The talented artisans may be provided with <b>improved machinery and training, as well as support to open a modern workshop</b> in the rural area</p>

	is diminishing as they migrate to urban areas.	itself, which benefits both the artisan and the rural farming community.
5	<p><b>Machines that dehull/decorticate (deseed) freshly harvested gingelly (sesame/gingili)</b> are available in India, from small “mini-decorticators” and peelers to full hulled-sesame plants (<i>e.g.</i>, Rising Machinery, Devika/mini-decorticators, Swastik Technology, Tinytech, etc.). However, current machines often need improvements in field-friendliness, seed quality retention, and affordability for small farmers. Many machines are <b>designed for post-cleaned, dried seed</b> (processing lines expect seed already threshed/cleaned). Some are wet/soak + peel systems. Farmers harvest sesamum at high moisture and want to process it immediately (fresh); most machines assume dry, cleaned seed and are stationary. Many small machines cause high split rates (low whole-seed yield), lowering the value for table seeds and press performance.</p>	<p>Develop <b>portable, low-power decorticators</b> or tractor/van-mounted units to deseed <b>the freshly harvested gingelly</b>, and that can be used at the farm/village level immediately after harvest to reduce transport losses and drying time.</p>
6	<p><b>Harvesting charges in groundnut</b> have increased considerably in TN due to a shortage of agricultural labourers and increasing wages of migrant labourers.</p>	<p>Groundnut is being harvested using a large machine in Gujarat, as a large stretch of area is planted with groundnut. But the TN groundnut area is scattered, and manual harvesting increases the cost, besides the non-availability of labour. So, small scale mechanical harvester is needed for groundnut harvest.</p>
7	<p><b>End-to-end mechanization for cultivation of vegetables</b> like brinjal, onion, tomato and chilli <b>and Jasmine</b> in Tamil Nadu, covering cultivation phases such as Land preparation, Nursery &amp; seedling handling, Planting/transplanting / direct seeding, Irrigation &amp; fertigation, Inter-cultural operations (weeding, mulching, staking), IPM / spraying / foliar feeds (mist/blower sprayers, drone options), Harvesting &amp; collection (manual, semi-mechanized, specialized), On-farm</p>	<p>Promote and scale hub-and-spoke custom hiring (SMAM &amp; state schemes) so smallholders can access transplanters, harvesters, dryers and pack-house equipment without buying units. Policy support exists and should be tapped.</p> <p>Focus on modular systems (start with a planter or lifter module that can be added onto) and tractor-PTO-driven or battery variants for rural electrification constraints.</p>

	handling & primary processing (grading, sorting, drying, curing) and Storage/ cold chain / value-addition (packing, cold rooms, processing lines)	Many Indian prototypes exist (transplanters, small harvesters) but needs supports for rapid prototyping, pilot trials in TN agro-ecologies and industrial partnerships to commercialise.
8	<p><b>Onion de-topper:</b> Detopping is the process of removing the foliage (leaves, stems / tops) from freshly harvested onions, after curing, before storage or sale. This is usually done manually with sickles and is labour-intensive, time-consuming, and drudgery. A detopper machine is designed to shear or cut off foliage efficiently, while preserving the onion bulbs/clusters, reducing labour cost &amp; time, and improving hygiene/marketability. The ICAR-IIHR, Bengaluru, has developed an onion detopping machine. Its capacity is 370 kg/h with 98% detopping efficiency. This compares favourably to 30 kg/h by manual work. The State of TN does produce a lot of “multiplier onion” (small onion), which would benefit from detopping. There are onion processing units in Perambalur that do peeling, paste, flakes, etc. But detopping is perhaps still largely manual there. <b>So, there is certainly a market for the machine, but no machine suitable for small-scale detopping is available.</b></p>	<p>Machines need to be adapted to local onion varieties (size, cluster type, neck length, etc.), power supply (single phase, three phase), and local repair parts. Local fabricators could make simpler, cheaper versions.</p> <p>Not all farmers in TN require 300-370 kg/h detopping machines.</p> <p>Smaller-scale detoppers (say 50-100 kg/h) would be useful for smaller farms.</p> <p>Lighter, portable versions, maybe tractor-PTO or small motor powered.</p>
9	<p>Farmers need efficient ways to collect crop residues (straw, stubble, sugarcane trash, sorghum/Napier, rice straw) for fodder, mulching, compost, or bioenergy rather than burning. Smallholders and dairy units need chopped fodder/silage; small forage harvesters produce chopped material for animals directly. Harvesting/collecting biomass is labour-intensive and seasonal- <b>small biomass harvester machines speed operations and cut labour costs.</b> Companies like Shaktiman and several regional manufacturers offer small forage harvesters suitable for napier, maize and other fodder. But the actual <i>on-farm</i></p>	<p><b>Smaller capacity Biomass Harvester</b> such as tractor-mounted PTO or mini-tractor self-propelled (HP 20–50) to suit common power in TN, cutting width 1–2 m (single/dual row) for narrow fields; chopping knife drum with adjustable cut length (10–50 mm), often with integrated collection / small baler module (optional) or trailer to collect chopped mass; mini baler making 10–25 kg bales for easy manual handling and capable of robust feed &amp; anti-clogging design (for wet rice straw or sticky trash) need to be designed and evaluated.</p>

	<p><i>presence</i> of small biomass harvesters is uneven. Some progressive FPOs/co-ops and contractors have these machines, while many smallholders do not.</p>	
10	<p><b>Solar energy</b> provides a renewable, decentralized and cost-effective source of power for farm operations, especially in tropical areas with unreliable grid electricity or high diesel costs. Tamil Nadu, with high solar radiation (5–6 kWh/m<sup>2</sup>/day), has strong potential for agricultural solar applications. <b>Cold storage units</b> (for fruits, vegetables, flowers, milk, fish, etc.) consume high power; solar energy drastically cuts recurring electricity costs. Solar-powered cold rooms developed under TNAU and IIT-M incubation projects are being adopted in Krishnagiri and Dindigul districts for storing jasmine, tomato, and grapes. <b>This successful model may be replicated.</b></p> <p>With <b>solar-powered batteries, farmers can operate small pumps, sprayers, threshers, weeders, and dryers</b> without relying on grid power or diesel. Once installed, solar power provides free energy and reduces recurring fuel and electricity bills significantly. Solar knapsack sprayers and solar-powered brush cutters by TNAU, Coimbatore. Solar-powered mini-milking machines, seed graders, and paddy threshers have been demonstrated by the Department Agri. Engineering, TN in Villupuram and Thanjavur. More such demos are needed.</p>	<p>1) Need to develop Cost effective Solar Powered Cold Storage System.</p> <p>2) Need to develop smaller agricultural machinery with the power generated by the solar panels of the Solar Pumping system using Universal Solar Pump Controller (USPC).</p>
11	<p><b>Development of Electric-Powered Agriculture Machinery.</b> Developing electric-powered agricultural machinery in Tamil Nadu offers numerous advantages (zero emission, reduced noise pollution, lower operation costs, etc.), particularly given the state's strong agricultural base and commitment to sustainable development.</p>	<p>Developing electric-powered agricultural machinery in Tamil Nadu aligns with the state's agricultural needs, environmental goals, and policy initiatives. By investing in electric machinery, Tamil Nadu can enhance farm productivity, reduce environmental impact, and improve the livelihoods of its farmers.</p>

	<p>Electric Tractors like the Sonalika Tiger Electric and e-tractors from John Deere, and AgCo offer features like instant torque delivery and precision control. Electric Feed Mixers (used in livestock farming) provide homogeneous blends of animal feed, enhancing the nutritional quality. Electric Straddle Tractors: Ideal for tasks like soil tilling and phytosanitary treatments in vineyards, these tractors offer high performance with low emissions. <b>More research and investment are needed in this area.</b></p>	
12	<p>Development of machinery for separating Jackfruit bulbs from Jackfruit.</p>	<p>Machineries such as Pneumatic-Based Jackfruit Corer Cum Splitter, Semi-Automated Jackfruit Cutting and Splitting Tools, Jackfruit Peeling and Cutting Machines are available. Manufacturers like JMS Industries in Coimbatore offer jackfruit peeling and cutting machines. These machines are suitable for various applications, including jackfruit powder production. <b>Demo may be organized in major jackfruit growing districts.</b></p>

**Theme 4**  
**Addressing Issues in the Horticulture Sector**

**Focus /Intervention:** *Promote eco-friendly cultivation through ICM, INM, IPM, etc., shift from production-centric to market-driven horticulture by linking farmers to organized markets, e-NAM, and export channels, encourage processing, branding, and promotion of value-added products to stabilize farmer income and promote high-density planting, protected cultivation, precision farming, micro-irrigation, and mechanization*

#	Priority Issues or Challenges	Possible Solution to Address the Issue
1	<b>Low productivity of coconut plantation</b> 12,000–14,000 nuts/ha, which is close to the national average but lower than states like Andhra Pradesh, where productivity exceeds 15,000 nuts/ha, due to (i) poor manuring, (ii) increasing incidence of rugose spiralling whitefly, (iii) root wilt and other causes	Integrated approach: ICM, IPM, INM, organic recycling to sustain productivity. Concentration of manure during the monsoon season Distribution of coconut shredder /pulverizer at subsidized rate, at least one shredder for 9-10 villages
2	Coffee is usually grown along with Pepper. An alternative cropping system specific to each region in the state is required.	Identification of location-specific coffee cropping systems with allied crops (other than pepper) and management of white stem borer in Coffee is required.
3	<b>Banana:</b> Despite having high productivity (40 t/acre), the rising cost of cultivation in the State is a great concern  Continuous monocropping has led to nutrient imbalance and declining soil health. Banana is labour- intensive (planting, propping, harvesting, packing), but rising wages and scarcity increase the cost of cultivation. Added to these, Tissue culture plants, fertilisers, drip systems, and plant protection measures have also increased cultivation costs.	Innovative low-input, climate-smart cultivation practices and cultivation methods to promote carbon-sensitive farming, organic and natural farming in <b>bananas need to be developed</b>
4	<b>Addressing the problem of plenty:</b> Due to excess production/ harvest, the produce fetches a low price in the production Centres, but there is demand and a high price in far-away markets. <i>e.g.</i> , jackfruit, palmyrah, green chilli, brinjal and tomato	Establishing a suitable <b>cold storage facility</b> in the major production Centres.  Establishing a facility or support for long distance market. Establishing a marketing network, including promotion for export, and e-marketing for reaching more traders.

