

ICAR-KRISHI VIGYAN KENDRA
(Hosted by CREED)
Ariyalur District, Tamil Nadu

ANNUAL REPORT 2018-19

(APRIL 2018 TO MARCH 2019)

Submitted to
The Director
ICAR-ATARI, Hyderabad

CONTENT

Sl.No.	Particulars	Page No.
1	Annual Progress Report Summary	1
2	General Information about KVK	3
3	Details of adopted villages	9
4	Technical achievements	19
5	Technology assessment in detail	21
6	Front Line Demonstration	43
7	Training programmes	59
8	Extension programmes	84
9	Production of seeds, planting materials and bio-products	86
10	Details of soil and water analysis	88
11	Publications	89
12	Awards/ Rewards by KVK and staff	93
13	Success stories	95
14	Impact	110
15	Linkages	121
	<u>Annexure I</u> SAC proceedings along with list of participants	
	<u>Annexure II</u> a. Progress Report of the Project funded by Department of Science and Technology, New Delhi b. Report on Empowering Farm Women through Agricultural based Economic activities c. Report on District level Seminar on Cashew	

ANNUAL REPORT (April 2018-March 2019)

APR SUMMARY

1. Training Programmes

Clientele	No. of Courses	Male	Female	Total participants
Farmers & farm women	75	2065	740	2805
Rural youths	11	226	71	297
Extension functionaries	13	186	47	233
Sponsored Training	14	438	132	570
Vocational Training	3	13	75	88
Total	116	2,928	1,067	3,995

2. Frontline demonstrations

Enterprise	No. of Farmers	Area (ha)	Units/Animals
Oilseeds	5	2	---
Pulses	--	--	--
Cereals	15	6	--
Vegetables	8	3	--
Other crops	37	16	--
Total	65		--
Livestock & Fisheries	7	--	10 birds/unit
Other enterprises	1	--	I SHGs
Total	8		--
Grand Total	73	27	

3. Technology Assessment & Refinement

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	8	24	24
Livestock	2	8	8
Various enterprises	2	6	6
Total	12	38	38
Technology Refined			
Crops	---	---	--
Livestock	--	---	--
Various enterprises	---	---	--
Total	--	--	--
Grand Total	12	38	38

4. Extension Programmes

Category	No. of Programmes	Total Participants
Extension activities	1643	15965
Other extension activities	73	Mass
Total	1716	15965

5. Mobile Advisory Services

Name of KVK	Message Type	Type of Messages						Total
		Crop	Livestock	Weather	Marketing	Awareness	Other enterprise	
Ariyalur KVK	Text only	8	7	5	2	5	---	27
	Voice only	10	8	4	3	4	--	29
	Voice & Text both	--	---	---	---	--	--	--
	Total Messages	18	15	9	5	9	--	56
	Total farmers Benefitted	1653	1531	1135	884	1634	---	6837

6. Seed & Planting Material Production

Particulars	Quintal / Number	Value (Rs.)
Seed (q)	7.91	1,80,520
Planting material (No.)	5,700	1,92,000
Bio-Products (kg)	5,262	3,38,150
Livestock Production (No.)	622	3,83,074
Fishery production (No.)	--	--

7. Soil, water & plant Analysis

Samples	No. of Beneficiaries	Value Rs.
Soil	525	10,500
Water	176	1,760
Plant	--	--
Total	701	12,260

8. HRD and Publications

S. No.	Category	Number
1	Workshops	1
2	Conferences	1
3	Meetings	2
4	Trainings for KVK officials	10
5	Visits of KVK officials	4
6	Book published	3
7	Training Manual	2
8	Book chapters	2
9	Research papers	0
10	Lead papers	0
11	Seminar papers	1
12	Extension folder	11
13	Proceedings	0
14	Award & recognition	2
15	Ongoing research projects	1

Annual Progress Report 2018-19

1. GENERAL INFORMATION ABOUT THE KVK

1.1. Name and address of KVK with phone, fax and e-mail

Address	Telephone		E mail
	Office	FAX	
ICAR Krishi Vigyan Kendra, (Hosted by CREED) Cholamadevi Post, Jayankondam (Via), Udayarpalayam Taluk, Ariyalur District, Tamil Nadu – 612902.	04331 – 290335 97512 80089	---	kvk.Ariyalur@icar.gov.in reedkvk@gmail.com

1.2. Name and address of host organization with phone, fax and e-mail

Address	Telephone		E mail
	Office	FAX	
Centre for Rural Education and Economic Development (CREED) Post Box No.9 23, Aranganathan Nagar, Near Chinna Market Chidambaram – 608001 Cuddalore District, Tamil Nadu	04144-224987	---	creed.ngo@gmail.com

1.3. Name of the Programme Coordinator with phone & mobile No

Name	Telephone / Contact		
	Residence	Mobile	Email
Dr.G.Alagukannan Senior Scientist & Head	---	9629246586	gakannan@rediffmail.com

1.4. Year of sanction: 2009

1.5. Staff Position (as on 31th March, 2019)

Sl. No.	Sanctioned post	Name of the incumbent	Designation	Discipline	Pay Scale (Rs.)	Present basic (Rs.)	Date of joining	Permanent /Temporary	Category (SC/ST/OBC/ Others)
1	Programme Coordinator	Dr.G.Alagukannan	Senior Scientist & Head	Horticulture	Rs.37,400-Rs.67,000	50720	02.11.15	Permanent	OBC
2	Subject Matter Specialist	A.Rajkala	Subject Matter Specialist	Agricultural Extension	Rs.15600-Rs.39100	27420	22.06.09	Permanent	OBC
3	Subject Matter Specialist	Y.Raja Joslin	Subject Matter Specialist	Horticulture	Rs.15600-Rs.39100	26620	01.07.10	Permanent	OBC
4	Subject Matter Specialist	M.Ashok Kumar	Subject Matter Specialist	Plant Protection	Rs.15600-Rs.39100	22280	02.01.17	Permanent	OBC
5	Subject Matter Specialist	M.Thirumalaivasan	Subject Matter Specialist	Agronomy	Rs.15600-Rs.39100	21000	15.10.18	Permanent	OBC
6	Subject Matter Specialist	---	---	Animal Science	---	---	---	---	---
7	Subject Matter Specialist	S.Shobana	Subject Matter Specialist	Home Science	Rs.15600-Rs.39100	22280	02.01.17	Permanent	OBC
8	Programme Assistant	B.Vivekananthan	PA (Computer Programmer)	Computer Applications	Rs.9300-Rs.34800	18820	01.07.09	Permanent	OBC
9	Programme Assistant	S.Arivuselvi	PA (Lab Technician)	Agriculture	Rs.9300-Rs.34800	14330	02.01.17	Permanent	OBC
10	Programme Assistant	---	PA (Farm Manager)	---	---	---	---	---	---
11	Accountant / Superintendent	V.Ramani	Assistant	Computer Applications	Rs.9300-Rs.34800	14330	02.01.17	Permanent	OBC
12	Stenographer	K.Abinaya	Stenographer	Computer Science	Rs.5200-Rs.20200	9910	01.06.18	Permanent	SC
13	Driver	P.Govindasami	Driver	---	Rs.5200-Rs.20200	10560	22.06.09	Permanent	OBC
14	Driver	P.Sivaraman	Driver	---	Rs.5200-Rs.20200	8890	01.11.11	Permanent	OBC
15	Supporting staff	R.Velu	Supporting Staff	---	Rs.5200-Rs.20200	9160	22.06.09	Permanent	OBC
16	Supporting staff	S.Balu	Supporting Staff	---	Rs.5200-Rs.20200	9160	22.06.09	Permanent	SC

1.6. Total land with KVK (in ha) :

S. No.	Item	Area (ha)
1	Under Buildings	0.13
2.	Under Demonstration Units	0.02
3.	Under Crops	5.76
4.	Orchard/Agro-forestry	12.86
5.	Others (Fish pond / Water harvesting area	1.24
Total		20.01

1.7. Infrastructural Development:
A) Buildings

S. No.	Name of building	Source of funding	Stage					
			Complete			Incomplete		
			Completion Date	Plinth area (Sq.m)	Expenditure (Rs.)	Starting Date	Plinth area (Sq.m)	Status of construction (Completed/ in progress/ to be initiated)
1.	Administrative Building	ICAR	31.03.2011	550	71.75381	---	---	---
2.	Farmers Hostel	ICAR	31.03.2011	305	49.77500	---	---	---
3.	Staff Quarters (No.)							
	1	ICAR	31.03.2011	399.96	55.58500	---	---	---
	2	ICAR						
	3	ICAR						
	4	ICAR						
	5	ICAR						
	6	ICAR						
4.	Demonstration Units							
	1. Goat	ICAR	31.03.2011	80	4.00	---	---	---
	2. Nursery	ICAR	31.03.2011	80	4.00	---	---	---
5	Fencing	ICAR	31.03.2012	1500 m	10.00	---	---	---
6	Rain Water harvesting system							
7	Threshing floor	---	---	---	---	---	---	---
8	Farm godown	---	---	---	---	---	---	---
9	Shed (Farm equipment)	---	---	---	---	---	---	---

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Jeep	2009	6,29,990.00	245145	Poor condition
Tractor	2009	5,64,128.00	3123	Poor condition
Power Tiller	2010	1,50,000	414	Not in working condition
Two wheeler(2)				
Bajaj Pulsar	2010	1,00,000	82374	Good condition
Bajaj Platina	2010		94069	Good condition

C) Equipments & AV aids

Name of the equipment	Year of purchase	Cost (Rs.)	Present status
Computer dual core	Jan. 2010	0.50	Good
Xerox cum printer	Jan. 2010	0.70	Good
Camera	March 2010	0.25	Good
Generator	March 2011	1.00	Good
PUSA STFR Meter	March 2017	0.73	Good
Mini soil testing unit – Mridaparikshak	March 2017	0.80	Good
Computer i3 (2 Nos.)	March 2017	0.75	Good
UPS 2.0 KW (Battery and Inverter)	March 2017	0.29	Good
LED Projector (3200 lumens)	March 2017	0.29	Good
Portable PAS	March 2017	0.12	Good
Digital camera	March 2017	0.07	Good
Handy cam (Video camera)	March 2017	0.22	Good
Refrigerator	March 2017	0.16	Good
Fire extinguisher	March 2017	0.03	Good

1.8. A). Details SAC meeting* conducted in the year

Sl. No.	Date	No of Participants	Salient Recommendations
1.	20.03.19	19	<ul style="list-style-type: none"> • KVK should prepare next year action plan in consultation with farmers and line department officials • Each SMS should conduct impact study and quantify them. All the trainings should end with model bankable projects. • Each SMS should document adoption rate of every training programme • The latitude and longitude of each OFT and FLD fields should be documented with the help of GPS equipment. • KVK should give technology to farmers through quick SMS • NCOF decomposer liquid formulation supply to farmers by sales mode to be increased • Supply of the seeds to farmers from genuine source to be ensured to the possible extent • Encourage paid training to improve the adoption of technologies • Successful farmers case should be disseminated through radio programmes • KVK may purchase solar drier unit for demonstration purpose with permission of ATARI, Hyderabad. • Tick and deworming practices demonstration should be conducted in goat • Ranikhet disease demonstration in Poultry should be conducted • Demonstration on control of Mastitis disease in cattle should be conducted • Saba variety of banana should be directly recommended to problematic soil • Training also be given to Scientists and farmers for banana sucker production • Promote leaf purpose varieties like Poovan and Karppooravalli • Promote short duration varieties in crops of Ariyalur district to mitigate drought • KVK should conduct more research trials and demonstration for Fall Army Worm in Maize • Promote ecological engineering for IPM in all crops • Trainings should be conducted on safe use of pesticide • Promote high yielding and drought tolerant sesame variety • Promote and give trainings on protected cultivation techniques • Assess the alternate for cucumbers crop which is perform better under shadenet • Promote primary cultivation machineries and its importance • Promote guidelines given for drip irrigation usages. • Promote and conduct demonstration of white sesame variety VRI-3 for better marketing and high yielding under drought situation • Promote and conduct demonstration of pani pipe method of irrigation in Paddy for water conservation • Promote heifer calf rearing and its management practices • Trainings should be conducted on fodder cultivation

** Copy of SAC proceedings along with list of participants is attached in Annexure - I*

2. DETAILS OF DISTRICT (2018-19)

2.0. Operational jurisdiction of KVKs (Andhra Pradesh & Telangana only)/ Give names of districts & Tehsils

- Not Applicable -

2.1. Major farming systems/enterprises (based on the analysis made by the KVK)

Classification	First crop	Second crop	Third crop
Wet land	Paddy (Kuruvai) (June-Oct.)	Paddy (Thaladi) (Oct. to Feb.)	Paddy (Navarai) (Jan – May)
	Paddy (Kuruvai) (June-Oct.)	Paddy (Thaladi) (Oct. to Feb.)	Blackgram (Feb to May)
Garden land	Groundnut (Jun to Sep)	Groundnut (Oct-Jan)	Groundnut (Feb-May)
	Groundnut (Jun to Sep)	Vegetable (Oct – Jan)	Blackgram (Feb-May)
	Groundnut (Jun to Sep)	Groundnut (Oct – Jan)	Blackgram (Feb-May)
Dry land	Fallow	Maize (Aug-Sep)	Fallow
	Fallow	Cotton (Aug-Sep)	Fallow
	Fallow	Sorghum/Varagu (Aug-Sep)	Fallow

2.2. Description of Agro-climatic Zone & major agro ecological situations (based on soil and topography)

S. No	Agro-climatic Zone	Characteristics
1	North Eastern Zone	Ariyalur district is located in Northern eastern part of TamilNadu. The climate in the zone basically semi-arid tropical with an average rainfall of 954 mm. The soil p ^H is ranging from 6.5 to 8.0. Ferruginous red loam occurs
S. No	Agro ecological situation	Characteristics
1	North Eastern portion of VIII Agro ecological Zone of India	The maximum precipitation is contributed by North East Monsoon. The soil texture is usually loamy, the colour varying from red at the surface to yellow at the lower horizon. Black soil favours the cultivation of rainfed crops viz., cotton, maize in a larger area,

2.3. Soil type/s

S. No	Soil type	Characteristics	Area in ha
1	Red Soil	Rich source of Fe, Mn, High P fixation capacity due to the presence of kaolinitic clay along with sesquioxides, low organic matter & clay.	66,315
2	Black Soil	More than 30% clay, Mn adding black to the soil. High CEC with high p ^H range, abundant source of Mo and Boron.	49,550

2.4. Area, Production and Productivity of major crops cultivated in the district

Sl.No.	Name of the crop	Area (ha.)	Production (tons)	Productivity (t/ha.)
1	Cashew nut	30,345	13,655	0.45
2	Paddy	24,143	1,03,090	4.27
3	Maize	18,239	70,950	3.89
4	Groundnut	17,500	38,500	2.20
5	Sugarcane	7,727	7,13,897	92.39
6	Cotton	8,990	12,136	1.35
7	Black gram	4,042	3,718	0.92
8	Sesame	1,660	614	0.37
9	Sorghum	1,531	3,368	2.2
10	Casurina	1,500	2,70,000	180
11	Chillies (Dry)	1,121	1,580	1.41
12	Drumstick	800	17,600	22.00
13	Bajra	466	699	1.50
14	Kodo millet	285	427	1.5
15	Brinjal	230	2873	12.49
16	Bitter gourd	40	640	16.00
17	Ragi	35	63	1.8
18	Fodder Cowpea	25	303	12.1

2.5. Weather data

Month	Rainfall (mm)	Temperature ° C		Relative Humidity (%)
		Maximum	Minimum	
April 2018	1.20	36.3	27.5	75.5
May 2018	46.48	38.7	28.7	74.5
June 2018	96.50	38.1	28.5	56.5
July 2018	25.00	36.3	27.9	54.2
August 2018	74.28	36.4	27.1	74.6
September 2018	22.55	35.5	27.9	74.5
October 2018	200.23	33.1	26.7	71.4
November 2018	297.85	30.3	26.5	68.9
December 2018	20.15	29.2	22.5	64.5
January 2019	14.21	33.1	22.9	67.5
February 2019	--	37.2	24.3	74.3
March 2019	--	38.5	26.1	81.5

2.6. Production and productivity of livestock, Poultry, Fisheries etc. in the district

Category	Population	Production	Productivity
Cattle	306549	555.77 (in lakh litre)	---
Goats	372142	---	---
Pigs	---	---	---
Indigenous	21824	---	---
Poultry			
Desi	262330	---	---

Category	Area	Production	Productivity
Fish	---	6480 (tonnes)	---

Source: Regional Joint Director of Animal Husbandry, Ariyalur.

2.7. Details of Adopted Villages (2018-19)

Sl. No	Taluk/mandal	Name of the block	Name of the village	Year of adoption	Major crops & enterprises	Major problem identified	Identified Thrust Areas
KVK adopted villages							
1	Udayarpalayam	T.Palur	Amirthara yankottai	2017	Paddy, Groundnut, Sesame, Dairy, Goat & Poultry	Paddy <ul style="list-style-type: none"> • Non adoption of drought tolerant paddy varieties • Inadequate and uneven rainfall • Partial or total yield loss due to the lack of rainfall • Less yield (2.6t/ha) (P.Y-4.5t/ha) 	FLD on Demonstration of ICM in Direct Sown Paddy
2	Udayarpalayam	T.Palur	Kodali karuppur	2017	Paddy, Groundnut, Cotton, Drumstick, Vegetables, Dairy, Goat & Poultry	Bajra <ul style="list-style-type: none"> • Non receipt of irrigation water from Ponnar river for the past three years hinders paddy crop. Hence the farmers shifted to Bajra crop • Use of unknown local variety of Bajra • Improper spacing due to high seed rate(5kg/ha) • Downy mildew incidence • Low Yield (1750 kg/ha) Potential yield (2900 kg/ha) 	FLD on Demonstration of Bajra CO 10 for yield and income potential

						Drumstick <ul style="list-style-type: none"> • Low market price during peak fruiting season • (April –May) • Leaf webber and Fruit fly damage • Flower shedding • Yield loss upto 30-35% • Low yield (24t/ha) • Low income and net profit due to less price (Rs.60,000/ac.) • Price fluctuation • Low income • Poor knowledge on low cost iron rich food • Lack of awareness on nutritional security • Lack of awareness in value addition 	FLD on Demonstration of off season production techniques & IPM in Annual Drumstick
						Small Ruminants <ul style="list-style-type: none"> • Resistance over mass deworming • Not calculating refugia (Host/ Environmental) • Identification of new drug targets 	OFT on Assessment of Ethno Veterinary treatment for control of Endo parasites in Small ruminant
						Poultry <ul style="list-style-type: none"> • Frequent occurrence of ailments like worm infestation, ranikhet disease, fowl pox in poultry birds and indigestion, wounds, mastitis, haemoagalactia and infertility problems in cows 	FLD on Demonstration on Ethno veterinary garden (EV garden) aiming at health of Poultry Birds and Animals

						<ul style="list-style-type: none"> • Lack of veterinary dispensary or medical shop in the villages • Erosion and lack of knowledge on use of herbals to treat ailments of poultry birds and animals 	
						TOT <ul style="list-style-type: none"> • Technology transfer mechanism need to be improved to reach the individual farmers' farm holding in time. • Present TOT mechanism faces lot of constraints including limited staff, wider coverage and multi diverse cropping system 	OFT on Assessing the Effectiveness of e-Extension Methods in terms of Knowledge Gain and Skill Acquisition and Symbolic Adoption Behavior among the Rural Youth
3	Udayarpalayam	T.Palur	Karaikuruchi	2017	Paddy, Groundnut, Brinjal, Drumstick, Dairy, Goat & Poultry	Brinjal <ul style="list-style-type: none"> • 30-35% wastage of Brinjal fruit due to fruit borer incidence • Under utilization or wastage of damaged fruits • Fruit borer infested fruits left in the field aggravate the fruit borer problem further • Poor quality product from the existing sun drying process • Low income • Lack of awareness in value addition 	FLD on Demonstration of Value Addition in Brinjal to convert waste into wealth
4	Udayarpalayam	Jayankondam	Elamangalam	2018	Cashew, Groundnut, Blackgram,	Cashew <ul style="list-style-type: none"> • Low yield due to severe soil 	FLD on Demonstration of Water

					Dairy, Goat & Poultry	moisture stress during Jan.- May <ul style="list-style-type: none"> • Low soil fertility • Tea mosquito bug incidence • Anthracnose disease incidence • Lack of knowledge on soil & water conservation 	Conservation, Pest & Disease Management towards doubling income from Cashewnut
5	Udayarpalayam	Jayankondam	Meensuriti	2018	Paddy, Groundnut, Vegetables, Casurina, Blackgram, Dairy, Goat & Poultry	Casuarina <ul style="list-style-type: none"> • Lack of adoption of suitable Casuarina based Agro forestry system. • Low cropping intensity as there is no intercrops grown • No income till 3-5 years once the trees are fell • Poor utilization of resources like land & water 	OFT on Assessment of suitable inter crops in Casuarina to reap income during initial years
6	Andimadam	Andimadam	Nagampanthal	2018	Paddy, Ragi, Groundnut, Blackgram, Dairy, Goat & Poultry	Ragi <ul style="list-style-type: none"> • Low productivity with the existing Ragi varieties (1400 kg/ha) under rainfed condition • Lack of adoption of varieties suitable for rainfed condition • Susceptibility of existing varieties to lodging and neck blast • Shortage of dry fodder 	OFT on Assessment of Ragi varieties suitable for Ariyalur District
7	Andimadam	Andimadam	Periyakrishnapuram	2017	Paddy, Groundnut, Blackgram, Dairy, Goat & Poultry	Poultry <ul style="list-style-type: none"> • Low egg production in desi birds (40-60 eggs/year), 	OFT on Assessment of egg production potential of improved

						<ul style="list-style-type: none"> • Non availability of brown shell eggs Non availability of improved strains of native chicken for egg production • Less per bird productivity and income (Rs.400 – 600 per annum) • Erosion and lack of knowledge on use of herbals to treat ailments poultry birds and animals • Frequent occurrence of ailments in Desi birds and cattle's 	native chicken breeds under backyard conditions
8	Sendurai	Sendurai	Maruvathur	2018	Paddy, Groundnut, Blackgram, Cashew, Dairy, Goat & Poultry	Blackgram <ul style="list-style-type: none"> • Non adoption of foliar nutrient spray • Poor pod filling and seed setting • Low yield (610 kg/ha.) PY (850 kg/ac.) 	OFT on Assessment of Foliar Nutrition in Blackgram
			Veerakkan	2015	Cashew, Groundnut, Blackgram, Chillies, Dairy, Goat & Poultry	Chilli <ul style="list-style-type: none"> • Incidence of sucking pests like thrips and mites • Excess usage of chemicals • Yield 	OFT Assessment of Technology for Sucking pests Management in Chillies
9	Ariyalur	Ariyalur	Ottakovil	2018	Sorghum, Cotton, Dairy, Goat & Poultry	Sorghum <ul style="list-style-type: none"> • Low productivity with the existing varieties (1150kg/ha) under rainfed condition • Lack of adoption of varieties suitable for rainfed condition • Occurrence of downy mildew (PDI-22-25%) • Fodder shortage 	OFT on Assessment of Dual purpose Sorghum varieties for high yielding and drought tolerance

10			Thealur	2015	Paddy, Groundnut, Cotton, Dairy, Goat & Poultry	Cotton <ul style="list-style-type: none"> • Incidence of Bollworm(34%) • Leaf hoppers, Thrips, whitefly (26%) • Alternaria Leaf spot (32%) • Inhaling of Pesticides during spraying by farmers • Low yield (12q/ha) • Less adoption of raising intercrops & border crops in cotton • Border and inter crop occupies 15-20% of cropped area but less returns • Use of local variety seeds gives less yield • Prevalence of pest problem • (<i>Spodoptera</i>, <i>Helicoverpa</i>) due to non adoption of border crops and their by yield loss (10%) 	OFT on Assessment of suitable modules for pest and disease management in cotton FLD on Demonstration of suitable inter crop (red gram) and border crop (Castor) variety in cotton
11	Ariyalur	Thirumanur	Karaivetti	2018	Paddy, Blackgram, Dairy, Goat & Poultry	Fodder <ul style="list-style-type: none"> • Shortage of green fodder • Non-availability of high yielding fodder crops • Poor Nutrient management in cows and thereby poor health. 	FLD on Demonstration of mixed fodder unit for the steady supply of planting materials
			K.Mettuthuru	2017	Paddy, Sugarcane, Sesame, Dairy, Goat & Poultry	Sugarcane <ul style="list-style-type: none"> • Farmers practicing burning of trashes in situ that affects soil microflora • Poor recycling of organic resources 	OFT on Assessment of composting of Sugarcane trash using different microbial decomposers to minimize soil &

						<ul style="list-style-type: none"> • Reduction in germination and yield loss due to burning of trashes to the tune of 10 - 15% in ratoon crop • Air pollution and leads to global warming • Over irrigation/ flooding lead to water logging • Leaching of nitrates below the root zone • Wastage of precious water resource 	environmental degradation FLD on Demonstration of Soil Moisture Indicator tool for scheduling of irrigation in Sugarcane
			Semmbiyakudi	2016	Paddy, Sugarcane, Banana, Sesame, Blackgram, Dairy, Goat & poultry	Barnyard Millet <ul style="list-style-type: none"> • Unutilization of fallow land during the month of May-July (before commencing samba paddy) • Lack of awareness in minor millet production and economic gain 	FLD on Demonstration of Barnyard millet (Kudiraivali) MDU 1
						Banana <ul style="list-style-type: none"> • Low net return from paddy (Rs.25,000/ha in 2 crops) • Problem in marketing of sugarcane • Faster rate of ground water depletion make the farmers to think about alternate crops • Uncertainty in getting Cauvery river water • Poor quality water (EC up to 1.5dS/m) 	OFT on Assessment of suitable Banana varieties to replace Paddy and Sugarcane at Thirumanur block of Ariyalur District
						Taro <ul style="list-style-type: none"> • Low net return from paddy (Rs.25,000/ha) 	FLD on Introduction of Taro (<i>Colocasia</i>)

						in 2 crops) • Problem in marketing of sugarcane • Faster rate of ground water depletion make the farmers to think about alternate crops • Uncertainty in getting Cauvery river water • Slightly poor quality water (EC up to 1.5ds/m)	<i>esculenta</i>) in Thirumanur block
						Fish • Carp take a longer time to grow in pond , water scarce districts, • Fish production couldn't be promoted. • Failure to improve brood stock of IMC, • Leading to inbreeding and poor growth rate of fish. • More feed requirement. Therefore farmer's forced to harvest prior to complete culture duration	FLD on Demonstration of Intensive culture of GIFT Tilapia in freshwater ponds
DFI villages							
1	Udayarpalayam	T.Palur	Venmankonda n	2018	Paddy, Groundnut, Sugar cane, Fodder, Dairy, Goat & Poultry	Paddy • Use of old varieties like CR1009Incidence of leaf folder (20 %) and stem borer (30%) • Occurrence of bacterial leaf blight and blast during samba season • Low yield (3.56 t/ha)	FLD on Demonstration of Paddy CO (R) 52 variety for yield and income potential

						Groundnut <ul style="list-style-type: none"> • Spodoptera Incidence(6-8 larvae/sq.m) • Commencement of tikka Leaf spot disease from 25 DAS and thereby yield reduction • Low Yield (1200 kg/ha) when compared to the potential yield of 2500 kg/ha) 	OFT on Assessment of Management Strategies of Stem rot and Root rot in Groundnut FLD on Management of Leaf eating caterpillar and Tikka leaf spot in Groundnut
						Cowpea <ul style="list-style-type: none"> • Deficient in protein rich fodder • Limited Pasture land. • Lack of Awareness on new fodder crops and varieties. • Poor health status of cows and low milk yield(5-7lit/day) 	FLD on Demonstration of fodder Cowpea Co 9

2.8. Priority/thrust areas

Crop/Enterprise	Thrust area
Paddy, Bajra, Sorghum, Ragi, Barnyard millet, Groundnut, Blackgram, Drumstick, Banana, Taro, Cowpea, Fodder, Poultry & Fish	Improved varietal/ Hybrid Introduction
Paddy, Bajra, Maize, Sorghum, Ragi, Barnyard millet, Groundnut, Blackgram, Sugarcane, Drumstick, Brinjal, Cashew, Cotton Banana, Taro, Cowpea, Fodder, Goat, Poultry & Fish	Integrated Pest and Disease Management
Paddy, Bajra, Sorghum, Ragi, Barnyard millet, Groundnut, Blackgram, Sugarcane, Drumstick, Brinjal, Cashew, Cotton Banana, Taro & Cowpea	Integrated crop management
Bajra, Ragi, Sorghum, Cashew, Cashew, Groundnut & Blackgram	Dry land production system
Paddy, Bajra, Ragi, Sorghum, Groundnut & Blackgram	Seed Production in agricultural crops
Maize, Groundnut & pulses	Farm mechanization in Agriculture crops
Dairy, Goat & Poultry	Scientific feed and disease management in Livestock
All components	Integrated Farming System
Groundnut & Blackgram	Drudgery reduction
Goat, Poultry & Dairy	Entrepreneurship development

2.9. Salient Achievements of (April 2018-March, 2019) (Mandated activities/ Projects)

S.No	Activity	Target	Achievement
1	Technologies Assessed and refined (No.)		
2	On-farm trials conducted (No.)	14	12
3	Frontline demonstrations conducted (No.)	15	15
4	Farmers trained (in Lakh)	0.01620	0.02805
5	Extension Personnel trained (No.)	200	235
6	Participants in extension activities (in Lakh)	0.06890	0.15965
7	Production of Seed (in Quintal)	32	7.71
8	Planting material produced (in Lakh)	0.21350	0.05700
9	Live-stock strains and finger lings produced (in Lakh)	1305	622
10	Soil, Water, plant, manures samples tested (in Lakh)	0.00500	0.00701
11	Mobile agro-advisory provided to farmers (in Lakh)	0.00500	0.00738
12	No.of Soil Health Cards issued by Mini Soil Testing Kits (No.)	500	525
13	No.of Soil Health Cards issued by Traditional Laboratory (No.)	2000	2037

Give Salient Achievements by KVK during the year in bullet points:

- Completed the mandated activities viz., OFT,FLD, Trainings and production of technological inputs as committed in the Annual Action Plan 2018-19.
- Conducted 12 OFTs, 15 FLDs to assess and showcase the effectiveness of different technologies in improvising yield and farmer's income.
- The capacity of the farmers, farm women and rural youth were built by 116 programmes to 3995 participants.
- To popularize the frontline technologies through extension officers 13 trainings conducted to 233 officials.
- 1716 Extension programmes conducted to benefit 15965 farmers.
- 525 Soil samples were tested and 480 farmers facilitated to go for soil test based fertilizer application.
- 176 water samples analysis to ascertain water quality.
- Advisories on problems in crops, animals, birds and commencement of new ventures given to 905 farmers.
- Self entrepreneurship among the rural youth has been promoted. 23 viable mushroom farms, 106 Integrated farms, 48 Dairy units, 17 Calf rearing units, 33 Goat farms, 75 Apiary, 28 Fish farms promoted newly. So that paved way for district productivity enhancement in agricultural sector.
- The innovative idea of financing rural youth by farming retired youth club (RY-RY model) helped 26 resource less youth to become entrepreneur and thereby migration of rural youth minimized.
- This model fetched the award from Mahindra and Mahindra Limited namely KVK Samman 2019 with the cash prize of Rs.1.11 lakh.
- Three innovative farmers innovations are recorded and they were presented their innovations at the innovators meet held at CRIDA, Hyderabad on 14.04.2018.
- Tuned technology to make dried Brinjal to make waste into wealth.

