

Tamil Nadu Agricultural University

ICAR-Krishi Vigyan Kendra
Needamangalam- 614 404
Thiruvarur District

9th Scientific Advisory Committee meeting report

(2018-19 to 2019-20)

Agenda Item No. 01

Chairman's Opening Remarks about KVK

i. Establishment details

S. No	Particulars	Details
01	Name of the KVK	Thiruvarur
02	Postal address of the KVK	ICAR-Krishi Vigyan Kendra Needamangalam Thiruvarur District PIN - 614 404
03	Telephone number /Fax / email and Web site address of the KVK	Telephone: 04367- 260666, 04367-261444 Fax: 04367- 260666 email: kvkndm@tnau.ac.in Web site:www.kvkthiruvarur.com
04	Name of the Host Organization	Tamil Nadu Agricultural University
05	Postal address of the Host Organization	Tamil Nadu Agricultural University, Coimbatore-641 003.
06	Telephone number /Fax / email and Web site address of Host Organization	Telephone: 0422- 2431222 Fax:0422-2431821 E mail: registrar@tnau.ac.in Web Address: www.tnau.ac.in
07	Sanction Order Details	F. No.16(4)/2001 - AE - I/2004. Dt.1 st July 2004 of the ICAR, New Delhi
08	Name of the Programme Coordinator	Dr.M.Ramasubramanian
09	Total land area with the KVK in ha.	18.66

ii. Mandate

The overall mandate of the KVK is to develop and disseminate location specific technological modules at district level through Technology Assessment, Refinement and Demonstration and to act as Knowledge and Resource Centre for agriculture and its allied activities. The specific activities carry out to achieve this mandate are:

- Conducting on-farm testing to identify the location specificity of agricultural technologies under various farming systems
- Organizing frontline demonstrations to establish production potential of various crops and enterprises on the farmers' fields
- Organizing need based training to farmers for update their knowledge and skills in modern agricultural technologies related to technology assessment, refinement and demonstration, and training of extension personnel to orient them in the frontier areas of technology development
- Creating awareness about improved technologies to larger masses through appropriate extension programmes
- Production and supply of good quality seeds and planting materials, livestock, poultry and fisheries breeds and products and various bio-products to the farming community
- Work as resource and knowledge centre of agricultural technology for supporting initiatives of public, private and voluntary sector for improving the agricultural economy of the district

iii. Staff details (as on 29.02.2020)

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Qualification	Pay Scale	Joining date	Nature of employment
1	Programme Coordinator	Dr.M.Ramasubramanian	Programme Coordinator	Agri. Extension	Ph.D.	131400-217100	07.05.2018	Permanent
2	Subject Matter Specialist (SMS)	Vacant						
3	Subject Matter Specialist (SMS)	Dr. A. Anuratha	Asst.Professor	Soil Science & Agricultural Chemistry	Ph.D.	68900-205500	07.05.2018	Permanent
4	Subject Matter Specialist (SMS)	Dr.R.Ramesh	Asst.Professor	Entomology	Ph.D	57700-182400	31.07.2014	Permanent
5	Subject Matter Specialist (SMS)	Dr.S.Saravanan	Asst.Professor	Veterinary & Animal Science	M.V.Sc,Ph.D	57700-182400	01.10.2014	Permanent
6	Subject Matter Specialist (SMS)	Dr. J. Vanitha Sri	Training Assistant	Food Science & Nutrition	Ph.D.	40000 (Con.Pay)	02.03.2018	Temporary
7	Subject Matter Specialist (SMS)	Dr. A. Rajeshkumar	Training Assistant	Agronomy	Ph.D.	49000 (Con.Pay)	03.10.2018	Temporary
8	Programme Assistant(Tech.)	Tmt. D. Reka	Programme Assistant(Tech)	Home Science	B.Sc.	35900-113500	04.06.2007	Permanent
9	Programme Assistant (Computer)	Tmt. R. Sakunthala	Programme Assisnat (C)	Computer Application	B.E (Ag), MCA	35900-113500	12.04.2017	Permanent
10	Farm Manager	Mr.D. Nakkiran	Farm Manager	Agriculture	B.Sc.	35900-113500	26.08.2013	Permanent
11	Assistant	Mr.D. Senthil Kumar	Assistant	-	B.A.	20600-65500	02.05.2013	Permanent
12	Junior Assistant	Tmt. P. Poongodi	Junior Assistant cum Typist	-	M.Com.	19500-62000	23.01.2018	Permanent
13	Driver	Mr. Vincent paul	Supervisor	-	-	35400-112400	03.11.2013	Permanent
14	Driver	Mr. K.Babu	Driver	-	-	19500-62000	29.06.2016	Permanent
15	Supporting staff	Th.M.Kumaran	PUSM	-	-	15700-50000	01.04.2009	Permanent
16	Supporting staff	Vacant						

Agenda Item No. 02

Composition of the Scientific Advisory Committee

S.No	Name	Designation	Address	Affiliation
1	Dr.N.Kumar	Vice Chancellor	Tamil Nadu Agricultural University Coimbatore-3	Chairman
2	Dr. Y.G.Prasad	Director	ICAR-Agricultural Technology Application Research Institute (ATARI) CRIDA Campus, Hyderabad	Member
3	Dr.M.Jawaharlal	Director of Extension Education	Tamil Nadu Agricultural University Coimbatore-3	Member
4	Dr.V.Ambethgar	Director	Tamil Nadu Rice Research Institute Aduthurai - 612 101 Thanjavur District	Member
5	Dr. S.Uma	Director	National Research Centre for Banana Thogamalai Road, Thayanur Post, Tiruchirapalli - 620 102	Member
6	Dr.K.Arivoli	District Forest Officer	Collectorate Complex, Thiruvarur - 610 001	Member
7	Th.T.Sivakumar	Joint Director of Agriculture	Collectorate Complex, Thiruvarur - 610 001	Member
8	Dr. I.Dhanabalan	Joint Director of Animal Husbandry	Veterinary Hospital Campus, Nethaji road,Thiruvarur - 610 001	Member
9	Er.A.A. Chellakkan Gnanaseelan	Executive Engineer(AED),	Department of Agricultural Engineering , Pavithramanickam, Kumbakonam Road, Thiruvarur- 610 002	Member
10	Th. Patrick Jasper	District Development Manager	NABARD, Tiruvarur 610 001	Member
11	Th.Neethimanikkam	Deputy Director of Horticulture,	Collectorate Complex, Thiruvarur - 610 001	Member

12	Tmt.R.Mangalam	Deputy Director of Agriculture,	Agricultural Business and Marketing, Regulated Market campus, Thiruvarur	Member
13	Dr. M.Kathirchelvan	Associate Professor and Head	Farmers Training Centre, (TANUVAS) Kurunji Nagar, Vilamal, Tiruvarur - 610004	Member
14	Th.S.Ravichandran	General Manager	District Industrial Centre Collectorate Complex Thiruvarur - 610 001	Member
15	Th.Elilarasan	Lead District Manager	Indian Overseas Bank,Thiruvarur	Member
16	Th.R.Rajesh Kumar	Assistant Director of Fisheries	Room No. 210, Second floor District Collectorate Office additional building, Opp. to District court Thiruvarur - 610 004.	Member
17	Th. L.Chandrasekaran	Regional Deputy Director of Sericulture	Regional office, Department of Sericulture No. 6, V.O.C Road, Trichy	Member
18	Mrs. C.UmaiyaI	District Social Welfare officer	Collectorate Complex Thiruvarur - 610 001.	Member
19	Mr. Chinnasamy	Farm Radio Reporter	All India Radio, (AIR) Near American Hospital Thiruchirapalli-1	Member
20	Th. A. Devendiran	Assistant Director of Agriculture	Anna silai , Thanjavur Road, Needamangalam. - 614 404	Member

21	Th.S.Ganesh kamalakannan	Progressive farmer-1	S/o Th. Sathasivam. M Kothankudi, Arasavanankadu(Post) Kodavasal Taluk Thiruvarur District PIN 612 603	Member
22	Th.V.R.Gopalakrishnan	Progressive farmer- 2	S/o Th. Ramasamy No 10/13A, Rajan street Vaduvur Thenpathi,Needamangalam Taluk Thiruvarur District PIN 614 019	Member
23	Tmt.M.Maharani	Women Farmer-1	W/o Th.P.K.Saminathan 59/B Mela kudiyana street, Rishiyur Needamangalam Taluk Thiruvarur District PIN 614 404	Member
24	Mrs.G.Latha	Women Farmer-2	W/o. Th.Gunasekaran 1, Karaimettutheru, Pullavarayan kudikadu (Post), Needamangalam (Tk),Thiruvarur (Dt). PIN 614013	Member
25	Mr.Paramasivam	Agri -entrepreneur	S/o Chidambaram Ovarkudi , Thiruthuraipoondi (TK) Thiruvarur District Cell no.:9943384204	Member
26	Mrs.S.Mohanammal	Chair person of Women Self Help Group	W/o. Selvakumar Keezhapattu, Rayapuram post Needamangalam Tauk, Thiruvarur District PIN: 612 803	Member
27	Dr.M.Ramasubramanian	Programme Coordinator	ICAR Krishi Vigyan Kendra, Needamangalam,Thiruvarur District	Member

Agenda Item No. 03

Action Taken Report on the previous SAC meeting held on 15.03.2019

Sl.No	Recommendations & Proposer	Action taken	Specific constraints in taking if any
1	<p>Agroforestry models suitable for Cauvery delta should be raised at KVK farm. The tree species like Katham, Malaivembu may be included in the model</p> <p>Proposer : Director of Extension Education Tamil Nadu Agricultural University Coimbatore</p>	<ul style="list-style-type: none"> • The allocated land for the model has been inundated due to continuous rainfall • Agro forestry model will be implemented during April - May 2020 	
2	<p>Awareness programme on Foot and Mouth Disease should be conducted in KVK</p> <p>Proposer : Director of Extension Education Tamil Nadu Agricultural University Coimbatore</p>	<ul style="list-style-type: none"> • An Awareness programme on Foot and mouth disease was conducted and annual FMD camp was initiated on 11.09.2019. JDAH, ADAH and animal department officials have participated in the function and a total of 42 animals vaccinated. • The news was provided to media for mass reach and it kick started the vaccination programme for the season of August 2019 • SMS has been sent to 9926 farmers pertaining to the importance of vaccination for FMD • Ethnoveterinary practice to overcome the minor decline in milk production was advised in every training programme conducted. 	

3	<p>Raising vegetable crops in the bunds of paddy field may be introduced through demonstrations</p> <p>Proposer : Director of Extension Education Tamil Nadu Agricultural University Coimbatore-3</p>	<ul style="list-style-type: none"> • FLD on Demonstration of bhendi hybrid as border/bund crop in paddy field of Thiruvarur District was conducted in 10 locations at Keluvathur village of Kottur block as per the action plan. • Field day was organized on 19.12.2019 • Bhendi was also raised in the bunds of KVK farm 	
4	<p>Nutrigarden may be developed at Anganwadi through demonstration</p> <p>Proposer : Director of Extension Education Tamil Nadu Agricultural University Coimbatore-3</p>	<ul style="list-style-type: none"> • Importance of vegetables and Nutri garden was delivered during the Anganwadi training programme at KVK, Needamangalam on 11.10.2019. 32 Anganwadi staffs were attended and benefited. • Two days on campus training on Establishment of nutri garden was conducted at KVK, Thiruvarur on 11.02.2020 and 13.02.2020. 25 farm women's were attended and benefited. • Demonstartion on Nutrigarden was developed at Vaduvur (DFI village), Rayapuram (NICRA Adopted village), Pullavarayan Kudikadu, Kappaludaiyan and Munnavalkottai Anganwadis. • Vegetable seeds of Cluster bean (MDU 1), Ribbed gourd (CO1), Moringa (PKM 1), Brinjal (CO2), Snake gourd (CO2), Bitter gourd (CO1), Pumpkin (CO2), Bottle gourd (CO1), Chilli (CO 4), Lab lab (COGb 14), Bhendi hybrid (COBhH 1), Amaranthus (CO1) were distributed to Pullavarayan kudikadu, Rayapuram and Munnaval kottai anganwadis and Nutrigarden was developed. • Vegetables and greens are in seedling stage. 	