5	<p><b>Banana:</b> Greater role of genome editing technologies</p> <p>Since banana is a clonally propagated, sterile and triploid crop with narrow genetic diversity, conventional breeding is slow and difficult. Hence, genome editing and molecular breeding can play a role in banana improvement, particularly the identification and knockdown or modification of resistant genes against <i>Fusarium</i> wilt, <i>Sigatoka</i>, and nematodes.</p>	<p>Development of high-yielding, climate-resilient varieties adaptable to diverse agro-climatic zones through accelerated breeding strategies, genome editing tools, and marker-assisted selection, complementing conventional breeding, will address the issue.</p>
6	<p>Greater demand for <b>native vegetables</b>-traditional varieties in the local market exist, but authentic seeds are not available in the production belts. Farmers are travelling long distances to get the seedlings or seeds of these varieties.</p>	<p>Strengthening the seed production mechanism of traditional/native vegetables, preferably in their major cultivation belt, is required. Seeds/seedlings shall be made available to farmers well before the season.</p>
7	<p><b>Promoting GI tagged lemon:</b> Puliyanakudi is popularly known as the 'lemon city' of Tamil Nadu, and its lemon got the GI tag in 2025. The popular lemon needs further promotion.</p>	<p>Development of drought-tolerant, disease-resistant lemon varieties, introduction of drip irrigation and fertigation for efficient water use, market promotion activities like establishment of community cold storage with training, formation of FPOs to ensure collective marketing and better bargaining power, linking with e-NAM, contract farming, and direct retail chains, and assistance for export, etc., will boost the income of lemon growers.</p>
8	<p><b>Utilising cashew apple:</b> Cuddalore, Ariyalur and part of Tirunelveli, Thoothukudi districts are producing cashew in large scale. The fruits (apples) are often wasted, due to the increasing cost of collection, poor storage and marketability. Effective means of utilising the cashew apple may be deliberated.</p>	<p>The Government of TN has recently announced the establishment of the Cashew Board in Cuddalore. The presence of tannins makes fresh cashew apple unpalatable (astringent). Unless treated (by steaming, enzymatic treatment, salt soak, etc.), this limits acceptance. Cashew apple deteriorates very fast after harvest. These areas need to be addressed through research.</p>
9	<p>Lack of value addition and infrastructure for <b>Palmyra sap (pathaneer)</b> is the pressing issue in the sector, besides poor awareness of</p>	<p>1) Improving collection, preservation &amp; quality control such as develop/subsidize clean tapping tools and hygienic collection vessels to avoid contamination,</p>

<p>neera’s health and nutritional benefits, both among consumers and producers. Raw sap / pathaneer is highly perishable and ferments quickly. Lack of hygienic collection, processing, and preservation facilities leads to losses. Though neera is non-alcoholic, it is ‘sap’ that ferments if not handled well; toddy bans have historically discouraged or conflated sap usage. Promote <b>Palmyra sap</b> (Pathaneer) as a healthy, organic and nutrient supplement.</p>	<p>use anti-fermentation/preservative solutions, cold storage (ice/chillers) right at source, make packaging attractive and safe (sterilized bottles, cans, pouches) to preserve freshness and extend shelf life, standardize processing protocols to ensure consistent taste, safety, purity.</p> <p>2) Branding &amp; Certification, such as promoting Geographical Indications (GI) for local palmyra sap/palm sugar from regions like Ramanathapuram. This improves market recognition and price. Promote pathaneer as 100% organic, natural, non-fermented fresh sap claims with certifications (food safety, hygiene, etc.).</p> <p>3) Produce value-added variants: flavoured neera, carbonated versions, blended with herbs/fruits. Process into neera honey/sugar/jaggery/syrup/concentrate so that shelf life is longer and shipping easier, create powdered forms (as has been done in some states) to enable dry storage and longer market reach.</p> <p>4) Market Channels &amp; Access: This area requires Government interventions and support. Link Neera producers with retail chains, local supermarkets, cafes, and health food stores. Provide subsidy for transport of Pathaneer from the production Centre to urban markets. Use mobile vendors/kiosks in urban areas, morning markets. Use online platforms/e-commerce to ship packaged pathaneer / neera-products.</p> <p>5) Create public awareness &amp; demand creation in social media, health influencers, doctor recommendations, demonstrations, free tastings in public places, and fairs. Promote during summer/heat seasons as a natural coolant/hydration drink, and promote selling Neera in higher secondary schools and colleges. Minimum Support Price</p>
---	---

		<p>(MSP) for Neera and jaggery or guaranteed purchase, so farmers are not exploited by middlemen. Training programs for climbers, young people, to make sap tapping an attractive livelihood. Subsidies or financial support for setting up cold storage and processing units near groves. Ensuring that palm tapper families have access to basic amenities like healthcare, schooling, etc.</p>
<p><b>10</b></p>	<p><b>Problems faced by loose flower growers:</b> Farmers often use vegetative propagation material from unverified sources, leading to yield and quality variation. <b>Continuous monocropping of malligai, mullai, etc.,</b> without adequate external supplements of organic manure, leads to low soil fertility and productivity. 3) Lack of awareness about IPM and biological control options is widespread among the growers. <b>Farmers often use inappropriate growth promoters and indiscriminate pesticides, which cause resistance and residue problems, besides affecting the quality of flowers.</b> 4) Pests like bud worm (mokkuppuzhu), mites (sempaen), and blossom midge (kurudu) are the major problems in Trichy, Madurai, Pudukkottai, and Ramanathapuram districts, especially in Malli and Mullai. The larvae of the bud worm and the maggots of the blossom midge enter the buds at the base of the corolla and cause rotting of the <b>flower stalk (kaampu azhugal) and changes colour of the bud into pinkish (unfit for tying and selling).</b></p> <p>In places like Trichy and Villupuram, farmers who grow Chrysanthemum are observing <b>blackening of the lower whorls of chrysanthemum petals.</b></p> <p>Another issue in loose flower cultivation is the inefficient irrigation methods.</p>	<p>Conduct training programs for farmers on good agricultural practices, pruning, fertigation, and IPM, including neem oil sprays, bioagents (<i>Trichoderma</i>, <i>Beauveria</i>, <i>Metarhizium</i>), use of pheromone traps, etc.</p> <p>This is a fungal infection. Farmers may be advised not to use sprinklers, adopt wider spacing/ aeration, regulate watering and foliar application of Mancozeb @ 2.5g/l.</p> <p>Adoption of <b>drip and fertigation systems</b> under TN Horticulture Mission / PMKSY.</p> <p>The TNAU, ICAR-CIAE, Bhopal/Coimbatore and ICAR-IIHR</p>

<p>Labour cost accounts for 40–50% of total production cost, making jasmine cultivation less profitable. As of now, harvesting of jasmine and rose is entirely manual. No efficient mechanical harvester exists due to small flower size, delicate buds, and plant height variability.</p> <p>Pruning and flowering management need more research and farmers' awareness. Farmers adopt non-scientific pruning or local practices to manage the crop during the lean season, such as grazing jasmine garden with sheep, tying and or wrapping the whole plant with banana pseudo-stem sheaths.</p> <p>Standardization of protected cultivation for year-round Jasmine production and an increasing number of demos.</p>	<p>Bengaluru may intensify research on semi-mechanized jasmine harvesters.</p> <p>These local practices (ITK) of southern districts need to be validated in terms of flower production in comparison with standard pruning practice, <i>i.e.</i> pruning the bushes at 45-50 cm height from ground level during the last week of Nov (Malligai) or Jan (Mullai) every year.</p> <p>By protecting Jasmine plants from heavy rain, cold stress and dew deposit, especially in the early morning hours and night, it may be possible to get continuous vegetative and reproductive growth even in non-flowering months, <i>i.e.</i> make the jasmine plants not enter into dormancy, so flowering continues even in winter (Nov–Feb). <b><i>More research efforts are needed in this direction.</i></b></p> <p>The Government of TN is promoting polyhouse jasmine cultivation. The structure has been demonstrated in Madurai, Dindigul, Krishnagiri, and Tirunelveli under TNAU trials or subsidised under NHM or MIDH / State Horticulture Mission (SHM-TN). <b><i>This promotion efforts need upscaling.</i></b></p>
---	---

**Theme 5**  
**Issues related to post-harvest processing, value addition and agriculture marketing**

**Focus/intervention:** *Align cropping pattern with market demand, exports, and processing industries, ensure fair price realization for farmers through transparent, efficient, and inclusive marketing systems, strengthen e-NAM, online platforms, grading, and standardization to reduce middlemen exploitation, Create modern markets, cold chain, and logistics facilities for perishable commodities, strengthen farm-to-fork (urban market) linkages through contract farming, FPOs, and buy-back arrangements and promote processing, branding, and GI-linked marketing to enhance farmer income.*