- Use of waste decomposer to prevent air pollution, use of Soil Moisture Indicating Tool, Ethno Veterinary for Cattle and Birds are our flagship technologies this year.
- One of our farmer Mr.Nagaraj bagged “Best Farmer Award” for SSI in Sugarcane from ICAR-SBI, Coimbatore.
- Our KVK has been conferred with “Best Technology Disseminator” award by ICAR – NRCB in its Silver Jubilee Year.
- Our host organization instituted and conferred 12 kinds of awards to our staff members and successful farmers.
- Mobilized Rs.22.15 lakhs from other funding sources like Department of Science and Technology, National Commission for Women, ATMA, NABARD, DCCD, Coconut Development Board to make enhanced services to the farmers.
- Our KVK is operating twelve farmers club and two NABARD funded farmer producer companies.
- Recommended policy measures to GoI to Double the Farmers’ Income by our lead paper through MSSRF, Chennai and empowering farm women through the seminar conducted in collaboration with NCW, New Delhi.

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievements of mandatory activities by KVK during 2018-19

OFT (Technology Assessment)				FLD (crop/enterprise/CFLDs)			
1				2			
Number of technologies		Total no. of Trials		Area in ha		Number of Farmers	
Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
14	12	44	38	15	15	73	73

Training (including sponsored, vocational and other trainings carried under Rainwater Harvesting Unit)					Extension Activities			
3					4			
Number of Courses			Number of Participants		Number of activities		Number of participants	
Clientele	Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
Farmers	81	75	1620	2805	780	6890	1643	15965
Rural youth	15	11	225	297				
Extn. Functionaries	10	13	200	235				

Seed Production (Qtl.)			Planting material (Nos.)		
5			6		
Target	Achievement	Distributed to no. of farmers	Target	Achievement	Distributed to no. of farmers
32	7.91	801	21350	5700	578

3.b. Technology Assessment

Summary of technologies assessed under various crops by KVK

Thematic areas	Crop	Name of the technology assessed	Source of technology with year	No. of trials	No. of farmers
Integrated Nutrient Management	Blackgram	Assessment of Foliar Nutrition in Blackgram	TNAU, 2010 TNAU, 2013	3	3
Varietal Evaluation	Sorghum	Assessment of Dual purpose Sorghum varieties for high yield and drought tolerance	TNAU, 2015 ICAR IIMR, 2011	3	3

	Ragi	Assessment of Ragi varieties suitable for Ariyalur District	TNAU, 2013 UAS, 2009	3	3
	Banana	Assessment of suitable Banana varieties to replace Paddy and Sugarcane at Thirumanur block of Ariyalur District	NRCB, 2007 NRCB, 2016	3	3
Integrated Pest Management	Cotton	Assessment of suitable modules for pest and disease management in Cotton	Directorate of Plant Protection Quarantine & Storage (DPPQ&S) 2014 TNAU, 2012	3	3
	Chilli	Assessment of Technology for Sucking pests Management in Chillies	NCIPM, 2014 BAU, 2016	3	3
Integrated Crop Management	Casuarina	Assessment of suitable inter crops in Casuarina to reap income during initial years	IFGTB CRIDA	3	3
Integrated Disease Management	Groundnut	Assessment of Management Strategies for Stem rot and Root rot in Groundnut	NCIPM -2014 TNAU-2018	3	3
Resource Conservation Technology	Sugarcane	Assessment of composting of Sugarcane trash using different microbial decomposers to minimize soil & environmental degradation	TNAU, 2012 NCOF, Ghaziabad 2015	3	3
Others (Pl. specify)	Paddy	Assessing the Effectiveness of e-Extension Methods in terms of Knowledge Gain and Skill Acquisition and Symbolic Adoption Behavior among the Rural Youth	TNAU, India Development Gateway, GOI	3 Groups	60
Total				30	87

Summary of technologies assessed under **livestock** by KVKs

Thematic areas	Name of the livestock enterprise	Name of the technology assessed	No. of trials	No. of farmers
Disease Management	Goat	Assessment of Ethno Veterinary treatment for control of Endo parasites in Small ruminant	5	5
Evaluation of Breeds	Poultry	Assessment of egg production potential of improved native chicken breeds under backyard conditions	3	3
Total			7	7

Summary of technologies assessed under various **enterprises** by KVKs

Thematic areas	Enterprise	Name of the technology assessed	Source of technology with year	No. of trials	No. of farmers
--	--	--	--	--	--

3.c.Technology Assessment In Detail

1. OFT on Assessment of Dual purpose Sorghum varieties for high yield and drought tolerance

- 1. Thematic area:** Varietal Introduction
- 2. Title:** Assessment of Dual purpose Sorghum varieties for high yield and drought tolerance
- 3. Scientist involved :** SMS (Agronomy) & SMS (Agricultural Extension)
- 4. Details of farming situation:**

This study was carried out through On - farm testing during Kharif season of 2018 at Ottakovil village of Ariyalur block in Ariyalur district with an objective to assess the Dual purpose Sorghum varieties for high yield and drought under rainfed condition as compared to the farmers practice. Sorghum crop was sown during 1st week of September and harvested during 2nd week of December, 2019. Three farmers each having one acre of sorghum field was selected and compared with the Farmers practice with recommended package of practices.

5. Problem definition / description:

- Low productivity with the existing varieties (1850kg/ha) under rainfed condition
- Non adoption of varieties suitable for rainfed condition
- Occurrence of downy mildew (PDI-22-25%)
- Fodder shortage

6. Technology Assessed:

Varietal Character	TO 1	TO 2	TO 3
	Farmer practice variety (local)	Cultivation of K 12 (TNAU, 2015)	Cultivation of CSV 27 (ICAR- IIMR, Hyderabad 2011)
Duration	100 days	100 days	100 days
Avg. Yield	2150 kg/ha	3123 kg/ha	2900 kg/ha
Dry fodder yield	--	11.9 t/ha	19.3 t/ha
Tolerant to	--	Drought tolerant	Drought tolerant and Grain mould tolerant and non lodging
Resistant to	--	Moderately Resistant to shoot fly, stem borer and resistant to downy mildew	--
Purpose		Dual purpose (Grain and fodder)	Dual purpose (Grain and fodder)

7. Critical inputs given:

Name of Critical input	Quantity/Trial	Value (Rs.)
Sorghum K-12 seed @ 15 kg/ha	6 kg @Rs.75/kg	450
Sorghum CSV 27 Seed @ 15 kg/ha	6 kg @Rs.75/kg	450
Pottasium Dihydrogen phosphate 2%	1kg @ Rs. 50/kg	50
PPFM @ 2.5 lit/ha	1 lit. @Rs.300/lit.	300
Total		1,250
Rs.1,250 x 3 trials = Rs.3,750		

8. Results:**Table 1: Yield and yield contributing characters of different varieties assessed**

Technology Option	No. of trials	Height (cm)	Downy mildew (PDI)	Duration of maturity	Grain Yield (Kg/ha)	Dry fodder Yield (Kg/ha)
Farmers' Practice – Local variety K2	3	180	4.3	105	2,550	8,750
K 12		258	1.6	101	2,834	8,920
CSV 27		242	2.2	100	2,752	11,450

Table 2: Economics of different Sorghum varieties assessed

Technology Option	Gross Cost(Rs.)	Gross Income(Rs.)	Net Income(Rs.)	BCR	Marketability
Farmers Practice	34875	60850	25975	1.74	Good
K 12	33,950	66018	32068	1.94	Moderate
CSV 27	33,900	69684	35784	2.05	Good

Description of the results:

This trial was conducted to assess the performance of sorghum varieties with farmers practice during Kharif 2018 (September, 2018 to December, 2018). The results showed that sorghum variety K 12 is better in production related parameters but CSV 27 recorded the highest dry fodder yield of 11,450 kg/ha and it was followed by K12 (8,920 kg/ha). In this trial, the TO 3 trial recorded the highest net return of Rs.35,784 with the BCR of 2.05 than the TO 2 (Net Income Rs. 32,068 and BCR 1.94) and farmers practice. Performance of the TO 3 was good. Incidence of downy mildew disease in sorghum was very less in TO 2 (1.6%) compared to TO 3 (2.2%) and farmers practice (4.3%). Dry fodder Yield was 27 percentages higher in CSV 27 variety followed by K 12. Market preference is good for CSV 27 variety.

Constraints faced: Nil

9. Feed back of the farmers involved:

- The general appearance of K12 variety and health of the plants itself is very good, drought withstanding capacity is very well compared to CSV 27 and local variety.
- Good drought tolerance observed in these two varieties, particularly K12 at the early stage where long dry spell occurs.
- Low pest and disease incidence (Downy mildew) compared to existing variety.

10. Feed back to the scientist who developed the technology:

The performance of CSV 27 sorghum variety is good.

2. OFT on Assessment of Ragi varieties suitable for Ariyalur District

1. Thematic area: Varietal Introduction

2. Title: Assessment of Ragi varieties suitable for Ariyalur District

3. Scientist involved: SMS (Agronomy) & SMS (Agricultural Extension)

4. Details of farming situation:

This study was carried out through on farm testing during *Rabi* season of 2018 at Nagampandal village of Andimadam block in Ariyalur district with an objective to assess the Ragi varieties suitable for Ariyalur District under rainfed condition as compared to the farmers practice. Ragi was sown during 1st week of October and harvested during 2nd week of February, 2019. Three farmers each having one acre of Ragi field was selected and compared with the Farmers practice with recommended package of practices.

5. Problem definition / description:

- Low productivity with the existing Ragi varieties (1400 kg/ha) under rainfed condition
- Non adoption of varieties suitable for rainfed condition
- Susceptibility of existing varieties to lodging and neck blast
- Shortage of dry fodder

6. Technology Assessed:

Varietal Character	TO 1	TO 2	TO 3
	Farmers practice variety (local)	CO (Ra) 15 (TNAU, 2013)	ML 365 (UAS, 2009)
Duration	110 days	120 days	115 days
Avg. Yield	45q/ha	55-60q/ha	50-55q/ha
Tolerant to	--	Drought	Drought
Resistant to	--	Neck blast	Neck blast
Grain type	--	Bold grain	Bold grain
Lodging	--	Non lodging	Non lodging

7. Critical inputs given:

Name of critical input	Quantity/Trial	Value (Rs.)
CO (Ra) 15 Seed @ 5 kg/ha	2 kg @Rs.80/kg	160
ML 365 Seed @ 5 kg/ha	2 kg @Rs.80/kg	160
PPFM @ 2.5 lit/ha	1 lit. @Rs.300/lit.	300
Total		620
Rs.620 x 3 trials = Rs.1,860		

8. Results:**Table 1: Yield and yield contributing characters of different varieties assessed**

Technology Option	No. of trials	Height (cm)	Neck blast incidence (%)	Duration of maturity	Grain Yield (Kg/ha)	No. of tiller/plant
Farmers' Practice	3	90	8.7	110	2,750	5
CO(Ra) 15		98	1.8	120	3,654	7
ML 365		92	1.4	115	3,475	7

Table 2: Economics of different Ragi varieties assessed

Technology Option	Gross Cost(Rs.)	Gross Income(Rs.)	Net Income(Rs.)	BCR	Marketability
Farmers Practice – local variety	26250	41250	15000	1.57	Good
CO(Ra) 15	25,850	54810	28960	2.12	Moderate
ML 365	25,750	52125	26375	2.02	Good

Description of the results:

This trial was conducted to assess the performance of Ragi varieties with farmers practice during *Rabi* 2018 (October, 2018 to February, 2019). The results showed that Ragi variety CO(Ra) 15 is better in production related parameters than ML 365 Ragi variety and local variety. CO(Ra) 15 recorded the highest yield of 3,654 kg/ha and it was followed by ML 365 (3,475 kg/ha). In this trial, the CO(Ra) 15 trial recorded the highest net return of Rs.28,960 with the BCR of 2.12 than the ML 365 (Net Income Rs. 26,375 and BCR 2.02) and farmers practice. Performance of the CO(Ra) 15 was good. Incidence of Neck blast disease in Ragi was very less in ML 365 (1.4%) compared to CO(Ra) 15 (1.8%) and farmers practice (8.7%).

Constraints faced: Nil

9. Feed back of the farmers involved:

- Low blast disease incidence was observed compared to existing variety.
- The growth performance of ML 365 variety was very good during all the stages, compared to CO (Ra) 15 and local variety in drought condition.

- Better drought tolerance observed in ML 365 as it withstands drought well compared to other varieties.
- Good market preference for ML 365 variety.

10. Feed back to the scientist who developed the technology:

Performance of CO (Ra) 15 Ragi is very good compared to ML 365 variety.

3. OFT on Assessment of suitable inter crops in Casuarina to reap income during initial years

1. Thematic area : Inter cropping

2. Title: Assessment of suitable inter crops in Casuarina to reap income during initial years

3. Village: Meensuruti, Jayankondam block, Ariyalur district

4. Scientist involved: SMS (Agronomy), SMS (Horticulture) & SMS (Agricultural Extn.)

5. Details of farming situation:

This study was carried out through on farm testing during Kharif season of 2018 at Meensuruti village in Ariyalur district with an objective to assess the suitable inter crops in Casuarina to reap income during initial years under irrigated condition as compared to the farmers practice (single crop). Casuarina is normally planted at the spacing of 0.9 x 0.9 m. In the Kharif season, black gram crop variety VBN 6 was sown in between the Casuarina trees during 4th week of July and harvested during 1st week of October, 2018. In the *Rabi* season, groundnut crop variety VRI 2 was sown in between the Casuarina trees during 1st week of December and harvested during 2nd week of March, 2019.

6. Problem definition / description:

- Lack of adoption of suitable Casuarina based Agro forestry system.
- Low cropping intensity as there is no intercrops grown
- No income till 3-5 years once the trees are fell
- Poor utilization of resources like land & water

7. Technology Assessed:

TO 1	TO 2	TO 3
Farmers practice (Casuarina single crop)	Cultivation of Black gram in the inter spaces of Casurina plantation during first year	Cultivation of groundnut in the inter spaces of Casurina plantation during first year Groundnut (variety VRI 2)

8. Critical inputs given: (along with quantity as well as value)

Name of critical input	Quantity/Trial	Value (Rs.)
Blackgram	6kg @Rs160/kg	960
Watermelon seed	1.5kg @Rs.2500/kg	3,750
<i>Pseudomonas fluorescense</i>	1kg @Rs100/kg	100
Total		4,810
Rs.4,810 x 3 trials = Rs.14,430		

9. Results:

Table 1: Yield and yield contributing characters of different varieties assessed

Technology Option	No. of trials	Yield (Kg/ha)	No. of pods/plant
Farmers' Practice - Nil	3	3,300 (Wood)	--
Black gram		650	21
Ground nut		1250	24

Table 2: Economics of different technologies assessed

Technology Option	Gross Cost(Rs.)	Gross Income(Rs.)	Net Income(Rs.)	BCR
Farmers Practice	12,500	20,000	7,900	1.60
Black gram	19,500	32,500	13,000	1.66
Ground nut	22,960	37,500	14,540	1.63

Description of the results:

This trial was conducted to assess the performance of suitable inter crops in Casuarina to reap income during initial years with farmers practice during Kharif, 2018 (September, 2018 to November, 2019). The results showed that both Ground nut variety and Black gram performed well during the Kharif season. Ground nut crop recorded the yield of 1,250 kg/ha and Black gram (650 kg/ha). In this trial, the Ground nut crop trial recorded the highest net return of Rs.14, 450 with the BCR of 1.63 than the Black gram (Net Income Rs.13,000 and BCR 1.66) and farmers practice. Performance of the ground nut as intercrop in casuarinas is good.

Constraints faced: It was not possible to caring out sowing during second season (Rabi) as the canopy of Casurina covered entire land surface.

9. Feed back of the farmers involved:

Growth of the black gram variety was very good as Inter crop in Casuarina. Ground nut crop gave higher yield and income than black gram as inter crop.

10. Feed back to the scientist who developed the technology:

Ground nut is the best suitable intercrop for Casuarina than Black gram. Intercrop cultivation is possible in the first year only in Casuarina due to the closer planting of 3x3ft between row to row and plant to plant.

4. OFT on Assessment of Management Strategies of Stem rot and Root rot in Groundnut

1. Thematic area : Integrated Disease Management

2. Title: Assessment of management Strategies of Stem rot and Root rot in Groundnut

3. Scientist involved: SMS (Plant protection), SMS (Agronomy) & SMS (Agri. Extn.)

4. Details of farming situation:

The study was carried out through on farm testing during *Rabi* season of 2018 at Venmankondan village in Ariyalur district with an objective to assess the management Strategies of Stem rot and Root rot in Groundnut under irrigated condition as compared to the farmers practice (Application of carbofuran/Spraying of bavistin). For ideal growth and yield of ground nut there is a need for optimum temperature, humidity and irrigation at every stage of growth such as seed sowing, germination, flowering and pod formation stage. Ground nut crop variety GJG 7 was sown during 1st week of December and harvested during 3rd week of March, 2019. Three farmers each having one acre of ground nut field was selected and compared with the Farmers practice with recommended package of practices.

5. Problem definition / description:

- Stem rot and root rot incidence resulting in less plant population (12-15 %)
- Yield reduction to the tune of 15%

6. Technology Assessed:

TO 1	TO 2	TO 3
Farmer practice - Application of carbofuran/Spraying of bavistin	<ul style="list-style-type: none"> • Seed treatment with <i>Trichoderma viridi</i> 10 gm/kg seed to control soil borne disease. • Soil application of <i>Trichoderma viridi</i> 10 kg/ha multiplied in 250 kgs of FYM 15 days prior to its application and applied at the time of sowing • Soil application of neem cake 250 kg/ha. 	<ul style="list-style-type: none"> • Seed treatment with Tebuconazole @ 1.5 g/kg of seed • Soil application of <i>P. fluorescens</i> @ 2.5kg enriched in 50 kg FYM/ha • Soil application of castor cake 500 kg/ha. • Spot drenching with Carbendazim @ 1gm/lit of waste

7. Critical inputs given: (along with quantity as well as value)

Name of critical input	Quantity/Trial	Value (Rs.)
<i>P. fluorescence</i>	0.75 kg	160
<i>Trichoderma viridi</i>	1.25 kg	260
Neem cake	25 kg	750
Castor cake	50 kg	1,000
Total		2,170
Rs.2,170 x 3 trials = Rs.6,510		

8. Results:

Table 1: Yield contributing characters of different treatments assessed and performance of the technology

Technology Option	No. of trials	Number of plant/sq.m	Number of pod/plant	Ground nut pod Yield (Kg/ha)
Farmers' Practice TO 1	3	34	18	1,725
TO 2		30	22	1,850
TO 3		28	27	1,920

Table 2: Economics of different treatments assessed

Technology Option	Gross Cost(Rs.)	Gross Income(Rs.)	Net Income(Rs.)	BCR	Marketability
TO 1	51,850	86,250	34,400	1.66	Good
TO 2	53,750	92,500	38,750	1.72	Good
TO 3	54,250	96,000	41,750	1.76	Good

Description of the results:

The trial has been conducted to assess the management Strategies of Stem rot and Root rot in groundnut with farmers practice during Rabi 2018 (December, 2018 to March, 2019). This period a rainfall of 297 mm was received and not evenly distributed. The results showed that TO 3 - Seed treatment with Tebuconazole @ 1.5 g/kg of seed, Soil application of *P. fluorescence* @ 2.5kg enriched in 50 kg FYM/ha, Soil application of castor cake 500 kg/ha, Spot drenching with Carbendazim @ 1gm/lit of waste is better in growth and production related parameters. TO 3 recorded the yield of 1,920 kg/ha and it was followed by TO2 (1,850 kg/ha). In this trial, the TO 3 trial recorded the highest net return of Rs.41,750 with the BCR of 1.76 than the TO 2 and farmers practice. Performance of the TO 3 was good. Incidence of Stem rot and Root rot in Groundnut was very less in TO 3 compared to TO 2 and farmers practice

Constraints faced: Nil

9. Feed back of the farmers involved:

The highest yield was attained in TO 3 practice namely Seed treatment with Tebuconazole @ 1.5 g/kg of seed, Soil application of *P. fluorescence* @ 2.5kg enriched in 50 kg FYM/ha, Soil application of castor cake 500 kg/ha, Spot drenching with Carbendazim @ 1gm/lit of water is better in growth and production related parameters.

10. Feed back to the scientist who developed the technology:

Seed treatment with Tebuconazole @ 1.5 g/kg of seed, Soil application of *P. fluorescence* @ 2.5kg enriched in 50 kg FYM/ha, Soil application of castor cake 500 kg/ha, Spot drenching with Carbendazim @ 1gm/lit of water is better to control Stem rot and root rot in Groundnut.

5. OFT on Assessment of Foliar Nutrition in Blackgram

1. **Thematic area** : Integrated Nutrient Management
2. **Title**: Assessment of foliar nutrition in Blackgram
3. **Scientist involved** : SMS (Agronomy) & SMS (Agricultural Extension)
4. **Details of farming situation**:

The study was carried out through on farm testing during *Rabi* season of 2018 at Sirukalathur village in Ariyalur district with an objective to assess the foliar nutrition in Blackgram under irrigated condition as compared to the farmers practice. The black gram sowing was taken up during 2nd week of October and harvested during 4th week of December. Three farmers each having one acre of black gram field was selected for foliar spraying of TNAU Pulse wonder, Nutrigold and Farmers practice with recommended package of practices.

5. Problem definition / description:

- Non adoption of foliar nutrient sprayer some farmers are practicing 2 % DAP spray
- Poor pod filling and seed setting
- Low yield is about 610 kg/ha against potential yield of 850 kg/ha

6. Technology Assessed:

TO 1	TO 2	TO 3
Farmers practice- Nil	Foliar spraying of TNAU Pulse wonder @ 10kg/ha (TNAU, 2010)	Foliar spraying of Nutrigold @ 1.25 lit/ha (TNAU,2013)

7. Critical inputs given: (along with quantity as well as value)

Name of critical input	Quantity/Trial	Value (Rs.)
VBN 6 Blackgram seed	8 kg	1,120
TNAU Pulse wonder	2 kg	400
Nutrigold	500 ml	350
Total		1,870
Rs.1,870x 3 trials = Rs.5,610		

8. Results:

Table 1: Yield contributing characters of different treatments assessed and performance of the technology

Technology Option	No. of trails	Yield (kg/ Ha.)	Gross Cost(Rs.)	Gross Income(Rs.)	Net Income(Rs.)	BCR
TO 1: Farmers Practice	3	640	19500	38400	18900	1.97
TO 2: TNAU Pulse wonder		780	20200	46800	26600	2.32
TO 3: Nutri gold		714	20250	42840	22590	2.12

Table 2 : Other performance indicator

Parameters	TO 1	TO 2	TO 3
Treatment material used	Nil	TNAU Pulse wonder	Nutrigold
No of Pods/plant	17.03	19.51	18.2
Seed Setting (%)	65	76	70
Seed weight (100g)	3.2	3.8	3.4
B:C ratio	1.21	1.38	1.31

Description of the results:

The trail has been conducted to assess the foliar nutrition in black gram with farmer practice during Rabi 2018. The result showed that TO 2 foliar spraying of TNAU Pulse wonder is better in growth and production related parameters like No of pods per plant (19.51 Nos), Seed setting percentage (76 %) and 100g seed weight (3.8) . TO 2 recorded the yield of 780 kg /ha and it was followed by TO 3 (714 kg/ha). in this trail, TO 2 recorded the highest net income of Rs. 13,050 per ha with BCR of 1.38 than the TO 2 and farmer practice.

Constraints faced : Nil

9. Feed back of the farmers involved:

- The black gram yield was higher in TO 2 foliar spraying of TNAU Pulse wonder than TO 3 foliar spraying of Nutrigold.
- Easy to adopt

10. Feed back to the scientist who developed the technology:

- High flower setting and Non shattering of flowers obtained by foliar spraying of TNAU Pulse wonder

6. OFT on Assessment of suitable modules for pest and disease management in Cotton**1. Thematic area : Integrated Pest and Disease Management**

2. Title: Assessment of suitable modules for pest and disease management in Cotton

3. Scientist involved: SMS (Plant protection), SMS (Agronomy) & SMS (Agri. Extn.)

4. Details of farming situation:

The study was carried out through on farm testing during Kharif season of 2018 at Thelur village in Ariyalur district with an objective to assess the suitable modules for pest and disease management in Cotton under Rainfed condition as compared to the farmers practice. Cotton crop variety RCH 659 was sown during 3rd week of August and harvested during 1st week of February, 2019.

5. Problem definition / description:

- Incidence of boll worm (34 %)
- Leaf hoppers, Thrips, whitefly (26%)
- Health hazards during pesticides spraying by farmers
- Low yield (12q/ha)

6. Technology Assessed:

TO 1	TO 2	TO 3
Farmer practice - No spray	IPDM Technologies	Organic Pest Management practices

7. Critical inputs given: (along with quantity as well as value)

Name of critical input	Quantity/Trial	Value (Rs.)
Yellow sticky trap	5 Nos.	250
Pheromone trap and lure	5 Nos.	300
<i>Trichogramma chilonis</i>	6cc	300
<i>Sl</i> NPV	250 ml.	360
<i>Verticilium lecanii</i>	1 lit.	450
Total		1660
Rs.1660 X 3 trials = Rs. 4980		

8. Results:**Table 1: Yield and yield contributing characters of different treatments assessed**

Technology Option	No. of trials	Boll worm (%)	Thrips & white fly Incidence	Leaf spot PDI (%)	Yield q/ha
Farmers' Practice TO 1	3	3	26	14	16.65
TO 2		1	18	10	20.60
TO 3		2	22	12	18.40

Table 2: Economics of different treatments assessed

Technology Option	Gross Cost(Rs.)	Gross Income(Rs.)	Net Income(Rs.)	BCR
TO 1	52,400	83,250	30,850	1.58
TO 2	53,750	1,03,000	49,250	1.91
TO 3	51,860	92,000	40,140	1.77

Description of the results:

From this trail, TO2 of IPDM technologies recorded very less Pest incidence like Bollworm (1%), thrips and whitefly incidence (18%) and leaf spot disease incidence (10%) than TO3 of organic pest management practices and farmer's practice. In addition to TO 2 of IPDM technologies showed high cotton yield of 20.6 q/ha followed by TO3 organic pest management practice. TO2 IPDM technologies practice gives higher net income of Rs.49, 250/ha with BCR 1.91 followed by TO3 organic pest management practice in cotton.

Constraints faced: Nil.

9. Feed back of the farmers involved:

IPDM technologies gives good results in controlling of pest and disease problems such as Bollworm, thrips, whitefly and leaf spot disease in cotton crop at critical stages which gives great impact in yield and income than other alternate practice of organic pest management.

10. Feed back to the scientist who developed the technology:

The performance of IPDM technologies works very well in controlling of Pest and Disease on cotton crop than organic pest management practices.