5	<p>Alternative crops for rice and IFS which is suitable for Thiruvarur District may be promoted</p> <p>Proposer : Dean, AC&RI, Thanjavur</p>	<ul style="list-style-type: none"> • The OFT On Assessment of suitable alternate crop for rice in Kharif (Kuruvai) season was conducted at Mahadevapattinam of Mannarkudi block and Kelavathur villages of Kottur block. The growth and yield attributes, water requirement and economics were assessed in the OFT. • During <i>Kuruvai</i> season, blackgram (VBN 6), maize (COMH 6) and rice (CO 51) were raised at five villages. An average yield of 732, 3212 and 5160 kg ha⁻¹ was observed in blackgram, maize and rice respectively. • With regard to water requirement, maize crop had the highest total water use of 500 mm (10 irrigations) as compared to black gram (300 mm in 6 irrigations). The total irrigation water consumed by rice was 1156 mm. • The higher net income and BCR of Rs.53,200 ha⁻¹ & 3.66 was obtained in black gram • The post harvest nutrient status revealed that among the different crops, black gram cultivated field resulted higher nutrient status as compared to Maize and Rice cultivated field. <p>Post harvest nutrient status of farmers field (Average of five farmers)</p> <table border="1"> <thead> <tr> <th rowspan="2">Nutrients (kg ha⁻¹)</th> <th rowspan="2">Initial</th> <th colspan="3">Post harvest soil nutrient status (kg ha⁻¹)</th> </tr> <tr> <th>Pulse</th> <th>Maize</th> <th>Rice</th> </tr> </thead> <tbody> <tr> <td>AV.N</td> <td>232</td> <td>193</td> <td>172</td> <td>186</td> </tr> <tr> <td>AV.P</td> <td>35</td> <td>31</td> <td>29</td> <td>30</td> </tr> <tr> <td>AV.K</td> <td>285</td> <td>267</td> <td>248</td> <td>253</td> </tr> </tbody> </table>	Nutrients (kg ha ⁻¹)	Initial	Post harvest soil nutrient status (kg ha ⁻¹)			Pulse	Maize	Rice	AV.N	232	193	172	186	AV.P	35	31	29	30	AV.K	285	267	248	253	
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6	<p>Preparation of Ideal model for coconut farming integrating animal husbandry in consultation with scientist of CRS, Aliyarnagar</p> <p>Proposer : Joint Director of Agriculture, Thiruvarur</p>	<p>Ideal model for coconut farming integrating animal husbandry will be formulated during summer 2020.</p>	
7	<p>The latest variety in Blackgram other than ADT 3 is to be disseminated among farmers of Thiruvarur District</p> <p>Proposer : Joint Director of Agriculture, Thiruvarur</p>	<ul style="list-style-type: none"> • Blackgram- ADT 5, Vamban 6 varieties were disseminated under cluster FLD scheme during April-July 2019 in 30 Ha for 75 farmers of vaduvur of Needamangalam and Mannargudi blocks • Black gram Vamban 6 variety were disseminated under cluster FLD scheme during Jan - Feb 2020 in 30 Ha for 75 farmers . • FLD on Introduction of Rice Fallow blackgram variety ADT 6 in Thiruvarur District was conducted at Pullavarayan Kudikadu village of Needamangalam block. • The crop is in vegetative stage. 	
8	<p>New technologies on forestry are to be popularised through trainings and awareness programme</p> <p>Proposer : District Forest Officer, Thiruvarur</p>	<p>Tree Plantation Drive was organized on 17.09.2019 for environmental awareness among farmers. Th.S.Gurusamy, IFS, District Forest Officer, Thanjavur chaired the training programme. Forest department officials along with line department extension personal delivered various technologies new to the participants. Totally 189 farmers benefitted.</p>	
9	<p>The improvised technologies related to back yard poultry rearing are to be disseminated</p> <p>Proposer : Joint Director of Animal Husbandry, Thiruvarur</p>	<p>ANNEXURE I</p>	

10	<p>Growing of tree fodder can be promoted including Agathi, Subabul and Glyricidia</p> <p>Proposer : Joint Director of Animal Husbandry, Thiruvarur</p>	<p>Agathi was planted at the bunds of fodder demonstration plot. Subabul and glyricidia will be established during summer 2020.</p>	
11	<p>Training on Hydroponics is to be imparted to farmers</p> <p>Proposer : Joint Director of Animal Husbandry, Thiruvarur</p>	<p>Hydroponics is recommended where there is less availability of cultivable land and water scarcity. There is a huge demand for fodder crops especially CoFS31, hence an FLD on the same has been proposed and implemented. Tree fodder crops have been propagated to the farmer with less cultivable land and as intercrop to coconut garden.</p> <p>However a proposal as request has been sent to the A demo model Joint director of animal husbandry to transfer the hydroponics unit from veterinary dispensary Needamangalam to this Kendra for demonstrating its use as a cost effective fodder production unit. The unit is under installation and trial run. Once the production starts with economical benefit, the training will be conducted</p>	
12	<p>Standardised Capacity Building module for FPO is to be developed</p> <p>Proposer : AGM, NABARD, Thiruvarur</p>	<p>A Standardised Capacity Building Module for training FPO members was prepared with the following topics and training are being imparted using this module</p> <ul style="list-style-type: none"> • Nuances of business plan preparation • Social capital accumulation in groups • Leadership skills • Communication skills • Negotiation skills • Upscaling of FIG into Farmer Producer Companies • Registration procedure for FPCs • Sustainability issues in Farmers Groups 	

13	<p>Training on Micro irrigation for Horticultural crops may be given</p> <p>Proposer : Deputy Director of Horticulture, Thiruvarur</p>	<p>Special lecture on water conservation practices, Method Demonstration, live demonstration, clay model Exhibition, film show and Farmers and Scientist interaction related to Micro irrigation for Horticulture was conducted in the large scale Mela during the four JAL SHAKTI ABHIYAN awareness programme as detailed below</p> <table border="1"> <thead> <tr> <th>Date</th> <th>Location</th> <th>No of participants</th> </tr> </thead> <tbody> <tr> <td>29.08.2019</td> <td>KVK, Thiruvarur</td> <td>814</td> </tr> <tr> <td>03.09.2019</td> <td>Thanjavur</td> <td>736</td> </tr> <tr> <td>18.10.2019</td> <td>Ammamet</td> <td>626</td> </tr> <tr> <td>23.11.2019</td> <td>Kanjikudikadu</td> <td>678</td> </tr> </tbody> </table> <p>Totally 2854 farmers benefitted</p>	Date	Location	No of participants	29.08.2019	KVK, Thiruvarur	814	03.09.2019	Thanjavur	736	18.10.2019	Ammamet	626	23.11.2019	Kanjikudikadu	678	
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14	<p>Training on growing Crysanthimum and greens are to be imparted</p> <p>Proposer : Deputy Director of Horticulture, Thiruvarur</p>	<ul style="list-style-type: none"> • Special lectures and demonstration was given to the farmers about cultivation techniques of greens and importance of greens at KVK, Needamangalam on 20.08.2019. 25 farmers were attended. • Discussed about health benefits of Chekkurmani greens at Pullavarayan kudikadu on 16.09.2019. 																
15	<p>Exposure visits of farmers may be organised to Sericulture farm in coordination with Department of Sericulture</p> <p>Proposer : Junior Inspector of Sericulture, Thiruvarur</p>	<p>It is proposed to make an Exposure visit to Sericulture farm during Second week of March 2020 as discussed with Department of Sericulture under NICRA project</p>																

16	<p>Fodder crops may be raised in KVK farm and it should be distributed to farmers</p> <p>Proposer : Associate Professor and Head Farmers Training Centre, (TANUVAS) Kurunji Nagar, Vilamal, Tiruvarur</p>	<ul style="list-style-type: none"> • Fodder cafeteria have been established at KVK farm to showcase the different fodder crops suitable for Thiruvarur District. Fodder cafeteria comprises with Cumbu Napier, Super napier, Fodder sorghum (Co (FS) 29 & Co (FS) 31), muyal masal, veli masal, agathi and fodder maize. The visiting farmers and trainees witnessed the unit and benefitted. Fodder slips intend to distributed from summer 2020 to the needy farmers • Totally 14210 fodder slips have been distributed to 28 farmers for Rs 17052 	
17	<p>Awareness should be created on mushroom cultivation and bee keeping through trainings</p> <p>Proposer : Deputy Director of Horticulture, Thiruvarur</p>	<ul style="list-style-type: none"> • Vocational training cum demonstration on Mushroom cultivation techniques and value addition was conducted at KVK on 29.01.2019 and 30.01.2020. Totally 62 farmers benefitted. Mushroom Bed preparation and Value added products viz mushroom soup and mushroom pickle from mushroom was also prepared and demonstrated. • Training on Bee keeping and Value addition in mushroom was conducted at KVK on 31.01.2020 for 25 farmers 	
18	<p>Trainings for FPO members may be given in KVK</p> <p>Proposer : Agricultural officer, Agricultural Business and Marketing, Regulated Market campus, Thiruvarur</p>	<ul style="list-style-type: none"> • Trainings for FPO members was imparted on 8th June 2019 as part of State Balanced Growth Fund Scheme. • Besides, various technical trainings have been imparted to the members of Karikalan Pulse Producer Company, Vaduvur. • They had been imparted training on soil health management, System of Rice Intensification, Ecological Pest Management, Technologies related to Direct Sown Rice and Improved technologies on Pulses seed production 	

19	<p>Food festival may be organised at KVK to popularise millet based food in collaboration with District Social Welfare Officer</p> <p>Proposer : District Social Welfare officer, Collectorate Complex, Thiruvarur</p>	<ul style="list-style-type: none"> • World Nutrition week was conducted in Anganwadi at Sithamallai on 22.09.2019. • World Nutrition week was conducted in public place at Rishiyur on 25.09.2019. • World food day was conducted at Government Higher Secondary School, Munnavaikottai on 16.10.2019. In this occasion, Awareness created about balanced diet and world food day among the students. Food Competitions were conducted and prizes were distributed to all the winners and participants 	
20	<p>Non lodging paddy varieties may be introduced during Kuruvai</p> <p>Proposer : Th.D.Rajkumar, Devangudi Post, Poovanoor (via), Needamangalam (TK), Thiruvarur District.</p>	<ul style="list-style-type: none"> • The FLD on Demonstration of Newly released non lodging short duration variety ADT 53 with ICM in Kharif (Kuruvai) season was conducted at Vaduvur, Needamangalam and Kelavathur. The growth and yield attributes, % lodging and economics were observed in the FLD. • From the front line demonstrations, it was observed that the short duration variety ADT 53 recorded the higher yield (5640 kg/ha) compared to the farmers' practices variety (4840 kg/ha). The increase in the demonstration yield over farmer's practices was 14.18 per cent. • Application of Silica Solubilizing Bacteria @ 2 kg/ha and K Solubilizing Bacteria @ 2 Kg/ha along with Soil test based fertilizer application in rice gave higher net return of Rs. 50,240/ha as compared to farmers' practices. The benefit/cost ratio of ADT 53 rice under improved technologies was 2.26 as compared to 1.94 under farmers' practices • Lodging of ADT 53 was reduced (from 43% to 12%) in silica solubilising bacteria and potassium solubilising bacteria applied plot 	