#	Priority Issues or Challenges	Possible Solution to Address the Issue
1	<p><b>Poor drying, winnowing and grading:</b> To address labour shortage, introduction of <b>complete mechanization in these post-harvest operations</b> like drying, winnowing, grading and bagging, thereby reducing spoilage, improving the quality of produce and ensuring better price for the produce</p>	<p>The time has come to think of an automated dryer cum-winnower-cum-grading and bagging multi-grain machine as detailed below.</p> <p>i) A diesel-operated mobile machine for small-scale operation suited to individual households may be developed.</p> <p>ii) Large-scale dryer cum winnower - bagging machine with Silo Bin suitable for large-scale handling, as available in Western Countries, is required, which may be permanently kept in each DPC/RM/Mandis.</p> <p>(ii) The <b>Agriculture Infrastructure Fund (AIF)</b> to provide a financing facility for creating post-harvest management infrastructure, and the creation of viable community Farming Assets <b>need more promotion efforts in rural areas.</b></p>
2	<p><b>Effective utilisation of already established cold storage plants is lacking.</b></p>	<p>Crop /produce specific <b>standardization/protocol</b> may be developed.</p> <p>Create <b>capacity building</b> on the use of cold storage facility - Art of training on the use of cold storage facility, as well as promoting export of processed / value-added products.</p> <p><b>The success story</b> of cold storage utility, export, etc., may be spread to other entrepreneurs.</p>

3	<p><b>Banana:</b> Tamil Nadu is contributing around 12% of India's total banana production. The state cultivates over 18 banana varieties, including GI-tagged ones like Viruppakshi Hill Banana and Kanyakumari Matti Banana, providing distinct branding and marketing opportunities. Uniform finger size, bunch weight, and maturity stage are not maintained by all farmers. Poor post-harvest handling and long transit times cause high (25–40%) losses. Currently, the State exports around 200–250 containers, equating to a modest volume—yet there is scope for increasing exports by addressing challenges in post-harvest processing.</p>	<p>Formation of export-oriented clusters with quality certification, guiding residue-free production, educating farmers and entrepreneurs on greener ripening methods, storage systems, and traceability systems to boost global competitiveness needs to be perfected.</p> <p>Development of value-added technologies, support to entrepreneurs, and the making of value-added products.</p>
4	<p>The middleman takes a huge share of the price offered to the crop by the procurement agency/consumer, particularly for <b>organic products</b>.</p>	<p><b>The e-marketing App</b>, which connects farmers directly to consumers/end users for organic products, need popularization. Exploring foreign markets for organic products.</p>
5	<p>A digital marketing App which links producers to the spinning miller and guides growers to earn a better price for quality cotton needs to be developed.</p>	<p>Plot traceability and quality-based payment systems with a spinning mill partner and ELS (extra-long staple) producing FPOs/ ELS farmers.</p>
6	<p>Desi chicken egg has an increasing demand in the urban area. However, <b>there are some issues in genuinity of the local chicken eggs and marketing.</b></p>	<p>The Government, through suitable arrangements with private partners, may facilitate the purchase of desi chicken eggs, establishing a cold storage facility near peri-urban /urban markets and aid in certification to promote the marketing of desi eggs.</p>
7	<p>A few regulated markets (RM)/Mandis set up by the Government at the block level have been moved or merged with the taluk level RM due to operational reasons. Now, new production clusters are emerging in many blocks, wherein new to the cluster or grown. <b>Farmers in the new</b></p>	<p>It is suggested to establish demand-driven RM/ Mandi at the Block level or the Crop Production Centre. Maybe an <i>ad hoc</i> or seasonal RM will serve the purpose.</p>

	<i>production area are facing a marketing problem as RM/Mandis are not available.</i>	
8	<p><b>Export promotion of GI-tagged crop/ varieties/ produce:</b></p> <p>Promoting branding and marketing of GI-tagged crop/varieties, particularly in the export market.</p>	<p>(i) <b>Crops for which GI has already been given:</b> Value addition with focus on GI-tagged spices like Kanyakumari clove, Kodaikanal Malai Poondu, Erode Manjal, Ramnad Mundu Chilli, Virudhunagar Sambha Vathal, etc., may be taken up.</p> <p>ii) <b>Crops that have no. GI:</b> promoting branding and selling under the brand is suggested, <i>e.g.</i>, Dharmapuri, Krishnagiri, Kollu rasam, and Kollu podi in the supermarket/ export market.</p>
9	<p><b>Promoting cultivation and marketing/export of traditional paddy varieties through cluster approach:</b> Farmers who grow traditional varieties faces problems in the fields such as pests and disease (traditional varieties are often tall, with long crop duration (140–160 days), making them prone to pests like stem borer, leaf folder, BPH, and diseases like blast and sheath blight, its yields are relatively low (2–3 t/ha) compared to 5–6 t/ha in improved HYVs), during milling process (most of the rural or modern rice mills are designed for milling short- to medium-grain, high-polish varieties. Long or slender grain traditional varieties break easily during milling, resulting in 15–30% broken rice loss. Husk to rice recovery is often &lt;55% due to unsuitable machinery and outdated processing) and during marketing (as only few farmers grow these varieties scattered across villages; hence, traders don't find it economical to procure small lots, as no local Dehusking/ milling units, the farmers often transport paddy faraway places to process small quantities- increasing cost and reducing profit. <i>If farmers wish to</i></p>	<p>Form Farmers clusters or FPOs in each district, cultivating specific traditional varieties, <i>e.g.</i>, Mappillai Samba Cluster – Pudukkottai, Karuppu Kavuni Cluster in Thanjavur, Karung Kuruvai grower cluster in Ariyalur, etc. Each cluster (25–50 ha) ensures uniform production, collective input purchase, pest management, and marketing. The TN Department of Agriculture, Organic Certification Department (TNOCD), NABARD and TNFDC may support FPO programmes/cluster formation, while the TNAU &amp; ICAR institutes and KVKs may provide technical support.</p> <p>Organise training and awareness programme on ICM and IPM for traditional varieties. Promote TNAU's Traditional Rice Health Management Kit (Trichoderma + Neem + <i>Pseudomonas</i> + NPV).</p> <p>Set up Mini Rice Mills or Rubber Roll Hullers suitable for long-grain, low-polish milling. Promote TNAU Paddy Dehusker, CFTRI Mini Rice Mill, or village-level hulling units (0.5–1 ton/hour). Promote brown rice, hand-pounded rice, and semi-polished rice production to retain nutritional value.</p> <p>Funding through the PM-FME Scheme, ODOP (One District One Product), or</p>

	<p><i>sell directly to the mills, the millers demand a minimum supply of 400 bags (of 60 kg) from that particular variety as the minimum processing quantity per lot in the modern mill is 400 bags.</i> These issues may be addressed through the formation of a traditional variety grower cluster in the selected villages to get better bargains during marketing.</p>	<p>TNSRLM may be explored, and FPOs can jointly own and operate the mill.</p> <p>Aim for export markets, develop distinct branding like Thanjavur Heritage Rice, Madurai Mappillai Samba. Obtain Geographical Indication (GI) or Organic Certification where possible. Use e-commerce &amp; direct marketing: TN's Uzhavan App, Tamil Nadu Agrimark, or private portals like Namma Marachekku, BioBasics, etc.</p>																																																
<p><b>10</b></p>	<p><b>There is a lack of awareness on ready reckoner chart for optimum solar drying</b> conditions of common agricultural produce. It should cover temperature, relative humidity, drying time, and method suggestions suitable for small-scale solar dryers in Tamil Nadu conditions.</p>	<p>Create hands on training and awareness programme. Use the chart given below as guidance.</p> <table border="1" data-bbox="813 779 1394 1288"> <thead> <tr> <th>Produce</th> <th>Ideal Drying Temp (°C)</th> <th>Relative Humidity (%)</th> <th>Drying Time (hours)</th> </tr> </thead> <tbody> <tr> <td>Tomato</td> <td>55-65</td> <td>20-25</td> <td>6-12</td> </tr> <tr> <td>Onion</td> <td>50-60</td> <td>20-25</td> <td>12-24</td> </tr> <tr> <td>Chilli (Red)</td> <td>55-60</td> <td>20-25</td> <td>8-15</td> </tr> <tr> <td>Mango</td> <td>55-60</td> <td>15-20</td> <td>10-15</td> </tr> <tr> <td>Banana</td> <td>55-60</td> <td>15-20</td> <td>12-18</td> </tr> <tr> <td>Pineapple</td> <td>55-60</td> <td>15-20</td> <td>12-18</td> </tr> <tr> <td>Ginger (Rhizome)</td> <td>50-60</td> <td>20-25</td> <td>18-24</td> </tr> <tr> <td>Turmeric (Rhizome)</td> <td>50-60</td> <td>20-25</td> <td>18-24</td> </tr> <tr> <td>Coriander Leaves</td> <td>40-50</td> <td>30-35</td> <td>4-6</td> </tr> <tr> <td>Green Chillies</td> <td>50-55</td> <td>20-25</td> <td>12-18</td> </tr> <tr> <td>Areca Nut</td> <td>50-55</td> <td>15-20</td> <td>24-36</td> </tr> </tbody> </table>	Produce	Ideal Drying Temp (°C)	Relative Humidity (%)	Drying Time (hours)	Tomato	55-65	20-25	6-12	Onion	50-60	20-25	12-24	Chilli (Red)	55-60	20-25	8-15	Mango	55-60	15-20	10-15	Banana	55-60	15-20	12-18	Pineapple	55-60	15-20	12-18	Ginger (Rhizome)	50-60	20-25	18-24	Turmeric (Rhizome)	50-60	20-25	18-24	Coriander Leaves	40-50	30-35	4-6	Green Chillies	50-55	20-25	12-18	Areca Nut	50-55	15-20	24-36
Produce	Ideal Drying Temp (°C)	Relative Humidity (%)	Drying Time (hours)																																															
Tomato	55-65	20-25	6-12																																															
Onion	50-60	20-25	12-24																																															
Chilli (Red)	55-60	20-25	8-15																																															
Mango	55-60	15-20	10-15																																															
Banana	55-60	15-20	12-18																																															
Pineapple	55-60	15-20	12-18																																															
Ginger (Rhizome)	50-60	20-25	18-24																																															
Turmeric (Rhizome)	50-60	20-25	18-24																																															
Coriander Leaves	40-50	30-35	4-6																																															
Green Chillies	50-55	20-25	12-18																																															
Areca Nut	50-55	15-20	24-36																																															