7. OFT on Assessment of Technology for Sucking pests Management in Chillies

1. **Thematic area :** Integrated Pest Management
2. **Title:** Assessment of technology for sucking pests management in chillies
3. **Scientist involved:** SMS (Plant protection), SMS (Agronomy) & SMS (Agri. Extn.)
4. **Details of farming situation:**

The study was carried out through on farm testing during Rabi season of 2018 at Veerakan village in Ariyalur district with an objective to assess the technology for sucking pest management in Chillies under Irrigated condition as compared to the farmers practice. For ideal growth and yield of Chillies it need a diverse set of climatic conditions at every stage of growth such as seed germination, flowering, fruiting, etc. Chilli crop variety US 344 was sown during 1st week of November and harvested during 4th week of March, 2019. Three farmers each having one acre of Chilli was selected and (Farmers practice) with recommended package of practices. The entire harvest is being done as green Chillies.

5. Problem definition / description:

- Incidence of sucking pests like thrips and mites
- Excess usage of chemicals
- Yield reduction (20 %)

6. Technology Assessed:

TO 1	TO 2	TO 3
Chemical sprays to control pests	<ul style="list-style-type: none"> • Inter crop with <i>Sesbania grandiflora</i> provide barrier which regulate the thrips population • Chilli crop bordered by two rows of maize at every 0.5 acre area (31.2 X 60 sqm) for mites control • Seed treatment with imidacloprid 70% WS @ 4g/kg of seed 	<ul style="list-style-type: none"> • Seedlings dip with imidacloprid 70 WS @ 2gm/L • Spraying of neem oil@1% at 25-30 DAT • Spraying of imidacloprid 17.8 SL@0.5ml/L at 40-45 DAT • Spraying of <i>Verticilium lecani</i> (vertimec) @ 5 gm/L at 55-60 DAT (Mites)

8. Critical inputs given: (along with quantity as well as value)

Name of critical input	Quantity/Trial	Value (Rs.)
Sesbania grandiflora seeds	150g@Rs.250/150g	100
<i>Verticillium lecani</i>	250g	50
	Total	150
Rs.150 x 3 trials = Rs.450		

9. Results:**Table 1: Yield and yield contributing characters of different treatments assessed**

Technology Option	No. of trials	Thrips (%)	Mites Incidence	Number of fruits/plant	Yield t/ha
Farmers' Practice TO 1	3	16	5	30	19.4
TO 2		12	4	34	21.2
TO 3		9	3	42	22.4

Table 2: Economics of different treatments assessed

Technology Option	Gross Cost(Rs.)	Gross Income(Rs.)	Net Income(Rs.)	BCR	Marketability
TO 1	82,260	2,38,344	1,54,284	2.89	Good
TO 2	86,460	2,54,580	1,75,720	2.94	Good
TO 3	87,125	2,68,200	1,81,075	3.07	Good

Description of the results:

A study for assessment of technologies for sucking pests management in Chillies was conducted in Veerakan village. The technological package included in TO3 contribute better to control of sucking pests in Chilli such as thrips (9%) and mites incidence (3%) than the TO2 . The high yield of 223.50 t/ha was recorded in TO2 where ever it was 194.62 t/ha only in the case of farmers practice. BC ratio was also the highest (3.07) in the case of TO3 and it was followed by TO2 (2.94)

Constraints faced: Nil

9. Feed back of the farmers involved:

- The sucking pest incidence is very less and get better yield of chilli by use of alternate technologies than the recommended technologies.
- Reduced the purchase of excess chemical which leads to reduction in cost of cultivation.
- The fruit quality is better than our regular practice adopted in field. in alternate technologies than recommended technology and farmers practices.

10. Feed back to the scientist who developed the technology:

The performance of alternate practice gives better control of sucking pest in Chilli crop than recommended practice.

8. OFT on Assessment of composting of Sugarcane trash using different microbial decomposers to minimize soil & environmental degradation

1. Thematic area : Waste to wealth

2. Title: Assessment of composting of Sugarcane trash using different microbial decomposers to minimize soil & environmental degradation

3. Scientist involved : SMS (Agricultural Extension) & SMS (Agronomy)

4. Details of farming situation:

The study was carried out through on farm testing during *kharif* season of 2018 at K.Mettu theru village in Ariyalur district with an objective to assess the composting of sugarcane trash using different microbial decomposers under irrigated condition as compared to the farmers practice (burning of trash). The soil of the experimental site was clay loam with medium organic carbon content (0.57 %), medium in nitrogen (75.6 kg ha⁻¹), low in phosphorus (22.4 kg ha⁻¹) and medium in potassium (98.4 kg ha⁻¹) contents. Ratoon crop was taken up during 2nd week of July and harvested during 3rd week of January. Five farmers each having one acre of sugarcane trash using TNAU Bio mineralizer, NCOF waste decomposer and burning of trash (Farmers practice) with recommended package of practices.

5. Problem definition / description:

- Farmers practicing burning of sugarcane trashes in situ that affects soil micro flora
- Poor recycling of organic resources
- Reduction in germination and yield loss due to burning of trashes to the tune of 10 -15% in the ratoon crop.
- Air pollution and leads to global warming

6. Technology Assessed:

	TO 1	TO 2	TO 3
Characteristics	Farmers practice variety (local)	Composting using TNAU bio mineralizer (TNAU, 2012)	Composting using NCOF waste decomposer (UAS, 2009)
Time taken for Composting trashes (duration)	1 day (burning)	90 days	60 days

7. Critical inputs given: (along with quantity as well as value)

Name of critical input	Quantity/Trial	Value (Rs.)
TNAU Bio mineralizer	6 kg	375
NCOF	100g	180

8. Results:

Technology Assessed by KVK:

Characteristics	TO 1	TO 2	TO 3
	Farmers practice variety (local)	Composting using TNAU bio mineralizer (TNAU, 2012)	Composting using NCOF waste decomposer (UAS, 2009)
Time taken for Composting trashes (duration)	1day (burning)	93 days	62 days

Table 1: Soil nutrient status and Yield

Technology Option	No. of trials	Composting duration	Nutrient status Before	Nutrient status After	Cane Yield (t/ha)	No. of tiller/ plant
Farmers' Practice	3	--	N P K 75.6 : 22.4 : 98.4	N P K 78.4 : 26.8 : 109.5	78.50	8
TNAU Bio mineraliser		90	N P K 73.6 : 21.4 : 93.2	N P K 91.3 : 44.5 : 111	80.40	9
NCOF waste decomposer		60	N P K 76.1 : 20.3 : 94.6	N P K 98.4 : 47.2 : 117	81.84	9

Table 2: Economics of different microbial decomposers assessed

Technology Option	Gross Cost(Rs.)	Gross Income(Rs.)	Net Income(Rs.)	BCR	Marketability
Farmers Practice	1,06,250	1,96,250	90,000	1.84	Good
TNAU Bio mineraliser	1,08,900	2,01,000	92,100	1.85	Good
NCOF waste decomposer	1,08,150	2,04,600	96,450	1.89	Good

Description of the results:

This trial was conducted to assess the composting of sugarcane trash using different microbial decomposers under irrigated condition in sugarcane as compared to the farmers practice (burning of trash) with farmers practice during Kharif, 2018 (September, 2018 to December 2018). The results showed that the performance of NCOF waste decomposer is very good than the TNAU Bio mineralizer. NCOF waste decomposer applied field recorded the highest yield of 81.84 t/ha and it was followed by TNAU Bio mineralizer (80.40 t/ha). In this trial, the NCOF waste decomposer trial recorded the highest net return of Rs.96,450 with the BCR of 1.89 than the TNAU Bio mineralizer (Net Income Rs.92,100 and BCR 1.85) and

farmers practice (Net Income Rs.90,000 and BCR 1.84). Performance of the NCOF waste decomposer was good and quick in composting.

Constraints faced: The decomposer may be produced at district or state level as it is difficult to get the material from Haryana or Bangalore

9. Feed back of the farmers involved:

- The technology is much easy to do.
- Good waste decomposing observed in these two waste decomposer, particularly NCOF waste decomposer in very short time.
- Water holding capacity of the soil has improved in NCOF waste decomposer than other methods.

10. Feed back to the scientist who developed the technology:

The production technology of waste decomposers may be informed to KVKs to make the production availability easily. The technology is very easy and simple to practice.

9. OFT on Assessing the Effectiveness of e-Extension Methods in terms of Knowledge Gain and Skill Acquisition and Symbolic Adoption Behavior among the Rural Youth

1. Thematic area: Information Communication Technology (ICT)

2. Title: Assessing the Effectiveness of e-Extension Methods in terms of Knowledge Gain and Skill Acquisition and Symbolic Adoption Behavior among the Rural Youth

3. Scientists involved: SMS (Agricultural Extension) & SMS (Agronomy)

4. Details of farming situation:

The study was carried out through On-farm testing during 2018 at Cholamadevi cluster village in Ariyalur district with an objective to assess the Effectiveness of e-Extension Methods for Transfer of Technology. In Ariyalur District paddy is being cultivated in an area 21,892 ha. Farming situation is irrigated. About 95 % of the farmers are irrigated. Most of the farmers used CR1009 variety in samba season. Climate of the region is fairly hot and the average rainfall in the year during the study period from September to January was 635 mm in 37 rainy days. The soil of the experimental site was red soil with medium organic carbon content (0.57 %), NPK is 225:75:75 respectively.

5. Problem definition / description:

Farmers get low yield due to pest (leaf folder & stem borer) and disease (blast & gall midge) incidence in paddy. Technology transfer mechanism need to be improved to reach the individual farmers' farm holding in time.

Present TOT mechanism faces lot of constraints including limited staff, wider coverage and multi diverse cropping system

Adoption level of different technologies are also low leading to low productivity in paddy, Hence the study has been conducted to assess the Effectiveness of e-Extension Methods for Transfer of Technology to farmer and to improve the knowledge level and adoption rate.

6. Technology Assessed:

Based on the problems, paddy cultivation technologies were selected to disseminate through three different e – extension methods. The study has been conducted at Chola madevi cluster village of T.Palur block. Three groups of beneficiaries were selected having 20 members of each group. Pre Test and Post Test conducted for these groups to identify the knowledge and adoption level. The technological options tried to deliver the technologies are as follows :

Technology option	Technology
Technology option 1	Transfer of Paddy technologies through Agri-tech portal (http://agritech.tnau.ac.in)
Technology option 2	Transfer of Paddy technologies through On line Expert System
Technology option 3	Transfer of Paddy technologies through India Development Gateway, GOI Vikaspedia Portal (http://vikaspedia.in/index/)

7. Critical inputs given:

S.No.	Inputs	Quantity (Nos.)	Value (Rs.)
1	Net connection for 3 months	40	6000

8. Results:

The gain in Knowledge (%) as assessed by pre and post test are presented here

Name of the technologies	Class	Technology Option 1 – Agri-tech portal				Technology option 2 – On line Expert System				Technology Option 3 – India Development Gateway,			
		No. of Participants - 20				No. of Participants - 20				No. of Participants – 20			
		Pre-test knowledge		Post-Test knowledge		Pre-test knowledge		Post-Test knowledge		Pre-test knowledge		Post-Test knowledge	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Paddy technologies	L	13	65	9	45	12	60	4	20	11	55	7	35
	M	5	25	7	35	5	25	11	55	6	30	8	40
	H	2	10	4	20	3	15	5	25	3	15	5	25

(1-5 Mark – Low, 6-10 Mark – Medium, 11-15 Mark – High)

The adoption percentage of different technologies delivered through extension literature, text message and voice messages are depicted below :

S.No	Name of the technologies	Class	Technology Option 1 - Agri-tech portal		Technology option 2 - On line Expert System		Technology Option 3 – India Development Gateway	
			No. of Participants 20		No. of Participants 20		No. of Participants 20	
			Adoption		Adoption		Adoption	
			No.	%	No.	%	No.	%
1	Zn deficiency symptoms	L	5	25	1	5	4	20
		M	13	65	14	70	12	60
		H	2	10	5	25	4	20

2	Management of leaf folder	L	6	30	1	5	5	25
		M	11	55	13	65	9	45
		H	3	15	6	30	6	30
3	Management of Stem borer	L	4	20	2	10	5	25
		M	10	50	14	70	11	55
		H	6	30	4	20	4	20
4	Management of Blast	L	6	30	4	20	6	30
		M	11	55	11	55	9	45
		H	3	15	5	25	5	25
5	Management of Leaf spot	L	6	30	3	15	7	35
		M	8	40	13	65	11	55
		H	6	30	4	20	2	10

Table : Performance of the technology

Technology delivery mechanism	Adoption percentage of different Paddy cultivation technologies					Average adoption %
	1	2	3	4	5	
By Agri-tech portal	65	55	50	55	40	53
By Text On line Expert System	70	65	70	55	65	65
By India Development Gateway	60	45	55	45	55	52

Description of the results:

In this OFT, one problem was selected (paddy cultivation techniques) in Cholamadevi village of Sendurai block. Three groups of beneficiaries were selected having 20 members of each group. Pre Test and Post Test conducted for these groups to identify the knowledge and adoption level.

Pre Test Knowledge level

By conducting this Pre Test, Agri tech portal group revealed that 10 % of the farmers noticed high level knowledge, 25 % of the farmers having medium level and 65% of famers had low level of knowledge. By conducting Pre Test for Online Expert system Group, it is revealed that the knowledge level results 15 % of the farmers noticed high level knowledge, 25 % of the farmers having medium level and 60% of famers had low level of knowledge. Technology option group 3 noticed that 15% of the farmers having high level knowledge, 30 % of the farmers having medium level and 55% of famers obtained low level of knowledge.

Post Test Knowledge level

By conducting this Post Test, Agri tech portal Group revealed that 20 % of the farmers noticed high level knowledge, 35 % of the farmers having medium level and 45% of famers had low level of knowledge. The online expert system group revealed that the knowledge level results 25 % of the farmers noticed high level knowledge, 55 % of the

farmers having medium level and 20% of famers had low level of knowledge. Technology option group 3 noticed that 25% of the farmers having high level knowledge, 40 % of the farmers having medium level and 35% of famers had low level of knowledge. The Pre Test and Post Test was analysed based on the score rated Low as 1-5 mark, Medium as 6-10 mark and High as 11-15 mark.

Adoption level

The adoption level of five different technologies delivered through three different extension modes / delivery mechanism reveals that online Expert as when required scores high adoption percentage for all the five technologies and the average arrived was 65%. it is followed by Agri tech portal (53 %) and India development gate way (52.0 %).

Constraint faced:

Faced constraints in reminding the farmers then and there to see the technology source (TO1, TO2, TO3) and practice the technologies as and when some problems started in the field.

9. Feed back of the farmers involved:

- Faced difficulty in preparation of spray fluid as it is bring mentioned as percent or PPM.
- They need explanation or training for some technologies understand the chemical name of fertilizers or pesticides.

10. Feed back to the scientist who developed the technology:

The OFT results concluded that the technologies can be very well delivered through text messages, The text messages should be pin pointed and shoot and to be delivered at need based.

10. OFT on Assessment of egg production potential of improved native chicken breeds under backyard conditions

1. **Thematic area:** Varietal Evaluation
2. **Title:** Assessment of egg production potential of improved native chicken breeds under backyard conditions
3. **Scientist involved:** SMS (Animal Science) and Senior Scientist and Head
4. **Details of farming situation:**

Ariyalur district is backward district in Tamil Nadu as the socio economic status of farmers is poor. Most of the times the farmers faced crop failures and/or less profit from crops. Under these circumstances poultry plays a major role in sustaining the regular income of farmers besides meeting the protein requirement of the family. Now-a-days the demand for country chicken eggs is increasing and thereby it is the need of the day to increase the country chicken egg production. But the native hens lays only 60-70 eggs per year instead the improved breeds are with the higher egg production potential of 250 eggs/year/bird. The production of eggs beyond the household need will facilitate marketing of eggs and thereby the income level of the family will be increased. Hence, the OFT on “Assessment of egg

production potential of improved native chicken breeds under backyard conditions'' has been taken up to identify the suitable breed for the higher egg production at backyard condition.

5. Problems:

- Less egg productivity of native birds (60-70 eggs/bird)
- Disease outbreak like Ranikhet, heat stroke and fever
- Decreasing trend of poultry birds population due to diseases, predators and other socio economic causes.
- Lack of awareness among the farm women about improved breeds.

6. Technology assessed:

In order to test the egg laying potential of improved breeds the following breeds were tested

TO 1	TO 2	TO 3
FP: Native chicken	Improved breed - Grammapriya	Improved breed – TANUVAS Aseel
Native chicken named siruvidai is widely prevalent. They give yield around 40-60 eggs/Year	Average egg production of 180 eggs/annum	Average egg production of 160 eggs/annum

7.Critical inputs:

Name of critical input	Quantity/Trial	Value (Rs.)
Gramapriya	30 Nos.	1,500
TANUVAS Aseel	30 Nos.	1,500
	Total	3,000
Rs.3,000 x 3 trials = Rs.9,000		

8. Results:

Day old chicks were distributed to the farmers and the participants farmers are being regularly guided and monitored. The chicks were distributed during the month of October and the birds started laying from 156th to 174th day of its age.

Table: Performance of the technology.

Technology Options	No. of trails	No. of birds/trial	Mortality till laying (%)	Body weight at laying (kgs)	Egg production
TO 1 – Farmers practice (Native breed)	3	10	8	0.95	Under observation
TO 2 – Grammapriya		10	22	1.45	
TO 3 – TANUVAS Aseel		10	13	1.60	

Description of the results:

- As the birds are just started laying the observations will be made for the next 10 months to conclude the trial.

9. Feedback of the farmers involved:

From the preliminary observations, it is felt that Grammapriya breed gives eggs at the rate of 2 per 3 days. However there was the difficulty in rescuing the chicks from mortality.

10. Feed back to the scientist who developed the technology:

Feedback of the technology will be given after the final observations.

11. OFT on Assessment of Ethno Veterinary Treatment for control of endo parasites in small ruminants.

1. **Thematic area:** Disease Management in Livestock
2. **Title:** Assessment of Ethno Veterinary Treatment for control of endo practices in small nutrients.
3. **Scientists:** SMS (Agronomy) and Senior Scientist and Head
4. **Framing situation:**

Goat rearing in Ariyalur District of Tamil Nadu forms the basis for rural employment and income to the farm families. Almost every farm household is having 3-5 goats thus makes the goat population of 372142 in the district. The local breeds of goats generally grown here are “Naatu aadu” and “Kodi aadu”. The first breed attains the body weight of 12-13 Kg and the second 24-25 Kg in the age of 8 months under good management. But the weight gain in most of the goat population is not upto the expected level by different management lacuna and other problem.

5. Problems:

- Lack of awareness among the farmers about periodical deworming practices in goat.
- Less access to veterinary dispensaries.
- Heavy infestation of endoparasites like hook worm, round worm, tape worm led to poor health of lambs attributed by smelly distribution, pot belly, anaemic and absence of shininess on hairs.

6. Technology assessed

TO 1	TO 2	TO 3
Farmer practice – No deworming practice followed	Herbal dewormer (NIF,2007) A poly herbal formulation consist of nimbi, Kalmegh, Lata Karanja, Dadian and Jambu Dose : 4 tablets a day for 4 days	EVM for deworming preparation of bolus forms of herbal consisting of Onion, Garlic, Mustard, Neem leaves, cumin, Bitter guard, Turmeric, Pepper, Banana stem, leucas, Jaggery Dose : 4 tablets a day for 4 days

7. Critical inputs

Name of critical input	Quantity/Trial	Value
Herbal formulation Tablets	10/goat	Cost from NIF at free of cost

8. Results

a) Growth parameter

Technology Option	No.of eggs – fecal egg count			Body weight			Mortality
	10 th day	17 th day	21 st day	2 nd month	4 th month	6 th month	
TO1 – Farmers practice	380	410	425	6.5	8.1	9.8	10.8
TO2 – NIF formulation tablets	385	125	8	6.5	9.8	13.7	2.0
TO3 EVM formulation – Bolus (TANUVAS)	380	148	13	6.7	9.5	12.8	2.0

Observations taken upto 6 months only

b) Economic parameters (for 10 goats)

Technology option	Gross cost	Gross returns*	Net returns	BCR
TO1	16300	29400	13100	1.80
TO2	16800	41100	24300	2.45
TO3	16650	38400	21750	2.30

* Rs.300/Kg of live weight

Description of the results

The treatments were imposed properly as per the directions and results were observed. The fecal egg count has been done by NIF master technique and expressed in terms of eggs per gram (EPG). There was a considerable reduction in egg count on 7th day itself and it almost vanished (8) in the lambs administered with NIF formulation tablets. It was followed by EVM treatment prescribed by TANUVAS as there was 148 and 13g of dung on 7th and 21st day respectively. Mortality of lambs was also less (2%) in the case of NIF and EVM formulation and it was 10% in the lambs untreated. Body weight observed at 6th month reveals that the NIF formulation tablets administered lambs recorded the highest weight of 13.7 Kg and it was followed by EM formulation (12.8 Kg). The highest BCR also obtained in TO3 (2.45)

Constraints faced: Difficulties in collection of herbals

9. Feedback of the farmers involved:

Both the herbal formulations are good to safeguard the lambs. Difficulty and/or non-availability in collection of herbals and preparation of bolus form.

10. Feed back to the scientist who developed the technology:

- NIF formulation in the forms of tablets is very effective in endoparasite control in goat.
- TANUVAS can also make the formulation like tablet for the easiness of farmers.

3. d. FRONTLINE DEMONSTRATION

a. Follow-up of FLDs implemented during previous years

S. No	Crop/ Enterprise	Thematic Area*	Technology demonstrated	Details of popularization methods suggested to the Extension system	Horizontal spread of technology		
					No. of villages	No. of farmers	Area in ha.
1	Paddy	Mechanization	Mechanization in Paddy 2012-13	News paper coverage Radio Talk Group Meetings	12	2643	1058
2	Sugarcane	ICM	Demonstration of SSI in sugarcane 2012-13	Field day Exposure visit News paper coverage	8	246	168
3	Sesame	Varietal Introduction & ICM	Demonstration of TMV 7 in Sesame with ICM practices 2013-14	Field day News paper coverage Radio Talk Extension literature	11	76	36
4	Black gram	Varietal Introduction	Demonstration of Blackgram VBN 6 with ICM practices 2013- 14	Field day News paper coverage Seed production Extension literature	29	268	108
5	Drum stick	ICM	Demonstration of ICM in Drum stick 2013-14	Field day Exposure visit Group meeting News paper coverage	12	184	90
6	Tuberose	Varietal Introduction	Demonstration of IIHR Prajwal variety of tuberose	Field day Zonal monthly meeting Grievance day Radio talk Newspaper coverage	16	80	32
7	Fodder	Varietal Introduction	Demonstration of Mixed fodder 2014-15	Exposure visit Radio talk Seed production	28	240	48
8	Paddy	Varietal Introduction	Demonstration of TNAU Rice ADT 50 variety 2015-16	Field day Exposure visit	17	204	81

				Group meeting News paper coverage			
9	Groundnut	Mechanization	Mechanized Groundnut cultivation 2015-16	Exposure visit Demonstration Field day Newspaper coverage	12	1024	820
10	Sesame	Varietal Introduction	Integrated Crop Management with Demonstration of Sesame VRI (Sv)2 2015-16	Field day Newspaper coverage Grievance day Zonal Monthly Meeting	7	35	24
11	Cashew	IPM	Demonstration of stem borer management in cashew 2015-16	Exposure visit Demonstration Field day Newspaper coverage	12	120	146
12	Paddy	ICM	Demonstration of Paddy variety CO (R) 51 with ICM practices 2016-17	Field day Newspaper coverage Radio talk	5	50	20
13	Chilli	Varietal Introduction	Demonstration of Chilli hybrid CO(Ch)1 with ICM practices 2016-17	Method demonstration News paper coverage Group Meeting	3	28	15
14	Cashew	Intercrop	Demonstration of Black gram as intercrop in Cashew Gardens 2016-17	Exposure visit Method demonstration Grivence day Newspaper coverage	16	240	110
15	Fodder	Varietal Introduction	Demonstration of multi cut fodder sorghum CO (FS) 31 2017-18	Field visit Seed production News paper coverage Radio talk	20	200	45
16	Maize	Mechanization	Mechanized Maize cultivation 2017-18	Field day Exposure visit News paper coverage	8	146	105
17	Paddy	Varietal introduction and ICM	Demonstration of Paddy CO 52 variety for yield and income potential - 2017-18	Field day Zonal monthly meeting Grievance day	6	300	120

* Thematic areas as given in Table 3.1 (A1 and A2)

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Source of funds	Area (ha)		No. of farmers/demo		
						Proposed	Actual	SC/ST	Others	Total
1	Paddy	Varietal introduction & ICM	Demonstration of ICM in Direct Sown Paddy	Rabi,2018	ICAR	2	2	2	3	5
2	Paddy	Varietal introduction & ICM	Demonstration of Paddy CO (R) 52 variety for yield and income potential	Rabi,2018	ICAR	2	2	1	4	5
3	Bajra	Varietal introduction & ICM	Demonstration of Bajra CO 10 for yield and income potential	Kharif, 2018	ICAR	2	2	1	4	5
4	Barnyard millet	Varietal introduction & ICM	Demonstration of Barnyard millet (Kudiraivali) MDU 1	Rabi– Summer,2018	ICAR	2	2	--	5	5
5	Groundnut	IDM	Management of Leaf eating caterpillar and Tikka leaf spot in Groundnut	Rabi,2018	ICAR	2	2	1	4	5
6	Cotton	Intercrop	Demonstration of suitable inter crop (red gram) and border crop (Castor) variety in cotton	Kharif, 2018	ICAR	2	2	--	5	5
7	Sugarcane	Water conservation	Demonstration of Soil Moisture Indicator tool for scheduling of irrigation in Sugarcane	Kharif,2018	ICAR	4	4	2	8	10
8	Drumstick	ICM	Demonstration of off season production techniques & IPM in Annual Drumstick	Kharif,2018	ICAR	0.5	0.5	-	5	5
9	Cashew	Water conservation	Demonstration of Water Conservation, Pest & Disease Management towards doubling income from Cashewnut	Rabi,2018	ICAR	2.8	2.8	2	5	7
10	Brinjal	Waste to Wealth	Demonstration of Value Addition in Brinjal to convert waste into wealth	Rabi, 2018	ICAR	1 SHG group	1 SHG group	--	15	15
11	Taro	Varietal introduction & ICM	Introduction of Taro (<i>Colocasia esculenta</i>) in Thirumanur block	Rabi,2018	ICAR	0.3	0.3	--	3	3
12	Cowpea	Varietal introduction & ICM	Demonstration of fodder Cowpea Co 9	Rabi,2018	ICAR	2	2	1	4	5
13	Mixed fodder	Varietal introduction & ICM	Demonstration of mixed fodder unit for the steady supply of Planting materials	Rabi,2018	ICAR	2	2	-	5	5

- b. Details of FLDs implemented during the current year (Information is to be furnished in the following **three tables** for **each category** i.e. **cereals, horticultural crops, oilseeds, pulses, cotton and commercial crops.**)

Details of farming situation

Crop	Season	Farming situation (RF/Irrigated)	Soil type	Status of soil			Previous crop	Sowing date	Harvest date	Seasonal rainfall (mm)	No. of rainy days
				N	P	K					
Paddy	Rabi,2018	Irrigated	Clay loamy	205	28	124	Sesame	30.08.2019	10.01.2019	470.2	23
Paddy	Rabi,2018	Irrigated	Clay loamy	234	34	132	Paddy	03.08.2019	23.01.2019	470.2	23
Bajra	Kharif, 2018	Rainfed	Red	223	42	131	Groundnut	02.07.2019	2.10.2018	470.2	23
Barnyard millet	Rabi– Summer, 2018	Rainfed	Clay loamy	106	17	95	Paddy	30.04.2019	---	--	---
Groundnut	Rabi,2018	Irrigated	Red	212	38	113	Maize	21.09.2019	30.03.2019	754.3	31
Cotton	Kharif, 2018	Rainfed	Sandy clay loam	242	47	105	Cotton	06.08.2018	22.01.2019	617.5	32
Sugarcane	Kharif,2018	Irrigated	Clay loamy	213	51	126	Sugarcane	10.06.2018	22.03.2019	564.2	29
Drumstick	Kharif,2018	Irrigated	Red	168	38	125	Groundnut	13.06.2018	---	470.2	23
Cashew	Rabi,2018	Rainfed	Red	210	24	162	Cashew	---	18.02.2019	468.3	27
Brinjal	Rabi, 2018	Irrigated	Sandy clay loam	234	26	139	Groundnut	---	12.09.2018	470.2	23
Taro	Rabi,2018	Irrigated	Clay loamy	222	39	134	Banana	13.09.2018	--	238.4	19
Cowpea	Rabi,2018	Irrigated	Red	215	27	121	Maize	12.09.2018	22.01.2019	436.7	27
Mixed fodder	Rabi,2018	Irrigated	Red	18	32	131	Maize	19.09.2018	02.01.2019	445.8	30

Technical Feedback on the demonstrated technologies

S. No	Feed Back
1	ICM practices in paddy results in increased productivity and reduced cost of cultivation
2	CO® 52 is best suited for Ariyalur condition as it is resistant to disease like blast and leaf spot
3	There is the lesser number of incidence in false smut disease, long earheads
4	---
5	The technologies work well for leaf eating caterpillar management. But tikka leaf spot occurs at later stages
6	Inter crop and Border crop highly helped in minimizing pests in cotton crop.
7	Soil Moisture indicator tool is the ideal technology
8	Under off season production technology in drum stick, the flowering comes during Nov-Dec. Due to the continuous rainfall and wind almost all flower shed and no fruit set
9	Taking of staggered trenches in cashew gardens facilitates moisture retention and thereby enhanced flowering and fruitset
10	The scientific and hygienic drying of waste brinjal fruits helps in good appearance of dried product and increased shelf life.
11	Better growth and development observed yield data yet to be recorded
12	Fodder cowpea CO 9 is the good biomass yield to cattle
13	Mixed fodder unit provides steady supply of balanced nutrients to the cattle