21	<p>Value addition of banana may be popularised through training and demonstration</p> <p>Proposer : K.Abirami, W/o. Karthikeyan, Inam Kiliyoor. Valangaiman (TK), Thiruvarur District</p>	<ul style="list-style-type: none"> • Training and demonstration was conducted on 07.01.2020 at Pullavarayakudikadu. Total participants: 21 • Value added products prepared: Candy, Jam, Pickle, Cutlet, Extract juice 	
22	<p>More number of trainings on animal husbandry may be given</p> <p>Proposer : K.Santhi W/o, Karunanithi Poonthottam, Valangaiman (TK), Thiruvarur District</p>	<ul style="list-style-type: none"> • Three on campus and three off campus training has been conducted under various animal husbandry related topics covering 452 farmers comprising of farm men, women, rural youth extension professionals. • In person advices for animal husbandry practices and continuous monitoring by receiving feedback of their practices has been done and recorded. • An entrepreneur "Zhagaram incubators" has been promoted by this Kendra after their successful demonstration of the egg incubator model to the farmers. • Animal camps has been conducted in NICRA adopted Rayapuram village and Needamangalam Veterianry dispensary as a part of animal husbandry field activity. 	
23	<p>Training and distribution of tree seedlings to farmers in collaboration with Forestry department</p> <p>Proposer : Moganambal, W/o. Selvakumar Keezhapattu, Needamangalam (TK) Thiruvarur District</p>	<ul style="list-style-type: none"> • Tree Plantation Drive was organized to create environmental safety awareness among farmers on 17.09.2019. Th.S.Gurusamy, IFS, District Forest Officer, Thanjavur chaired the training programme. Forest department officials along with line department extension personals participated. Totally 189 farmers were benefitted. Seedlings viz., Jack, Pungan, Teak, Poovarasu, Jamun, custard apple were distributed to the participants • Tree saplings were distributed to the farmers during JAL SHAKTI ABHIYAN awareness programme conducted at different places viz., Needamangalam, Thanjavur, Ammapet and Kanjikudikkadu. 	

ANNEXURE I

Training has been conducted on improved techniques for backyard poultry. The following steps have been taken

- A Small scale egg incubator of 100 eggs capacity with fully automatic setup was set as “Community Incubator” on contribution basis from farmers.
 - Date of installation : 30.10.2019
 - No. of farmers benefitted : 5
 - No. of chicks produced : 34
 - (8 Kadaknath and 18 Aseel 10 Giriraja)
- Hatchability : >85%
- A Mini feed with the capacity of 50kg per hour (both wet and dry type/ 2hp motor) was installed in this Kendra. The crop wastage from paddy in the form of chaffy grains is effectively used as feed source for the birds maintained in the Fish pond – Poultry IFS unit.
- Ethnovet practices – Integrated farming system trainings has been regularly conducted in this Kendra and the motto of “**self help is the best help for better income in animal husbandry**” was emphasized to the farmers. For Backyard Poultry rearing, the initial stage of maintaining the chicks either with ethnovet practices or disease control management using antibiotics has been preached and practiced in this Kendra. After rejoining duty from the month of August 2019, three new poultry farms has been initiated by interested farmers under my personal supervision. Regular technical advices has been provided to these farmers by inperson/mobile service.
- Improvised breed TANUVAS Aseel and Nicobari from Poultry Research Station, Madhavaram has been purchased for the OFT on suitable poultry breed for backyard poultry (ongoing). The Nicobari breeds are performing better in the farm as a part of IFS unit while in field the performance is an amiss. TANUVAS Aseel performance excels in field, on the basis of weight gain when compared with NICOBARI and local breeds.
- Feed cost is a major deciding factor for the BCR in backyard poultry. The protein requirement has to be met as per standard recommendation, if not it leads to poor performance. As Thiruvarur district as plenty of vegetable and fishery wastes a small scale Black soldier fly larva unit has been recently established in this Kendra. The outcome will be shared to farmers once large scale production is initialized.

(a) Agricultural scenario of the district

i. Major farming systems/enterprises: Agriculture, Horticulture, Animal Husbandry, Fisheries, Agro Enterprises etc.

The rice cropping season of this district is divided into Kurvai (Dry), Samba, Thaladi (Wet) and Summer. Rice is the major crop during Kuruvai and Thaladi seasons followed by Pulses (Blackgram and Greengram). Cotton, groundnut, coconut, vegetables and sugarcane are the other crops grown depending upon the soil types. The area under rice cultivation is only in wetland category; whereas Pulses and Cotton are cultivated as rice fallow crops. The other crops are being cultivated in areas of assured water supply as pure crops. Irrigation is mainly through 13 canals of Cauvery, Vennar and Grand Anaicut system. The gross area irrigated by these canals is 1,83,610 ha.

The following are the crop rotation is being followed in Thiruvarur district.

1. Rice - Rice - Rice
2. Rice - Rice - Pulses (Blackgram & Greengram) / Gingelly
3. Rice - Rice - Gingelly /Groundnut
4. Fallow - Rice - Cotton
5. Sugarcane
6. Pulses / Gingelly - Rice - Pulses (Black gram & Green gram)

Alternate cropping against rice is only possible during Kuruvai season (dry). Pulses, Maize, Gingelly and Groundnut are cultivated as alternate crops. As the soil is predominantly heavy clay type, Rice is the only crop which thrives well in case of inundation without much difficulty especially during North East monsoon period. Annual rainfall is 1230 mm (53 % NEM & 30 % SWM).

ii. Details of problems and thrust areas (of previous year in the following format)

2018-19

S. No	Names of the Block and Operational Village	Major Crops and Enterprises	Major problems identified	Thrust areas identified to tackle the problems	Nature of interventions proposed to be implemented*
1	Needamangalam-Devangudi	Farm mechanization	<ul style="list-style-type: none"> • Drudgery during weeding operations • Low workout put 	Drudgery reduction	OFT-Assessment for drudgery reduction of different weeders in paddy
2	Thiruthuraipoondi-Thiruvanchuzhi, Needamangalam-Rishiyur	Rice	<ul style="list-style-type: none"> • Yield reduction due to saline problem (EC - more than 1.4 dS/m) • Use of Saline water (borewell) for irrigation during summer kuruvai 	Varietal evaluation	OFT-Assessment of saline tolerant rice varieties for Thiruvarur District
3	Mannargudi-Paamini, Needamangalam-Vellagudi	Sesame	<ul style="list-style-type: none"> • Low yield of existing local cultivar • Potential alternate for existing cultivar • Decline in area of cultivation 	Varietal evaluation	OFT-Assessment of suitable sesame variety for rice fallow condition
4	Koradacheri-Pathur, Vishvanathapuram	Millet	<ul style="list-style-type: none"> • Depletion of ground water level • Unawareness of millet crop for rice fallow condition 	Varietal evaluation	OFT-Assessment of suitable millet crop for rice fallow condition

5.	Mannargudi-Melanagai	Brinjal	<ul style="list-style-type: none"> • Low yield due to high incidence of fruit & shoot borer 	Hybrid evaluation	OFT-Assessment of brinjal Hybrids for high yield and resistant to fruit and shoot borer incident
6	Needamangalam Seeni kudikadu	Onions	<ul style="list-style-type: none"> • Lack of knowledge about value addition • Post harvest losses 	Value addition	OFT- Assessment of dehydration onions
7	Needamangalam-PV Kudikadu	Poultry	<ul style="list-style-type: none"> • Higher production cost (60%) • Low body weight gain of existing variety • Low egg production of existing variety 	Backyard poultry	OFT-Assessment on suitable poultry birds for backyard rearing
8	Needamangalam-Kalacherry, Valangaiman-Poonthootam, Kudavasal-Kudavasal	Rice	<ul style="list-style-type: none"> • Non availability of high yielding long duration variety for samba season • Incidence of blast disease 20% • Non availability of rice variety resistant to blast 	Varietal introduction	FLD-Demonstration of rice variety ADT 51 for Rabi season
9	Needamangalam-Vaduvur	Rice	<ul style="list-style-type: none"> • Non availability of fine grain with high yielding variety for Thaladi • Susceptibility to blast disease of existing variety 	Varietal introduction	FLD-Demonstration of rice variety MGR 100 for Thaladi season (Rabi)
10	Thiruthuraiipoondi-Kattimedu	Rice	<ul style="list-style-type: none"> • Non adoption of cultivating traditional paddy varieties in Thiruvarur District. 	Varietal introduction	FLD-Revival of traditional paddy variety in Thiruvarur District
11	Needamangalam-Keelapattu	Rice	<ul style="list-style-type: none"> • Lodging of existing variety rice crop (CR 1009, ADT 38) during NE monsoon. • Yield loss >40% due to lodging. 	INM	FLD-Demonstration of Silica Solublizing Bacteria application for preventing lodging of rice

12	Mannargudi-Pamini	Rice	<ul style="list-style-type: none"> • Regular infestation during kuruvai and samba seasons (Kharif & Thaladi). • Yield loss (30%) due to leaf folder damage. 	IPM	FLD-Demonstration of Bio-intensive module for the management of leaf folder in Rice
13	Needamangalam - Adhanur	Black gram	<ul style="list-style-type: none"> • Non availability of early maturing blackgram variety (65 days) for rice fallow condition 	Varietal introduction	FLD-Demonstration of ADT 6 black gram variety for rice fallow condition
14	Needamangalam-Vaduvur	Black gram	<ul style="list-style-type: none"> • The area under Rice fallow pulses and irrigated pulses in Thiruvarur District is 1.2 lakh ha. • Thai pattam (January 15-30) and Chithirai Pattam (April 15-30) are the seasons. • Flea beetle, Spodoptera, Pod borer, Whitefly are the major pests. • Less maintenance and low yield i.e. 1.0 q/ac 	IPM	FLD-Demonstration of Bio-intensive Pest Management Module in Blackgram
15	Needamangalam-Pullavarayan kudikadu	Cereals, legumes and greens based nutritious mix	<ul style="list-style-type: none"> • Lack of technical knowledge in preparation of nutritious mix • Lack of awareness about importance of legumes and greens 	Value addition	FLD-Demonstration on cereals, legumes and greens based nutritious mix
16	Needamangalam-Rishiyur	Millets	<ul style="list-style-type: none"> • Lack of consumption • Less availability of millets products • Lack of knowledge on preparation and processing technology. 	Value addition	FLD-Processing of Millets (Finger millet & Barnyard millet) based food products