## Theme 6

### Issues related to Animal Husbandry and the Fisheries Sector

**Focus / Intervention:** *Ensure livelihood security for small, marginal, and landless livestock farmers/fishermen, improve productivity of native breeds while conserving indigenous germplasm, and sustainable, technology-driven, and market-oriented livestock/fisheries development.*

#	Priority Issues or Challenges	Possible Solution to Address the Issue
1	<b>Ice-ice disease</b> is a common and serious disease affecting cultivated seaweeds, especially <i>Kappaphycus alverizii</i> , the most preferred species for seaweed farming among the coastal fishers/farmers. It causes economic losses.	Management practices such as site selection with good water flow and stable salinity/temperature, regular thinning and cleaning of farms to prevent stress, use of healthy, resistant seedlings, application of probiotics or beneficial bacteria to suppress pathogens, crop rotation, etc., need to be standardized.
2	Fish farming in rural areas is picking up well in the State as local demand is increasing for live fish. Faced with labour shortage and other problems, some paddy farmers are switching to fish farming in villages. However, <b><i>the initial cost of digging a pond add burden to such entrepreneurs.</i></b> The Central and State Governments are assisting them, but more awareness of such schemes among rural entrepreneurs is required.	<b>Awareness</b> of Government Schemes related to the fisheries sector may be taken up, particularly in rural areas.  The turnaround period for issuing subsidies/ benefits may be minimized.
3	<b>Management of fish and poultry wastes:</b> Often these wastes/carcasses/litter are dumped on road sides, street corners and on the bank of water bodies, leading to bad odour, environmental pollution, health hazards, increase in the stray dog population.	Technologies to convert these wastes into wealth are available, but <b><i>collection and logistics remain weak points.</i></b>  The Swachh Bharat programmes place emphasis on Waste-to-Wealth, but organised waste collection from towns and town panchayats, decentralized processing, and farmer/entrepreneur awareness are the need of the hour.
4	<b>Establishment of fodder seed nurseries in villages</b>	<b>It is suggested to establish a fodder seed nursery at each taluk</b> , often utilising the service of progressive farmers.
5	<b><i>Fish fingerlings are not available in rural areas</i></b> , and farmers depend on a few fingerling suppliers, located in faraway places.	Capacity building on fish fingerling production may be taken up on a massive scale to create more entrepreneurship.

6	<p><b>Export standards:</b> Many fish export consignments face rejection due to <b>antibiotic residues, bacterial contamination</b>, or poor handling. International buyers demand strict <b>traceability</b>, which small farmers struggle to maintain.</p>	<p>Issues related to antibiotic residues, bacterial contamination and traceability gaps need to be addressed to promote exports of fish and fishery products.</p>
7	<p><b>Grazing of seaweeds by herbivorous fish</b> is a serious challenge in seaweed raft culture systems. This reduces economic returns.</p>	<p>Effective management is needed to address this issue.</p>
8	<p><b>Stock assessment &amp; data gaps in small-scale fisheries:</b> Many marine fish stocks are overexploited or poorly monitored. Small-scale fishers are the backbone of TN fisheries, yet data on their catches, seasonal patterns, and effort are scarce.</p>	<p>Gear-wise stock assessment, digital logbooks, and participatory monitoring are suggested.</p>
9	<p><b>Pollution &amp; contaminant impacts on seafood safety:</b> Heavy metals, persistent organic pollutants, and microplastics threaten both ecosystem health and human consumers. Communities near industrial zones or urban rivers are at risk.</p>	<p>Mapping pollutants in fish, seagrass, and sentinel species; risk assessment for human consumption may be undertaken as a long-term project.</p>
10	<p><b>Low usage of roughages for urban milch animals:</b> Milch animals reared in urban areas are not fed adequate roughages (paddy straw, jowar straw, etc.), due to the lack of availability of paddy straw in the peri-urban/urban area and problems associated with long-distance transport and storage of paddy straw.</p>	<p>The Government may suitably assist the urban cattle farmers to get an adequate supply of paddy straw and jowar straw by assisting in the transport of roughages from paddy/sorghum cultivation areas and arranging storage of paddy / jowar straw in urban areas.</p>
11	<p><b>Silage making needs further promotion:</b> Green fodder like maize, sorghum, bajra, and napier-grass is abundant in the rainy season but scarce during summer. The silage helps conserve surplus fodder during a lean period. Under NABARD, NHB, State Horticulture Schemes support is given for fodder cultivation and silage-making machines. The demand for silage bags/bales is rising in rainfed areas.</p>	<p>Creating more awareness camps on silage in rainfed tracts, particularly in Thalaivasal, Attur, Perambalur, Karur, Namakkal, Dharmapuri, Krishnagiri, along with credit support for silage making machine is suggested.</p>

## Theme 7

### Addressing Issues related to Frontier technologies / cutting-edge technologies

**Focus:** *Harnessing the advances in science or cutting-edge technologies in the agri sector.*

#	Priority Issues or Challenges	Possible Solution to Address the Issue
1	The TN Government is making a digital Crop survey of crops. A lot of manual operation is involved, and it may be reduced by using cutting-edge technologies.	Digital crop survey using a drone may be standardized. More awareness of the use of digital devices is required.
2	New and emerging opportunities for using AI technologies in the agricultural Sector	The AI technology may be integrated with AWS to predict or forecast the water requirement of upland crops where well water/ground water is limited. Mobile Scanner may be developed for identifying nutrient deficiency in plants, like SPAD. An AI-based mobile App to identify crop varieties is needed. Mobile based irrigation water quality testing kit (Sensor) may be developed. AI based pests and disease diagnosis and management.
3	Adoption of <b>digital farming tools like AI</b> , sensors, and IoT to optimise resource use (water and nutrient use efficiency/precise fertigation, etc.) and crop monitoring, harvest optimization to ensure quality and transparency in the banana value chain is the need of the hour.	The ICAR-NRCB, in collaboration with subject matter experts, may formulate a suitable programme to address the issue.
4	<b>Drones' usage for foliar spray and pesticide application:</b> Drones (Unmanned Aerial Vehicles – UAVs) are emerging as a game-changer in precision agriculture, especially for foliar application of micronutrients and pesticides in crops like paddy, cotton, maize, sugarcane, banana, and horticultural crops. Drone has advantages like uniform spray coverage on both upper and lower leaf surfaces, Reduced water use — only 10–15 L/acre (vs. 150–200 L in manual spraying), Reduced labour and drudgery — 5–10 acres can be covered per hour, Minimized exposure of humans to chemicals, Timely application during	<b>Policy &amp; Subsidy Support available:</b> <ul style="list-style-type: none"> <li>• Under the Namo Drone Didi Scheme of the Government of India, Women's SHGs receive 80% of the drone and accessory costs, as a subsidy up to a maximum of Rs. 8.0 lakhs</li> <li>• For Farmer-Producer Organisations (FPOs) and Custom Hiring Centres, grants up to 75% of the cost of drones for demonstrations on farmers' fields are given</li> <li>• Under SMAM (Sub-Mission on Agricultural Mechanization) and the Kisan Drone Scheme, 50% subsidy to individual farmers.</li> <li>• Custom Hiring Centres (CHCs) can rent drones to farmers at ₹300–₹500/acre.</li> </ul>