Farmers' reactions on specific technologies

S. No	Feed Back
1	ICM practices gave more yield than our practices
2	CO (R) 52 is superior than the other varieties as its yield and income is high
3	We could get more yield but market preference is less compared to local varieties
4	---
5	Some more optimum technologies are required for Tikka leaf spot management in Groundnut
6	The new variety introduced in intercrop Redgram (LRG 52) and border crop Castor (YRCH2) performed very well and gave additional income
7	Using soil moisture indicator could able to increase the irrigation interval and save water
8	The off season production technology is not suitable as all the flower and fruits are fallen away by rain
9	Effectively could control pests and diseases in Cashewnut
10	Good technology to make the waste Brinjal fruits in to income generating activity
11	Expecting good yield and income
12	Increased milk production is realized from the milch animals by feeding fodder cowpea
13	The cattle health and production could be steadily maintained by mixed fodder area

Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Field days	9	12.09.2018 02.10.2018 02.01.2019 10.01.2019 22.01.2019 23.01.2019 18.02.2019 22.03.2019 30.03.2019	318	--
2	Farmers Training	5	28.07.2018 10.08.2018 18.08.2018 14.11.2018 04.12.2018	157	----
3	Media coverage	--	--	--	--
4	Training for extension functionaries	1	11.09.2018	15	--

Performance of Frontline demonstrations

Frontline demonstrations on crops

[illegible]

[illegible]

Crop	Thematic Area	technology demonstrated	Name of the Variety/ Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Domo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
							High	Low	Average										
Taro	Varietal introduction & ICM	Introduction of Taro (<i>Colocasia esculenta</i>) in Thirumanur block	Local	-	3	0.3	Under progress												
Fruits																			
Cashew	Water conservation	Demonstration of Water Conservation, Pest & Disease Management towards doubling income from Cashewnut	VRI 3	VRI 3	7	2.8	7.34	5.96	6.65	5.98	11.20	31450	66500	35050	2.11	30850	59800	28950	1.93
Plantation crops																			
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Spices and condiments																			
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Flowers																			
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fodder																			
Cowpea	Varietal introduction & ICM	Demonstration of fodder Cowpea Co 9	Co 9	Local	5	2	1.50	1.28	1.39	1.12	24	26350	41700	15350	1.58	25800	33600	7800	1.3

Crop	Thematic Area	technology demonstrated	Name of the Variety/ Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				%	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
			Domo	Check			Demo			Check		Increase in yield	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return
							High	Low	Average										
Mixed fodder	Varietal introduction & ICM	Demonstration of mixed fodder unit for the steady supply of Planting materials	Co (CN)5 Co(Fs) 31 Velimasal Agathi Subapul Cowpea	Sorghum	5	2	12.00	10.80	11.40	8.50	34.1	36400	114000	77600	3.1	30100	85000	54900	2.82

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

FLD on Livestock

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No.of Units (Animal/ Poultry/ Birds, etc)	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.)				Economics of check (Rs.)			
					Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Cattle																	
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Buffalo																	
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dairy																	
--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Poultry																	
Poultry	Scientific Disease Management	Demonstration on Ethno veterinary garden (EV garden) aiming at health of Poultry Birds and Animals	5	10 birds	Ranikhet disease recovery		216%	Herbal Yield									
					95%	30%		14 kg/2mont h/5cents	---								

[illegible]

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

FLD on Fisheries

Category	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of units	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.)				Economics of check (Rs.)			
					Demonstration	Check		Demonstration	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Fish																	
	Varietal introduction	Demonstration of Intensive culture of GIFT tilapia in freshwater ponds	2	2	Weight gain - 850g	Weight gain - 930g	-9.5	Yield/ac - 6.8 t	Yield/ac - 3.72t	1,65,000	4,76,000	3,11,000	2.9	1,45,000	3,72,000	2,27,000	2.5
								Stocking density - 8000/ac	Stocking density - 4000/ac								

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

FLD on Other enterprises

[illegible]

[illegible]

FLD on Women Empowerment

Category	Name of technology	No. of demonstrations	Name of observations	Demonstration	Check
--	--	--	--	--	--

FLD on Farm Implements and Machinery

[illegible]

FLD on Other Enterprise: Kitchen Gardening

[illegible]

FLD on Demonstration details on crop hybrids *(Details of Hybrid FLDs implemented during 2018-19)*

[illegible]

Pulse crop													
--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cereal crop													
--	--	--	--	--	--	--	--	--	--	--	--	--	--
Vegetable crop													
--	--	--	--	--	--	--	--	--	--	--	--	--	--
Fruit crop													
--	--	--	--	--	--	--	--	--	--	--	--	--	--
Other (specify)													
Cotton	Demonstration of suitable inter crop (red gram) and border crop (Castor) variety in cotton	RCH II	5	2	25.45	22.05	23.75	19.20	23.69	63750	141250	77480	2.21

FLDs conducted with the funding of other sources including CFLD/ATMA/NABARD/other ICAR institutes etc

Crop	Source of fund	Thematic Area	technology demonstrated	Name of the Variety/ Hybrid		No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
				Domo	Check			Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
								High	Low	Average										
Blackgram		Varietal Introduction &ICM	Demonstration of Blakgram VBN6 with ICM practices	VBN 6	T 9	25	10	7.9	6.5	7.1	3.9	82.05	31386	93546	62160	2.980501	19500	24560	5060	1.259487
Groundnut		Varietal Introduction &ICM	Demonstration of Groundnut VRI 8, Dharani with ICM practices	GJG 7	VRI 2	75	30	17.65	12	15.81	13	21.61	37423	91754	54331	2.45	38,960	62,586	23,626	1.61

FLD on Livestock

[illegible]

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

FLD on Fisheries

[illegible]

* Economics to be worked out based total cost of production per unit area and not on critical inputs alone.

** BCR= GROSS RETURN/GROSS COST

FLD on Other enterprises

[illegible]

FLD on Women Empowerment

Category	Name of technology	No. of demonstrations	Name of observations	Demonstration	Check
-	-	-	-	-	--

FLD on Farm Implements and Machinery

[illegible]

[illegible]

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Others (pl specify)	-	-	-	-	-	-	-	-	-	-
Total	2	26	16	42	1	0	1	27	16	43
VIII Fisheries										
Integrated fish farming	-	-	-	-	-	-	-	-	-	-
Carp breeding and hatchery management	-	-	-	-	-	-	-	-	-	-
Carp fry and fingerling rearing	-	-	-	-	-	-	-	-	-	-
Composite fish culture	-	-	-	-	-	-	-	-	-	-
Hatchery management and culture of freshwater prawn	-	-	-	-	-	-	-	-	-	-
Breeding and culture of ornamental fishes	-	-	-	-	-	-	-	-	-	-
Portable plastic carp hatchery	-	-	-	-	-	-	-	-	-	-
Pen culture of fish and prawn	-	-	-	-	-	-	-	-	-	-
Shrimp farming	-	-	-	-	-	-	-	-	-	-
Edible oyster farming										
Pearl culture	-	-	-	-	-	-	-	-	-	-
Fish processing and value addition	-	-	-	-	-	-	-	-	-	-
Others (pl specify)	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-
IX Production of Inputs at site										
Seed Production	-	-	-	-	-	-	-	-	-	-
Planting material production	-	-	-	-	-	-	-	-	-	-
Bio-agents production	-	-	-	-	-	-	-	-	-	-
Bio-pesticides production	-	-	-	-	-	-	-	-	-	-
Bio-fertilizer production	-	-	-	-	-	-	-	-	-	-
Vermi-compost production	-	-	-	-	-	-	-	-	-	-
Organic manures production	2	89	29	118	1	0	1	90	29	119
Production of fry and fingerlings	-	-	-	-	-	-	-	-	-	-
Production of Bee-colonies and wax sheets	-	-	-	-	-	-	-	-	-	-
Small tools and implements	-	-	-	-	-	-	-	-	-	-
Production of livestock feed and fodder	-	-	-	-	-	-	-	-	-	-
Production of Fish feed	-	-	-	-	-	-	-	-	-	-
Mushroom Production	2	37	3	40	-	-	-	37	3	40

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
value addition										
Others (pl specify)	-	-	-	-	-	-	-	-	-	-
Total (g)	-	-	-	-	-	-	-	-	-	-
GT (a-g)	10	177	51	228	-	-	-	177	51	177
III Soil Health and Fertility Management										
Soil fertility management	1	14	8	22	-	-	-	14	8	22
Integrated water management	-	-	-	-	-	-	-	-	-	-
Integrated Nutrient Management	-	-	-	-	-	-	-	-	-	-
Production and use of organic inputs	-	-	-	-	-	-	-	-	-	-
Management of Problematic soils	-	-	-	-	-	-	-	-	-	-
Micro nutrient deficiency in crops	-	-	-	-	-	-	-	-	-	-
Nutrient Use Efficiency	-	-	-	-	-	-	-	-	-	-
Balance use of fertilizers	-	-	-	-	-	-	-	-	-	-
Soil and Water Testing	-	-	-	-	-	-	-	-	-	-
Others (pl specify)	-	-	-	-	-	-	-	-	-	-
Total	1	14	8	22	-	-	-	14	8	22
IV Livestock Production and Management										
Dairy Management	-	-	-	-	-	-	-	-	-	-
Poultry Management	-	-	-	-	-	-	-	-	-	-
Piggery Management	-	-	-	-	-	-	-	-	-	-
Rabbit Management	-	-	-	-	-	-	-	-	-	-
Animal Nutrition Management	1	35	0	35	-	-	-	35	0	35
Disease Management	-	-	-	-	-	-	-	-	-	-
Feed & fodder technology	-	-	-	-	-	-	-	-	-	-
Production of quality animal products	-	-	-	-	-	-	-	-	-	-
Others (pl specify)	-	-	-	-	-	-	-	-	-	-
Total	1	35	0	35	-	-	-	35	0	35

[illegible]

Nursery management	-	-	-	-	-	-	-	-	-	-
Integrated Farming Systems	-	-	-	-	-	-	-	-	-	-
Others (pl specify)	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-
GRAND TOTAL	38	758	403	1161	20	36	56	778	439	1217

Farmers' Training including sponsored training programmes – CONSOLIDATED (On + Off campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Weed Management	-	-	-	-	-	-	-	-	-	-
Resource Conservation Technologies	-	-	-	-	-	-	-	-	-	-
Cropping Systems	1	89	17	106	4	-	4	93	17	110
Crop Diversification										
Integrated Farming	1	24	6	30	-	-	-	24	6	30
Micro Irrigation/irrigation	2	74	4	78	4	0	4	78	4	82
Seed production	1	16	13	29	-	-	-	16	13	29
Nursery management										
Integrated Crop Management	7	197	51	148	4	2	6	201	53	254
Soil & water conservation	-	-	-	-	-	-	-	-	-	-
Integrated nutrient management	-	-	-	-	-	-	-	-	-	-
Production of organic inputs	2	89	29	118	1	-	1	90	29	119
Others (Innovative technology for Doubling the farmers income)	1	25	-	25	-	-	-	25	-	25
Total	15	514	120	534	13	2	15	527	122	649
II Horticulture										
a) Vegetable Crops										
Production of low value and high volume crops	6	133	53	186	5	11	16	138	64	202
Off-season vegetables	-	-	-	-	-	-	-	-	-	-
Nursery raising	-	-	-	-	-	-	-	-	-	-
Exotic vegetables	-	-	-	-	-	-	-	-	-	-
Export potential vegetables	-	-	-	-	-	-	-	-	-	-
Grading and standardization	-	-	-	-	-	-	-	-	-	-
Protective cultivation	-	-	-	-	-	-	-	-	-	-
Others (pl specify)	-	-	-	-	-	-	-	-	-	-
Total (a)	6	133	53	186	5	11	16	138	64	202

[illegible]

[illegible]

IX Production of Inputs at site	-	-	-	-	-	-	-	-	-	-
Seed Production	-	-	-	-	-	-	-	-	-	-
Planting material production	-	-	-	-	-	-	-	-	-	-
Bio-agents production	-	-	-	-	-	-	-	-	-	-
Bio-pesticides production	-	-	-	-	-	-	-	-	-	-
Bio-fertilizer production	-	-	-	-	-	-	-	-	-	-
Vermi-compost production	2	42	31	73	11	8	19	53	39	92
Organic manures production	4	128	56	184	9	5	14	137	61	198
Production of fry and fingerlings	-	-	-	-	-	-	-	-	-	-
Production of Bee-colonies and wax sheets	-	-	-	-	-	-	-	-	-	-
Small tools and implements	-	-	-	-	-	-	-	-	-	-
Production of livestock feed and fodder	-	-	-	-	-	-	-	-	-	-
Production of Fish feed	-	-	-	-	-	-	-	-	-	-
Mushroom Production	3	39	30	69	-	-	-	39	30	69
Apiculture										
Others (pl specify)										
Total	9	209	117	326	20	13	33	229	130	359
X Capacity Building and Group Dynamics										
Leadership development	1	24	-	24	-	-	-	24	-	24
Group dynamics	3	154	39	193	9	14	23	163	53	216
Formation and Management of SHGs	2	29	2	31	1	-	1	30	2	32
Mobilization of social capital	-	-	-	-	-	-	-	-	-	-
Entrepreneurial development of farmers/youths	-	-	-	-	-	-	-	-	-	-
WTO and IPR issues										
Others (Marketing)	2	62	1	63	-	-	-	62	1	63
Others (Information and Communication Technology)	1	29	8	37	-	-	-	29	8	37
Capacity building for FIG	1	11	-	11	-	-	-	11	-	11
Total	10	309	50	359	10	14	24	319	64	383

Dairying	-	-	-	-	-	-	-	-	-	-
Sheep and goat rearing	-	-	-	-	-	-	-	-	-	-
Quail farming	-	-	-	-	-	-	-	-	-	-
Piggery	-	-	-	-	-	-	-	-	-	-
Rabbit farming	-	-	-	-	-	-	-	-	-	-
Poultry production	2	17	32	49	2	1	3	19	33	52
Ornamental fisheries	-	-	-	-	-	-	-	-	-	-
Composite fish culture	-	-	-	-	-	-	-	-	-	-
Freshwater prawn culture	-	-	-	-	-	-	-	-	-	-
Shrimp farming	-	-	-	-	-	-	-	-	-	-
Pearl culture	-	-	-	-	-	-	-	-	-	-
Cold water fisheries	-	-	-	-	-	-	-	-	-	-
Fish harvest and processing technology	-	-	-	-	-	-	-	-	-	-
Fry and fingerling rearing	-	-	-	-	-	-	-	-	-	-
Any other (Marketing Strategies)	2	61	3	64	2	-	2	63	3	66
TOTAL	11	205	62	267	21	9	30	226	71	297

Training programmes for Extension Personnel including sponsored training programmes (On campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	1	21	3	24	2	1	3	23	4	27
Integrated Pest Management	3	39	13	52	6	3	9	45	16	61
Integrated Nutrient management	-	-	-	-	-	-	-	-	-	-
Rejuvenation of old orchards	-	-	-	-	-	-	-	-	-	-
Protected cultivation technology	-	-	-	-	-	-	-	-	-	-
Production and use of organic inputs	-	-	-	-	-	-	-	-	-	-
Care and maintenance of farm machinery and implements	-	-	-	-	-	-	-	-	-	-
Gender mainstreaming through SHGs	-	-	-	-	-	-	-	-	-	-
Formation and Management of SHGs	-	-	-	-	-	-	-	-	-	-
Women and Child care	-	-	-	-	-	-	-	-	-	-
Low cost and nutrient efficient diet designing	-	-	-	-	-	-	-	-	-	-
Group Dynamics and farmers organization	-	-	-	-	-	-	-	-	-	-
Information networking among farmers	-	-	-	-	-	-	-	-	-	-
Capacity building for ICT application	-	-	-	-	-	-	-	-	-	-
Management in farm animals	-	-	-	-	-	-	-	-	-	-
Livestock feed and fodder production	-	-	-	-	-	-	-	-	-	-
Household food security	-	-	-	-	-	-	-	-	-	-
Any other (Management of FAW in Maize)	2	26	7	33	3	2	5	29	9	38
Strategies for Doubling Farmers Income	1	12	1	13	-	-	-	12	1	13
TOTAL	7	98	24	122	11	6	17	109	30	139

Training programmes for Extension Personnel including sponsored training programmes (off campus)

[illegible]

Low cost and nutrient efficient diet designing	-	-	-	-	-	-	-	-	-	-
Group Dynamics and farmers organization	-	-	-	-	-	-	-	-	-	-
Information networking among farmers	-	-	-	-	-	-	-	-	-	-
Capacity building for ICT application	-	-	-	-	-	-	-	-	-	-
Management in farm animals	-	-	-	-	-	-	-	-	-	-
Livestock feed and fodder production	-	-	-	-	-	-	-	-	-	-
Household food security	-	-	-	-	-	-	-	-	-	-
Any other (pl.specify)	-	-	-	-	-	-	-	-	-	-
TOTAL	6	71	14	85	6	3	9	77	17	94

Training programmes for Extension Personnel including sponsored training programmes – CONSOLIDATED (On + Off campus)

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Productivity enhancement in field crops	3	45	9	54	6	2	8	51	11	62
Integrated Pest Management	6	71	17	88	8	5	13	79	24	103
Integrated Nutrient management	-	-	-	-	-	-	-	-	-	-
Rejuvenation of old orchards	-	-	-	-	-	-	-	-	-	-
Protected cultivation technology	-	-	-	-	-	-	-	-	-	-
Production and use of organic inputs	-	-	-	-	-	-	-	-	-	-
Care and maintenance of farm machinery and implements	1	15	4	19	-	-	-	15	4	19
Gender mainstreaming through SHGs	-	-	-	-	-	-	-	-	-	-
Formation and Management of SHGs	-	-	-	-	-	-	-	-	-	-
Women and Child care	-	-	-	-	-	-	-	-	-	-
Low cost and nutrient efficient diet designing	-	-	-	-	-	-	-	-	-	-
Group Dynamics and farmers organization	-	-	-	-	-	-	-	-	-	-
Information networking among farmers	-	-	-	-	-	-	-	-	-	-
Capacity building for ICT application	-	-	-	-	-	-	-	-	-	-
Management in farm animals	-	-	-	-	-	-	-	-	-	-
Livestock feed and fodder production	-	-	-	-	-	-	-	-	-	-
Household food security	-	-	-	-	-	-	-	-	-	-
Any other (Management of FAW in Maize)	2	26	7	33	3	2	5	29	9	38
Strategies for Doubling Farmers Income	1	12	1	13	-	-	-	12	1	13
TOTAL	13	169	38	207	17	9	26	186	47	233

Sponsored training programmes

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Increasing production and productivity of crops	1	34	4	38	3	-	3	37	4	41
Commercial production of vegetables	-	-	-	-	-	-	-	-	-	-
Production and value addition										
Fruit Plants	1	54	22	76	5	11	16	59	33	92
Ornamental plants	-	-	-	-	-	-	-	-	-	-
Spices crops	-	-	-	-	-	-	-	-	-	-
Soil health and fertility management	-	-	-	-	-	-	-	-	-	-
Production of Inputs at site	2	57	2	59	3	-	3	60	2	62
Methods of protective cultivation	-	-	-	-	-	-	-	-	-	-
Others (IPM)	3	107	34	141	-	-	-	107	34	141
Mushroom Cultivation	1	17	3	20	-	-	-	17	3	20
IFS	1	24	6	30	-	-	-	24	6	30
Total	9	293	71	364	11	11	22	304	82	386
Post harvest technology and value addition										
Processing and value addition	-	-	-	-	-	-	-	-	-	-
Others (pl. specify)	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-
Farm machinery										
Farm machinery, tools and implements	2	36	4	40	-	-	-	36	4	40
Others (Maintenance of Micro Irrigation System)	1	57	12	69	-	-	-	57	12	69
Total	3	93	16	109	-	-	-	93	16	109
Livestock and fisheries										
Livestock production and management	1	1	34	35	-	-	-	1	34	35
Animal Nutrition Management	-	-	-	-	-	-	-	-	-	-
Animal Disease Management	-	-	-	-	-	-	-	-	-	-
Fisheries Nutrition	-	-	-	-	-	-	-	-	-	-
Fisheries Management	-	-	-	-	-	-	-	-	-	-
Others (pl. specify)	-	-	-	-	-	-	-	-	-	-
Total	1	1	34	35	-	-	-	1	34	35
Home Science										
Household nutritional security	-	-	-	-	-	-	-	-	-	-
Economic empowerment of women	-	-	-	-	-	-	-	-	-	-
Drudgery reduction of women	-	-	-	-	-	-	-	-	-	-
Others (pl. specify)	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-
Agricultural Extension										
CapacityBuilding and Group Dynamics	1	40	-	40	-	-	-	40	-	40
Others (pl. specify)										
Total	1	40	-	40	-	-	-	40	-	40
GRAND TOTAL	14	427	121	548	11	11	22	438	132	570

Name of sponsoring agencies involved

- NABARD, Ariyalur
- Directorate of Cashew and Cocoa Development, Kochi
- Rural Self Employment Training Institute, Ariyalur
- National Skill Development Corporation
- ATMA
- National Commission for Women
- Friends of Coconut Tree
- Department of Agriculture Engineering, Ariyalur

Details of vocational training programmes carried out by KVKs for rural youth

Area of training	No. of Courses	No. of Participants								
		General			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Crop production and management										
Commercial floriculture	-	-	-	-	-	-	-	-	-	-
Commercial fruit production	-	-	-	-	-	-	-	-	-	-
Commercial vegetable production	-	-	-	-	-	-	-	-	-	-
Integrated crop management	-	-	-	-	-	-	-	-	-	-
Organic farming	-	-	-	-	-	-	-	-	-	-
Others (pl. specify)	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-
Post harvest technology and value addition										
Value addition	1	-	30	30	-	-	-	-	30	30
Others (pl. specify)										
Total	1	-	30	30	-	-	-	-	30	30
Livestock and fisheries										
Dairy farming	-	-	-	-	-	-	-	-	-	-
Composite fish culture	-	-	-	-	-	-	-	-	-	-
Sheep and goat rearing	-	-	-	-	-	-	-	-	-	-
Piggery	-	-	-	-	-	-	-	-	-	-
Poultry farming	1	--	35	35	-	-	-	-	35	35
Others (pl. specify)										
Total	1	--	35	35	-	-	-	-	35	35
Income generation activities										
Vermicomposting	-	-	-	-	-	-	-	-	-	-
Production of bio-agents, bio-pesticides,	-	-	-	-	-	-	-	-	-	-
bio-fertilizers etc.	-	-	-	-	-	-	-	-	-	-
Repair and maintenance of farm machinery	-	-	-	-	-	-	-	-	-	-
and implements	-	-	-	-	-	-	-	-	-	-
Rural Crafts	-	-	-	-	-	-	-	-	-	-
Seed production	-	-	-	-	-	-	-	-	-	-
Sericulture	-	-	-	-	-	-	-	-	-	-
Mushroom cultivation	1	13	8	21	-	2	2	13	10	23
Nursery, grafting etc.	-	-	-	-	-	-	-	-	-	-
Tailoring, stitching, embroidery, dying etc.	-	-	-	-	-	-	-	-	-	-
Agril. para-workers, para-vet training	-	-	-	-	-	-	-	-	-	-
Others (pl. specify)	-	-	-	-	-	-	-	-	-	-
Total	1	13	8	21	-	2	2	13	10	23
Agricultural Extension										
Capacity building and group dynamics	-	-	-	-	-	-	-	-	-	-
Others (pl. specify)	-	-	-	-	-	-	-	-	-	-
Total	-	-	-	-	-	-	-	-	-	-
Grand Total	3	13	73	86	-	2	2	13	75	88

5. Extension Programmes

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	Total
Advisory Services	268	886	19	905
Diagnostic visits	49	521	14	535
Field Day	10	312	6	318
Group discussions	16	236	10	246
Kisan Mela	1	415	17	432
Film Show	12	196	7	203
Self -help groups	4	60	---	60
Exhibition	3	1892	8	1900
Scientists' visit to farmers field	12	64	12	76
Plant/animal health camps	5	2134	8	2142
Farm Science Club	9	180	2	182
Farmers' seminar/workshop	2	330	7	337
Method Demonstrations	15	95	6	101
Celebration of important days 1. Honey bee day 2. Education day 3. Parthenium Awareness Week 4. Vigilance Week 5. Swatchta Hi Sewa 6. Swatchta pakwada 7. Community Harmony Week 8. National productivity Week	8	1155	16	1171
Special day celebration 1. Mahila Kisan Diwas 2. Kisan Diwas 3. World Soil Health Day 4. National milk day	4	289	7	296
Exposure visits	5	170	5	175
Others (pl. specify)				0
PM Telecast	3	279	17	296
Field visit	182	1092	6	1098
Farmers visit to KVK	348	4177	26	4203
PRA	3	147	6	153
Technology week	5	512	12	524
Mobile Advisory services	720	720	18	738
Total	1684	15862	229	16091

Details of other extension programmes

Particulars	Number
Electronic Media (CD./DVD)	---
Extension Literature	9
News paper coverage	34
Popular articles	3
Radio Talks	21
TV Talks	3
Animal health camps (Number of animals treated)	3(3125)
Total	73

Messages sent

MOBILE ADVISORY SERVICES THROUGH MKISAN PORTAL

(While filling mobile advisory data, only fill numbers under 'Type of messages'. Please don't add any text)

No of registered farmers: 908

Types of Messages	Type of messages													
	Crop		Livestock		Weather		Marketing		Awareness		Other enterprise		Total	
	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers
Text only	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Voice only	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Voice & Text both	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Messages	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total farmers Benefitted	---	---	---	---	---	---	---	---	---	---	---	---	---	---

MOBILE ADVISORY SERVICES THROUGH OTHERS

(While filling mobile advisory data, only fill numbers under 'Type of messages'. Please don't add any text)

No of registered farmers:1510

Types of Messages	Type of messages													
	Crop		Livestock		Weather		Marketing		Awareness		Other enterprise		Total	
	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers	No of messages	No of farmers
Text only	8	686	7	632	5	518	2	312	5	832	---	---	27	2980
Voice only	10	967	8	899	4	617	3	572	4	802	---	---	29	3857
Voice & Text both	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Messages	18	---	15	---	9	---	5	---	9	---	0	---	56	---
Total farmers Benefitted		1653		1531		1135		884		1634		0		6837

6. DETAILS OF TECHNOLOGY WEEK CELEBRATIONS

Types of Activities	No. of Activities	Number of Participants	Related crop/livestock technology
Gosthies			<ul style="list-style-type: none"> Cultivation aspects in field crops & horticultural crops through Organic way and organic input production Cashew Cultivation Techniques and Schemes under Horticulture department Soil Health Management through Organic Way Ethno veterinary practices in livestock Roof top gardening Organic farming, organic certification and market strategies
Lectures organised	10	560	
Exhibition	5		
Film show	5		
Fair			
Farm Visit	5		
Diagnostic Practicals	2		
Distribution of Literature (No.)	560		
Distribution of Seed (q)	--		
Distribution of Planting materials (No.)	--		
Bio Product distribution (Kg)	--		
Bio Fertilizers (q)	--		
Distribution of fingerlings	--		
Distribution of Livestock specimen (No.)	--		
Total number of farmers visited the technology week	560		

7. PRODUCTION OF SEED/PLANTING MATERIAL AND BIO-PRODUCTS

Production of seeds by the KVKs

Enterprise	Name of crop	Variety	Seed produced		Seed supplied to farmers						Seed supplied to other agencies	
			Quantity (q)	Value (Rs)	Free seed			Priced seed			Quantity (q)	Value (Rs)
					Qty (q)	No of farmers	Value (Rs)	Qty (q)	No of farmers	Value (Rs)		
OIL SEEDS	Groundnut	VR18	3.31	26520	--	--	--	3.31	252	26520	--	--
	Total Oil Seeds		3.31	26520	--	--	--	3.31	252	26520	--	--
PULSES	Black gram	VB N 6	2.20	30800	--	--	--	2.20	152	30800	--	--
	Total Pulses		2.20	30800	--	--	--	2.20	152	30800	--	--
FODDER seeds	Desmanthus/Hedge Lucerne	-	0.40	23200	--	--	--	0.36	72	20880	--	--
	COFS 31	-	1	50000	--	--	--	0.84	155	42125	--	--
	COFS 29	-	1	50000	--	--	--	0.86	170	43000	--	--
	Total Fodder		2.40	123200	--	--	--	2.06	397	106005	--	--
	Grand Total of Seeds		7.91	180520	--	--	--	7.57	801	163325	--	--

Production of planting materials by the KVKs (seedlings, cuttings. Slips in numbers)