17	Vallur	Coconut	Heavy infestation of Rugose spiralling whitefly.	IPM	FLD-Demonstration of management of Rugose spiralling whitefly
18	Mannargudi-Melanagai	Brinjal	<ul style="list-style-type: none"> • Yield reduction due to micronutrient deficiency (10-20%) • Non adoption of foliar spraying of micro nutrients 	ICM	FLD-Demonstration of IIHR Vegetable special with ICM in Brinjal
19	Needamangalam-Aathanur, Melavasal	Lablab	<ul style="list-style-type: none"> • High pandal cost for vine type • Un awareness of bush type varieties 	Varietal introduction	FLD-Demonstration of CO(GB)14 lablab (Bush type) variety in Thiruvarur District
20	Mannargudi-Karuvakurichi	Ribbed gourd	<ul style="list-style-type: none"> • Low yield of existing varieties • Unawareness of high yielding hybrids 	Hybrid introduction	FLD-Demonstration of COH1 Ribbed gourd hybrid in Thiruvarur District
21	Valangaiman-Inamkiliyur	Banana	<ul style="list-style-type: none"> • Low yield of existing varieties • Susceptible to wilt and nematodes of existing varieties • Tall growing of existing variety 	ICM	FLD-Demonstration of Integrated Crop Management (ICM) in NRCB Udhayam Banana
22	Needamangalam-Karaimedu	Herbal garden	<ul style="list-style-type: none"> • Lack of awareness about herbal garden • Lack of knowledge about herbal garden in home 	Herbal garden	FLD-Demonstration of herbal garden

b) Major outcome of Technology Assessment and Refinement (in bullet form only)

Technology Assessment

Assessment of saline tolerant rice varieties for Thiruvarur District

- Paddy varieties, CSR 36 and TRY 3 recorded 24.1 and 19.3 per cent higher grain yield than check variety ADT 49, respectively.
- The paddy variety CSR 36 registered an average yield of 51.5 q/ha as compared to ADT 49 (41.5 q/ha).
- The paddy variety CSR 36 recorded, germination percentage (98.8), plant height (116.9 cm), No of tillers / hill (29), No.of productive tillers/hill (10).No of panicles/m² (356), panicle length (31.2cm), No .of grains per panicle (150), 1000 grain weight (24.81g) as compared to TRY 3
- Hence, the paddy variety **CSR 36** would be better option for saline condition

Assessment of suitable sesame variety for rice fallow condition

- Among the three varieties TMV 7, VRI 3 and local variety of sesame assessed, **TMV 7** recorded higher yield of 9.32 quintals/ha with higher number of capsules (36 / plant).
- While VRI 3 sesame variety recorded the yield of 8.17 quintals/ha with the higher number of capsule (30/plant).
- Growers expressed that the yield potential of sesame variety TMV 7 is higher compared with other varieties.
- TMV7 is resistant to drought and it bears the higher number of capsules per plant .

Assessment of suitable millet crop for rice fallow condition

- Three millet crops *viz.*,kuthiraivali, Ragi (CO 15) and Pearl millet (CO 10) was assessed in rice fallow condition of Thiruvarur district. Pearl millet (CO 10) recorded higher yield of 3579 kg per hectare, Plant height (168 cm), Ear head length (31 cm) and 1000 grain weight (14 g).
- Ragi (CO 15) registered 2817 kg/ha of grain yield with an average of 8 tillers per hill and plant height (109 cm) and Ear head length of (9.7 cm).
- Cultivation of Kuthiraivali (farmers practice) gave the grain yield of 2612 kg/ha.
- Hence, the millet crop Pearl millet (CO 10) would be recommended for rice fallow conditions of Thiruvarur district.

Assessment of dehydration onions

- Dehydration ratio is better in cabinet drying than sun drying and shade drying.
- Time taken for drying in shade drying (42hrs) was high compared to sun drying (28hrs) and cabinet drying (6hrs).
- Shade drying takes more time to dry compared other drying methods.

- Sensory evaluation of dehydrated onion compared to fresh onion samples showed that the color of the fresh sample had highest score (4.5), texture of dehydrated had highest score of 3.5, fresh and dehydrated onion was 4.0 and 3.5 and overall acceptability of dehydrated onion had highest score 4.0 compared to fresh onion.

Assessment on suitable poultry birds for backyard rearing

- Among the three breeds Gramapriya, Srinidhi and TANUVAS Aseel studied **TANUVAS Aseel** has better Performance.(BCR-2.4)
- Gramapriya and shrinidhi are almost equivalent in their performance (BCR 2.1 and 1.2 respectively) compared to Aseel, yet it is observed Tanuvas Aseel is better

Assessment for drudgery reduction of different weeders in paddy

Not Conducted- As there is no SMS for Agronomy and Agricultural Engineering. It requires more technical knowledge to study the specified technical parameters

Assessment of brinjal Hybrids for high yield and resistant to fruit and shoot borer incident

Not Conducted- The major critical inputs viz the 2 brinjal hybrids were not available during the specified season -

c) Major outcome of Frontline Demonstrations (in bullet form)

- Target and achievement in terms of area covered and number of farmers

Area in ha		Number of Farmers	
Targets	Achievement	Targets	Achievement
43	41	150	145

Demonstration of rice variety ADT 51 for Samba(Rabi) season

- The average yield of 51.00 q/ha was recorded with net return of Rs. 62000 in demo plot and comparatively low yield of 36.2 q/ha with net return of Rs. 32400/- was recorded in control.
- The BCR also higher in demo plot with 2.55 whereas in control it was 1.88. B: C ratios were 2.55 and 1.80 for ADT 51 and local check .
- The probable reason was lesser incidence of stem borer, leaf folder and blast coupled with higher number of productive tillers per plant resulting higher grain yield and straw yield.
- Grain type was medium slender than check variety (CR 1009). Hence this variety can be popularized for Rabi season in Cauvery delta region

Demonstration of rice variety MGR 100 for Thaladi season (Rabi)

- Resist to majority of pest and diseases
- Saving of Rs.3500/acre/farmer due to reduction in application of inorganic inputs
- 30% higher yield than conventional varieties
- 13 additional bundles of straw
- Non Lodging compared to conventional varieties

Revival of traditional paddy variety in Thiruvarur District

- Farmers felt that use of panchakavya and other by products from cow alone used for traditional paddy cultivation. But their view was changed after using *Pseudomonas* and Azadirachtin, which really useful for the management of pests and diseases
- Yield increases to the tune of 25.45 % while using panchakavya, *Pseudomonas* and Azadirachtin

Demonstration of Silica Solublizing Bacteria application for preventing lodging of rice

- The highest yield in demo plot was 51.2 q/ha whereas in control it was 44.7/ha. The yield increase in demo over control was 12.7 %. The BCR of demo plot was 2.13 and control plot 1.9
- Lodging of ADT 46 was reduced (46%) in silica solubilising bacteria and potassium solubilising bacteria applied plot

Demonstration of Bio-intensive module for the management of leaf folder in Rice

- The egg parasitoid, biological organism and botanical used for the management of paddy leaf folder have really produced effective control of leaf folder over inorganic chemical compounds without affecting the environment and natural enemies.
- The spiders, ground beetle and ladybird beetle populations were more in demo plots
- Yield increases to the tune of 21.36 % while adopting the bio-intensive module for the management of leaf folder
- The plot produced the highest yield of 67.5 q/ha with the net return of Rs 64005 and the BCR was 2.81 and the yield control plot yield was 50.10 q/ha with the net return of Rs 48285 and the BCR was 2.43

Demonstration of ADT 6 black gram variety for rice fallow condition

- Demo plot produced the highest yield of 6 q/ha and an average yield of 5.25 q /ha with 17 per cent increase in yield over check (4.5 q/ha).
- BCR of 2.20 in demo plot and in control it was 1.99

Demonstration of Bio-intensive Pest Management Module in Blackgram

- Demo plot produced the highest yield of 8 q/ha and an average yield of 6.93 q /ha with 26 per cent increase in yield over check (5.52 q/ha).
- BCR of 2.67 in demo plot and in control it was 2.34

- Eco friendly management with sex pheromone trap, yellow sticky trap, azadirachtin have provided effective control of major pests in blackgram
- Normally chemical insecticides were used for the management of insect pests in blackgram but it very much consumed in day today life either in the form of vada, idli or dosa. Hence, there is a possibility of residues, but it was avoided if we use bio-intensive module for the management of pests

Demonstration on cereals, legumes and greens based nutritious mix

- Cereals, legumes and greens based nutritious mix products *viz.*, traditional foods - idli, dosa, porridge and masiyal , Sweets based foods *viz.*, Asoka, laddoo and Fried foods - pakoda, fried grams, kakra and bonda were prepared and evaluated organoleptically. Various quality attributes like colour and appearance, flavour, texture, taste and overall acceptability were evaluated. These products had slight variation of sensory score in all the products.
- In nutritious ball had highest sensory score of check compared to demo ranged from 8.5 to 9.0 for colour and appearance, flavor, taste and overall acceptability, in porridge had slight variation for all the sensory attributes, in roti and adai products also had highest sensory score of check compared to demo.
- The nutrient composition of cereals, legumes and greens based nutritious mix products were analysed namely protein, fat, carbohydrate and iron.
- In nutritious ball had highest protein, carbohydrate and iron content of demo compared to check ranged from 13.91g to 16.27g, 51.87g to 58.24g and 5.01mg to 5.54mg.
- A slight significant difference in the protein, carbohydrate and iron content was observed porridge, roti and adai samples.

Processing of Millets (Finger millet & Barnyard millet) based food products

Idli, dosa, panyaram, adhirasam, pongal, idiyappam, puttu, pakoda and murukku were prepared from millets (Ragi and Kuthiraivali). The standardized products were organoleptically evaluated. The ragi and kuthiraivali flour incorporated puttu, pongal, idiyappam, panyaram (100%) was well accepted by the consumers and recorded an overall acceptability of 97-99 per cent. The overall acceptability of pakoda, adhirasam, dosa and idli from barnyard millet (70, 60, 50 and 40%) had a higher rating of 94-96 per cent.

Demonstration of management of Rugose spiraling whitefly

- Occurrence of Encarsia parasitism was 36.67 % in Demo plot and 11.56 % in check
- Occurrence of predators was 13.33% in Demo plot and 4.50 % in check
- Natural parasitization was found in the coconut garden, hence advised for the spraying of botanical to conserve the natural enemies
- Initially farmers were reluctant to believe natural parasitization and we showed them the normal one and the parasitized one. After that they accepted to spray neem formulation and fixing yellow sticky trap

Demonstration of IIHR Vegetable special with ICM in Brinjal

- The highest yield in demo plot was 612.5q/ha whereas in control it was 525q/ha. The yield increase in demo over control was 16.6 %. The BCR of demo plot was 5.44 and control plot 4.67
- By application of IIHR vegetable special, nutrient deficiency symptoms were reduced in brinjal, plant can tolerate the drought and more number of flowers were retained in brinjal which in turn increase the yield.

Demonstration of CO(GB)14 lablab (Bush type) variety in Thiruvarur District

- Demo plot produced the highest yield of 96 q/ha and an average yield of 88.5 q /ha with 29 per cent increase in yield over check (68.4 q/ha).
- BCR of 4.43 in demo plot and in control it was 2.83
- The major challenge of pod set and high yield with bush type without pandal has been achieved for dolichos bean.

Demonstration of COH1 Ribbed gourd hybrid in Thiruvarur District

- Demo plot produced the highest yield of 344 q/ha and an average yield of 328 q /ha with 46 per cent increase in yield over check (225 q/ha).
- BCR of 4.56 in demo plot
- With this FLD the farmers realized 45.8 per cent an increased yield with cost benefit ratio of 4.7.