	<p>critical crop stages, Ideal for waterlogged, tall, or dense crops where manual entry is difficult (paddy, maize, cotton) and Precise dosage and GPS-based mapping ensure no under- or over-application. However, the widespread application of drone has some limitations / Challenges such as High initial cost (₹8–10 lakh per drone), need for trained, DGCA-certified operators, calibration for each crop and chemical is essential, limited payload restricts very large field coverage at once and difficulty in adjusting flight height of drones in undulating canopy like coconut garden with different heights as in slope, inefficient control especially when used for weed control, etc.</p> <p><b>Drone Specifications</b></p> <p>Tank Capacity : Small drones 5-6 L and Medium spray drone 8-12 L</p> <p>Spray volume : 10–12 L/acre</p> <p>Droplet size : 80–120 µm</p> <p>Flight speed : 4–6 m/s</p> <p>Height above crop: 2–3 m</p> <p>Swath width : 3–5 m</p> <p>Cost of drone : 3.0 lakhs to 20,000, depending on spray tank size and battery capacity.</p>	<ul style="list-style-type: none"> <li>• TNAU and ICAR institutes (like ICAR-CIAE, ICAR-IARI) have standardized drone spray protocols for different crops.</li> </ul> <p><b>Drone use for Foliar spray of micronutrients</b></p> <p>Paddy: ZnSO<sub>4</sub> (0.5%), FeSO<sub>4</sub> (0.5%), MgSO<sub>4</sub> (1%), Borax (0.2%)</p> <p>Maize / Sorghum: ZnSO<sub>4</sub> (0.5%), Urea (2%) + FeSO<sub>4</sub> (0.5%)</p> <p>Cotton: Micronutrient mixture (TNAU Mix) @ 0.5%</p> <p>Banana / Coconut: ZnSO<sub>4</sub> (0.5%) + MgSO<sub>4</sub> (1%)</p> <p><b>Drone Use for Pesticide Application</b></p> <p>Paddy: BPH, leaf folder, sheath blight</p> <p>Cotton: Sucking pests (aphids, jassids, whitefly), bollworms</p> <p>Maize: Fall Armyworm</p> <p>Sugarcane: Early shoot borer, mealybug</p> <p>Banana: Sigatoka, rust thrips</p> <p>Success story: For paddy – Foliar spray of ZnSO<sub>4</sub> 0.5% using drone at 30 and 60 DAT to correct zinc deficiency. One 10L tank covers ~1 acre in 7–8 minutes.</p> <p>At Thanjavur and Salem, drones are used for foliar spray of ZnSO<sub>4</sub> and bio-pesticides in paddy and cotton (under TN Pilot Scheme, 2024).</p>
5	<p><b>Development of AI-Based Laser Weeder Using Solar Energy:</b> An AI-based laser weeder is an advanced machine that uses artificial intelligence to detect weeds and eliminate them using a focused laser beam, without harming crops. When powered by solar energy, it becomes sustainable and cost-effective for farmers.</p>	<p>The Blue River’s “See &amp; Spray” technology in the USA uses AI + targeted herbicide. A similar concept can be adapted with laser + solar in India. The ICAR and IITs are exploring AI-based weeding robots suitable for paddy, maize, and vegetables. But it may take years to become a reality.</p>
6	<p><b>Development of Unmanned Tractors and Power Tillers:</b> Unmanned tractors and power tillers are autonomous or semi-autonomous machines for ploughing and other field operations. They can be solar-assisted or electric to reduce fossil fuel use. This may be developed in future.</p>	<p>The TAFE / Mahindra in India are undertaking testing of autonomous tractors.</p> <p>John Deere is working on the Electric autonomous tractor concept.</p> <p>The ICAR and TNAU are developing small unmanned tractors for rice and vegetable farming in South India.</p>

## Theme 8

### Issues related to Agri Extension, Capacity building and Awareness

**Focus/ Intervention:** *Providing training /demo on cutting-edge technologies, value chain management, cold storage maintenance, export market for value-added, GI tagged, native crops*

#	Priority Issues or Challenges	Possible Solution to Address the Issue
1	<b>High-tech training</b>	There is an increased need to train farmers/businessmen/entrepreneurs <b>on value chain management, utilization/standardization of cold storage modules, export potential</b> of competitive crops/ GI Spices/ traditional varieties/ Organic products.
2	Farmers are relying upon a YouTube channel, which often carries <b>unauthenticated/unverified claims/</b> information. Farmers get confused or adopt irrelevant technologies.	<b>Opening of a dedicated Agri TV channel and Government YouTube Streaming Platform.</b> This is the need of the day to disseminate all agriculture technologies, including information on marketing, post-harvest processing, and value addition, which will help to reshape our traditional agriculture marketing pattern into a global competitor.
3	Indiscriminate use of pesticides is increasing. Vegetable farmers often use high doses of pesticides to deliver pest-free products in the markets.	<b>It is time to re-emphasize IPM practices throughout the State.</b>
4	Many small farmers or new entrepreneurs in rural areas who wish to enter into inland fish farming lack training in scientific aquaculture practices, feed management, water quality monitoring, and disease prevention.	Training in scientific aquaculture practices, feed management, water quality monitoring, and disease prevention to farmers is to be provided.

## Part F

### 1. Five-Year Integrated Action Plan to Address Agrarian Issues in TN through VKSA

#### 1.1 Action Plan on villages to be covered and the number of farmers to be contacted during the campaign in TN

Year	No. of Villages proposed to be covered (across 31 KVKs / District)	No. of Blocks to be visited during the campaign	No. of farmers to be contacted per team per day	Minimum No. of farmers to be contacted per day in the State	Campaign Duration	Total Minimum Number of farmers to be contacted during the entire campaign periods
Rabi 2025	1438	243	100-400	9300	15 days	139500
Kharif 2026 / Rabi 2026	1774	311	100-400	9500	15-16 days	150000
Kharif 2027/Rabi 2027	1400	275	100-400	10000	15-30 days	150000
Kharif 2028/ Rabi 2028	1500	300	100-400	11000	15-30 days	150000
Kharif 2029 / Rabi 2029	1500	300	100-400	11000	15-30 days	150000
Kharif 2030 / Rabi 2030	1500	300	100-400	11000	15-30 days	150000

*Note: List of villages to be visited during the VKSA campaign for two years is listed in pages 42-60*

**1.2 Integrated Action Plan on major agrarian issues to be addressed through awareness campaign, research and policy changes in Tamil Nadu**

<b>Year</b>	<b>Major Issues faced by Farmers in TN</b>	<b>Approaches to address the Problems</b> (Awareness / Policy / Research)	<b>Action by ICAR/SAUs/Policy Makers</b>	<b>Expected Deliverables</b> (depends on funding and other logistics)
<b>Year 1</b>	<ol style="list-style-type: none"> <li>1. High cost of cultivation</li> <li>2. Erratic rainfall &amp; water scarcity</li> <li>3. Indiscriminate pesticide use</li> <li>4. Lack of awareness on MSP/procurement</li> <li>5. Low dryland productivity</li> </ol>	Awareness + Research + Policy	<ul style="list-style-type: none"> <li>• Awareness: IPM training, water saving practices (SRI, drip)-</li> <li>• Research: Develop low-input varieties-</li> <li>• Policy: Promote crop insurance, MSP awareness</li> </ul>	<ul style="list-style-type: none"> <li>• 5,000 farmers trained in IPM &amp; water management</li> <li>• Pilot research on low-input varieties</li> <li>• State-wide campaign on MSP &amp; insurance</li> </ul>
<b>Year 2</b>	<ol style="list-style-type: none"> <li>1. Shrinking sugarcane &amp; cotton area</li> <li>2. Post-harvest losses (veg/fruits)</li> <li>3. Market glut, lack of cold storage</li> <li>4. Wild animal menace</li> <li>5. Misinformation from social media.</li> <li>6. Production to processing to marketing for traditional paddy varieties</li> </ol>	Awareness + Policy + Infra Support	<ul style="list-style-type: none"> <li>• Res: Development of pokkah boeng + Crown Mealy Bug tolerant sugarcane variety; cotton variety suitable for HDPS</li> <li>• Awareness: Cold storage mgmt., value-addition</li> <li>• Policy: Compensation/culling norms for wild animals</li> <li>• Infra: Block-level cold storages-</li> <li>• Media: Dedicated Agri-TV/YouTube channel</li> <li>• Traditional rice promotion through cluster-based farmer empowerment,</li> </ul>	<ul style="list-style-type: none"> <li>• One Cotton and sugarcane variety suitable for the State.</li> <li>• Cold storage pilots in a selected district</li> <li>• Farmers trained in value-addition</li> <li>• Draft policy on wild animal control submitted</li> </ul>

			customized technology, and heritage branding, ensuring better income, conservation of TN rice biodiversity	
<b>Year 3</b>	<ol style="list-style-type: none"> <li>1. Pest/disease outbreaks (mealybug, stem borer, root wilt)</li> <li>2. Low adoption of farm mechanization</li> <li>3. Unorganized fish/poultry waste mgmt.</li> <li>4. Global trade disruptions (tariffs)</li> <li>5. Low productivity in cotton (ELS varieties need)</li> </ol>	Research + Awareness + Policy	<ul style="list-style-type: none"> <li>• Research: Resistant varieties for pest/disease</li> <li>• Awareness: Promote mechanization (power weeder, drones)</li> <li>• Policy: Export support &amp; FPO strengthening- Tech: Waste-to-wealth models</li> </ul>	<ul style="list-style-type: none"> <li>• New pest-tolerant varieties under trials</li> <li>• 5,000 farmers adopt small machinery</li> <li>• One waste-to-wealth units operational</li> <li>• Trade resilience plan prepared</li> </ul>
<b>Year 4</b>	<ol style="list-style-type: none"> <li>1. Climate change impact on cropping patterns</li> <li>2. Need for digital/AI-based advisory tools</li> <li>3. Limited seed availability (timely supply)</li> <li>4. GI crop promotion (turmeric, lemon, chilli)</li> <li>5. Poor inland fisheries training</li> </ol>	Research + Digital Tools + Awareness	<ul style="list-style-type: none"> <li>• Research: Climate-resilient varieties</li> <li>• Digital: Mobile apps for nutrient mgmt., irrigation advisory</li> <li>• Awareness: GI branding, export readiness- Training: Scientific aquaculture</li> </ul>	<ul style="list-style-type: none"> <li>• Mobile advisory app launched</li> <li>• Climate-resilient crops demo plots</li> <li>• GI branding campaigns in 5 districts</li> <li>• 1,000 fish farmers trained</li> </ul>
<b>Year 5</b>	<ol style="list-style-type: none"> <li>1. Policy gaps in solar/agrivoltaics for drylands</li> <li>2. Need for strong FPO networks</li> <li>3. Organic &amp; niche product marketing</li> <li>4. Lack of buy-back arrangements</li> <li>5. Labour shortage in agriculture</li> </ol>	Policy + Institutional + Awareness	<ul style="list-style-type: none"> <li>• Policy: Promote solar-agrivoltaics, labour subsidy schemes</li> <li>• Institutional: Strengthen 200+ new FPOs-</li> <li>• Awareness: Organic certification, buy-back models- Mechanization to reduce labour dependence</li> </ul>	<ul style="list-style-type: none"> <li>• Solar-agrivoltaics pilots in dry zones</li> <li>• 100 new FPOs linked to markets</li> <li>• Organic certified clusters formed</li> <li>• Buy-back arrangements in 3 crops</li> </ul>