Enterprise	Name of crop	Variety	Planting material produced		Planting material supplied to farmers						Planting material supplied to other agencies	
			Qty (Nos)	Value (Rs)	Free supply			Priced			Qty (Nos)	Value (Rs)
					Qty (Nos)	No of farmers	Value (Rs)	Quantity (Nos)	No of farmers	Value (Rs)		
FRUITS grafts seedlings and	Mango	Sendura	300	15000	--	--	--	267	44	13350	--	--
	Guava	L-49	3000	150000	--	--	--	2504	42	100100	--	--
	Jack fruit	PKM 1	100	4000	--	--	--	51	24	2040	--	--
	Banana suckers	Saba	1200	12000	--	--	--	1180	268	11800	--	--
	Total Fruit planting materials		5700	192000	--	--	--	5089	578	138160	--	--

[illegible]

Nemato des	<i>Psuedomonas</i>	--	400	40000	--	--	--	261	96	26100	--	--
	Total bio-pesticides	--	--	73500	--	--	--	454	150	45400	--	--
	Total bio-products	--	5262	338150	850	1	51000	3760.78	559	241980	--	--

Production of livestock materials

Category	Name of the livestock/fish/feed	Variety/im proved species name/Com mercial name (if any)	Production		Supplied to farmers						Supplied to other agencies	
			Qty (No)	Value (Rs)	Free distribution			Priced				
					Qty (No)	No of farmers	Value (Rs)	Qty (No)	No of farme rs	Value (Rs)	Qty (No)	Value (Rs)
Dairy cattle	Cow	--	7	210000	--	--	--	2	2	51000	--	--
	Total Dairy Cattle	--	7	210000	--	--	--	2	2	51000	--	--
Goat and Sheep	Goat	--	35	147000	--	--	--	9	9	89225	--	--
	Total goat and sheep	--	35	147000	--	--	--	9	9	89225	--	--
Poultry	Desi bird chicks	--	580	26074	--	--	--	580	49	26074	--	--
	Total poultry	--	580	26074	--	--	--	580	49	26074	--	--
	Grand Total Livestock and fishery	--	622	3,83,074	--	--	--	591	60	1,66,299	--	--

9. DETAILS OF SOIL, WATER AND PLANT ANALYSIS

Samples/SHC	No. of Samples		No. of Farmers	No. of Villages	Amount realized (Rs.)
	Using Mini Soil Testing Lab	Through Traditional Lab			
Soil samples	525	-	480	131	10,500
Soil Health Cards (SHC)	525	2037	2517	102	-

Samples	No. of Samples	No. of Farmers	No. of Villages	Amount realized (Rs.)
Water	176	176	83	1760
Plant	--	--	--	--
Manure	--	--	--	--
Others (pl. specify)	---	---	---	---
Total	176	176	83	1760

10. SCIENTIFIC ADVISORY COMMITTEE

Date of SAC meeting	Number of members attended
20.03.2019	19

Note: Proceedings of SAC meeting along with the list of participants is attached in Annexure-I

10. PUBLICATIONS

Publications in journals

S. No	Authors	Year	Title	Journal
--	--	--	--	--

Other publications

S.No	Item	Year	Authors	Title	Publisher
1	Books	2018-19	Dr.G.Alagukannan Y.Rajajoslin A.Rajkala M.Ashokkumar S.Shobana M.Thirumalaivasan	Empowering farm women through agricultural waste economic activity	ICAR – KVK,Ariyalur Dt.
		2018-19	Dr.G.Alagukannan Y.Rajajoslin A.Rajkala M.Ashokkumar S.Shobana M.Thirumalaivasan	Livestock management based on climate condition	ICAR – KVK,Ariyalur Dt
		2018-19	Dr.G.Alagukannan, Y.Raja joslin, A.Rajkala, Dr. M.Saravanan, M.Ashok kumar, S.Ilavarasan, S.Shobana, M.Thirumalaivasan	Cashew Production Technology	ICAR-KVK, Ariyalur Dt.
2	Book chapters / manuals	2018-19	Dr.G.Alagukannan A.Rajkala M.Thirumalaivasan	Importance & uses of Soil moisture Indicator	Naveena Velanmai
		2018-19	Dr.G.Alagukannan A.Rajkala	Success story on SSI in sugarcane	Valarum Valenmai
3	Training manuals	2018-19	M.Thirumalaivasan Dr.G.Alagukannan S.Shobana	A practical guide on Organic farming	ICAR-KVK, Ariyalur Dt. NSDC financial support
			M.Ashok Kumar, Dr.G.Alagukannan S.Shobana	A practical guide on Mushroom Cultivation	ICAR-KVK, Ariyalur Dt. NSDC financial support
4	Conference, proceeding papers, popular articles, Bulletins, Short communications	2018-19	A.Rajkala	Azolla cultivation	Dinamalar
		2018-19	Dr.G.Alagukannan	SRI in paddy	Dinathanthi
		2018-19	Dr.G.Alagukannan	Vermicompost production	DInakaran
		2018-19	Dr.G.Alagukannan Y.Rajajoslin A.Rajkala M.Ashokkumar S.Shobana M.Thirumalaivasan	Management of Fall Army worm	ICAR KVK, Ariyalur Dt.
5	Technical bulletin/ Folders				
	Leaflet	2018-19	S.Arivuselvi, A.Rajkala & Dr.G.Alagukannan	Collection of soil sample and its importance	ICAR-KVK, Ariyalur Dt.
	Leaf let	2018	A.Rajkala, Dr.G.Alagukannan	Cultivation Techniques in Blackgram	ICAR-KVK, Ariyalur Dt.

	Leaf let	2018	M.Thirumalaivasan, Dr.G.Alagukannan & A.Rajkala	Azolla Cultivation	ICAR-KVK, Ariyalur Dt.
	Folder	2018	Y.Raja joslin, Dr.G.Alagukannan & A.Rajkala	Hi –Tech Tuberose Cultivation	ICAR-KVK, Ariyalur Dt.
	Folder	2018	Dr.M.Saravanan, Dr.G.Alagukannan & A.Rajkala	Cultivation techniques in Groundnut	ICAR-KVK, Ariyalur Dt.
	Folder	2018	M.Ashok kumar, Dr.G.Alagukannan & A.Rajkala	Cultivation techniques in Maize	ICAR-KVK, Ariyalur Dt.
	Folder	2018	M.Ashok kumar & Dr.G.Alagukannan	IPM in Paddy	ICAR-KVK, Ariyalur Dt.
	Folder	2018	M.Ashok Kumar & Y.Raja Joslin	IPM in Cashew	ICAR-KVK, Ariyalur Dt.
	Folder	2018	Dr.M.Saravanan, Dr.G.Alagu Kannan	Cotton cultivation techniques	ICAR-KVK, Ariyalur Dt.
	Folder	2018	Dr.G.Alagukannan, Y.Raja joslin, A.Rajkala, Dr. M.Saravanan, M.Ashok kumar, S.Shobana, M.Thirumalaivasan, S.Arivuselvi	Doubling Farmers Income	ICAR-KVK, Ariyalur Dt.
	Phamlets	2018	Dr.G.Alagukannan, Y.Raja joslin, A.Rajkala, Dr. M.Saravanan, M.Ashok kumar, S.Shobana, M.Thirumalaivasan, S.Arivuselvi	Management of fall Army worm in maize	ICAR-KVK, Ariyalur Dt.
6	Others	---	---	---	---

Newsletter/Magazine

Name of News letter/Magazine	Frequency	No. of Copies printed for distribution
Seithi Malar	Quarterly once	500

2. Training/workshops/seminars etc details attended by KVK staff

Trainings attended in the relevant field of specialization (Mention Title, duration, Institution, location etc.)

Name of the staff	Title	Dates	Duration	Organized by
V.Ramani B.Vivekananthan	Public Financial Management System and Government e-Market place	18.07.18 to 19.07.18	2 days	TNAU, Coimbatore
Y.Raja Joslin	Orientation training programme on SVEP	12.07.18 to 16.07.18	5 days	Chattisgarh

Dr.GAlagukannan	Orientation training on Cluster Front Line Demonstration	28.08.18	1 day	TNAU, Coimbatore
S.Arivuselvi	Training on biogas technology for sustainable fuel and organic manure	17.09.18 to 20.09.18	4 days	TNAU, Coimbatore
Dr.G.Alagukannan	Annual Review Workshop	20.09.18 to 23.09.18	4 days	ICAR-ATARI, Hyderabad
M.Ashok Kumar M.Thirumalaivasan	ToT Training	25.09.2018 – 27.09.2018	3 days	PJTSAU, Hyderabad
R.Kiruthiga	Symposium on animals in disaster	26.09.18 to 27.09.18	2 days	Madras Veterinary College, Chennai
Y.Raj Joslin	Interactive workshop on Agroforestry	09.11.18	1 days	FC&RI, Mettupalayam
M.Thirumalaivasan	Popularizing tree outside forest	14.11.18 to 16.11.18	3 days	IFGTB, Coimbatore
M.Ashokkumar	Pesticide Application Techniques and Safety Measures	26.11.2018 to 30.11.2018	5 days	NIPHM, Hyderabad.
Dr.G.Alagukannan V.Ramani	PFMS training	07.01.19 to 08.01.19	2 days	TNAU, Coimbatore

11. DETAILS ON RAIN WATER HARVESTING STRUCTURE AND MICRO-IRRIGATION SYSTEM

Activities conducted				
No. of Training programmes	No. of Demonstrations	No. of plant materials produced	Visit by farmers (No.)	Visit by officials (No.)
--	--	--	--	--

12. INTERVENTIONS ON DISASTER MANAGEMENT/UNSEASONAL RAINFALL/HAILSTORM/COLD WAVES ETC

Introduction of alternate crops/ varieties

Crops/cultivars	Area (ha)	Extent of damage	Recovery of damage through KVK initiatives if any
---	---	---	---
Total			

Farmers-scientists interaction on livestock management

Animal health camps organised

Seed distribution in drought hit states

Large scale adoption of resource conservation technologies

Awareness campaign

[illegible]

13. Awards / Rewards by KVK and staff

Recognitions & Awards/Special attainments and Achievements of Practical Importance

Farmer Awards

- Mr.Nagarajan belongs to Kandirathittam mettuthuru village of Ariyalur district received **Best farmer award** for the year 2018 – 19 on 24.08.18 from Sugarcane Breeding Institute, ICAR, Coimbatore.
- Mrs. R.Rasathi belongs to Kayaralabath village of Ariyalur block received Award for High Paddy Yield **Best Women Entrepreneur for Backyard Poultry Rearing** from ICAR – KVK, Ariyalur on 15.10.2018 during Mahila Kisan Diwas Celebration.
- Mrs.R.Dhanalakshmi belongs to Karaipakkam village of Thirumanur block received **Best Women Entrepreneur for Goat Rearing** from ICAR – KVK, Ariyalur on 15.10.2018 during Mahila Kisan Diwas Celebration.
- Mrs.R.Meena belongs to Periyakrishnapuram village of Andimadam block received **Best Women Entrepreneur for Backyard Poultry Rearing** Award from ICAR – KVK, Ariyalur on 15.10.2018 during Mahila Kisan Diwas Celebration.
- Mrs. T.Santhi belongs to Kattur village of Ariyalur block received **Best IFS farmer Award** from ICAR – KVK, Ariyalur on 15.10.2018 during Mahila Kisan Diwas Celebration.
- Mrs. V.S.Revathi belongs to Keezhapalur village of Ariyalur block received **Best Hi Density Guava Cultivation Farmer Award** from ICAR – KVK, Ariyalur on 15.10.2018 during Mahila Kisan Diwas Celebration.

Recognitions & Awards (Team Award/individual)

Item of Recognition	Year	Awarding Organization National / International / Professional Society	Individual/ collaborative
Best Technology Disseminator	31.08.2018	ICAR – NRCB, Trichy	Senior Scientist and Head
Mahindra Samridhi Krishi Vigyan Kendra Samman	18.03.2019	Mahindra	KVK
Best Extension Personnel	15.10.2018	CREED Society	SMS (Agriculture Extension)
Best Technology Disseminator	03.12.2018	CREED Society	SMS (Horticulture)
Staff of the Decade	20.03.2019	CREED Society	SMS (Agriculture Extension)
Best Performer of the Year	20.03.2019	CREED Society	SMS (Plant Protection)
Heart of the KVK	20.03.2019	CREED Society	PA (Computer Programmer)
Young Achiever Award	20.03.2019	CREED Society	SMS (Home Science)

Special Attainments & Achievements of Practical Importance (patents, technologies, varieties, products, concepts, methodologies etc.)

Category	Title	Year	Individual/ Collaborative	Additional Details/Information
--	--	--	--	--

14. Details of sponsored projects /programmes implemented by KVK

S.No	Title of the programme / project	Sponsoring agency	Objectives	Duration	Amount (Rs)
1	Project on Socio Economic upliftment of SC/ST farmers of Ariyalur district of Tamil Nadu through development of Master trainers on Integrated Farming System (IFS) Approaches	Department of Science and Technology, Ministry of Science and Technology, Government of India, New Delhi	<ul style="list-style-type: none"> To improve the farm productivity and farm income owned by SC farmers by disseminating integrated Farming System approaches To enhance the socio economic status of 40,000 SC farmers of Ariyalur district of Tamil Nadu 	2 years	18,98,000
2	Seminar on Cashew nut cultivation	Directorate of Cashewnut and Cocoa Development Board, Kochi	<ul style="list-style-type: none"> To transfer the latest technologies in cashew cultivation 	10 years	50,000
3	Seminar on Empowering Farm women through agricultural based extension activities	National Commission for Women, New Delhi	<ul style="list-style-type: none"> To empower farm women through agri based income activities To suggest suitable policy recommendations to empower farm women 	5 years	1,97,500

Note: Detailed report of project / programme is attached in Annexure II

15. Success stories/Case studies

15. A. Success stories/case studies

Title : ICAR – KVK, Ariylaur Excelled in Enhancement of productivity in Blackgram and thereby the socio economic conditions of farmers

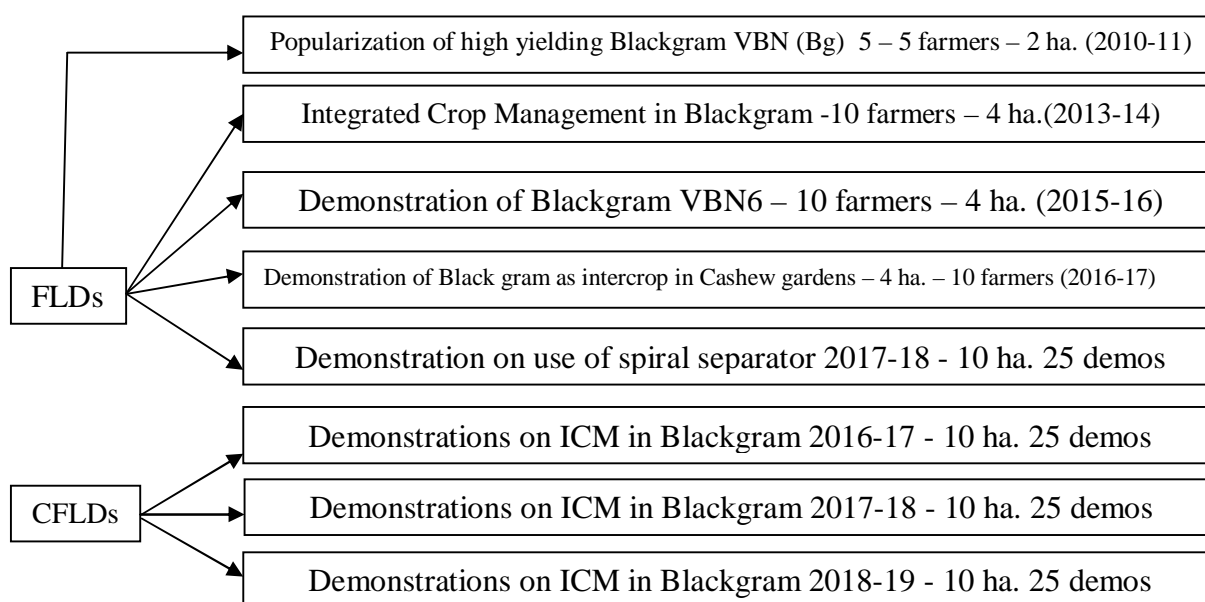
a. Problem Statement

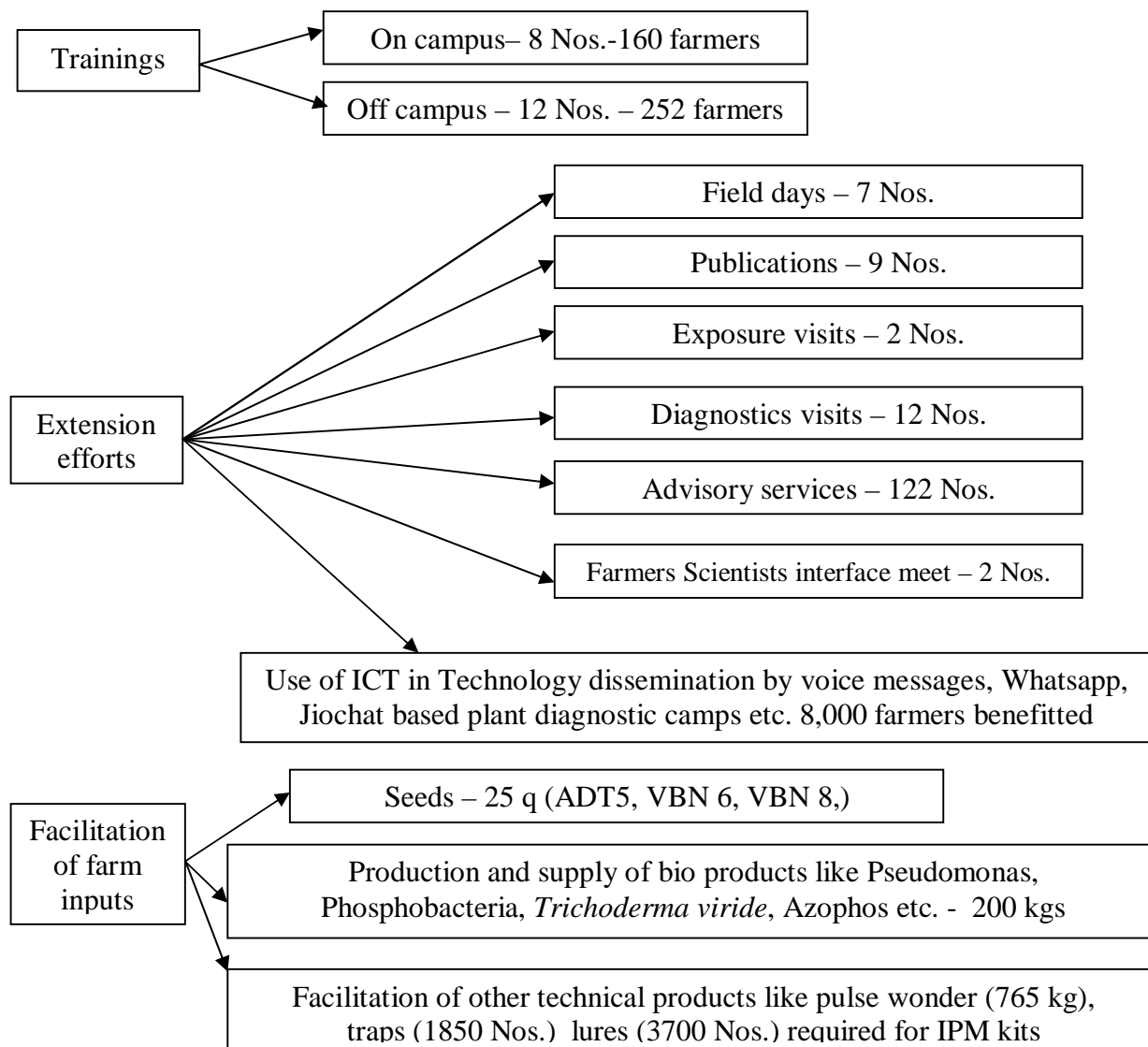
Blackgram popularly known as ‘Urad’ is one of the most important pulse crop grown in India. In Tamil Nadu it is being grown in an area of 3.41 lakhs ha. during Kharif, Rabi and Summer seasons in almost all the districts of Tamil Nadu wherever paddy is cultivated. Blackgram is the predominant Rice fallow pulse crop. In Ariyalur district Blackgram is grown in an area of 4,042 ha. in almost all blocks of the district as sole crop and intercrop in Cashewnut plantations. The productivity is low (520 kg/ha.) when compared to the potential yield of 1,000 kg/ha. due to various problems.

1. Use of seeds of age old varieties like ADT 5, T9 and VBN 3
2. Non adoption of proper seed rate. The farmers are using 25-30 kg/ha. instead of recommended seed rate of 20 kg/ha. It led to over population and thereby reduction in yield.
3. Susceptibility of ADT 5 and T9 varieties to YMV disease resulted in 30-35% yield loss and upto 60% yield loss when it is grown during summer season
4. Non availability of seeds of latest varieties like VBN 6, VBN 8 that are tolerant or free from YMV disease.
5. Non adoption of recommended package of practices like fertilizer application, weed management, IPDM, etc.

b. Plan, Implement and Support

ICAR- Krishi Vigyan Kendra hosted by CREED, Ariyalur district put forth series of efforts through its mandated activities to tallies these problems and achieve higher productivity in Blackgram and thereby the enhanced income of the farmers. The following flowchart depicts the series of interventions implemented step by step to tackle the above problems.





c. Output

By series of interventions provided by ICAR – KVK, Ariyalur the participating farmers gained knowledge and skills in different technologies as depicted in the following table.

Sl.No.	Crop / Enterprises	Technologies	% gain in knowledge	% gain in adoption
1	Blackgram	Adoption of VBN 6 variety	62	44
2	Blackgram	Foliar spraying of Pulse wonder @5kg/ha or DAP 2% during flowering stage	52	38

By adopting the basket of technologies disseminated through series of interventions the productivity level in the demonstration field has increased sizably along the economic benefits. The details are presented hereunder.

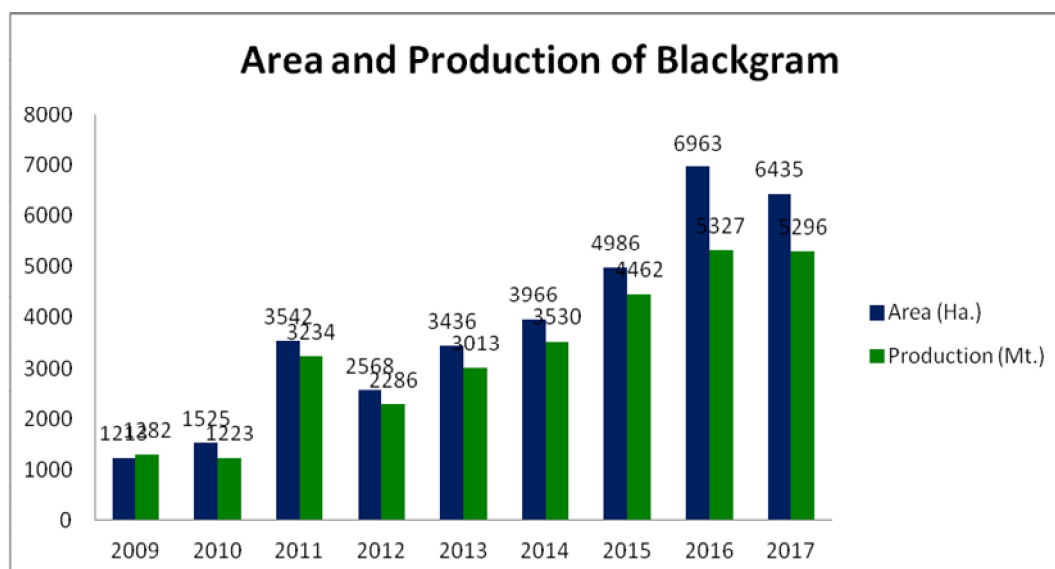
Sl.No.	Crop	Year	Productivity / ha.			Increase in income / ha.	
			From	To	% increase	From	To
1	FLD	2016-17	6.24 q	8.84 q	42	26,085	45,564
2	CFLD	2017-18	5.9 q	8.5 q	44	38,200	62,160
3	CFLD	2018-19	3.9 q	7.1 q	82	5,060	62,160

d. Outcome

Based on the knowledge and skill enhancement, improved adoption of various technologies by the participating farmers and their income level increase, the farmers in the neighboring villages and nearby blocks started adopting those technologies in black gram cultivation. The details are given below:

S.No.	Technologies	Horizontal spread to neighboring villages	No. of Farmers	Area (ha.)	Horizontal spread to neighboring blocks	No. of Farmers	Area (ha.)
1	Cultivation of high yielding Black gram VBN 6 variety	25	1550	475	3	455	145
2	Foliar spraying of Pulse wonder @5kg/ha or DAP 2% during flowering stage	32	1850	525	4	225	195

The area increased under different technologies in the demo villages and neighbouring villages is presented in the following figure.



By adoption of different technologies disseminated by KVK and by horizontal spread of the technologies, the first level beneficiaries accrued increased income from black gram cultivation as below :

Sl.No.	Village	No. of farmers	Net Income realized (Rs.)/ ha.	
			Before adoption	After adoption
1	Cholamadevi, Kodalikarupur, T.Palur, Alagapuram, Anaikudam, Andimadam, Anikudichan (North), Chinnapattakadu, Devamangalam, Devanur, Edaayankurichi, Edanganni, Edayar, Ariyalur, Edayathankudi, Elaiyur, Elaiyur (East), Elaiyur (West) Elakurichi, Elandakudam, Elayaperumalnallur, Eravangudy, Cholankudikadu, Sirukadambur	875	Rs.36,085	Rs.45,564

Likewise, by adoption of the technologies disseminated by ICAR-KVK, Ariyalur , the usage of chemical inputs in black gram cultivation by the farmers have reduced sizeably.

Sl.No.	Technologies	Reduction in terms of Kind	Reduction in terms of Cost
1	Seed treatment with <i>T.viridi</i> , <i>Rhizobium</i> , <i>Phosphobacteria</i>	Urea application to the tune of 30kg/ha. DAP @ 25kg/ha MOP @ 20kg/ha	Rs.2500/ha
2	Pheromone traps, Yellow sticky traps	2 No. of Pesticide spray reduced	Rs.1500/ha

FLD on use of spiral separator conducted during 2017-18 added the value to the intervention made in black gram as it is highly useful to grade the black gram grains. The graded black gram by spiral separator fetches good price in the market.

In black gram cultivation farmers reaped a maximum net income of Rs.36, 085/ha. Before KVK intervention. Currently the farmers are getting an income of Rs.45,564/ha as the yield and quality of black gram enhanced substantially. So there is 26.3 % increase in income if the price is stable.

e. Impact

- After KVK interventions, the Department of Agriculture started distribution of VBN 6 black gram seeds through its various subsidy schemes.
- The seeds of VBN 6 and VBN 8 from the KVK farm and from KVK promoted farmer fields is as follows :

Year	Qty. produced at KVK farm (q.)	Seed produced at Farmers field (q.)	Total seed distributed (q.)
2014-15	11.0	22.0	33.0
2015-16	8.0	22.0	30.0

2016-17	18.0	96.5	114.5
2017-18	6.8	94.5	101.3
2018-19	4.0	120.5	124.5
Total	47.8	355.5	403.3

- Apart from KVK efforts, Department of agriculture also promoting seed production in farmers field to meet the district seed requirement.
- Our KVK is always facilitating the farmers in procurement of seeds, bio products, bio fertilizers, IPM practices and grading, etc.
- Out KVK intervention on Blackgram paved the way for increased production (2.25 mt) and productivity (570 kg/ha.) (Source: Department of Agriculture, 2017-18).
- During 2015-16, there was the hike in price for Blackgram grains and it went upto Rs.100/kg at that time the contribution of Blackgram to agricultural economy was high.
- Blackgram cultivation certainly improved the social status of farmers as the income of Rs.45, 564/ha in children education, repaid their loans, etc.