Demonstration of herbal garden

- Herbal garden was established with the herbs viz Vallarai, Thoodhuvalai, Karpooora valli, Thulasi, Karunthulasi, Nochi, Karunnochi, Pudhina, Thavasi murungai, Pasalai, Manjal karisalai, Sudukattu malli, Insulin plant, Malai vembu, Dhuthi, Aadathodai, Sirupeelai, Pirandai, Manathakkali keerai, Mudakkathan, and Kuppaimeni
- The Net return obtained from this herbal garden was Rs 29174 with BCR of 2.17

Demonstration of Integrated Crop Management (ICM) in NRCB Udhayam Banana

Not Conducted due to the non availability of Udhayam Banana suckers at NRCB, Trichy

d) Details of Training Programmes conducted

2018-19

Category	Major thematic areas covered	No. of Courses		Duration	No. of Participant			
		T	A		Men		Women	
					T	A	T	A
Farmers and farm women	Crop Production, Horticulture, Livestock Production and Management, Home Science / Women empowerment, Agril. Engineering, Plant Protection, Capacity Building and Group Dynamics	50	46	1 day	1510	1457	650	653
Rural youth	Protected cultivation of vegetable crops, Integrated farming, Seed production, Vermi-culture, Mushroom Production	10	6	1 Day	100	104	100	131
Extension personnel	Productivity enhancement in field crops, Protected cultivation technology ,maintenance of farm machinery and implements	5	13	1 Day	350	392	35	59
Sponsored programmes *	Increasing production and productivity of crops. Commercial production of vegetables, Soil health and fertility management, Processing and value addition, Methods of protective cultivation	30	38	1 Day	800	858	600	877
Vocational programmes	Integrated crop management, Value addition, Sheep and goat rearing, Poultry farming, Seed production	10	4	2 Days	100	68	150	187

2019-20 (as on 29.02.2020)

Category	Major thematic areas covered	No. of Courses		Duration	No. of Participant			
		T	A		Men		Women	
					T	A	T	A
Farmers and farm women (including schemes)	Crop Production, Horticulture, Livestock Production and Management, Home Science / Women empowerment, Agril. Engineering, Plant Protection, Capacity Building and Group Dynamics	59	52	1 Day	1500	1319	930	598
Rural youth	Protected cultivation of vegetable crops, Integrated farming, Seed production, Vermiculture, Mushroom Production	18	7	1 Day	400	176	220	74
Extension personnel (Including Monthly Zonal)	Productivity enhancement in field crops, Protected cultivation technology, maintenance of farm machinery and implements	14	12	1 Day	405	450	100	102
Sponsored programmes *	Increasing production and productivity of crops. Commercial production of vegetables, Soil health and fertility management, Processing and value addition, Methods of protective cultivation	8	14	1 Day	300	420	100	36
Vocational programmes	Integrated crop management, Value addition, Sheep and goat rearing, Poultry farming, Seed production	7	3	2 Days	200	1	225	107

e) Extension Programmes conducted

2018-19

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	Total participants
Advisory Services	502	2347	75	2422
Diagnostic visits	126	646	37	683
Field Day	13	536	22	558
Group discussions	9	275	18	293
Film Show	48	1522	16	1538
Self -help groups	2	80	--	80
Kisan Mela	5	5508	214	5722
Exhibition	5	13783	515	14298
Scientists' visit to farmers field	197	246	31	277
Method Demonstrations	48	1522	16	1538
Celebration of important days	4	823	4	827
Special day celebration	1	163	5	168
Exposure visits	3	88	3	91
Others -Pre Rabi awareness campaign	1	103	12	115
Total	964	27642	968	28610

Details of other extension programmes

Particulars	Number
Extension Literature	13
News paper coverage	168
Popular articles	18
Radio Talks	11
TV Talks	3
Total	213

2019-20 (As on 29.02.2020)

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	Total participants
Advisory Services	617	2841	95	2936
Diagnostic visits	132	572	44	616
Field Day	11	244	16	260
Group discussions	16	294	11	305
Film Show	88	3283	42	3325
Self -help groups	6	84	--	84
Kisan Mela	7	2180	38	2218
Exhibition	8	2518	47	2565
Scientists' visit to farmers field	121	317	43	360
Method Demonstrations	88	3283	42	3325
Celebration of important days	6	328	10	338
Special day celebration	4	147	13	160
Exposure visits	2	50	2	52
Others - JAL SHAKTI ABHIYAN	4	2854	82	2936
Total	1110	18995	485	19480

Details of other extension programmes

Particulars	Number
Extension Literature	19
News paper coverage	287
Popular articles	40
Radio Talks	24
TV Talks	3
Total	373

f) Production and supply of technology products:

2018-19

Category	Item	Target	Achievement	No.of farmers	Value (Rs.)
Seed Materials -Varieties (Quintal)	Rice-(TRY 3,CO (R) 52,TKM 13,CR 1009 Sub 1,CO (R) 51 (Mixed grain)	100	145.95	183	372710
Planting Materials - Varieties (Number)	Fodder Cumbu napier- Co 3, Co 4, Co 5	5000	2700	34	2700
Livestock Materials (Number)	Boer/Telichery cross bucks	10 Nos	-	-	-
Bio Products (kg)	Vermicompost	2000 Kg	2075 Kg	80	20750
	Azolla	500 Kg	27 Kg	27	1350
	Pseudomonas	3000 Kg	581	74	69720

2019-20

Category	Item	Target	Achievement	No.of farmers	Value (Rs.)
Seed Materials -Varieties (Quintal)	Rice-(CR 1009 Sub -1,CR 1009,Swarna Sub-1,ADT 50,CO (R) 50,MDU 6,TRY 3, CO (R) 51,ADT 43, TPS 5, ADT 45 (Mixed grain) Black gram-ADT 5	300	244	112	756400
Planting Materials - Varieties (Number)	Planting materials- Super nappier cuttings	3000 Nos	14210	28	17052
Livestock Materials (Number)	Goat- Boer/Telichery cross bucks	10 Nos	6 Nos	6	31500
Bio Products (kg)	Vermicompost	3000 Kg	2200	28	22000
	Azolla	500 Kg	28	13	1400
	Pseudomonas	3000 Kg	1310	85	220080

g) Convergence and linkages (Specify the activities & outcomes):

S.No	Name of the organization	Nature of linkage	Outcome
1	NABARD	Participation in Meeting and conduct of Training on crop production and precision technology of Agricultural and allied sectors.	Wide spread of schemes which are implemented by NABARD
2	SPGF	FLD on millets and its value addition	Popularization of value addition of millets
3	Department of Agriculture	Monthly Zonal Workshop, Field survey , Diagnostic Visit, Joint implementation, Participation in Meeting and conduct of Training on crop production and Protection technologies of mandatory crops of Agricultural crops.	<ul style="list-style-type: none"> • Popularization of new varieties and technology. • Timely pest and disease management.
4	Department of Horticulture	Field survey, Diagnostic Visit, Joint implementation, Participation in Meeting and conduct of Training on crop production and Protection technologies of Horticultural crops.	<ul style="list-style-type: none"> • Popularization of new varieties and technology and related to horticulture. • Timely management of pest and disease.
5	Department of Agriculture Engineering	Participation in Meeting and conduct of Training on crop production and precision technology of Agricultural and Horticultural crops.	Department of AED officials delivered their scheme details on Agriculture Engineering.
6	Department of Animal Husbandry	Field survey, Diagnostic Visit, Joint implementation, Participation in Meeting and conduct of Training on crop production and Protection technologies of Cattle, Goat and Poultry.	Department of Animal Husbandry officials delivered their scheme details on trainings
7	Department of	Field survey, Diagnostic Visit, Joint implementation, Participation	Department of Fishery officials delivered

	Fishery	in Meeting and conduct of Training on Fishery technology.	their scheme details on trainings conducted by ICAR - KVK
8	Department of Forestry	Field survey, Diagnostic Visit, Joint implementation, Participation in Meeting and conduct of Training on trees	Department of Forestry officials delivered their scheme details on trainings and special programmes
9	Department of Sericulture	Field survey, Diagnostic Visit, Participation in Meeting and conduct of Training on mulberry and silkworm.	Department of Sericulture officials delivered their scheme details on trainings and special programmes
10	Department of Agricultural Marketing and Agriculture Business	Participation in Meeting and conduct of Training on regulated market committee and storage.	Department of Agricultural Marketing officials delivered their scheme details on trainings and special programmes
11	District Administration - Thiruvarur	Technological backstopping during Farmers grievance day of every third Thursday of the month.	<ul style="list-style-type: none"> • Farmer's grievance related KVK were solved. • Season wise lectures were delivered.
12	IIFPT,Thanjavur	Training to farmers, Rural Youth and data analysis for value addition, post harvest and processing.	Thiruvarur district farmers and farm womens were exposed to the value.

h) Soil Water and Plant Analysis

2018-19

Nature of sample	Number of samples	Number of farmers	Number of villages	Amount realized (Rs.)
Soil	419	385	45	17500
Water	124	122	22	6150
Total	543	507	67	23650

2019-20 (as on 29.02. 2020)

Nature of sample	Number of samples	Number of farmers	Number of villages	Amount realized (Rs.)
Soil	410	391	162	40686
Water	63	56	29	3181
Total	473	447	191	43867

i) Human Resources Development:

2019-20

S.No	Name of the staff	Title of training	Duration		Institute
			From	To	
1	Dr.M.Ramasubramanian	NASF Workshop on value chain management	27.03.2019	27.03.2019	AC&RI, Madurai
2	Dr.R.Ramesh	To attend workshop on Picture Based Diagnosis	06.06.2019	07.06.2019	MSSRF & CABI at Trichy
3	Dr.R.Ramesh	To attend 3rd Grantsmanship Workshop to Faculty of CPPS	10.06.2019	12.06.2019	TNAU,Coimbatore
4	Dr. M.Ramasubramanian	To participate in the International Conference at Veterinary college	27.06.2019	28.06.2019	TANUVAS, Chennai
5	Dr.R.Ramesh	To attend workshop on Maize Fall Armyworm Management Technology Capsule and Workshop on Field Diagnosis and Management of Plant Parasitic Nematodes in Horticultural Crops	22.07.2019	23.07.2019	TNAU,Coimbatore
6	Dr.S.Saravanan	Biogas Technology for Sustainable fuel and organic manure	26.8.2019	29.08.2019	TNAU,Coimbatore
7	Dr.A.Anuratha	National Conference on Climate Smart Agriculture for Livelihood Security: Challenges and Opportunities	13.09.2019	14.09.2019	ADAC &RI, Trichy.
8	Dr.R.Ramesh	Geotagging TNIAMP interventions using Mobile Application	24.09.2019	24.09.2019	TNAU, Coimbatore

9	Dr.R.Ramesh	Enhancing the Innovation Ability of the Agricultural Scientists and Technicians in the Belt and Road Countries in South Asia	21.10.2019	25.10.2019	Vegetable Research Institute,(GAAS), China
10	Dr.A.Anuratha	Training on seed quality maintenance in sunhemp and Roselle	04.11.2019	04.11.2019	TRRI, Aduthurai
11	Dr.A.Anuratha	84th Annual Convention of the Indian Society of Soil Science, And National Seminar on Developments in Soil Science - 2019	15.11.2019	18.11.2019	BANARAS HINDU UNIVERSITY, Varanasi
12	Dr.R.Ramesh	To attend Result Sharing Workshop and received Best Stakeholder Award	29.11.2019	29.11.2019	MSSRF, Chennai
13	Dr M Ramasubramanian	To attend the international conference Esard 2019	13.12.2019	17.12.2019	Suttur, Mysuru
14	Dr M Ramasubramanian Dr.A.Anuratha Dr. A. Rajeshkumar	National Conference on Doubling farmers income through scientific approach	20.12.2019	21.12.2019	Agricultural Engineering College and Research Institute, Kumulur, Trichy,

j) Action Plan in brief for the next year (2019-20)