*Note: Detailed action plan for each of the components given in the Table is elaborated in 1.2.1 to 1.2.3*

### 1.2.1 Detailed Action Plan to address Awareness-related Issues mentioned in Table 1.2

Issue	Action Plan	Implementing Organization	Time frame (5 Years)	Expected Outcome
Low awareness of MSP, procurement, & schemes	Campaigns via KVKs, Digital apps (Tamil), Agri kiosks at Uzhavar Sandhai & PACSs	SAUs + Department. of Agriculture + NABARD + CDB	Year 1-5 (scaling up coverage yearly)	50% farmer awareness of MSP and crop insurance
Poor adoption of IPM & organic methods	Farmer Field Schools (FFS), on-farm demos (biopesticides, NPV, Bt, <i>Trichogramma</i> )	ICAR (NBAIR) + TNAU + KVKs	Year 1-3	10% reduction in chemical pesticide use
Lack of market knowledge (GI Crops, exports)	Awareness on GI branding (Puliyankudi Lemon, Erode Turmeric), FPO buyer-seller meets.	Spices Board + APEDA + SAUs	Year 2-4	More GI crops linked to export markets
Climate advisories not reaching farmers.	Mobile alerts (SMS, WhatsApp), AI-based agro-advisory	IMD + ICAR (CRIDA) + TNAU ICT	Year 3-5	Real-time advisories to 2.5 lakh farmers
Create a complete system from production to processing to marketing for traditional paddy varieties through cluster-based farmer empowerment.	Mobilize growers into FPOs/Clusters; register under FPC Act, identify 10-15 popular varieties; establish community seed banks, conduct training through KVKs/TNAU on IPM, varietal purity maintenance, post-harvest care, Promote SRI / semi-dry rice techniques for traditional varieties, Establish Custom Mini Rice Mills & Processing Units through FPOs, Organize cluster-level aggregation & collective marketing through FPOs	KVKs, Department of Agri. Marketing, NABARD, TNAU, DoA,		5 FPOs/Clusters formed across major traditional rice districts 500 farmers trained in traditional rice management and 1,000 MT of traditional rice is marketed collectively

### 1.2.2 Detailed Action Plan to address Researchable Issues mentioned in Table 1.2

Researchable Issue	Expected Action by the ICAR–SAUs through the Project mode	Implementing Organization	Time frame	Deliverables
<b>Pest &amp; disease outbreaks</b> (Rugose spiralling whitefly, mealybugs, crown mealy bug in sugarcane, tea mosquito bug in cashew)	Screening and breeding resistant/tolerant varieties + biological control packages	ICAR + TNAU + TANUVAS	Yr 1–5	<ul style="list-style-type: none"> <li>• One resistant variety in each will be identified</li> <li>• One biocontrol package for managing the pests</li> </ul>
<b>Climate-resilient crops</b> (drought-tolerant millets, short-duration pulses, flood-tolerant rice)	Multilocational trials, participatory varietal selection	ICAR + TNAU	Yr 1–5	<ul style="list-style-type: none"> <li>• One climate-smart variety in pipeline</li> </ul>
<b>Cotton productivity gap</b> (ELS cotton, early compact variety for HDPS)	Develop & test high-density planting + mechanization modules	ICAR-CICR + TNAU Cotton Research Stations	Yr 2–5	<ul style="list-style-type: none"> <li>• Two new HDPS models/genotypes in pipeline.</li> <li>• One mechanized picking prototype</li> </ul>
<b>Soil &amp; water quality issues</b> (salinity, effluents)	Bio-remediation, microbe-based solutions, precision fertigation trials	ICAR + TNAU + SWC Department.	Yr 2–5	<ul style="list-style-type: none"> <li>• Protocols for safe reuse of effluent water</li> </ul>
<b>Post-harvest losses</b> (jackfruit, banana, vegetables)	Storage protocols, processing clusters, new value-added products	ICAR + TNAU Horticulture Department.	Yr 2–5	<ul style="list-style-type: none"> <li>• Three product clusters (Jackfruit Panruti, Banana Trichy, Lemon Puliyanakudi)</li> </ul>

### 1.2.3 Detailed Action Plan to address Policy Issues mentioned in Table 1.2

Policy Issue	Suggested Government Action	Responsible Agency	Time frame	Impact
<b>Wild animal menace</b> (boar, monkey, peacock)	Allow selective culling + crop compensation	State Forest Department + MoEF	Yr 1-2	Crop loss reduced by 10%
<b>Input subsidy delays</b>	Shift to back-end DBT (Direct Benefit Transfer)	TN Government + M/o A&FW	Yr 1-3	Faster access, fewer delays
<b>Crop insurance coverage gaps</b>	Expand to banana, sugarcane, and livestock	GOI (PMFBY) + TN Government	Yr 2-4	Wider coverage, reduced farmer risk
<b>Solar/agrivoltaics for drylands</b>	Modify Solar Policy 2019 to allow farmer-owned solar parks	MNRE + TN Energy Department	Yr 3-5	1,000 ha of agrivoltaics
<b>Export barriers</b> (tariffs, GI crops)	Negotiate FTAs, diversify markets beyond USA	DGFT + APEDA + TN Export Promotion Bureau	Yr 2-5	Increased export share of spices, fruits, and GI crops

*Note: The institutional roles – Who Does What? will be defined after the principal approval of the projects*

### 1.3 End of 5 Years Expected Outcomes

- Awareness: 70–80% farmers will be aware of MSP, crop insurance, GI branding; 30% farmers will be trained in IPM, mechanization, and digital tools; Increased adoption of cold storage & value addition
- Research: Two new varieties/technologies will be released jointly by ICAR–SAUs; Cotton & sugarcane area stabilized with new varieties
- Policy: Crop insurance expanded, wild animal crop losses will be addressed, and solar-agrivoltaics scaled.
- Impact: Improved resilience, 10% cost reduction, 10% income increase for farmers,

## Part G

### Suggestions to enhance ICAR's visibility and Impact in the State

The Indian Council of Agricultural Research (ICAR) has established 3 main research institutes (ICAR-SBI, ICAR-CIBA and ICAR-NRCB) and 12 regional Centres / Stations across Tamil Nadu covering diverse disciplines such as crop sciences, fisheries, mechanization, soil and water conservation, livestock, and post-harvest management. In addition, the State has three State Agricultural Universities (TNAU, TANUVAS, TNJFU) actively involved in agricultural education, research, and extension. To enhance the visibility of ICAR Institutes in Tamil Nadu, a multi-pronged strategy combining outreach, innovation, collaboration, and the use of digital tools is essential. Below are actionable and futuristic suggestions tailored to the State's agricultural conditions.

#### 1. Strengthening Research Visibility & Impact

- **Focus on translational research & local problem solving:** The ICAR Institutes in the State may take up 25% of their research projects focusing on district-level agro-ecological challenges (**Problem-solving research**), and another 25% of the research projects shall focus on meeting industry, export needs (**consumer-oriented research**). The remaining 50% of the projects may focus on basic research, applied /strategic research.
- Each ICAR institute **convenes a stakeholder meeting**, especially with small, marginal farmer representatives, industrialists, exporters, traders, SAUs and State Line Department Officials to assess their need/ district or state-level issues, formulate projects to solve the issues. Some issues identified may be translated into research mode with a defined time-frame to give solutions to the problems.
- Agriculture being a state subject, a **strong collaboration with SAUs and the State Agriculture Department** is suggested. Promote "**Problem-to-Solution Projects**" where each ICAR institute may partners with **2-3 KVKs and or SAUs** to solve one identified local problem in a span of 1 to 2 years.
- Establish an '**ICAR-Tamil Nadu Research Consortium**' linking all ICAR Institutes and Regional Centres for joint research planning, data sharing, and showcasing collective achievements.
- **TN Agri Policy Think Tank:** Establish a **State-level TN Agri-Research Advisory Body** (instead of Regional Committee), with technical and administrative members of ICAR HQ, M/o. A&FW, Directors of State Agricultural Departments, VC and DR of SAUs, Director/ Head of all ICAR Institutes in the State. This Body may identify priority areas of research, advise on research funding and develop 3- or 4-year research targets for each NARS institute in the State.
- The State-level TN Agri-Research Advisory Body, with support from ICAR HQ /Mo A&FW, may organize an '**Annual TN Agri Research Conclave**' wherein all ICAR Institutes and State Agricultural Universities **may present their annual research outcomes**. The Best technologies, identified in the meeting, may be passed on to the State Agricultural Department and KVKs for validation, demo and wider dissemination among farmers.
- Successful/ validated technologies identified by the above-mentioned procedures may be uploaded in **TNAU Agritech Portal** or to the Common '**TN Agri Innovation Portal**'.

This portal may highlight ICAR-SAU validated technologies, patents, publications, and success stories.

- Institute “**ICAR Agri Innovators Awards / Fellowship (Tamil Nadu)**” for PG/PhD scholars to work on applied regional problems and Scientists of ICAR/SAU who contributed to regional or local agrarian problems in the State.
- Conduct **Hackathons & Ideathons** with farmers, village youths, and engineering colleges on agricultural problems. They may throw light on ideas for research.