2. Ariyalur district of Tamil Nadu marching towards fodder sufficiency

Introduction

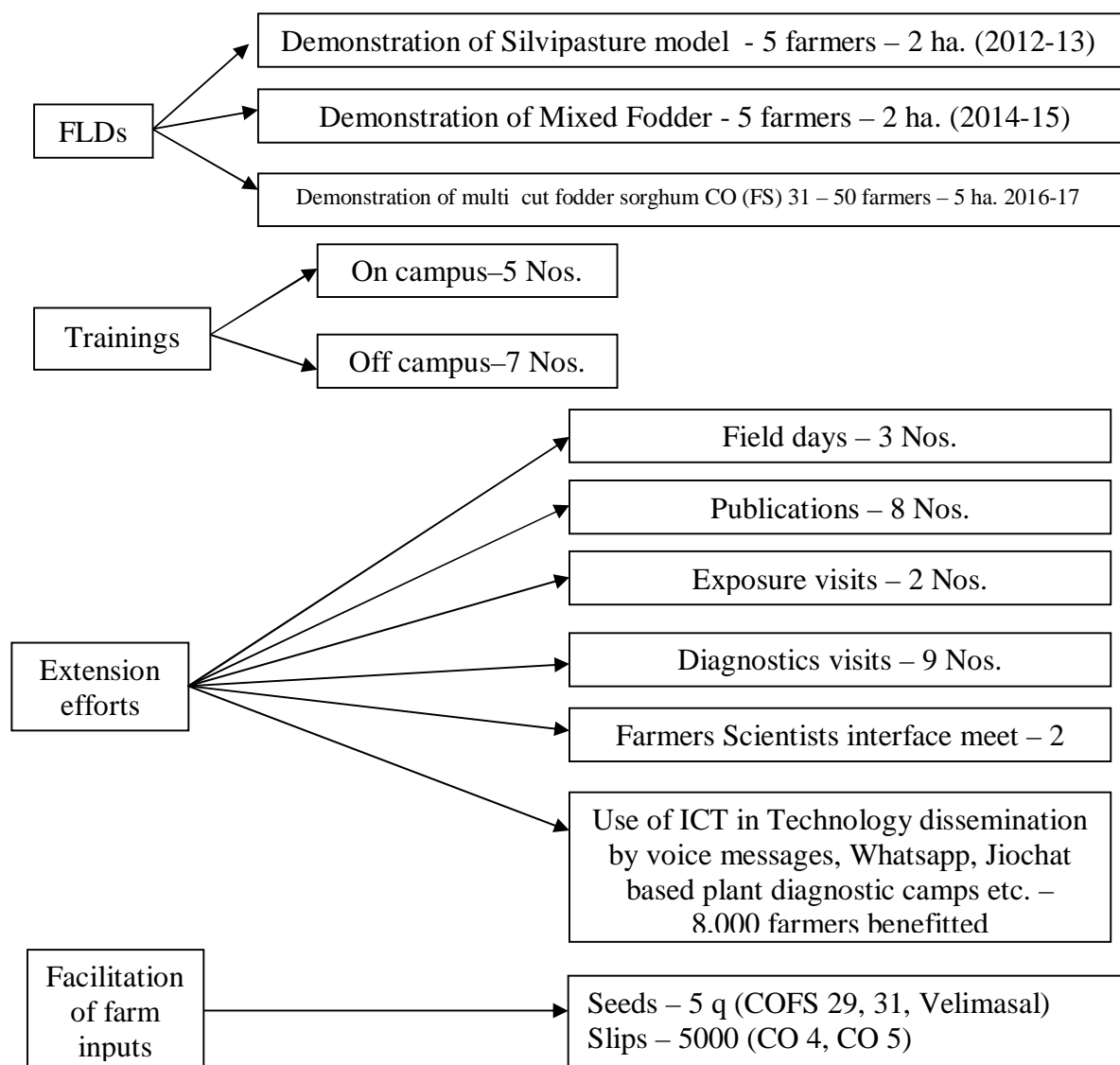
Ariyalur District is classified as backward district in Tamil Nadu comprising six blocks. Of which Thirumanur, T.Palur and Jayankondam blocks are potential for irrigation facilities favours cultivation of Sugarcane, Paddy and Vegetables. Other three blocks are dry and mostly depends on monsoon showers for crop production. Animal components viz., milch cows, goat, sheep and buffalo forms the integral part of farming here apart from backyard poultry. The productivity in milch animals, goat, sheep and poultry birds are less due to the following reasons / facts.

Problems

- Less preference of farmers to allocate a piece of land to raise fodder crops and thereby poor nutrition of animals
- Lack of awareness and knowledge on different fodder crops required to provide balanced diet to farm animals
- High cost of concentrate feed results in less remuneration from milch animals. About half of the income spent for concentrate feed.
- Fertility problems in cows due to mal nutrition
- Less weight gain in sheep and goat
- Less egg production in poultry birds and thereby less per bird productivity.

Plan, Implement and Support

Considering the fodder situation in the district, ICAR-KVK, Ariyalur planned and implemented strategic plans to bring more area under fodder crops. The different interventions made to achieve the goal of fodder sufficiency is depicted as follows :



Materials and Methods

Though most of the interventions were carried out in six blocks, but only two blocks viz., Jayankondam and Thirumanur were selected for the study. For the selection of respondents, list of beneficiaries of various programmes of KVK during last five years (2013-14 to 2017-18) was prepared. Out of 685 beneficiaries, only 100 farmers were selected by simple random sampling procedure from Jayankondam and Thirumanur with 50 farmers from each block.

A questionnaire was prepared and the data were collected through personal interviews with the respondents. The data collected were processed. Tabulated, classified and analysed in terms of percentage. Totally 10 practices were selected as criteria to evaluate the farmers for extent of knowledge gained and adoption of fodder cultivation technologies as results of various intervention viz., trainings, method demonstrations, Front Line Demonstrations (FLDs), On Farm Trials (OFTs), diagnostic visits, advisory services, exposure visits, radio talks and popular articles.

Table 1. Gain in knowledge level with respect to Fodder cultivation due to the intervention of CREED KVK at Ariyalur District of Tamilnadu

Sl. No	Improved production practices	Knowledge Level		
		Before KVK intervention	After KVK intervention	Gain in knowledge (%)
1	Land preparation	60	88	28
2	Seeds	25	60	35
3	Sowing methods	32	52	20
4	Varieties	55	78	23
5	Seed rate	22	40	18
6	Sowing time	3	56	18
7	Nutrient management	42	64	22
8	Irrigation	48	67	19
9	Harvesting	40	51	11
10	Uses of fodder	34	72	38

Output

By the above interventions, the participating farmers improved in their knowledge and skills in fodder crops raising. Primarily they realized the importance of having fodder cafeteria to feed their animals. All 685 direct participating farmers established their own fodder area in 35 villages. From these fodder units 1,900 animals are provided with green fodder and thereby health and productivity has been improved. Productivity increase in milch animals by providing green fodder and by curtailing concentrate feed the income is also increased.

Table : Output due to fodder cultivation

Sl.No.	Parameters	Before Situation	After supplementary green fodder
1	Health of the animal	Weak	Good
2	Calving period	Prolonged (2 calves in 3 years)	Ideal (One calf/year)
3	Milk yield / day	6.5	8.2
4	Cost reduction in concentrated feed (lit.)	---	30-36 %
5	Total milk yield / lactation / cow (lit.)	1,170	1,476
6	Gross Cost /cow/lactation	Rs.13,600	Rs.10,250
7	Gross return / cow	Rs.25,470	Rs.32,472
8	Net return / cow . lactation	Rs.11,870	Rs.22,222
9	BCR	1 : 1.87	1 : 3.1

Outcome :

Based on the performance of cow after feeding with sufficient green fodder, the farmers started adopting green fodder crops cultivation.

Table : Horizontal spread of fodder production technologies

Sl. No.	Technologies	Horizontal spread to neighboring villages	No. of Farmers	Area	Horizontal spread to neighboring blocks	No. of Farmers	Area
1	Cultivation of fodder crops viz., Co (CN) 4/5, Desmanthus, Subabul, CFS 29/31, Sesbania	30	285	145	5	315	126 ha.

Now the farmers are giving one importance to the cattle by cultivating green fodder crops and feeding the animals. Currently about 600 farmers are having their fodder in the district. Still there is heavy demand for fodder seeds and our KVK is promoting farmers to produce seeds / slips to facilitate horizontal spread. So far 30 farmers are actively involved in production and supply of fodder seeds including Azolla. By using the green fodder the cost on concentrate feed also reduced substantially to the tune of 30-35%.

Impact

- After the KVK intervention in fodder crops cultivation the milk yield is substantially increased in the district.
- More youth members are coming forward to rear milch animals and calf rearing. About 135 such youth members are being regularly guided in this regard.
- The overall health of the animals were improved and thereby increased yield and income is being realized by our farmers.

3. Success Story on Hi tech Tuberose Cultivation

Situation Analysis:

In Ariyalur district, Sugarcane is the major crop cultivated by farmers in Kuvagam village of Andimadam block. Farmers are getting a low income from these crops due to the high cost of cultivation, labour scarcity, high input cost and less market price. In sugarcane, the productivity is lower due to low yielding old varieties and lack of non adoption of integrated nutrient management and susceptibility of old varieties to pest and disease.

Mr.S.Kamaraj, a farmer aged 39 residing at Kuvagam village of Andimadam block, Ariyalur District approached the ICAR – KVK to get advisory to improve his income level from agriculture. In his traditional method of farming, he was spending his money for labour wages and to carry out farming operations in his 5 acres of land. The climate condition of Ariyalur district is best suitable to cultivate cut flower crop tuberose. Tuberose (*Polionthes tuberosa*) is a traditional flower used in all the social functions of Tamil Nadu as garland making, festival times and in perfume industry for extracting of essential oil. It is used as both loose flower and cut flower.

Plan, Implement and Support:

Our KVK Scientists have recommended cultivation of tuberose flower hybrid Prajwal released by ICAR – IIHR, Bengaluru. A Front Line Demonstration was conducted by our Krishi Vigyan Kendra, Cholanadevi, Ariyalur district in this farmer field to disseminate the technology. A training on hi tech tuberose cultivation was given to the farmers of Kuvagam village on the Integrated Crop Management practices in tuberose before conducting the front line demonstration. In this training, the following topics were taught viz., soil test based fertilizer application, land preparation, basal application of fertilizer and 25t/ha FYM, spacing (45cm x 25cm), bulb treatment with *Pseudomonas* @ 10g/kg of bulb, neem cake @250kg/ha and *Pacelomycetes linacious* (Nematon) for management of nematode, good planting material selection, mulching for weed management, irrigation, fertigation techniques, IPM and harvesting. Our KVK team along with SMS (Horticulture) has visited his field and gave technical guidance for cultivation of tuberose. Our KVK has helped the farmers in getting the tuberose bulbs planting material from ICAR – IIHR, Bengaluru. Around 10 farmers including Mr. Kamaraj were taken to ICAR – IIHR, Bengaluru to see the tuberose cultivation and Directorate of Cashew Research, Puttur, Karnataka to learn about the new technologies in horticulture. The printed article on tuberose cultivation was given to the farmers for further spread of this technology. The tuberose bulbs were sown in the field after the seed treatment with *pseudomonas*, spacing 45 x 25 cm and polythene mulching technique to control weeds and soil moisture conservation. Consultancy services were given to the tuberose farmer for getting higher productivity of about 15.04 tonnes per hectare per year.

Soil application of 25 tonnes per hectare farm yard manure, 400 kg single super phosphate, 2 kg azospirillum, 2 kg phosphobacteria, 2.5 kg/ha *Trichoderma viridi*, nematicides 2.5kg/ha were done.

The gross cost of cultivation incurred for land preparation, tuberose bulbs, labour wages, mulching sheet, fertilizer, pesticide, irrigation and harvesting is Rs.1,50,000 per hectare. Harvesting of flowers starts from the 3rd month of the planting onwards in daily basis. On an average of 30 – 35 kg of flower yield was harvested everyday from his 1 acre of land and it is taken to the nearby market in Kumbakonam. Now the tuberose farmer has attained knowledge and skill on tuberose cultivation. The nematode incidence in his field is reduced due to the application of nematicide and *pseudomonas* (bio pesticide) in his field. In general, the other tuberose farmer are harvesting only 20 kg flower in 1 acre area.

Output:

There was a significant increase in the yield of the Prajwal tuberose compare to that of the local variety. The yield potential of this hybrid is 15 – 16 tonnes per hectare which is significantly higher compare to the local variety which was synergized by the Integrated Crop Management Practices. The price of the tuberose flower was ranged from Rs.50 – Rs.150 in the local market during the different month of the year. The adoption of the successful technology namely precision farming techniques of TNAU like raised bed planting, INM, IPM, mulching, drip and fertigation enhanced the yield by 50% on an average.

The individual flower weight was significantly higher in Prajwal than the local variety as indicated by the number of flower per kilogram. The flower merchants also like the Prajwal flowers for garland making due to its quality i.e fragrance and appearance.

Outcome:

This farmer has converted three acre of his land into tuberose cultivation. His annual income has increased from 1 lakh to more than 5 lakh in the year from the sales of flower and tuberose bulbs to neighbouring farmers.

The success story of Mr.S.Kamaraj has got wide publicity in both print and mass media like radio (AIR, Karaikal, Trichy), Makkal TV, Door Dharshan and electronic media. As of now, the area under tuberose cultivation in Kuvagam village and neighbouring village has been increased upto 100 hectares in the district.

Impact:

- Tuberose cultivation could increase the farmer income than any other crop in Ariyalur district
- Huge number of farmers are coming forward to cultivate tuberose
- Though it is of new origin to Ariyalur District. 2000 acres brought under tuberose cultivation

4. A Novel idea of CREED KVK, Ariyalur to Attract and Retain Youth in Agriculture**Situation / Problem Statement:**

The total population of Ariyalur district is 7,52,481 in which 36% of total population includes youth members (19-35 years) who are unemployed/underemployed. The major problems of the rural youth are lack of employment for their qualification, lack of resources interms of land and finance to start their own enterprise, unacceptance of the parents to let their wards in agriculture, lack of skills and technical knowledge in agriculture, lack of credit facilities to rural youth from formal institutions. These problems lead to unutilization of available natural resources (land and water), reduction in district productivity and social and economic benefit of the individual.

Plan, Implement and support:

To overcome those problems, our KVK gave a call for rural youth in Daily news and the 1st meet held on 03.06.2016 at our KVK. More than 131 youth members participated and awareness created among rural youth about agriculture and allied enterprises. Keen interest of RY in agriculture motivated us of form “Rural Youth Club” in which 324 youth are members now. They provided with skilling programmes (13), trainings, meetings, exposure visits and advisories regularly. Motivational meeting has also been conducted to the parents of our Youth Club Members to let their wards in agriculture. But due to lack of financial support from formal institution we approached retired persons exclusively Ex-servicemen to extend financial support who readily accepted our request and they were formed into a group named as “Retired Youth Club” with 59 farmers. Retired youth club members contributed money to give financial assistance to the deserving youth club members in the form of loan at bank interest. A separate bank account has been opened for rural youth and retired youth club. Youth cell has been formed at our KVK to look after RY-RY activities. Separate WhatsApp group named “Youth Club KVK Ariyalur” has been opened for easy access which also acts as a platform for marketing their products.

S.No	Name of the Skill programme	Year	No . of youth members participated
1.	Mushroom Growers (NSDC)	2016 – 17	20
2.	Small Poultry Farmers (NSDC)	2016 – 17	20
3.	Integrated Farming System(ATMA)	2017 – 18	20
4.	Organic Cultivation of Fruits and Vegetables(ATMA)	2017 – 18	20
5.	Nursery Management of Horticulture crops	2017 – 18	32
6.	Integrated farming	2017 – 18	29
7.	Production of organic inputs	2017 – 18	37
8.	Mushroom Production	2017 – 18	23
9.	IPM in crops (ATMA)	2018 – 19	15
10.	Mushroom Growers (NSDC)	2018 – 19	20
11.	Organic Growers (NSDC)	2018 – 19	20
12.	Production of organic inputs (KVK)	2018 – 19	29
13.	Organic farming and marketing Strategies	2018 – 19	66

Output:

As a output of this RY-RY model, 324 youth members and 54 retired persons brought under the umbrella of KVK. So far, an amount of Rs.5.3 lakhs was collected and disbursed to 16 youth members to start their own agriculture and allied enterprise as follows:

S.No	Name	Father's name	Qualification	Loan availed (Rs.) from Retired youth Club	Enterprise	Current income per month (Rs.)
1	P.Kumarasan	Poorasamy	B.E	40,000	Milky Mushroom	22,000
2	S.Ashok	Sathi Ozippu	B.E	20,000	Oyster Mushroom	14,000
3	R.Meena	Ramachandiran	B.Sc (Nursing)	30,000	Desi Chicken	40,000
4	S.Rajadurai	Saminathan	Diploma Engg.	40,000	Desi chicken	60,000
5	N.Archunan	Nagarajan	12 th	30,000	Milky mushroom	19,200
6	P.Sumathi	Palanichamy	12 th	30,000	Desi chicken	18,600
7	G.Venkatachalapathy	Govindarajan	12 th	40,000	Cow	19,700
8	A.Rajandiran	Azagappan	12 th	20,000	Desi chicken	15,750
9	K.Sarath Kumar	Kasavan	B.Com	40,000	Mushroom	24,000
10	J.Indirajith	Jagadesh	Diploma	40,000	Poultry	18,000
11	T.Saravanan	Thangarasu	B.Sc	30,000	Poultry	35,000
12	P.Ilanthamilan	Periyasamy	B.E	40,000	Poultry	27,000
13	G.Durai	Gangatharan	SSLC	25,000	Mushroom	18,400
14	R.Suraendar	Ramasamy	B.E	30,000	Mushroom	16,000
15	K.Uma	Krishnamoorthy	M.A	40,000	Poultry	17,000
16	A.Immanuvel	Arokiyasamy	M.Phil	35,000	Mushroom	15,000
	Total			5,30,000		Avg. 27,400

Now, they are earning an average income of Rs.27,400/month from different agricultural enterprises.

Outcome:

Being an innovative and successful model, Dr.Y.G.Prasad, Director, ATARI, Hyderabad distributed the seed money on 06.12.17 and appreciated this model. Dr.H.Philip Former DEE, TNAU highly appreciated this model while his visit to our KVK a 04.10.18 and distributed seed money. Our KVK awarded “Mahindra Samriddhi KVK Samman – 2019” award for this innovative initiative.

Our skilled rural youth club members are serving as master trainer, resource person to various trainings organized by our KVK and also other KVK (Karur, TANUVAS) of different districts. They are acting as advisors and role model for other youngster to start agriculture enterprise. Youth members also became an employer from employee who generating employment opportunities to others in their own enterprise.

Their success cases has been broadcasted in AIR, Karaikal, Trichy and telecasted in Makkal TV, Puthiyathalaimurai, DD etc., Youth members are also recognized in various occasions by dignitaries.

- Director, ICAR – Agricultural Technology Application Research Institute, Hyderabad
- Directorate of Extension Education, Tamil Nadu Agricultural University, Coimbatore
- Director, SBI – Rural Self Employment Training Institute, Ariyalur
- DDM, NABARD
- JDA, Ariyalur District
- Lead Bank Manager, Ariyalur
- Principal Scientist from Agricultural Technology Application Research Institute, Hyderabad
- Also appreciated by the review committee at the Annual Review Workshop for KVKs of Zone X held at CRIDA, Hyderabad during 20th – 22nd October, 2018.

Impact:

- It is evidenced that the regular guidance, monitorance and skilling programmes increased the livestock numbers, Mushroom production, Organic farming area in the district quantifiably (i.e) In Ariyalur district more than 40 youth members involved in Desi Chick and Kadaknath rearing, 32 members in Mushroom production and around 10% of agriculture area falls under organic farming in the district after this trainings and skilling programmes. One of the Youth Club Members Mr.Madhavan has developed Coconut Processing Unit in large scale under the guidance of KVK with the financial support from Coconut Development Board, Cochin, NABARD.
- Benefit of RY-RY model and Rural Youth Whatsapp group attracting youth from other districts viz., Perambalur, Cuddalore, Tanjavur, Madurai, Karur to join in our whatsapp group and to avail trainings and other benefits from our KVK and youth members. Also migration of rural youth to cities is being reduced.

Impact - Increased income & cost reduction (Enterprise wise – Few quotes)

Sl.No	Crop / Enterprise	Innovative Tech. Adopted	Increase in income / Reduction in cost			
			Before (Rs.)	After (Rs.)	Net increase (Rs.)	%
Increase in income						
1.	Drumstick + Groundnut	Intercropping	50,000/ acre	75,000/ acre	25,000/ acre	50
2.	Poultry + Fish + Coconut + Dairy	Integrated Farming System	65,000/ acre	1,00,000/ acre	35,000/ acre	53
3.	Dairy(5 milch cows)	Fodder cafeteria	1,50,000	2,50,000	1,00,000	66
4.	Poultry	Production of poultry chicks	10,000	30,000	20,000	200
5.	Mushroom	Branded Milky mushroom	---	37,500/ month	---	---
6.	Fish	Fish rearing in village pond	30,000/ acre	1,00,000/ acre	70,000	233
7.	Goat rearing	Crossbred (Tellichery x local)	57,500/ year	87,500/ year	30,000	52
8.	Bee keeping	Indian honey bee rearing	---	55,000/ month	---	---
9.	Sericulture	Bivoltine silkworm rearing	1,64,000	1,92,000	28,000	17
10.	Nursery production	Cashewnut grafts	1,00,000	3,00,000	2,00,000	200
11.	Value addition	Mushroom – Pickle	21,600/ month	29,700/month	8,100	37
Reduction in cost						
12.	Poultry	Low cost poultry feed	30/kg	14/kg	16/kg	107
13.	Hatchery unit	Low cost hatchery unit for poultry	15,000/ unit	5,500/ unit	9,500	172
14.	Paddy	Modified power rotary weeder	Hand weeding Rs.10,500 (2 times)	3,500/ mechanized seedling	7,000	200

15. B. Give details of innovative methodology or innovative technology of Transfer of Technology developed and used during the year

1. Rural Youth – Retired Youth (RY-RY model)

Our KVK has maintained the potential of rural youth and planned innovatively to bring them into mainstream of agriculture. We have formed Rural Youth Club and they were capacitated on various agricultural and allied aspects to enter into the income generating activities. As they are lack of financial resources and facing hardship in availing credit facilities, they struggled to start their ventures. Here our KVK think and act differently to bring resourceful and resource less persons in a common platform. We approached retired persons and we formed a club named “Retired Youth Club” which 60 persons are members currently. They are contributing money every month and the lumpsum amount collected will be disbursed to youth members to start their agricultural activities. Currently and amount of Rs.5,30,000 lakhs mobilised such a way to disbursed to 16 members. They were regularly repaying their loan with bank interest.

Note : The details of genesis of RY-RY model is well explained in Chapter 9.

2. Abridging Resource less and Resourceful

This is and innovation of our KVK to bring uncultivated land into cultivation. The land owned are sometimes unable to do agriculture due to several reasons viz., over age. No follower (Son / Daughter), working abroad, etc. by having very close association with the farmers our KVK could identify such a resourceful (Land Water) persons and links them with potential youth members. The youth members are identified from our youth club, so far by this kind of linkage 42 ha. Uncultivated area brought under cultivation benefitting 10 farmers and youth members. They will pay the nominal lease to the land owners. Our KVK is technically supporting the youth besides availing them the land resource.

3. Technology delivery to the famer representatives

In Tamil Nadu Farmers Grievance day is the regular phenomenon in all the district and it is being conducted on last Friday of every month. Around 300 progressive farmers representing almost all parts of Ariyalur district and district and lock level officials are the partaken under the president ship of District Collector. Our KVK is utilizing this platform effectively to disseminate the technologies needed for the upcoming month. This 30 minutes programme consists of

- Powerpoint presentation,
- Exhibit of technological products,
- Method demonstration,
- Sharing of success of one farmer
- Information on KVK events for the ongoing month
- Release of booklets

4. Humane Approach and Transparency

Our KVK treat the farmer with kindness always whether he/she is small /marginal or big. We tell them to sit first and serve them with atleast a tumbler of water. By doing this they feel light and free to discuss their needs and problems. Whenever the lunch is provided our total team serves the, food with love and affection. These human touch really make them happy and adopt our advisories.

A detailed board is installed in front of office depicting the details under RTI Act, 2005. In the last nine years we have received only two queries under RTI. This shows the transparency and perfection in our KVK running.

5. Serving technologies to line department officials

Generally all the agriculture and allied departments conducts monthly zonal review meetings at KVK (mostly) and / or at their departments. Our KVK experts serves them with basket of technologies to carry forward those knowledge to the farming community. Discussions on Joint field visits made during that month by KVK and department is being held to arrive at the appropriate technological solutions.

6. Group approach

ICAR KVK took concerted effort in holding series of methodological approach to analyze the ground situation at each of its operational villages. To identify the problems for the crop production, animal production and the allied aspects that support the livelihood of farm families. It followed various specific methodologies as mentioned below.

Based on the data collection for baseline information CREED KVK planned its intervention plan through FLD, OFT, FFS, various trainings (on and off), etc.

7. Use of ICT in Technology Transfer

1. **WhatsApp:** We have two WhatsApp groups administrated by our KVK. One groups is specially meant for Rural youth and the other group is for farmers. The Director of Extension Education, TNAU is also the admin of this group and Director, ICAR-ATARI, Hyderabad is also present in these groups.

The message are being regularly posted by our experts on different technologies needed as per the crop calendar. These groups facilitates the exchange of technologies, ideas, clarifications, marketing of technological inputs and products

2. **Giochat programmes :** This innovative ICT aided technology transfer mechanism is assisted by Reliance Foundation. In this programmes, the field staff take the photo of field problems viz., pest attach, disease incidence, micro nutrient deficiencies, etc. and sent to experts at our Kendra. Our expert teams views the photos on large screen like in Television and clarifies / suggest the suitable measures to the farmers over phone. This kind of programmes aid in reach of more number of farmers in minimum time. During 2017-18 four such programmes and covered 86 farmers to solve 112 problems in various crops

8. Identification, Validation and Promotion of Farmers innovation

Apart from innovation made by our KVK for the effective functioning, we are showing special emphasize in identification, validation and promotion of farmers innovation at farm level. The such innovations were highly appreciated by our Director ICAR-ATARI Dr.Y.G.Prasad during December 2017. Their innovations were presented at

1. Innovators meet held at CRIDA on 14th April 2018 and these innovations find a place in the book titled Farm Innovators published by ICAR-ATARI, Hyderabad
2. Agriculture conclave held at Lucknow on 5th to 8th October 2018

15. C. Give details of indigenous technology practiced by the farmers in the KVK operational area which can be considered for technology development (in detail with suitable photographs)

S. No.	Crop / Enterprise	ITK Practiced	Purpose of ITK
1	Cashew	1 kg goat meat + 1 kg cow meat+ 1kg pig meat + 1 kg desi chicken meat + 1 kg fish waste +1 kg blackgram flour+ 1 kg jaggery + 50 lit of water. mixed well. Kept for fermentation for 40 days stirring in morning and evening two times done. 1 litre gunapanjaram mixed with 30 litres of water and sprayed as nutrient for crops and also soil application. It will improve the growth of cashew plants traditionally.	Growth regulator
2	Vegetables	Cow urine and dung are collected, mixed with water and fermented for few days. After fermentation, the content is sieved to control pests. Cow urine act as germicide and cow dung provides nutrients to the crops.	To control the pest
3	Paddy	Soaking the paddy seeds in diluted cows urine before sowing.	To improve the seed germination percentage and early vigour of the seedlings.
4	Paddy	Bunds are strengthened with weeds and stubbles collected from the fields, bunds are plastered with mud.	To prevent rat holes and their damage.
5	Paddy	Placing bird perches in the field to allow birds to sit and predate on the pests.	To control all kinds of larvae.
6	Paddy	Storing of grains on a mud pot of more than 6 feet height.	To control storage pests.
7	Paddy	Keeping neem leaves or pungam leaves in between gunny bags.	To control storage pests.
8	Duck rearing	Duck rearing in Paddy field	To increase soil fertility and collected pupae in summer season
9	Poultry	Use of <i>Phyllanthus niruri</i> , cumin seeds, garlic extract, and turmeric is mixed with boiled rice and can be given as feed.	To contain ranikhet as prophylactic and after disease outbreak.

16. IMPACT

16.A. Impact of KVK activities (Not to be restricted for reporting period).

Name of specific technology/skill transferred	No. of participants	% of adoption	Change in income (Rs./ha.)	
			Before (Rs./Unit)	After (Rs./Unit)
Varietal introduction CO(R) 50	48	35	14790	24600
Mechanization of Transplanting in Paddy	30	70	33569	48880
MN Mixture application	25	70	37760	51290
Introduction of Groundnut variety VRI 2	30	40	37014	53458
Introduction of Sesame variety TMV 7	32	35	26410	39300

2% DAP spray in pulses	55	40	24700	31200
Vegetable seedling production through protray	42	70	114350	144500
ICM in cashew	35	61	15000	30000
Management of shoot and fruit borer in brinjal	20	45	62300	86400
Hi-Tech Tuberose cultivation	18	30	725000	1050000
Seed treatment with Pseudomonas in paddy and groundnut	50	40	38014	64488
Introduction of fodder CO (CN)4 and CO(FS) 29	25	40	16500	26250
Soil test based fertilizer application	22	30	38670	54040
Integrated feed management in cattle	46	32	13600/cow /lactation	21200/cow /lactation
Integrated disease management in sheep and goat	30	22	4200/goat /sheep	7410 /goat / sheep
Mixed fodder cultivation	20	12	36000/acre	48100/acre
Composite fish culture	30	17	85000/ha.	175000/ha.
Stunted earlings for seasonal ponds	25	11	94000/ha.	120500/ha.
Disease management in poultry birds	156	86	4800/ 20 birds	6300/ 20 birds
Spraying of Pulse wonder	534	45	5060/ha	62160
Groundnut rich	786	52	23626/ha	54331/ha

NB: Should be based on actual study, questionnaire/group discussion etc. with ex-participants.