S. No	Names of the operational village	Crop/ Enterprise	Major problems identified	Thrust areas identified to tackle the problems	Nature of interventions proposed to be implemented*
1	Mahadevapattinam Keluvathur Ullikottai.	Rice, Pulses, Cotton, Livestock, Backyard poultry	<ul style="list-style-type: none"> • Depletion of ground water level • Unawareness of alternate crop for rice during late release of Cauvery water 	Varietal Introduction	OFT-Assessment of suitable alternate crops for Rice in Kuruvai (Kharif) season
2	Devangudi	Rice, Pulses, Cotton, Fisheries, Livestock, Backyard poultry	<ul style="list-style-type: none"> • Yield reduction due to severe weed density • Weeds compete with crops for Moisture, Nutrients and sunlight etc., 	Weed Management	OFT-Assessment of suitable weed management practices for Direct Seeded Rice
3	-	Rice, Pulses, Maize, Livestock, Backyard poultry	Yield reduction due to Fall army worm <i>Spodoptera frugiperada</i> incidence	Integrated Pest Management	OFT-Assessment of management modules against Fall Army Worm in Maize
4	Munnavaikottai	Rice, Pulses, Livestock, Backyard poultry	The Mobile apps were reported to impact upon the uptake of technologies by farmers, but field level data to substantiate the utility of information given through mobile apps by the	Information Technology	OFT-Assessment of Mobile Apps for Effective Technology Delivery

			farmers is not available. Hence, this OFT would analyse the Effectiveness of two important mobile apps		
5	Rayapuram, Nagar	Rice, Pulses, Livestock, Backyard poultry	<ul style="list-style-type: none"> • Native chicken with low egg production • Increasing demand among the farmers for dual purpose chicken. 	Evaluation of Breeds	OFT-Assessment of performance of dual purpose crossbred chicken varieties under backyard system of rearing.
6	Kilariyam	Rice, Pulses, Millets	<ul style="list-style-type: none"> • High incidence of non communicable diseases 	Post Harvest Technology / Value addition	OFT-Alternative natural sweetener for bakery products (Cookies)
7	Koopaachi kottai , Kattakudi	Rice, Pulses, Coconut	<ul style="list-style-type: none"> • Nematode incidence reduces the tuberose yield upto 40% • Invasive insect pest RSW reduces the coconut yield 	Integrated Pest Management	OFT-Assessment of management modules against Rugose Whitefly in Coconut
8	Vaduvur-Melpathi, Thenpathi, Vadapathi, Needamangalam, Kalacheri, Keluvathur	Rice, Pulses, Millets	<ul style="list-style-type: none"> • Lodging of existing variety (30%) • Incidence of leaf folder, stem borer, blast and sheath rot disease (32%) 	Varietal Introduction	FLD-Demonstration of Newly released Non lodging short duration Paddy variety ADT 53 with ICM in Thiruvavur District
9	Kaalacheri Vaduvur Thenpathi Periakottai	Rice, Pulses, Livestock, Fisheries, Backyard poultry	<ul style="list-style-type: none"> • The yield potential of the ruling prominent varieties like BPT got reduced • The ruling varieties in the region are susceptible to 	Varietal Introduction	FLD-Demonstration of Co52 paddy variety (MGR 100) for Thaladi (Rabi) season

			<p>pest and Diseases</p> <ul style="list-style-type: none"> • Cost of cultivation especially fertilizers and plant protection cost have escalated for the ruling varieties 		
10	Thiruvanchuli, Kunno or	Rice, Pulses, Cotton	<ul style="list-style-type: none"> • Yield reduction due to Alkaline nature of soil • Non adoption of suitable management practices • Use of salt water for irrigation 	Integrated Crop Management	FLD- Demonstration of ICM for Salt affected soils of Thiruvarur District
11	Sarabojirapuram, Koilpatthu, Vadugakudi, Vilagam	Rice, Pulses	<ul style="list-style-type: none"> • Low yield in existing practices • High demand for organically grown traditional rice variety 	Varietal Introduction	FLD- Demonstration of Traditional rice variety with Eco friendly management
12	Rayapuram Vaduvur Thenpathi	Rice, Pulses	<ul style="list-style-type: none"> • Increased cost of cultivation in operations namely transplanting and weeding done by manually • Limited availability of labour force for carrying out field level operations • Untimely operations resulting in yield reduction 	Farm Mechanization	FLD- Demonstration of complete mechanization in rice cultivation

13	Pullavarayankudikkadu	Rice, Pulses, Cotton, Livestock, Fisheries, Backyard poultry	<ul style="list-style-type: none"> • Non availability of improved varieties under rice fallow ecosystem • Non adoption of ICM technology 	Varietal Introduction	FLD- Introduction of Rice Fallow blackgram variety ADT 6 in Thiruvarur District
14	Rayapuram, Vaduvur Sathanur, Vaduvur puthukottai, Keelapattu Manakanthakottagam Mahadevapattinam	Rice, Pulses, Cotton, Livestock, Fisheries, Backyard poultry	<ul style="list-style-type: none"> • Lack of awareness on hybrid • More use of chemical insecticides for pest management 	Hybrid Introduction	FLD- Demonstration of bhendi hybrid as border/bund crop in paddy field of Thiruvarur District
15	Melanagai	Vegetables	<ul style="list-style-type: none"> • Shoot and Fruit borer is the major problem in Brinjal 	Integrated Pest Management	FLD- Eco friendly management of shoot and fruit borer in brinjal
16	Koradacheri block	Rice, Cotton	<ul style="list-style-type: none"> • Drought during most of the growing stages. Hence, severe mealy bug incidence was recorded 	Integrated Pest Management	FLD- Demonstration of ecofriendly methods for the management of mealy bug in cotton
17	Rayapuram, Vaduvur Sathanur, Vaduvur Thenpathi Manakathakottagam Mahadevapattinam Melathirupalakudi Keelapattu	Rice, Pulses, Cotton, Livestock, Fisheries, Backyard poultry	<ul style="list-style-type: none"> • Non adoption of Pulse as fodder crop • Using traditional varieties 	Varietal Introduction	FLD- Demonstration of fodder cowpea variety Co 9 in Thiruvarur District

18	Kalacheri, Poovanur,Keelapattu, Rayapuram Manakathankottagam	Rice, Pulses, Cotton	Inconvenience faced by the farmers during harvesting of bhendi	Drudgery reduction	FLD- Demonstration of Bhendi ring cutter
19	Aavoor,Valathakudi, Nagar,Ayyampettai Meppallam Mannargudi	Rice, Pulses, Livestock, Fisheries, Backyard poultry	<ul style="list-style-type: none"> Limited use of green fodder Minimal water availability during summer 	Varietal Introduction	FLD- Demonstration on CoFS-31 fodder crop
20	Needamanagalam Mannargudi Vilamal	Rice, Pulses, Livestock, Fisheries, Backyard poultry	<ul style="list-style-type: none"> Ectoparasites - ticks and fleas Roughened skin Blood parasites Reduced production 	Disease Management	FLD- Demonstration of ecto parasitic control in goats
21	Keelapattu, Keluvathur, Inamkiliyur, Vaduvur	Rice, Pulses, Cotton, Livestock, Fisheries, Backyard poultry	<ul style="list-style-type: none"> Fish yield reduction due to improper feed supplement Low income generation Higher cost for fish feeds 	Integrated Farming System	FLD- Demonstration of khaki campbell and indian runner duck in wetland IFS
22	Koopachikottai, Vaduvur	Rice, Pulses, Livestock, Fisheries, Backyard poultry	<p>Access</p> <ul style="list-style-type: none"> Often the farmers face the problem of inaccessibility of Extension workers and Scientists resulted in lack of efficiency in Technology Transfer <p>Time</p>	Information Technology	FLD- Demonstrating the Efficiency of Whatsapp in dissemination of technologies related to Rice Cultivation

			<ul style="list-style-type: none"> • Many times the technologies are given not in line with the timing of agricultural operations which will not be useful for farmers <p>Cost</p> <ul style="list-style-type: none"> • Significant Cost involved in meeting of scientists/Extension workers in their workplace amidst busy agricultural operations 		
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23	Chettisathiram Pullavarayan kudikadu	Rice, Pulses, Vegetables & Greens ,	<ul style="list-style-type: none"> • Demand for organic greens and vegetables • Lack of knowledge on macro and micro nutrients in vegetables and greens • Low per capita consumption of vegetables and greens 	Nutritional garden	FLD- Demonstration of Nutritional garden in Anganwadis in Thiruvavur district
34	Mannargudi Melathirumathikunnam Kotthamangalam Chozhavithuapuram Manjanavadi Sirangudi	Mushroom	<ul style="list-style-type: none"> • Highly perishable of mushroom • Seasonal 	Value addition	FLD- Demonstration on ready to eat and ready to cook mushroom products

k) Revolving Fund Status (Rs. in lakh):

Year	Opening balance as on 1st April of previous year	Income during the year	Expenditure during the year	Net balance in hand as on 1st April of current year
April 2017 to March 2018	1.54	11.82	11.02	2.35
April 2018 to March 2019	2.35	10.33	11.56	1.12
April 2019 to February 2020	1.12	15.01	13.75	2.38

l) Utilization of KVK funds during the Previous Year/Current Year (Rs.)

2018-19

Name of Head	Revised Estimate 2018-2019	Funds Received	Expenditure up to 31.03.2019	Balance	
Recurring contingencies					
Pay & Allowances	12458000	15289506	11538700	919300	
Pay & Allowances back log of 2017-2018	1449000		0	1449000	
Travelling Allowances	150000		149975	25	
a) Field activities & programmes					
b) Training Programmes					
Contingencies	488000		15289506	0	
A. Office Contingencies					
a) Stationery, telephone, stamps and other expenditure on office running				263788	
b) POL, repair of vehicles, tractor and equipments including hiring of vehicle				180410	

B. Technical Programme			0	
a) R. 150/- per person per day towards food and refreshments for KVK training programmes for farmers/extension personnel			88280	
b) Teaching materials for training and demonstration	597000		75307	527
c) Training of extension functionaries			2994	
d) Publication of extension literature for farmers and extension functionaries			9372	
e) Honorarium for trainers			2000	
f) On Farm Testing (Problem Oriented)			19987	
g) Front Line Demonstration on major crops including oilseeds & pulses, fodder crops, animal husbandry, fisheries, etc.			85376	
h) Kissan Melas/Farmers Fair (at KVK farm)			45296	
i) Library (Purchase of news paper, journals, etc.)			5685	
j) Maintenance of farm			305978	
k) Entrepreneurship development programme (EDP)/Integrated Farming System (IFS/ Farmers Field School (FFS)			0	
l) Soil Testing Refill and Printing of Soil Health Card			0	
m) SCSP COMPONENT	191000		190880	120
Total of Recurring Items	15333000		12964028	2368972
Non-Recurring Items				
Works	0		0	0
Bore well	400000		400000	0
Total	400000		400000	0