## **2) Strong Collaborative Programmes with SAUs, State line Departments, Industry, Trade Agency/ Exporters and KVKs**

By leveraging synergies with TNAU, TANUVAS, TNJFU, KVKs, Industry, Trade Agency/ exporters, State Department of Agriculture, Commodity Boards, APEDA, MPEDA, DMI and agro-input-machineries manufactures/ dealers, the initiatives suggested below aim to amplify research impact, farmer adoption, and public awareness.

- Develop **joint projects with TNAU/TANUVAS/TNJFU/ State line Departments/ Industry/ Trade Agency/ Exporters/ KVKs** for integrated crop-livestock-fish systems or addressing emerging challenges or common issues identified by State line Departments.
- Develop an SOP/guideline **promoting 10% of ICAR Scientists** working in the State are engaged in **Joint research/extension/development projects** with SAUs, KVKs, State line Department, commodity Boards, etc. working in the State.
- **Joint Training / Capacity Building Programmes:** Collaborate with TNAU, TANUVAS, TNJFU, and Commodity Boards to offer short-term training or certificate courses. For example, training on Sugarcane micro-irrigation/biocontrol agent production/disease management led by ICAR-SBI with TNAU Cuddalore/Sirugamani Centres; Brackish Water Aquaculture Management led by ICAR-CIBA Chennai in collaboration with TNJFU; Climate resilient cotton breeding led by TNAU in collaboration with ICAR-CICR. Promote these training/capacity building programmes *via* University Websites, ICAR Institute Website and State Department Agri-portals to attract farmers, entrepreneurs, and students.
- **Industry-Institute Linkages:** Establish "ICAR Innovation Hubs" at key locations like Coimbatore (hosting ICAR-CICR, CIAE, and SBI), partnering with agri-tech start-ups for co-developing products. For instance, joint programmes with drone companies for precision farming demos at ICAR-CIAE, Coimbatore.
- Look for **National linkage with APEDA/ MPEDA/ Processing and Export industries** for taking up export or value chain-oriented research, as well as **international linkages** with ASEAN and Indian Ocean Rim countries for coastal and tropical agriculture technologies
- **Joint Melas/ Farmer Field Schools:** Co-run melas/ FLDs/Demos/ FFS with TNAU, TANUVAS, and TNJFU as well as the State Agricultural Department.
- **Shared Research Incubators:** Promote **Bio-entrepreneurship in value-added products** (banana fibre, cotton by-products, sugarcane bagasse-based polymers, bioplastics, brackish water aquaculture feed, etc.). Establish thematic incubators (*e.g.*, Brackish Water Aquaculture, Banana Value Chain) **jointly managed by ICAR and SAUs.**

### 3) Outreach activities and public participation

- **Modernized outreach programmes:** Partner with KVKs, TN State Line Departments, SAUs, Commodity Boards, Banking Institutions like PACS, NABARD, input supply agencies (Seeds, Pesticide, Fertilizer, etc.), and village Panchayats to organize "**ICAR on Wheels**" **mobile units—vans** equipped with digital banners, posters, videos of latest ICAR technologies. These could visit rural areas monthly, providing hands-on training.
- **Fixing flexi banners/ banners** in places where farmers assemble (like village Sandhai/mandis, taluk/panchayat office, etc.) about improved agro-technologies will **give wider publicity. Also, news on training/ demo/ new technologies may be broadcasted in local TV/Radio/FM channels, periodically.**
- **Financial support for farmers-scientists interactive meeting:** Adequate financial support may be provided to ICAR Institutes to organize meeting with farmers and other stakeholders at the village or block level, at least one meeting in one district in one month. Nowadays, due to freebies given by the political parties to the farmers/public attending their party meeting, farmers are expecting monetary benefits to attend meeting organized by research institutions (even if the meeting is intended to benefit them). This trend-change may be taken into account while deciding the budget for outreach programmes.
- **Demand-driven research:** The feedback received from farmers, consumers, or end users of agro-technologies and general farmers ' problems through extension functionaries – KVKs and ICAR outreach programmes shall be translated into action or to refine research programmes.
- **Effective mera gaon mera gaurav programme:** The MGMG programme may be undertaken in the true spirit with **adequate financial support**. Similar to the MLA or MP local constituency development fund, each ICAR scientist or group of Scientists may be given the MGMG fund to develop their own village. The Scientists may be allowed to choose villages of their choice (either in his/her native area or some backward areas) and asked to adopt the village for overall agricultural development. He/she, in collaboration with SAUs, State Line Department/ banking Institutions/, NGOs, etc., will develop that village as **ICAR's model village**. Every three or five years, a third-party assessment of the model village may be made for accountability. Adequate financial and logistic support and suitable recognition to the Scientist may be given.
- In a similar manner, ICAR Institutes *per se* may **develop model ICAR technology villages (one per agro-climatic zone or district in a span of 3 years)** demonstrating integrated packages from multiple ICAR institutes. This target is for the ICAR Institute (combined efforts of all Scientists, in collaboration with SAUs, State Department, KVKs and other stakeholders).
- **Scientist's responsibility in transferring his technology or input distribution to farmers - new role:** Group of Scientists of ICAR Institutes in the State may be assigned to look after/ coordinate production, distribution/ dissemination of any one agro-inputs/ technology in one or two blocks/ districts. He/she will be guiding or coordinating the production or distribution of inputs in the assigned village/blocks for a specified number of years. The inputs/technology may be from his/her institutes or other ICAR institutes. He/she may take production of the inputs (*e.g.*, biocontrol

agents/seeds) at his/her institutes or overseas, or by third-party or participatory production.

- **Promote short tour of farmers to see demos in progressive farmers' field:** For effective learning and to promote seeing is believing concept, progressive farmers from each district in the State may be encouraged by ICAR for a short tour within and neighbouring states to see technology demos, conducted by KVKs/ICAR/SAUs in progressive farmers' fields/ research Station, etc.

#### **4) Promote Scientific publications in the mother tongue / regional language, Dissemination of research outputs in the local language**

- To increase the visibility of ICAR Institutes' activities among farmers, publics, politicians, and policy makers in the State, prepare and **publish the Institutes' Annual Report in local languages.**
- All the **13 ICAR Institutes** (including Research Stations) in the State may prepare a **combined Annual Report** of less than 25 pages in the local language, and a copy may be circulated to the State Agriculture Department, SAUs and others. The same may be posted on the Website of ICAR Institutes, SAUs and State Agriculture Departments, KVKs for wider publicity. The Annual Report should focus only on deliverables (technology/products/ salient research outcome).
- The ICAR Institutes are preparing and publishing a **newsletter**, usually in English. It **should be in the local and regional language.** For example, ICAR-SBI may prepare a bi-monthly or quarterly Newsletter in Tamil, Telugu, Kannada, Marathi and Hindi where its varieties and technologies percolate.
- Every institute should have a '**Language cell**' responsible for the publication of the institute's research outcomes in all the local and regional languages.
- **Research publications** (need not be in journal format) /Package of Practices/Success Stories/ Technology Validation/ Seed Production and distribution and related services duly **vetted or approved by Institutes' PME Cell** or SAU or Similar official body and **published in local or regional languages may be treated as a valid publication as important as that of NAAS-rated publications.** The Scientists/contributors should be recognized suitably.

#### **5) Digital Extension: Media Amplification for Research Outputs**

- **Unified Digital Platform:** Develop a centralized "**Tamil Nadu Agri Hub**" portal or app (in collaboration with TNAU, TANUVAS, TNJFU and KVKs) that aggregates research outputs from all ICAR and SAU institutes (i.e. expansion of TNAU Agritech portal). Include the latest technologies, interactive dashboards for real-time metrics on crop yields, soil health data, and publications. As a novel idea, integrate the web portal with AR/VR features for **virtual tours** of facilities like the ICAR-CMFRI Stations in Chennai, Mandapam, and Tuticorin, allowing global access to marine research demos, ICAR-SBI's varietal development Process, allowing cane researchers across the globe to understand sugarcane breeding, etc.
- **Social Media Campaigns:** Launch targeted campaigns on platforms like X, Instagram, and YouTube, with institute-specific handles (*e.g.*, @ ICARSugarcaneCoimbatore) sharing short videos on breakthroughs, such as brackish water aquaculture innovations from ICAR-CIBA Chennai, banana processing/ value addition for export markets, and innovation of ICAR-NRCB. Use hashtags like #ICARTNResearch and

collaborate with influencers or farmer vloggers for wider reach. Track engagement via analytics to refine content.

- **AI and cutting-edge Technology Integration:** Develop an AI-powered chatbox (built on models like Grok) for institutes like ICAR-CICR (Cotton) to provide instant advice on cotton genetics or pest management, accessible via WhatsApp. Use an AI-based chatbot (Tamil-enabled) for farmers to get instant advice from ICAR experts. As a new or futuristic thought, use blockchain for traceability in supply chains, piloted at ICAR-CMFRI for marine products, ensuring transparent research-to-market journeys and publicizing *via* case studies.
- **Create a WhatsApp Group or join with the mKisan App:** Linking progressive farmers with ICAR /SAU Experts to get instant expert advice from farmers
- **Create a 24x7 dedicated “Tamil Nadu Agri TV Channel as well as ‘TN Agri YouTube’** which may be managed by Experts from ICAR/SAUs/ State Agriculture Department for public visibility.
- **Also partner with Doordarshan,** Private TV channels, All India Radio, and FM channels for ICAR technology talk shows, expert Q&A, and farmer success stories.
- **Conduct Kisan Mela/ Fair, etc., periodically,** in collaboration with all ICAR Institutes, SAUs, State Departments, giving wide publicity in local print and visual media.