16.B. Cases of large scale adoption

Cases of large scale adoption

Villages	Crop/Enterprise	Technology	Treatment	% of Adoption
Naduvalur	Groundnut	Groundnut rich as foliar spray to improve the yield	KVK has recommended spraying of groundnut rich 5 kg/ha at the time of peak flowering stage 2 times for increasing the yield of groundnut by 18 percent.	35
Nagemangalam	Paddy CO® 50	Varietal introduction CO® 50	After seeing the performance of CO®50 over CR1009. The farmers were very much interested in cultivation of CO®50. With the advice of our Kendra and by the demand from the farmers. The state agricultural department has itself started distribution of CO®50 paddy seeds in their depots. Now, it is being spread not only our operational area of village but also in other blocks.	70
Sembiyakudi	Paddy	Mechanization of Transplanting in Paddy	Now, the farmers are carrying out transplanting operation in time at less cost.	70
Cholamadevi	All crops	MN Mixture application	Now the farmers have realized the importance of micro nutrients and started to regularly apply MN	40

Villages	Crop/Enterprise	Technology	Treatment	% of Adoption
			mixture through soil and foliar application.	
Naduvalur	Groundnut	Introduction of Groundnut variety VRI 2	After the demonstration on VRI 2, farmers are harvesting 1000 kg/ac. And thereby the income level increased.	80
Naduvalur	Sesame	Introduction of Sesame variety TMV 7	Now the farmers are familiarized in using certified seeds. They also harvest 15-20 % increased yield by cultivation of TMV 7 over the earlier varieties.	40
Devamangalam	Pulses	2% DAP spray in pulses	Farmers are regularly spraying 2% DAP at flowering and pod formation stage. So, they are obtaining bold grains and thereby increased yield.	70
Silal	Vegetables	Vegetable seedling production through protray	Now the farmers using good quality seedling raised in ortrays. So the initial establishment and yield is upto the expected level in all the transplanted vegetable like tomato, brinjal, chillies, etc.	35
Veerakkan	Cashew	ICM in cashew	The farmers are learned to manage the tea mosquito bug and stem borer by regular sprays and other management practices. Now the productivity has increased upto 250 kg/acre.	70
Cholamadevi	Brinjal	Management of shoot and fruit borer in brinjal	Now the farmers are familiarized in usage of pheromone trap and other bio control measures in management of brinjal shoot and fruit borer. Now the infestation is reduced to 10-15 %	45
Kodali	Tuberose	Hi-Tech Tuberose cultivation	Farmers are now adopting the new variety of hybrid namely Prajwal with soil mulching techniques and nematode management practices to get higher yield.	30
Kasankottai	Paddy and groundnut	Seed treatment with Pseudomonas in paddy and groundnut	Farmers are doing seed treatment with Pseudomonas with 10g/kg of seed as prophylactic measures and also the soil application of 1 kg /acre and thereby good control of seed borne and soil borne diseases and ensured.	40
Across the district	Fodder	Introduction of fodder CO (CN)4 and CO(FS) 29	The farmers are well aware of importance of green fodder in management of cattle and also to improve the milk productivity. Now farmers practicing the cultivation of fodder CO(CN)4 and CO (FS) 29 in at least 10 cents.	40
Nagamangalam	All crops	Soil test based fertilizer application	Now, the farmers are testing the soil to know the N,P,K and MN status before cropping. They are applying fertilizers based on the requirement.	30

Villages	Crop/Enterprise	Technology	Treatment	% of Adoption
Kasankottai	Groundnut	Mechanization in Groundnut	Now, the farmers are carrying out sowing operation in time at less cost.	46
Across the district	Cattle	Integrated feed management in cattle	Judicious use of green fodder cereal, legume and green fodder crops and concentrated feed along with minerals enhances health of animals	59
Across the district	Cattle	Integrated disease management in sheep and goat	Ethno veterinary practices, animal health Camp	48
Across the district	Cattle	Mixed fodder cultivation	Judicious use of green fodder cereal, legume and green fodder crops and concentrated feed along with minerals enhances health of animals	39
Across the district	fish	Composite fish culture	Intensive fish culture like catla, mirgal and rogu	27
Across the district	fish	Stunted earlings for seasonal ponds	Useful technology for short water bodies	24

16. C. Impact analysis of KVK activities carried out during the reporting period

1. Impact study on Mushroom cultivation for Micro Entrepreneurship development

Introduction

Cultivated mushrooms have now become popular all over the world. Mushroom cultivation can directly improve livelihoods through economic, nutritional and medicinal contributions. Mushroom is a popular food due to their special flavour, nutritive value and medicinal properties. Mushrooms are a good source of vitamin B, C and D, including niacin, riboflavin, thiamine, and folate, and various minerals including potassium, phosphorus, calcium, magnesium, iron and copper. They provide high quality fats and low in carbohydrates and cholesterol, which is ideal for reducing body weight (Qumio et al., 1990). Mushroom cultivation can help reduce vulnerability to poverty and strengthens livelihoods through the generation of a fast yielding and nutritious source of food and a reliable source of income (Rachna et al., 2013). It is an indoor crop, grown independent without sunlight and do not require fertile land and can be grown on small scale as it does not include any significant capital investment (Chadda and Sharma, 1995). Mushroom cultivation will improve the socio-economic condition of farmers, families and solve employment problems of both literate and illiterate of rural areas and semi-urban, especially women. Mushroom cultivation is a women friendly profession. Mushroom growing is an agricultural activity in which women can utilize their spare time and play a vital role without sacrificing their household responsibilities. Promotion of mushroom cultivation could relieve pressure on land, increase food and nutritional security and uplift the status of women through earning additional income and in household decision making as far as concerned (Manju et al., 2012). Mushroom substrate can be prepared from any clean agricultural waste material, and mushrooms can be produced in temporary clean shelters. They can be cultivated on a part-

time basis, and require little maintenance. Mushroom cultivation activities can play an important role in supporting the local economy by contributing to subsistence food security, nutrition, and medicine; generating additional employment and income through local, regional and national trade; and offering opportunities for processing enterprises such as pickling and drying. Oyster as well as Button mushroom offers good potential for its cultivation in Ariyalur district. The demonstration and training conducted by Krishi Vigyan Kendra, Ariyalur. The trained people after getting proper know how and skill started its production. Apart from the trained trainees, a lot of other farmers and farm women started its cultivation by seeing their neighbour and fellow farmer nearby villages. But methods of mushroom cultivation of these two groups differ a lot and the difference were mainly due to proper training from KVK taken before mushroom cultivation was started. Keeping in view the increasing demand of mushroom due to globalization and opening of the economy, the present study was undertaken with the specific objective to assess the impact of training and demonstration on mushroom production as an enterprise/self-employment.

Methodology

A complete list of 200 respondents was randomly prepared who have under gone through training and demonstration on mushroom production technique from Krishi Vigyan Kendra, Ariyalur districts from 2014- 15 to 2017-18. A questionnaire was framed covering background information. In order to assess the knowledge gained by the trainees and effectiveness of training, a pre-test before training and post evaluation after training was conducted to know the level of knowledge of participants about species, pest and disease infestation in mushrooms as well as their storage process and value addition etc. To test the knowledge of trainees, a set of 10 questions related to mushroom production, nutritive value, value added products prepared from mushroom, its picking and storage method etc. were prepared and the suggestions from the trainees were also recorded for further improvement in the next training programme. Change in perception level was calculated from the difference of scores obtained in pre and post knowledge test of the trainees. The data were tabulated and statistically analyzed using frequency, percentages and ranking.

$$\text{Change of Knowledge} = \frac{\text{After training} - \text{Before training}}{\text{Total respondents}} \times 100$$

Results & Discussion

Training courses aim at enhancing adoption and diffusion of innovations. Some of the outcomes envisaged for any training programme were gain in knowledge, gain in skill acquired and ultimately in more adoption and integration among farming community. An important indicator of the impact of training programme is the extent, to which they have adopted the package of practice of mushroom cultivation technology. Krishi Vigyan Kendra, Ariyalur has been giving long and short duration training on Mushroom production both to farmers, rural youth and rural women. Mushroom production has become one of few enterprises which rural women of both district has adopted in big way both at household level and as commercial enterprise as a source of income generation after the proper dissemination of technology through KVK.

Change in perception level of respondents (N=200)

Change in perception level of respondents before and after training was shown in Table 1. They develop a favourable attitude towards mushroom production after training. In pretest before training, the knowledge of respondents about mushroom spawn production was zero and 1.75 per cent regarding methods of compost making to 32.0 percent in case of

awareness of loans, schemes and subsidies provided by public or private institutions for establishment of mushroom production unit as revealed by Table 2. Post training score of various practices ranged from 58.00 per cent in case of mushroom spawn production to 100 per cent in case of profitability in mushroom cultivation. It was thus noticed that pre-training knowledge score was not much satisfactory for all the aspects of training programme. However, the knowledge score gained by respondents after training was more satisfactory in all aspects. The reason behind the satisfactory change in perception level might be due to well educational background, keen interest of participants and methods followed for technology transfer to the trainees.

Table 1: Change in perception level of respondents for mushroom production (N=200)

S.No.	Particulars	Pre-test Knowledge before training (%)	Post-test Knowledge after training (%)	Change in perception level (%)
1	Knowledge of Species of Mushroom and Identification of edible mushroom	8.5	90.25	81.75
2	Nutritive and medicinal value of mushroom	5.5	80	74.5
3	Materials and Techniques used for different types of mushroom production	8	81.75	73.75
4	Methods of compost making	1.75	64.5	62.75
5	Pest and disease infestation in mushroom	5	78.75	73.75
6	Profitability in mushroom cultivation	22.5	100	77.5
7	Harvesting and storage process	7.5	89	81.5
8	Mushroom spawn production	0	58	58
9	Value added products of mushroom	10.25	86	75.75
10	Awareness of loans, schemes and subsidies provided by public or private institutions for establishment of mushroom production unit	32	98.25	66.25

Level of adoption

A total of 200 farmers and farm women participated in the training for mushroom production in the year 2014-15 to 2018-19. Out of 200 farmers and farm women, only 78 farmers adopted desi bird farming practices (Table 1).

Table2. Impact of training programme of Mushroom cultivation farming

Year	Number of training	Number of participants of training	Number of participants adopting mushroom production	Percent adoption
2014-15	1	26	8	30.76
2015-16	3	61	21	34.42

2016-17	4	73	28	38.00
2017-18	3	40	21	52.50
Total	11	200	78	Avg: 38.92

The average rate of adoption from the year of 2014-15 to 2017-18 was 38.92%. The highest rate of adoption was noticed in the year of 2017-18 (52.50%), where as the lowest rate of adoption was noticed in the year of 2014-15 (30.76%) (Table.2). The low adoption of mushroom production in the year of 2014-15 may be due to hesitation on adoption of new technology as the mushroom production level and lack of availability of spawn and marketing. In consequent years, the adoption level increased on seeing of neighbour farms of benefited farmers.

Conclusion

Training and demonstration are integral part of KVK extension system. Krishi Vigyan Kendra playing an important role in encouraging rural farmers and farm women to take up simple and quick income generating enterprises from where they can earn additional income. The trainee respondents were inspired greatly by the easy method of mushroom production. The mushrooms were included in their daily diet and supplemented additional nutrition to them. The perception levels of the respondents about mushroom and its production after the training have changed. The reason behind the satisfactory change in perception level is due to well educational background, keen interest of participants and methods followed for technology transfer to the trainees. It also provided an opportunity to strengthen the link between farmers and scientists which helped in technology dissemination and overall development of weaker section. The regular supply of quality spawn is the single most important intervention that needs to be addressed for mushroom entrepreneurship to flourish.

2. Impact Assessment of KVK's Interventions on Groundnut Cultivation with special reference to IPDM practices in Ariyalur District

Introduction

Ariyalur district of Tamil Nadu is located in North eastern part of Tamil Nadu which has the potential of cultivating wet land, garden land and rainfed crops. Paddy is the major wet land crop while groundnut and Blackgram are the important garden land crops. Pearl millet, maize, cashew and cotton are the rainfed crops raised in red sandy loam and black cotton soils during north east monsoon season. The literacy level of farmers and the technical know-how on advanced crop production practices was poor due to the lack of resource centres like KVK or Regional Agricultural Stations

Groundnut is an important oilseed crop cultivated in an area of more than 17,500 ha in rabi season (November-December) under garden land condition mainly in five blocks of Ariyalur district viz., T.Palur, Jayankondam, Andimadam, Ariyalur and Sendurai with borewell irrigation. The important varieties under cultivation are Gujarat, VRI2, JL24 for domestic use and also for local marketing. The groundnut farmers were less assured of their crop due to the socio factors viz., less affordability towards high cost of inputs, biotic and abiotic stresses, improper marketing structure etc.

CREED KVK focused its extension activities in the five blocks of Ariyalur from 2009-10 to 2017-18 to improve the knowledge level of farmers and adoption of advanced Integrated pest and disease management technologies pertaining to groundnut cultivation.

The KVK demonstrated various IPM technologies through series of interventions in the farm of trainings, front line demonstrations, on farm trials, exposure visits, etc.

The present study was undertaken to ascertain the gain in knowledge level among the respondents and to study the adoption level of various interventions on groundnut and also to find out the reasons for non-adoption of certain technologies and to suggest suitable alternatives to enhance the income level out of Groundnut cultivation.

Materials and Methods

Though most of the interventions were carried out in five blocks, but only two blocks viz., T.Palur and Andimadam were selected for the study. For the selection of respondents, list of beneficiaries of various programmes of KVK during last five years (2013-14 to 2017-18) was prepared. Out of 1200 beneficiaries, only 100 farmers were selected by simple random sampling procedure from T.Palur and Andimadam with 50 farmers from each block.

A questionnaire was prepared and the data were collected through personal interviews with the respondents. The data collected were processed. Tabulated, classified and analysed in terms of percentage. Totally 11 practices were selected as criteria to evaluate the farmers for extent of knowledge gained and adoption of groundnut integrated pest and disease management technologies as results of various intervention viz., trainings, method demonstrations, Front Line Demonstrations (FLDs), On Farm Trials (OFTs), diagnostic visits, advisory services, exposure visits, radio talks and popular articles.

Results and Discussion

Gain in knowledge

Most of the farmers were traditional in nature and has less access to resource centres like KVK before the inception of CREED KVK during 2009. It is presumed that the knowledge of farmers to a larger degree relies upon the extent of exposure given to them through tools like trainings, demonstrations, exposure visits, etc. The data presented in Table 1 reveals the increased knowledge gain on various technologies of IPM due to the series of intervention of KVK. The highest gain of 54 percent was observed in knowledge on seed treatment with *Trichoderma viride* @ 10g/kg. of seed to control the seed borne disease like root rot and stem rot. this could be due to the frequent trainings and demonstrations conducted by the KVK and because of the easiness of technology in seed treatment. This is in consonance with the findings of Changadeya et al., (2012). Installation of pheromone traps @5/ha for monitoring and trapping of *Sopdoptera litura* and *Helicoverpa armigera* recorded the knowledge gain to the tune of 46 per cent and it could be due to the trainings and method demonstration organized by KVK at the farmer's field under Farm Field School programme. It is also support the findings of Dubey et al. (2008). The beneficiary farmers realized the usefulness of the technology by seeing the performance of groundnut crop under IPM measures followed field and by interaction with the successful farmers. Forty percent gain in knowledge was observed towards soil application of *Trichoderma viride* 10kg/ha. to avoid the soil borne diseases like dry root rot, stem rot, leaf spot and rust. Need based application of Imidacloprid 17.8% SL @120 ml/kg to groundnut field recorded the knowledge gain of 38 percent as it is very effective, cheaper and easily available. The least gain in knowledge was observed for crop rotation as the 32 percent of the farmers knew the crop rotation and the rest of the 20 percent of the respondents alone understand the need of crop rotation after KVK's intervention. The technologies viz., Installation of light trap @1 No./5 ha, collection and destruction of egg masses and spraying of Hexaconazole 5% EC in 15 days interval revealed

30 percent of knowledge of gain due to the interventions of KVK as the exposure to these technologies might be less.

Extent of Adoption

The data (Table 2) revealed that 56 percent of the farmers adopted seed treatment with *Trichoderma viride* @10g/kg of seed, 44 percent of the farmer installation of each pheromone traps @5/ha and 42 percent of the farmers adopted spraying of Hexaconazole 5% EC. The reason for higher adoption of these technologies could be the beneficial effect of these technologies to control seed borne diseases and pests and thereby increased level of income. Seed treatment, installation of pheromone trap and spraying of Hexaconazole technologies to control the pest and diseases resulted in high yield and hence the farmers is impressed upon this technology and its adoption was also high. Likewise, the sucking pest and leaf defoliated are the major pest in groundnut cultivation and by series of intervention of KVK the spray of Imidacloprid @ 125ml/ha and spraying of chloripyriphos 20% EC recorded higher adoption percentage of 30. Though the deep ploughing in summer is essential technique, 55 percent of the farmers were adopting this technology even before the KVK's intervention. It was noted that gain in knowledge about soil application of T.viride among the farmers was to an extent of 34 percent and its effects on control of soil borne disease like root rot, leaf spot and rust. Besides, it is effective, low cost and available throughout the year in KVK itself and it facilitated the farmers to use it regularly (Alagukannan and Srinivasan, 2014). About 12 percent of the farmers were taking collection and destruction of egg masses before KVK's influence as it was effective and easy for control of leaf eating caterpillar. The farmers used to take the samples like pest and disease to the nearby agro centre and the shopkeeper recommends chemicals but after KVK's intervention, the farmers were familiar in handling the IPM in groundnut.

Knowledge Acquisition Vs Extent of adoption

The gain in knowledge depends on various factors like easiness of technologies, educational background of the participating farmers, extension approaches handled in technology transfer, farmers' attitude, ability of extension personnel, teaching and learning situation etc. Likewise the extent of adoption of a particular technology relies mainly on easiness and usefulness of the technology besides the socio economic status, access to the technological inputs and its low cost. This is in accordance with the findings of Alagukannan et al. (2015) in Banana cultivation at Tuticorin District. The present study on percentage gain in knowledge and percentage adoption could certainly generate some useful information for future line of study or the charges needed in existing system of cultivation of groundnut. About deep ploughing in summer season, 88 percent of the respondents gained knowledge on summer ploughing and it was adopted by 78 percent of the respondents. The similar trend was also noticed in the case of soil application of neem cake @ 250kg/ha. In contrary to that, crop rotation was known to the farmers to an extent of 52 percent after KVK trainings but its adoption was less (18 %). This could be due to preference of the farmers to the groundnut in terms of income over the other crops. Similarly the gain in knowledge in respect of installation of light traps was 42% but only 12 percent of farmers used installation of light trap due to non availability of light traps in local and high cost. The other technologies like installation of pheromone trap, seed treatment with *Trichoderma viride*, spraying of Hexaconazole, Imidacloprid and Chloripyriphos exhibited the similar trend of comparatively higher level of acquisition of knowledge and also adoption among the participating farmers by the various interventions of KVK. In contrary to that the knowledge acquired by the beneficiary farmers was high but its adoption was less for the technologies viz., collection and destruction of egg masses of leaf eating caterpillar and soil application of T.viride. This

implies that still more awareness on this technology has to be imparted to the farmers and easy availability of *T.viride* in right time should be ensured.

Conclusion and Recommendation

The findings of the present study reveals that the interventions of CREED KVK, certainly facilitated the knowledge acquisition by the farmers and adoption at higher level in groundnut cultivation with respect to the technologies viz., summer ploughing, soil application of neem cake, installation of pheromone trap, seed treatment with *T.viride*, soil application of *T.viride*, spraying of Hexaconazole, Imidacloprid and Chloripyriphus to control various pests and diseases and to get higher yield. The present study also suggests the need of alternatives or timely availability of critical inputs like light traps could be ensured and some more awareness is required on use of light trap, crop rotation and collection and destruction of egg masses techniques. The extension system should be further invigorated using ICT tools to improve the knowledge acquisition and adoption of technologies in Groundnut cultivation at Ariyalur District.

Table 1. Gain in knowledge level with respect to IPDM practices in Groundnut cultivation due to the intervention of CREED KVK at Ariyalur District of Tamilnadu

Sl. No	IPM Technology	Knowledge Level		
		Before KVK intervention	After KVK intervention	Gain in knowledge (%)
a. Cultural practices				
1	Deep ploughing in summer to expose soil	60	88	28
2	Soil application of Neem cake @200kg/ha	25	60	35
3	Crop rotation	32	52	20
b. Mechanical practices				
4	Installation of light traps 1 No./5 ha.	12	42	30
5	Installation of each pheromone traps @5No./ha. for monitoring and trapping of S.litura and H.armigera	20	46	66
6	Collection and destruction of egg masses of leaf eating caterpillar	8	38	30
c. Biological control of pest and diseases				
7	Seed treatment with T.viride10g/kg of seed	24	78	54
8	Soil application of T.viride @10 kg/ha	20	60	40
d. Chemical control				
9	Two spray Hexaconazole 5% EC @1500 ml/500 lit. of water at 15 days interval	45	75	30
10	Need based application of Imidacloprid 17.8@ SL @125ml/ha. for managing sucking pest of Groundnut	32	70	38

11	Spraying of chloripyriphus 20%EC @1500ml/500 lit. of water for managing defoliators	48	80	32
----	---	----	----	----

Table 2. Change in adoption level with respect to IPDM practices in Groundnut cultivation due to the intervention of CREED KVK at Ariyalur District of Tamilnadu

Sl. No	IPM Technology	Knowledge Level		
		Before KVK intervention After KVK	After KVK intervention	Gain in knowledge (%)
a. Cultural practices				
1	Deep ploughing in summer to expose soil	55	78	23
2	Soil application of Neem cake @200kg/ha	22	40	18
3	Crop rotation	3	56	18
b. Mechanical practices				
4	Installation of light traps 1 No./5 ha.	10	22	12
5	Installation of each pheromone traps @5No./ha. for monitoring and trapping of S.litura and H.armigera	18	62	44
6	Collection and destruction of egg masses of leaf eating caterpillar	12	32	20
c. Biological control of pest and diseases				
7	Seed treatment with T.viride10g/kg of seed	16	72	56
8	Soil application of T.viride @10 kg/ha	22	56	34
d. Chemical control				
9	Two spray Hexaconazole 5% EC @1500 ml/500 lit. of water at 15 days interval	38	80	42
10	Need based application of Imidacloprid 17.8@ SL @125ml/ha. for managing sucking pest of Groundnut	35	65	30
11	Spraying of chloripyriphus 20%EC @1500ml/500 lit. of water for managing defoliators	44	74	30

17. LINKAGES

17.A. Functional linkage with different organizations

S.No.	Name of organization	Nature of linkage
1	Department of Agriculture, Ariyalur District	Training, Demonstration, Farm School and Meetings (ATMA, Zonal Monthly Meeting),
2	Department of Horticulture, Ariyalur District	Training and Demonstration
3	Department of Animal Husbandry, Ariyalur District	Training and Demonstration
4	Department of Agricultural Engineering	Training and Demonstration
5	Department of Agricultural Marketing	Training
6	Department of Seed Certification	Training & Seed production
7	Department of Sericulture	Training and demonstration
8	Directorate of Cashewnut and Cocoa Development Board, Cochin	Seminar & Training
9	Department of Science and Technology, New Delhi	Training and Demonstration
10	National Commission for Women, New Delhi	Seminar
11	AIR, TRICHY	Radio Talk
12	AIR, Karaikal	Radio Talk
13	NABARD	Farmers club, Training and FPO promotion
14	Pudu Vaazhvu Thittam, Ariyalur District	Training
15	Mahalir Thittam	Training and Demonstration
16	LEAD Bank (SBI), Ariyalur	Training
17	SBI-Rural Self Employment Training Institute(RSETI)	Training
18	Reliance Foundation	Capacity building and Voice message
19	OSAI NGO	Training
20	RISE NGO	Training

NB The nature of linkage should be indicated in terms of joint diagnostic survey, joint implementation, participation in meeting, contribution received for infrastructural development, conducting training programmes and demonstration or any other

17.B. List special programmes undertaken by the KVK and operational now, which have been financed by State Govt./Other Agencies

Name of the scheme	Date/ Month of initiation	Funding agency	Amount (Rs.)
Skill development training for Rural Youth	10.09.2018 – 15.09.2018	SAMETI, Kudimiyamalai	42,000
Kisan Mela	22.01.2019	ATMA, Ariyalur	1,00,000
Exposure Visit, FIAC		ATMA, Ariyalur	2,40,000
National Skill Development Training	17.12.2019 – 22.01.2019	ASCI	3,30,400

Training programme on Cashewnut cultivation	23.01.2019 – 25.01.2019	Directorate of Cashewnut and Cocoa Development Board, Kochi	90,000
Strategies to augment livestock productivity under changing climatic scenario	04.03.2019	NABARD	35,200
Training cum workshop on Scientific Banana Cultivation, Post Harvest Management and Value Addition for SC / ST farmers	25.03.2019	NRCB, Trichy	1,21,000
Training programme on Macro propagation	29.03.2019	NRCB, Trichy	30,000
Friends of Coconut Tree	05.03.2019 - 11.03.2019	CDB, Chennai	1,13,000

SAC proceedings along with list of participants

Sixth Scientific Advisory Committee meeting of ICAR Krishi Vigyan Kendra, Ariyalur was held at the premises of ICAR KVK, Ariyalur District on 20.03.19 by 10.00 am. Among 32 SAC members, 19 members presented in the meeting. The SAC meeting was started with welcome address by Dr.V.Nadanasabapathy, Chairman, ICAR KVK and gave brief introduction about KVK activities.

Dr.G.Alagukannan, Senior Scientist and Head, presented the report of activities carried out in past year to SAC Members. After submission of report, the Scientific Advisory Committee members were interacted and gave their valuable suggestions to improve and strengthen the KVK activities. After interaction, finally chairman briefed all the suggestions given by Scientific Advisory Committee members and gave assurance to execute the suggestions given.

Dr.A.Baskharan, Principal Scientist, ICAR-ATAR, Hyderabad

- KVK should prepare next year action plan in consultation with farmers and line department officials
- Each SMS should conduct impact study and quantify them. The trainings should end with model bankable projects for all the trainings.
- Each SMS should document adoption rate of every training programme
- The latitude and longitude of each OFT and FLD fields should be documented with the help of GPS equipment.
- KVK should give technology to farmers through quick SMS
- The Revolving fund of the KVK should be increased by the contribution of all SMS
- Each SMS should present FLD and OFT programmes with individual farmer datawise at the time of SAC meeting
- All SMS should select beneficiaries based on the suitability of the training
- Impact study should be documented for previous year training programmes
- NCOF decomposer liquid formulation supply to farmers by sales mode to be increased
- Supply of the seeds to farmers from genuine source to be ensured to the possible extent
- Encourage paid training to improve the adoption of technologies
- Successful farmers case should be disseminated through radio programmes
- While conduct of organic farming related training programmes officials from organic certification department to be invited
- KVK may purchase solar drier unit for demonstration purpose with permission of ATARI, Hyderabad.

Professor & Head, VUTRC, Perambalur

- New SMS for Animal science should discuss with VUTRC, Head to assess the problems of Ariyalur district and to survive at solutions
- Tick and deworming practices demonstration conducted in goat
- Ranikhet disease demonstration in Poultry should be conducted
- Demonstration of recovering from Mastitis disease in cattle should be conducted

Dr.Backiyarani, Principal Scientist, NRCB, Trichy

- KVK should conduct training and demonstration for macro propagation techniques of Saba variety to youth farmers
- Conduct OFT on new banana variety for leaf purpose
- Saba variety of banana should be directly recommended to problematic soil

- Training also be given to Scientists and farmers for banana sucker production
- Promote leaf purpose varieties like Poovan and Karppooravalli

Programme Coordinator, KVK, Trichy

- Promote short duration varieties in crops of Ariyalur district to mitigate drought
- KVK website should be modified and developed
- Give trainings related drip irrigation and fertigation tank management

Assistant Director of Agriculture, Department of Agriculture

- KVK should conduct more research trials and demonstration for Fall Army Worm in Maize
- Promote ecological engineering for IPM in all crops
- Trainings should be conducted on safe use of pesticide
- Promote high yielding and drought tolerant sesame variety

Department of Horticulture

- Promote and give trainings on protected cultivation techniques
- Assess the alternate for cucumbers crop which is perform better under shadenet

Department of Agriculture Engineering

- Promote primary cultivation machineries and its importance
- Promote and prompt guidelines given for drip irrigation usages.

Regional Research Station, Vrichachalam

- Promote and conduct demonstration of white sesame variety VRI-3 for better marketing and high yielding under drought situation
- Promote and conduct demonstration of pani pipe method of irrigation in Paddy for water conservation

LEAD Bank Manager, SBI

- KVK should conduct training programme with bankable project

Department of Animal Husbandry

- Promote heifer calf rearing and its management practices
- Trainings should be conducted on fodder cultivation

Farmer Suggestions

Mr.Ashok Kumar

- Motivate the farmers for involving in integrated farm development

Mr.Aasai Thambi

- Make production of all types of seeds and planting materials and supply to farmers

Mr.Viswanathan

- Take steps to follow up of trained farmers

Mrs.Mariyammal

- Promote and conduct training programmes on organic input preparation methods to farmers.