SCSP Component (Creation of Physical Assets/Repairs/Renovation)	147000		146836	164
Total of Non-Recurring items	547000		546836	164
Grand Total	15880000		13510864	2369136

Agenda Item No.05:

Achievements of SMSs :

Format for the agenda notes and presentation by the SMS

1	Problem identified	<ul style="list-style-type: none"> • Depletion of ground water level • Unawareness of alternate crop for rice
2	Technology Intervention Undertaken	<p>OFT-Assessment of suitable alternate crops for Rice in Kuruvai (Kharif) season</p> <ul style="list-style-type: none"> • Blackgram (VBN 6) and maize (COMH 6) seed were distributed • Application of biofertilizer and pseudomonas • Application of fertilizer based on soil test
3	Mode of Implementation	<ul style="list-style-type: none"> • OFT was conducted at five farmers field • Off campus training were given to 52 numbers of farmers and farm womens
4	Outcome	<ul style="list-style-type: none"> • During <i>Kuruvai</i> season, blackgram (VBN 6), maize (COMH 6) and rice (CO 51) were raised at five villages. An average yield of 732, 3212 and 5160 kg ha⁻¹ was observed in blackgram, maize and rice respectively. • With regard to water requirement, maize crop had the highest total water use of 500 mm (10 irrigations) as compared to black gram (300 mm in 6 irrigations). The total irrigation water consumed by rice was 1156 mm. • The higher net income and BCR of Rs.53,200 ha⁻¹ & 3.66 was obtained in black gram

5	Action for up-scaling / recommendation of the outcome	<ul style="list-style-type: none"> • Trainings given to farmers • Trainings given to Extension functionaries • Popularized through Newspaper, SMS & WhatsApp.
6	Any other special activities worth mentioning (Success Stories/Case Studies)	-

1	Problem identified	<ul style="list-style-type: none"> • Yield reduction due to severe weed density • Weeds compete with crops for Moisture, Nutrients and sunlight etc.,
2	Technology Intervention Undertaken	OFT-Assessment of suitable weed management practices for Direct Seeded Rice
3	Mode of Implementation	On Farm Testing
4	Outcome	<p>Trial was conducted at different places of Thiruvarur District.</p> <p>Treatment details are</p> <ul style="list-style-type: none"> • TO1 - Farmers Practice • TO2 - Pendimethaline 0.75 kg/ha + Hand weeding at 35 DAS • TO3 - Pretilachlor 0.45 Kg/ha + hand weeding at 35 DAS • Among the three different treatments, the treatment 3 application of pretilachlor 0.45 kg/ha + hand weeding at 35 DAS registered low weed density in direct seeded rice. • The treatment 3 applied plot recorded higher grain yield 5475 kg/ha followed by treatment 2 applied plot 4817 kg/ha. • The benefit cost ratio of treatment 3 is 1:2.86 whereas in treatment 2 it is 1:2.53
5	Action for up-scaling / recommendation of the outcome	Training was conducted to popularize the suitable weed management practices in Direct seeded rice.
6	Any other special activities worth mentioning (Success Stories/Case Studies)	Success story is under progress.

1	Problem identified	Incidence of Fall army worm <i>Spodoptera frugiperada</i> in maize
2	Technology Intervention Undertaken	OFT-Assessment of management modules against Fall Army Worm in Maize
3	Mode of Implementation	On Farm Testing Only 2 ha area under maize, which was cultivated during May -June season. Under TNIAMP scheme, we will conduct demonstration of maize as an alternate crop by providing seeds, nutrients and arranging marketing. Assessment of management modules against Fall Army Worm in Maize intervention will be conducted combined with TNIAMP scheme
4	Outcome	-
5	Action for up-scaling / recommendation of the outcome	-
6	Any other special activities worth mentioning (Success Stories/Case Studies)	-

1	Problem identified	The Mobile apps were reported to impact upon the uptake of technologies by farmers, but field level data to substantiate the utility of information given through mobile apps by the farmers is not available. Hence, this OFT would analyse the Effectiveness of two important mobile apps
2	Technology Intervention Undertaken	OFT-Assessment of Mobile Apps for Effective Technology Delivery
3	Mode of Implementation	On Farm Testing
4	Outcome	Ongoing
5	Action for up-scaling / recommendation of the outcome	-
6	Any other special activities worth mentioning (Success Stories/Case Studies)	-

1	Problem identified	<ul style="list-style-type: none"> • Native chicken with low egg production • Increasing demand among the farmers for dual purpose chicken.
2	Technology Intervention Undertaken	OFT-Assessment of performance of dual purpose crossbred chicken varieties under backyard system of rearing.
3	Mode of Implementation	On Farm Testing
4	Outcome	<p>Two breeds viz., TANUVAS Aseel and Nicobari developed by TANUVAS were compared with local breed for their performance. The weight gain and disease resistant were excellent in TANUVAS Aseel compared to Nicobari and Local breed. TANUVAS Aseel achieved 980g Avg weight by 120 days while Nicobari achieves Avg 740g, which is lesser than native breeds.</p> <p>Disease resistant as hypothesized for Nicobari is not well expressed as there is frequent mortality observed in Nicobari birds because of subclinical Ranikhet and complex bacterial diseases.</p> <p>TANUVAS Aseel well adapted to grain scrap feeding while Nicobari requires commercial feed for better output.</p>
5	Action for up-scaling /recommendation of the outcome	<p>Nicobari has to be tried with well established backyard poultry system. The birds reared in our KVK unit are quite healthy and resilient to climatic vagaries.</p> <p>Procuring chicks is quite difficult as one has to reach TANUVAS, Madhavaram by road.</p> <p>TANUVAS Aseel may be promoted as FLD in wide scale basis say 50 number of farmers on farmer contribution basis.</p>
6	Any other special activities worth mentioning	TANUVAS Aseel egg production and hatchability studies under progress.

1	Problem identified	High incidence of non communicable diseases
2	Technology Intervention Undertaken	OFT-Alternative natural sweetener for bakery products (Cookies)
3	Mode of Implementation	On Farm Testing
4	Outcome	<p>Demonstrated and prepared millet cookies from natural sweeteners with millet flour.</p> <ol style="list-style-type: none"> 1. Ragi flour with Jaggery / palm sugar / white sugar - TO 1. 2. Samai flour with Jaggery/ palm sugar / white sugar - TO 2. 3. Thenai flour with Jaggery / palm sugar / white sugar - TO 3. 4. Kuthiraivali flour with Jaggery / palm sugar / white sugar - TO 4. 5. Varagu flour with Jaggery / palm sugar / white sugar - TO 5. 6. Maida with Jaggery / palm sugar / white sugar - Check <p>5 farm women's were trained and benefited.</p> <p>Result:</p> <p>Sensory Evaluation:</p> <p>The sensory characteristics such as colour and appearance, flavor, texture, taste and overall acceptability of the millet flour cookies was evaluated. The ragi, samai, thenai and kuthiraivali cookies were found highly acceptable in terms of sensory attributes even beyond 65 days of storage at ambient conditions. Ragi, samai and kuthiraivali, thenai flour with palm sugar cookies was highly acceptable compared to other treatments.</p> <p>Shelf life:</p> <p>Shelf life period of millet cookies was between 80 (TO1), 75 (TO2), 70 (TO3), 65 (TO4) and 60 (TO5) days.</p>
5	Action for up-scaling /recommendation of the outcome	Awareness was created to popularize the millets cookies from natural sweeteners
6	Any other special activities worth mentioning	-

1	Problem identified	Invasive insect pest RSW reduces the coconut yield
2	Technology Intervention Undertaken	OFT-Assessment of management modules against Rugose Whitefly in Coconut
3	Mode of Implementation	On Farm Testing
4	Outcome	The spraying of Azadirachtin 1% @ 2ml/ litre of water with wetting agent and release of Encarsia was completed. Application of <i>Isaria fumosorose</i> will be taken up by 2 nd week of March.
5	Action for up-scaling /recommendation of the outcome	As of now, spraying of botanicals produced effective control and observed more number of natural enemies.
6	Any other special activities worth mentioning (Success Stories/Case Studies)	More number of spiders, coccinellids and parasitisation of Encarsia were observed in Azadirachtin sprayed field.

1	Problem identified	<ul style="list-style-type: none"> • Lodging of existing variety (30%) • Incidence of leaf folder, stem borer ,blast and sheath rot disease (32%)
2	Technology Intervention Undertaken	FLD-Demonstration of Newly released Non lodging short duration Paddy variety ADT 53 with ICM in Thiruvarur District <ul style="list-style-type: none"> • Introduction of ADT 53 Short duration paddy variety • Application of biofertilizer and pseudomonas • Application of fertilizer based on soil test
3	Mode of Implementation	<ul style="list-style-type: none"> • FLD was conducted at ten farmers field • On campus and Off campus training were given to 142 numbers of farmers and farm women's
4	Outcome	<ul style="list-style-type: none"> • Short duration variety ADT 53 recorded the higher yield (5640 kg/ha) compared to the farmers' practices variety (4840 kg/ha). The increase in the demonstration yield over farmer's practices was 14.18 per cent. • Application of Silica Solublizing Bacteria @ 12.5 kg/ha and K Solubilizing Bacteria @ 12.5 Kg/ha along with Soil test based fertilizer application in rice gave higher net return of Rs. 50,240/ha as compared to farmers' practices. The

		benefit/cost ratio of ADT 53 rice under improved technologies was 2.26 as compared to 1.94 under farmers' practices
5	Action for up-scaling /recommendation of the outcome	<ul style="list-style-type: none"> • Seed production of ADT 53 • Trainings given to farmers • Trainings given to Extension functionaries • Popularized through Newspaper, SMS & WhatsApp. • FLD Continued
6	Any other special activities worth mentioning	-

1	Problem identified	<ul style="list-style-type: none"> • The yield potential of the ruling prominent varieties like BPT got reduced • The ruling varieties in the region are susceptible to pest and Diseases • Cost of cultivation especially fertilizers and plant protection cost have escalated for the ruling varieties
2	Technology Intervention Undertaken	FLD-Demonstration of Co52 paddy variety (MGR 100) for Thaladi (Rabi)season
3	Mode of Implementation	Front Line Demonstration
4	Outcome	<ul style="list-style-type: none"> ▪ An average yield of 53 q/ha recorded in the demo plot and 44 q/ha was obtained in the control plot of conventional varieties ▪ Saving of Rs.3800/acre/farmer due to reduction in application of inorganic inputs ▪ 21 % higher yield than conventional varieties BPT & TKM 13 ▪ Non Lodging compared to conventional varieties
5	Action for up-scaling /recommendation of the outcome	The FLD was conducted in the previous year and the same has been dissiminated during this year through Field day, training and demonstrations
6	Any other special activities worth mentioning	Success story documented