## 6) Innovative & Futuristic Research Initiatives

- **Network Projects on TN Agro-biodiversity conservation and native germplasm mapping:** Linking all ICAR Institutes in the State, SAUs and International Organizations.
- **Integrated Climate-Smart Villages:** Multi-institutional demonstration on a suitable IFS model involving water-saving irrigation (IISWC), crop diversification (TNAU), and renewable energy use (CIAE).
- **Blue Economy Initiatives:** Joint CMFRI–CIBA–TNJFU projects on sustainable mariculture, ornamental fisheries, and coastal ecosystem health.
- **Addressing end-to-end mechanisation:** To be initiated with a single crop by collaboration of ICAR-CIAE, TNAU and private farm machinery manufacturers.
- **Innovative Sweet villages** (model sugarcane seed production): Through farmers' participatory approach in major cane growing blocks/districts, -cm-technology demo integrating possible improved technologies. Progressive farmers may be invited to see the success of seed production/adoption of improved technologies.

*The measures proposed above aimed to enhance the research visibility, stakeholder engagement, and socio-economic impact of ICAR institutions operating in Tamil Nadu, and may be fine-tuned by stakeholder consultation. The integration of cutting-edge research, digital tools, collaborative programmes, and community-based outreach will contribute significantly towards achieving the goals of sustainable, climate-resilient, and technology-driven agriculture in the State.*

**Annexure H: VKSA State Coordination Committee - Office Order****ICAR-SUGARCANE BREEDING INSTITUTE**

भा.कृ.अनु.प-गन्ना प्रजनन संस्थान

**COIMBATORE कोयम्बतूर -641 007**

Phone: 0422-2472621,9443698858 Email: directorsbiicar@gmail.com



F. No. ICAR-SBI Cbe/VKSA/2025

Date: 6.10.2025

**ORDER (REVISED)**

Pursuant to the letter No. 13(7)/2025-Cdn (Tech) of the HAM dt 30<sup>th</sup> July 2025 and ICAR letter No. 13(7)/2025-Cdn (Tech) dt 24.7.2025 and with the approval / consent of the concerned officials, the **State Coordination Committee** is hereby **re-constituted** to coordinate and implement VKSA (Viksit Krishi Sankalp Abhiyan (VKSA)- வேளாண்மை வளர்ச்சிக்கான பிரச்சார இயக்கம்) outreach activities in **Tamil Nadu** State.

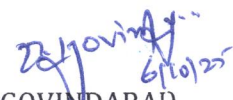
	<b>Name of the Officer</b>	<b>Email</b>	<b>Phone</b>
<b>Indian Council of Agricultural Research (ICAR)</b>			
1	Dr. P. Govindaraj Director ICAR-Sugarcane Breeding Institute Coimbatore <i>Nodal Officer on ICAR-Side</i>	directorsbiicar@gmail.com	9443698858
2	Dr. A. Velmurugan ADG (S&WM) ICAR, New Delhi <i>Co-Nodal Officer on ICAR-Side</i>	adgswm2021@gmail.com	9933270521
3	Dr. A. Bhaskaran Principal Scientist ICAR-ATARI, Hyderabad	bhaskaran.atari@gmail.com	6383211512
4	Dr. P. Jayaprakash PS & in-charge IARI-Rice Breeding & Genetics Research Centre, Aduthurai	jpsarit@gmail.com	9486899723
5	Dr. C. Karpagam Principal Scientist ICAR-NRCB, Trichy	karpsicar@gmail.com	9865261886
6	Dr. Loveson Edward, L. PS & in-charge ICAR- CMFRI Regional Station, Tuticorin	trccmfri@gmail.com	9951472553
7	Dr. P. Manivel PS & Head i/c ICAR-NIRCA Research Station Vedasandur	manivelp@yahoo.com	9429543209
8	Dr. J. Nanjundan Senior Scientist ICAR-IARI Regional Station Wellington	agrinanju@gmail.com	7904438234
9	Dr. R. Narayana Kumar PS & in-charge ICAR-CMFRI Regional Station Chennai	cmfrichennai@gmail.com	9446804213
10	Dr. A. H. Prakash Head, ICAR-CICR Regional Centre, Coimbatore	prakashcicr@gmail.com	9489077117

11	Dr. Priyank Mhatre PS & in-charge ICAR-Central Potato Research Station, Udhagamandalam	Priyank.iari@gmail.com	7827376710
12	Dr. A. S. Rajendiran PS & Officer in-charge ICAR-CSWRI Southern Regional Research Centre, Mannavanur	as.rajendiran@gmail.com	9655763727
13	Dr. Ravindra Naik PS & in-charge ICAR- CIAE Regional Station Coimbatore	naikravindra@gmail.com	9994464069
14	Dr. C.V. Sairam Principal Scientist ICAR-CIBA, Chennai	sairam_cpcri@yahoo.com	9980332572
15	Dr. J. Somasundaram PS & Head, ICAR-IISWC Research Centre Udhagamandalam	somajayaraman@gmail.com	9981840444
16	Dr. K. Vinod PS & Head ICAR-CMFRI Regional Centre Mandapam Camp	scientistincharge.incharge @gmail.com	7200449596
17	Dr. R. Karupaiyan Principal Scientist ICAR-SBI Coimbatore <i>Member Secretary at ICAR-SBI</i>	sikkimkarups@gmail.com	8015927937
<b>Tamil Nadu State line Departments</b>			
18	Mr. N. Ravichandran Deputy Director (IT & Trg) Directorate of Agriculture, Chepauk, Chennai	scoravi@gmail.com	9994083038
19	Mrs. S. Manamalli Deputy Director of Agri (Agri-business) Dept. of Agril. Marketing, Chennai	agrimarketing.pln23@ gmail.com	9994397339
20	Shri C. Ramprasadh Additional Director of Hort (NHM) TANHODA, Chennai	usopagri@tn.gov.in	944343301
21	Mrs C. Sudha Assistant Director Fisheries and Fishermen Welfare (Inland Fisheries), FFW Dept, Chennai	inlandfisheries15@gmail.com	9384824238
<b>State Agricultural Universities</b>			
22	Dr. V. Appa Rao Director of Extension Education TANUVAS, Chennai	dee@tanuvas.org.in	9677211395
23	Dr. V. Gopalakannan Director of Extension Education TNJFU, Nagapatinam	dee@tnfu.ac.in	8838882451
24	Dr. P. P. Murugan Director of Extension Education TNAU, Coimbatore	dee@tnau.ac.in	9489056701

<b>Commodity Boards</b>			
25	Dr. Naveena Kumara, K. T. Deputy Director & Centre in-charge National Horticultural Board Chennai	naveenakumara.kt91@gov.in	9880273019
26	Dr. K. Thangaraja Deputy Director-Extension Coffee Board Bodinayakanur	deputydirectorpc@gmail.com	9442249450
27	Smt. Shylaja, K.K. Jt Rubber Production Commissioner Rubber Board, Kottayam	jtrpcext@rubberboard.org.in	9605018872
28	Shri S. Senthil Kumaran Assistant Director Spices Board Regional Office Bodinayakanur	senthilkumaran.s@nic.in	957782107
29	Shri Nipun Sarmah Assistant Director of Tea Development Tea Board, Zonal Office, Coonoor	sanusarmah@gmail.com	70355 09986
30	Shri E. Aravazhi Director (Development) Coconut Development Board, RO, Coimbatore	ro-chennai@ coconutboard.gov.in	8763860091
<b>APEDA, DMI, IFFCO, NABARD, NSC, etc</b>			
31	Mrs. Shobana Kumar AGM & Regional Head APEDA, Chennai	shobana@apeda.gov.in	9013730865
32	Shri P. Engan Murugan Production Officer (Seeds) NSC Ltd Chennai	enganmurugan@gmail.com	8870686166
33	Ms. S. Abinaya JFR (Marketing) IFFCO State Office Chennai	abinaya@iffco.in	8778050594
34	Shri Thirumala Rao, C. District Development Manager NABARD Coimbatore & Nilgiris	thirumala.rao@nabard.org	8108703105
35	Dr. D. M. Govinda Reddy Dy. Agricultural Marketing Adviser Shri K. Harish Senior Marketing Officer Directorate of Marketing & Inspection, Regional Office Chennai.	dmirotn@nic.in	9342596812 9867193915

<b>Representative from processing industry</b>			
36	Mr. V. Dhananjayan Expert- Cold Storage, Foodgrain Processing, Ariyalur.	dhananjayan@cyrmandi.in	9443320269
<b>Representatives from FPO</b>			
37	Dr. G. Ranganathan Director, Palamalai FPO Periyanaickanpalayam Coimbatore-Dt	drgrover@gmail.com	9994970092

The Committee, in consultation with the Secretary, DARE & Director General, ICAR New Delhi may meet periodically to plan and execute VKSA related activities in Tamil Nadu.

  
 (P. GOVINDARA)  
 Director, ICAR-SBI &  
 TN State VKSA Nodal Officer

*Copy to*

Individual (By name)

The Director General, ICAR & Secretary, DARE, New Delhi for kind information

The DDG (Crop Science), ICAR, New Delhi for kind information

The Director- Agriculture, Dept of Agri & FW, TN, Chennai for kind information

The Director, Fisheries and Fishermen Welfare, TN, Chennai for kind information

The Commissioner, Dept of Agricultural Marketing, TN, Chennai for kind information

The Managing Director, TANHODA, Chennai for kind information

The Director, ICAR-ATARI Hyderabad for kind information