1	Problem identified	<ul style="list-style-type: none"> • Yield reduction due to Alkaline nature of soil • Non adoption of suitable management practices • Use of salt water for irrigation
2	Technology Intervention Undertaken	<p>FLD- Demonstration of ICM for Salt affected soils of Thiruvavarur District</p> <ul style="list-style-type: none"> • Demonstration of TRY 3 seeds @ 40 kg/ha • Insitu ploughing of GM - daincha- <i>Sesbania rostrata</i> seeds @ 50 Kg/ha • Application of Azophos@ 2 Kg/ha • Application of <i>Pseudomonas</i> @ 1kg/demo • Application of fertilizer based on soil test
3	Mode of Implementation	<ul style="list-style-type: none"> • FLD was conducted at Ten farmers field • On campus and Off campus training were given to 150 numbers of farmers and farm womens • Pamphlet related to saline soil management - 1 No
4	Outcome	<ul style="list-style-type: none"> • The paddy variety CSR 36 registered an average yield of 49.60 q/ha as compared to BPT5204 (41.2 q/ha). • Gross and net returns were Rs 79,360/- and Rs 39,360/-ha, respectively by cultivating CSR 36 as against Rs 65,920/-and Rs.25,920/- ha in the check variety.(BPT5204) • The BCR also higher in CSR 36 with 1.98
5	Action for up-scaling /recommendation of the outcome	<ul style="list-style-type: none"> • Trainings given to farmers • Trainings given to Extension functionaries • Popularized through Newspaper, SMS & WhatsApp. • FLD - ICM for salt affected soils - 2020
6	Any other special activities worth mentioning	<ul style="list-style-type: none"> • -

1	Problem identified	High demand for organically grown traditional rice variety
2	Technology Intervention Undertaken	<ul style="list-style-type: none"> • FLD- Demonstration of Traditional rice variety with Eco friendly management • Insitu ploughing of Daincha - GM- <i>Sesbania rostrata</i> seeds @ 50 Kg/ha • Azophos, PSB and SSB for seed treatment, Soil application @ 4 Kg/ha of each • <i>Pseudomonas</i> @ 10 gram/kg of seed treatment and soil application @ 2.5 kg/ha
3	Mode of Implementation	<ul style="list-style-type: none"> • FLD was conducted at ten farmers field • Off campus training were given to 42 numbers of farmers and farm women's
4	Outcome	<ul style="list-style-type: none"> • The average yield of 37.20 q/ha was recorded with net return of Rs. 48000 in demo plot and comparatively average yield of 55.80 q/ha with net return of Rs. 36780/- was recorded in control. • The BCR also higher in demo plot with 2.07 whereas in control it was 1.70.
5	Action for up-scaling /recommendation of the outcome	<ul style="list-style-type: none"> • Trainings given to farmers • Trainings given to Extension functionaries • Popularized through Newspaper, SMS & WhatsApp.
6	Any other special activities worth mentioning	<ul style="list-style-type: none"> • Success story was documented at Sarabojirapuram, Kudavasal block. Farmers Name - Thiru Gunaseelan.

1	Problem identified	<ul style="list-style-type: none"> • Increased cost of cultivation in operations namely transplanting and weeding done by manually • Limited availability of labour force for carrying out field level operations • Untimely operations resulting in yield reduction
2	Technology Intervention Undertaken	FLD- Demonstration of complete mechanization in rice cultivation
3	Mode of Implementation	Front Line Demonstration- Laser leveler, Transplanter, weeders, boomsprayer and combine harvesters were utilized for rice cultivation

4	Outcome	By adopting complete mechanization labour utilization was reduced to 68%. A sum of Rs 47000 has obtained from the demonstration plot as net income
5	Action for up-scaling /recommendation of the outcome	Farmers themselves come forward to utilize the farm implements by experiencing the benefits and labour scarcity
6	Any other special activities worth mentioning	-

1	Problem identified	<ul style="list-style-type: none"> • Non availability of improved varieties under rice fallow ecosystem • Non adoption of ICM technology
2	Technology Intervention Undertaken	FLD- Introduction of Rice Fallow blackgram variety ADT 6 in Thiruvarur District
3	Mode of Implementation	Front Line Demonstration
4	Outcome	Demo is under progress

1	Problem identified	<ul style="list-style-type: none"> • Lack of awareness on hybrid • More use of chemical insecticides for pest management
2	Technology Intervention Undertaken	FLD- Demonstration of bhendi hybrid as border/bund crop in paddy field of Thiruvarur District
3	Mode of Implementation	Front Line Demonstration
4	Outcome	<ul style="list-style-type: none"> • Adoption of bhendi as border/bund crop in paddy recorded 1330 kg of bhendi fruit from the bunds of one hectare of paddy field. • It bears 27 bhendi fruit from single plant starting from 38 days after sowing to maturity stage. • It gives totally 19 harvest. From single harvest an average of 70 kg of bhendi fruit is harvested from the bunds of one hectare of paddy field. • Benefit cost ratio is 1:4.45

5	Action for up-scaling /recommendation of the outcome	Field day was conducted to popularize the bhendi hybrid as border/bund crop in paddy field.
6	Any other special activities worth mentioning (Success Stories/Case Studies)	Success story is under progress.

1	Problem identified	Shoot and Fruit borer is the major problem in Brinjal
2	Technology Intervention Undertaken	FLD- Eco friendly management of shoot and fruit borer in brinjal
3	Mode of Implementation	Front Line Demonstration
4	Outcome	The reduction in incidence of shoot and fruit borer in brinjal was 36.84% in demo plot where as it was 21.15%.
5	Action for up-scaling /recommendation of the outcome	Residue free as this treatment involves only botanical, biological and pheromone traps.
6	Any other special activities worth mentioning (Success Stories/Case Studies)	-

1	Problem identified	Drought during most of the growing stages as cotton cultivated in rice fallow season coincides with summer season in Thiruvavarur District. Hence, severe mealy bug incidence was recorded and inorganic pesticides used for the management of mealy bug are not effective due to white mealy protective covering of mealy bug.
2	Technology Intervention Undertaken	FLD- Demonstration of eco-friendly methods for the management of mealy bug in cotton
3	Mode of Implementation	Front Line Demonstration – It will be conducted during 2 nd fortnight of March as cotton crops are cultivating during <i>Masi pattam</i> i.e. February 15 to March 15.
4	Outcome	-
5	Action for up-scaling	-

	/recommendation of the outcome	
6	Any other special activities worth mentioning (Success Stories/Case Studies)	-

1	Problem identified	<ul style="list-style-type: none"> • Non adoption of Pulse as fodder crop • Using traditional varieties
2	Technology Intervention Undertaken	FLD- Demonstration of fodder cowpea variety Co 9 in Thiruvarur District
3	Mode of Implementation	Front Line Demonstration
4	Outcome	<ul style="list-style-type: none"> • Higher green fodder yield was achieved in shorter period within 50 days after sowing. • Plant height was 137 cm, no. of branches per plant is 4 and no. of leaves per plant is 16. • High green fodder yield 21.78 t/ha was recorded. • Less than 5% wastage of green fodder due to high palatability.
5	Action for up-scaling /recommendation of the outcome	Field day was conducted to popularize the fodder cowpea (Co 9)
6	Any other special activities worth mentioning (Success Stories/Case Studies)	-
1	Problem identified	Inconvenience faced by the farmers during harvesting of bhendi
2	Technology Intervention Undertaken	FLD- Demonstration of Bhendi ring cutter
3	Mode of Implementation	Front Line Demonstration
4	Outcome	<ul style="list-style-type: none"> • By the use of ring cutter for harvesting bhendi, the percentage of labour saving was found. • Similarly the saving in cost of cultivation was to the tune of 50 % when compared to hand picking method using labours.

5	Action for up-scaling /recommendation of the outcome	Awareness was created through demonstration. The technology was shared during training and demonstration.
6	Any other special activities worth mentioning (Success Stories/Case Studies)	Success story under progress.

1	Problem identified	<ul style="list-style-type: none"> Limited use of green fodder Minimal water availability during summer
2	Technology Intervention Undertaken	FLD- Demonstration on CoFS-31 fodder crop
3	Mode of Implementation	Front Line Demonstration
4	Outcome	Fodder scarcity is addressed by this FLD. All the needy farmers cultivated this crop and utilized for their goat and cows. This cropping practice became the initiation of animal husbandry component for two FLD beneficiaries. Yield were around 70 tonnes per acre and seed yield 150kg/ acre.
5	Action for up-scaling /recommendation of the outcome	Good quality Chaff cutter to be given to farmers for better utilization of fodder on contribution basis (50:50).
6	Any other special activities worth mentioning (Success Stories/Case Studies)	One of the FLD farmers has tremendous cut down in cost production of milk as he cultivated CoFS 31 and Agathi as intercrop in coconut garden. Milk yield improved by 1.4 litre as average. Suggestion given to utilize the chaff cutter for improved digestibility.

1	Problem identified	<ul style="list-style-type: none"> Ectoparasites - ticks and fleas Roughened skin Blood parasites Reduced production
2	Technology Intervention Undertaken	FLD- Demonstration of ect endo parasitic control in goats

3	Mode of Implementation	Front Line Demonstration
4	Outcome	Farmers were equipped for the control of deworming and tick control. The health status and weight gain of kids improved because of both ecto endo parasitic control. Fleas recurrence was observed in 3 months on post flumethrin application. Hence the beneficiaries were advised for delicing four times a year.
5	Action for up-scaling /recommendation of the outcome	TANUVAS tick bath can be installed in veterinary dispensaries and one well established demo unit in KVK for better reach. Portable weighing balance for dose calculations helps the farmers for better understanding of dose calculation.
6	Any other special activities worth mentioning (Success Stories/Case Studies)	Skill development for farmers done and it is ensured for the farmers to be aware about the cyclical use of deworming drugs.

1	Problem identified	<ul style="list-style-type: none"> • Fish yield reduction due to improper feed supplement • Low income generation • Higher cost for fish feeds
2	Technology Intervention Undertaken	FLD- Demonstration of khaki campbell and indian runner duck in wetland IFS
3	Mode of Implementation	Front Line Demonstration
4	Outcome	Not conducted

1	Problem identified	<p>Access</p> <ul style="list-style-type: none"> • Often the farmers face the problem of inaccessibility of Extension workers and Scientists resulted in lack of efficiency in Technology Transfer <p>Time</p> <ul style="list-style-type: none"> • Many times the technologies are given not in line with the timing of agricultural operations which will not be useful for farmers <p>Cost</p> <ul style="list-style-type: none"> • Significant Cost involved in meeting of scientists/Extension workers in their workplace amidst busy agricultural operations
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2	Technology Intervention Undertaken	FLD- Demonstrating the Efficiency of Whatsapp in dissemination of technologies related to Rice Cultivation
3	Mode of Implementation	Front Line Demonstration
4	Outcome	Demo is under progress

1.	Problem identified	<ul style="list-style-type: none"> • Demand for organic greens and vegetables • Lack of knowledge on macro and micro nutrients in vegetables and greens • Low per capita consumption of vegetables and greens
2.	Technology Intervention Undertaken	FLD- Demonstration of Nutritional garden in Anganwadis in Thiruvarur district
3.	Mode of Implementation	Front Line Demonstration
4.	Outcome	<ul style="list-style-type: none"> • Brinjal, bhendi, lab lab, chilly, cluster bean, tomato, annual moringa, bottle gourd, ash gourd, snake gourd, pumpkin, bitter gourd, amaranthus, sirukeerai, paruppu keerai seeds were distributed and planted in Anganwadi. Plants are under growing stage.
5.	Action for up-scaling	Awareness was created through training

1.	Problem identified	Highly perishable of mushroom and Seasonal
2.	Technology Intervention Undertaken	FLD- Demonstration on ready to eat and ready to cook mushroom products
3.	Mode of Implementation	Front Line Demonstration
4.	Outcome	Mushroom value added products prepared through demonstration and training. Soup mix, pickle, gravy mix, pulav, bajji and cutlet were prepared and sensory wise evaluated.
5.	Action for up-scaling / recommendation of the outcome	Awareness was created through training.
6.	Any other special activities worth mentioning	Under progress

Sd/xxx

Programme Coordinator