List of Participants

S.No	Name	Designation
1.	Dr.A.Baskharan, ICAR-ATARI Hyderabad	Principal Scientist
2.	Dr.V.Nadanasabapathy CREED KVK Cholamadevi	Chairman
3.	Dr.P.Suresh Kumar Veterinary University Training and Research Centre Perembalur	Professor and Head
4.	Dr.S.Bakkiyarani National Research Centre for Banana Trichy	Principal scientist
5.	Dr.Eswaran Krishi Vigyan Kendra Trichy	Programme Coordinator
6.	Mr.Suresh Department of Agriculture Ariyalur	Assistant Director of Agriculture (Quality Control)
7.	Mr.V.Periasamy Department of Horticulture Ariyalur	Assistant Director of Horticulture
8.	Mr.P.Velusamy Department of Agriculture Engineering Ariyalur	Assistant Engineer
9.	Dr.S.Vasuki Department of Animal Husbandry Ariyalur	Veterinary Assistant Surgeon
10.	Dr.C.Harisudan Regional Research Station Vridhachalam	Assistant Professor
11.	Mr. Chinnasamy All India Radio, Trichy	Programme Executive
12.	Mrs.V.Jothi Sericulture Department Ariyalur	Field Inspector
13.	Mr.S.Elancheran Ariyalur	Lead District Manager
14.	Mr.K.Ashok Kumar Karaivetti	Farmer
15.	Mr.R.Aasai Thambi Andimadam	Farmer
18.	Mrs.Mariyammal Elakurichi	Farmer
19.	Mr.T.Visvanathan Silal	Farmer

Annexure 2**Project I****PROGRESS REPORT OF THE PROJECT UNDER SC/ST SCHEME FUNDED BY
DEPARTMENT OF SCIENCE AND TECHNOLOGY, NEW DELHI**

1. **Title of the Project** : Socio Economic upliftment of SC/ST farmers of Ariyalur district of Tamil Nadu through development of Master trainers on Integrated Farming System (IFS) Approaches
2. **a. Name of the Principal Investigator and Institute** : Dr.G.Alagukannan, M.Sc (Hort)., Ph.D., PGDAEM., Senior Scientist and Head
ICAR Krishi Vigyan Kendra (Hosted by CREED)
Cholamadevi PO, Jayankondam Via,
Udayarpalayam Tk. Ariyalur Dt. – 612 902
Tamil Nadu
- b. Name of the Co Principal Investigators and Institute**
 1. Y.Raja Joslin, SMS (Horticulture)
 2. A.Rajkala, SMS (Agricultural Extension)
ICAR Krishi Vigyan Kendra (Hosted by CREED)
Cholamadevi PO, Jayankondam Via,
Udayarpalayam Tk. Ariyalur Dt. – 612 902
Tamil Nadu
3. **Budget** : Rs.18.98 lakhs
4. **Objectives**

General objectives

- To improve the farm productivity and farm income owned by SC farmers by disseminating integrated Farming System approaches
- To enhance the socio economic status of 40,000 SC farmers of Ariyalur district of Tamil Nadu

Special objectives

- To capacitate 1,000 farmers on Integrated Farming System approaches through trainings and demonstration
- To convert those 1,000 SC trainers into master trainers to spread the IFS technologies among the neighbouring farmers
- To increase the current level of farm production and income from Rs.60,000/ha./year to Rs.1,20,000/ha./year by integrating all possible components.
- To create awareness on integrated farming system approaches among the 40,000 SC farmers through 1,000 master trainers and educate them to adopt IFS technologies.

5. Time Frame for achieving the objectives:

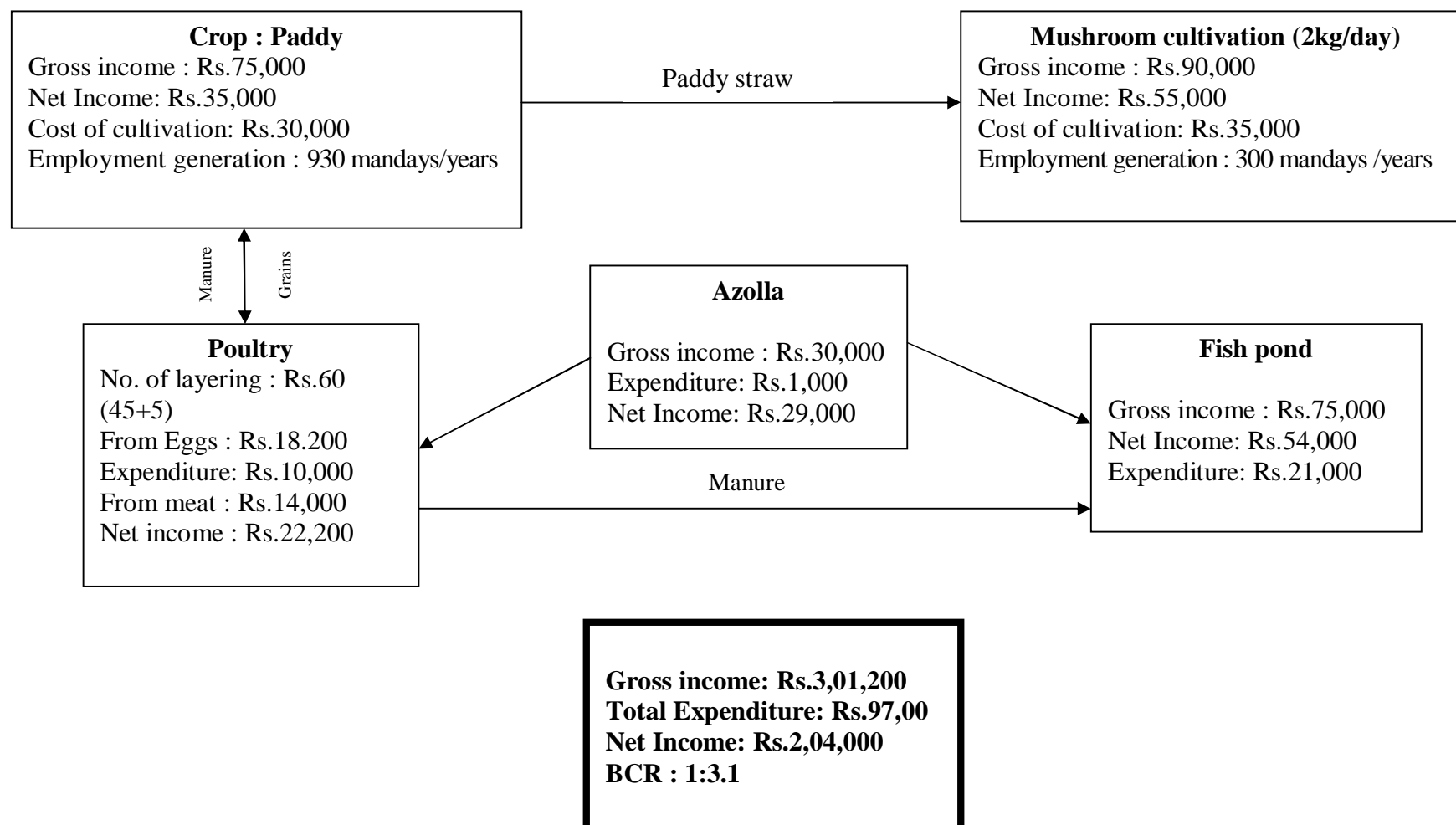
Sl. No.	Activity	Start month	End month
1	Pre project implementation appraisal in 30 villages	1 st month of the project implementation (October 2016)	3 rd month of the project implementation (December 2016)
2	Trainings – 30 batches to cover 1000 SC/ST farmers	4 th month (January 2017)	18 th month (March 2018)
3	Assessment of end of project status	19 th month (April 2017)	22 nd month (July 2018)
4	Consolidation of final report to DST	23 rd month (August 2018)	24 th month (September 2018)

6. Specific products/technology/training module developed for enhancing the income of the SC/ST :

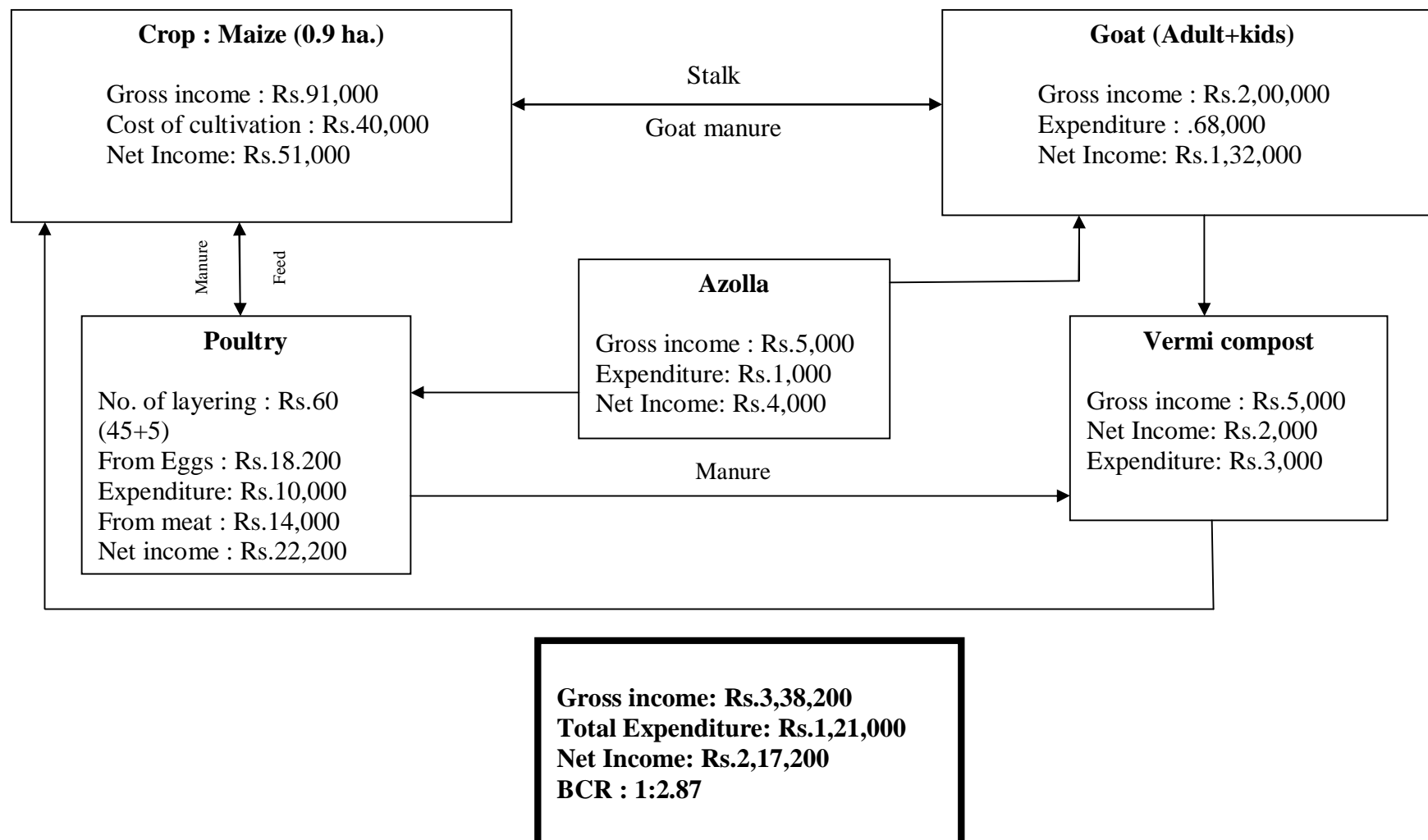
Ariyalur district is diversified in its soil types, land use pattern and rainfall and water availability. This district comprises of six blocks viz., T.Palur, Andimadam, Jayankondam, Thirumanur, Ariyalur and Sendurai. Thirumanur block receives Cauvery river water from Mettur dam and mostly paddy and sugarcane are cultivated in wet land and garden land condition respectively. T.Palur and Jayankondam blocks are good in ground water resources and hence mostly vegetables and flower crops are cultivated here. Andimadam and Sendurai blocks are mainly depends on rainfall and the soil types are suitable to grow groundnut, cashewnut, etc under rainfed condition. Ariyalur block is also rainfed as the black cotton soils favour the cultivation of cotton and maize.

Hence by assessing the needs of different blocks, we have developed different IFS models that suits to the particular block by considering the rainfall, ground water availability and soil type. The different models are depicted hereunder.

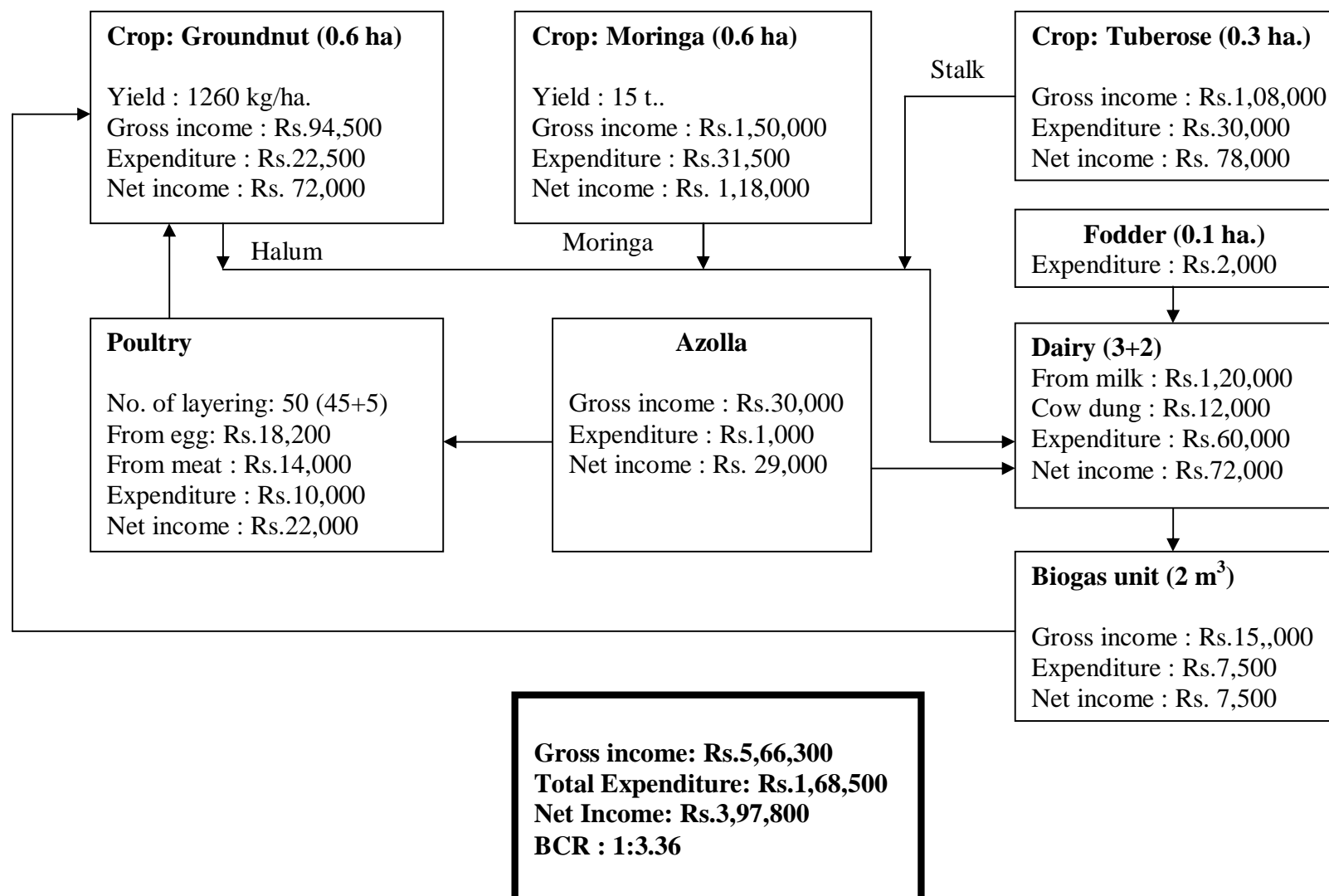
IFS model developed for Wetland



IFS model developed for Dryland



IFS model developed for Gardenland



Training module developed

Sl.No	Topics covered
1	Introduction on Integrated Farming System (IFS)
2	Crop components in IFS for wet land, dry land and rainfed
3	Vermi composting technique
4	Dairy unit – Site selection, shed construction and maintenance
5	Selection of milch cow breed, rearing and disease management
6	Slattered method goat rearing
7	Fodder and Azolla cultivation
8	Backyard Poultry rearing
9	Composite fish culture
10	Mushroom cultivation
11	Honey Bee rearing
12	Mulberry cultivation techniques
13	Bio gas unit
14	Hay and Silage making
15	Kitchen garden
16	Piggery unit & Rabbit rearing
17	Duck rearing & squab rearing
18	Government schemes in promotion of IFS
19	Preparation of project reports to avail credit facilities
20	Insurance programme for livestock / crop components

6. Area of operations/study :

State : Tamil Nadu

District: Ariyalur

Sl.No.	Name of the Block	No. of Village	Name of the Village
1	T.Palur	4	Muttuvancherry Vikramangalam Gunamangalam Karkudi
2	Thirumanur	2	Aathanur Thoothur
3	Jayankondam	3	T.Keezhaveli Kallathur Edaiyar
4	Sendurai	2	Paranam Kumuzhiyam
5	Andimadam	2	Anikurichan Vilanthai
6	Ariyalur	2	Vilangudi Nagamangalam

7. Number of beneficiaries :

Village wise number of farmers participated in the training is as follows :

Sl.No.	Name of the Village	No. of Trainees
1	Muttuvancherry	33
2	Vikramangalam	33
3	Gunamangalam	33
4	Karkudi	33
5	Aathanur	33
6	Thoothur	33
7	T.Keezhaveli	34
8	Kallathur	34
9	Edaiyar	34
10	Paranam	34
11	Kumuzhiam	34
12	Anikurichan	33
13	Vilanthai	33
14	Vilangudi	33
15	Nagamangalam	20

8. Impact assessment (before and after implementation of the project)

As per the project proposal, it has been proposed to conduct pre project implementation appraisal in 30 villages. PRA, Interview with the village leaders to ascertain the real need and resources available at the particular village. This was happened through this project in the first three months (October 2016 to December 2016). The training programmes of five days duration were commenced from January 2017 and till now (October 2017) 487 SC and ST farmers were trained on Integrated Farming System aspects. After training programmes, the participant farmers realized the importance of IFS and now they started to incorporate the different IFS components that are lacking in the existing system. So the real impact could be assessed only after one year. However, baseline survey of the individual farmers were completed so that the comparison can be made after one year.

However, the output and the outcome can be presented here.

Output

Four hundred and eighty seven (487) SC and ST farmer belongs to 15 villages were trained on Integrated Farming System (IFS) concepts.

Outcome

- Out of the 487 SC and ST farmers trained 161 farmers started incorporating different IFS components into their existing farming practices.
- Out of the 487 SC and ST farmers trained 140 farmers build their capacity to educate other farmers on IFS i.e. they turned into master trainers in their area. Beside they are also serving as master trainers in other training programmes conducted by our Kendra like Poultry, Mushroom, Japanese quail rearing, etc.

9. Future Scope/Suggestions/directions

Based on the experiences gathered in the implementation of this project for the first year, the following suggestions are made

- a. There is the wide scope to improve the production potential of SC / ST farmers in their farming by adding different agricultural allied enterprises like mushroom production, desi chick rearing, Japanese quail rearing, goat rearing, heifer calf rearing, dairy etc.
- b. In the real sense, about 54 per cent of the participant famers are devoid of land resources completely and others are small and marginal farmers. So the landless agricultural labourers should be given utmost care to ensure their livelihood.
- c. A minimum level of land (atleast one acre) may be spared on lease basis to those farmers from village common lands if available in their respective areas. This would certainly bring the waste 'porampok' lands into productive lands. The SC/ST landless labourers may be motivated to use their lands for the production of fodder for their cattles.
- d. The District authorities and State Governments may be directed in such a way to spare the wastelands to the SC/ST farmers to improve their income.
- e. The potential SC and ST farmers may be identified and provided with credit facilities to start their income generating ventures as they are currently completely lack of financial resources and credit access.
- f. The RSETI (Rural Self Employment Training Institute) serving in the district may direct their respective bank branches to render credit facilities to the potential beneficiaries.

- g. The complete and regular follow-up is required for the participants farmers of this trainings in terms of technology, weather advisories, market information, etc.
- h. The special market mechanism (like TRIFED for ST farmers) may be created to the SC farmers also to fetch good prices for their agricultural produce.

10. Final end product/outcome in terms of Socio economic development

Primarily this project is contemplated and implemented with the financial assistance of Department of Science and Technology to improve with socio economic development of SC and ST people in the target villages. The socio economic development happened as the result of implementation of this project are summarized below :

- The SC and ST people of our target villages never attend this kind of weeklong training programmes. By this project, they had the chance of attending long duration residential training. They expressed their happiness for their chance rendered by DST.
- They really felt happy and proud in attending these trainings.
- Their capacity in agriculture especially in the allied enterprises viz., goat and sheep rearing, desi chick rearing, dairying, etc. are built in a bigger way. So they were technologically empowered.
- Now they are attending training programme conducted by our Krishi Vigyan Kendra at par with the other farmers belongs to other communities. They share their knowledge and information, success cases, etc. with other farmers in the forum like trainings and social media like whatsapp to some extent. So they attained the improved status in the society.
- The economic development of the participants SC and ST farmers will be measured only during the second year of project period. However, few rural youths trained by us are started their income generating activities like desi bird rearing, mushroom cultivation and earning a income of Rs.8,000 to Rs.10,000 from this single enterprise. However this cannot be generalized at this stage.

Project II

Report on Empowering Farm Women through Agricultural based Economic activities

1. Introduction**a) Background:**

Women constitute 46.1 % of the population of the Ariyalur District of Tamil Nadu. The total population of the Ariyalur District is 7,54,894 among them 1,88,724 are farming families. The traditional agriculture by raising crop such as paddy, sugarcane, groundnut, cotton, maize etc., provides the farms families only with subsistence income and thereby the upliftment in the living standard is questionable. Natural calamities, increasing input cost, fluctuation in agriculture produce prices further worsen the situation. So the farming families are deprived of sustainable income.

To overcome these problems and to improve the farm families the only alternative is entering and new or strengthening the existing agriculture based allied entrepreneurial activities. Farm women are the best suited persons in the farm families look after these kinds of entrepreneurial activities. Keeping these facts the proposal has been contemplated and submitted to National Commission for Women, New Delhi and sanction availed.

b) Objectives:

1. To capacitate 100 farm women of Ariyalur District, TamilNadu on agriculture based economic activities in two days seminar (Total trainee days 200)
2. To identify the hurdles faced by the farm women in entering into economic activities and to arrive at possible measures to overcome those hurdles.
3. To come out with practically possible economic activities that they have very good market potential to improve the farm family income.
4. To suggest suitable policy points for the consideration of policy makers to empower the farm women.

Methodology:**c) Outline of the procedure adopted for conducting the Seminar**

The two days seminar has been well organized by the following proper methodologies:

1. Keen interest is exercised in identification of villages and farm women to take part in the seminar.
2. The professional rapporteurs and experts from eminence and renowned institution were prefixed and they were well informed about the content expected in the seminar.
3. The district level authorities were fixed not only to decorate the dias but also to understand the importance of farm women and objectives of National Commission for Women, New Delhi.
4. The sessions were commenced in time and local language used for presentation and discussion.
5. Suitable AV aids were engaged to make the learning process easy by the participants.
6. Other amenities like good food, drinking water and toilet facilities were provided.
7. Two KVK Scientists were totally allocated for this two days seminar under the overall guidance of Senior Scientist and Head of KVK.

2. Proceedings:

Brief on inaugural function

The two days seminar on “Empowering Farm Women through Agriculture based Economic Activities” was conducted on 06.03.2019 and 07.03.2019. During the inauguration function on 06.03.2019, the dias was decorated by various dignitaries and district officials. Dr.G.Alagukannan, Senior Scientist and Head, ICAR – KVK, Ariyalur delivered welcome address and encouraged women to become entrepreneurs instead of going for menial work. Dr.V.Nadanasabapathy, Chairman, CREED – KVK emphasized the importance of this days seminar and motivated women to involve in agri based economic activities. Mrs. A.Lalitha, Project Director, TNSRLM, Ariyalur in her speech emphasized women to start agriprenuership in group to avail all the government benefits, schemes in Mahalir Thittam and to change their attitude in claiming their rights. Mr.R.Palanisamy, Joint Director of Agriculture, Ariyalur stressed the importance of healthy living, promotion of organic farming and traditional food varieties also explained schemes in Agriculture Department. Mr.P.Anburaj, Deputy Director of Horticulture, Ariyalur explained various schemes under Horticulture department, created awareness on Uzhavan App and motivated women to involve in nursery production. Mr.C.Karthikeyan, Director, SBI – RSETI, Ariyalur explained activities of their institution in related to women empowerment. Dr.V.E.Nethaji Mariappan, Senior Scientist and Head, ICAR – KVK, Perambalur emphasized importance of food habits and its relationship with Agricultural sector. At the end of the inaugural session Chairman, CREED KVK honoured the dignitaries.

Session wise summary

Technical session for the day one was commenced immediately after the inaugural function Dr.V.E.Nethaji Mariappan, Senior Scientist and Head, KVK, Perambalur acted as a rapporteur for the day.

I Day (06.03.19)

Session 1:

The first session was handled by Mr.C.Karthikeyan, Director and Mrs.Lakshmi, Field Officer, SBI – RSETI, Ariyalur on “Self Employment Opportunities for Farm Women”. First of all Director explained the farm women about their institution, activities being carried out by them for the benefit of women. He also explained that they are working with our KVK and providing various training to the farming community. He added that as a follow up of trainings given by RSETI, the credit linkage facilities is also being provided to the beneficiaries with 35% subsidy. He created awareness among farm women to approach their institute for the trainings and other benefits. Mrs.Lakshmi, Field Officer listed out the trainings given to the women viz., pickle making, papad making, masala preparation, value addition, household products making, artificial jewellery making, tailoring, embroidery, etc., she also said that the trainees should fall under below the poverty line and the proof should be submitted. She added that based on farm women need trainings may be arranged either On Campus or Off Campus but all the training is a week long programme and accommodation and food will be provided in free of cost if it is On Campus or else only food will be provided for Off Campus training.

Farm women actively participated in interaction with Mrs.Lakshmi and submitted the trainings required for their village. SHG leaders have taken her contact number for further communications regards trainings, beneficiaries mobilizations and to know updates.

Session 2:

The second session on “Increase Generation through Agriculture Value Addition” was carried over by Mrs.P.Vijayalakshmi after a tea break. Initially she stressed the importance of being an entrepreneur which improves not only a economic status of family but also a status in society. She explained FIG formation under NABARD by which a group can avail various loans and subsidy schemes to start own entrepreneurship. In her speech, she created awareness among farm women about value addition, scope for value addition and demand for the value added products. She explained the nutrients in Millets and how it meet out the deficiency of the farm women (i.e) Ragi removes residues from the body, Cumbu has high Iron content which can consume by anaemic patients etc, farm women raised question that how to start a business? Mrs.Vijayalakshmi gave explanation initially to form a group, to conduct regular meetings daily atleast for an hour in leisure time and to come up with some products like sambar powder, coriander powder, masala powder and also moringa powder which is locally available source in Ariyalur District. She recommended farm women to prepare moringa powder and market price is Rs.400/kg. The procedure was also explained to collect the leaves, wash, shade dry and powdered. Salt may added if required. From 5 kg of fresh moringa leaves we will get 1 kg of powder. This can also be marketed with incorporate with atta powder, idli powder, soup powder etc., said Mrs.Vijayalakshmi.

She said that packing plays major role which comes up with neat label includes nutrient content details, preparation methods, FSSAI license number and expire date. The price for the product should be worked out with 20-25% margin. She also said direct/wholesale marketing earns higher profit rather retail marketing. The session came to an end followed by lunch break.

Session 3:

“Mulberry Cultivation and Silk Worm rearing – prospects and problems” was the session handled by Mr.L.Chandrasekaran, Assistant Director of Sericulture, Trichy. He said that women are instrumental in agriculture and new technologies and agri allied activities should be adopted by farmers for increased income. He requested everyone to do farming by understanding the cropping pattern of Ariyalur District and minding the ground water level which is depleted every year. Based on current scenario, along with agriculture it is necessary to go allied activities and Mulberry Cultivation is one of the best enterprise suitable for farm women. Day by Day scope for sericulture is increasing as it gives concrete income for every 45 days. He explained the cultivating technologies (i.e) tilling the land and farm yard manure should be applied. The proper sets should be selected and develop a nursery of 5,500 saplings/acre.

Intercropping may be suggested in early 5 months as revenue is not available through Mulberry Cultivation. For 2 acre Mulberry Cultivation, shed may be established in 50x20 ft. After 1 year Mulberry crop growth will be fine and 1500 eggs can be reared. Therefore, in small area, farmers can get higher returns. He also explained about subsidies in detail (i.e) farmer who own land can submit Chitta, Ration card, Aadhar card and photo and avail 75% subsidy for Mulberry cultivation. For shed construction 50% subsidy is given by government (eg. If shed cost is Rs.1.75 lakhs Rs.87,500 is subsidy amount) but the photo documentation is must in all the stages. Government also provides mini tractor, crop harvester machine,

pesticide sprayer, net, sicuture in free of cost and drip irrigation is also given for crop cultivation. He added statistics that 36,000 tonnes of silk is required for Indian sub continent and cost of 1 kg silk is Rs.350/-. A women can earn an income of Rs.24,000 to a maximum of Rs.32,000 from 1 acre and the expected yield is 80 kg.

Session 4:

Dr.G.Alagukannan, Senior Scientist and Head, ICAR - KVK, Ariyalur covered “Protected cultivation of high value crops”. He has explained about the current situation of shrinking of land and water resources and need for taking up the technologies that would give high returns in smaller area. Establishment of medium cost poly houses, shadenet houses and vertical space utilization by erecting pandal/bower system and the crops to be cultivated under these systems are highlights of his presentation. He has delivered the technologies suitable for cultivation of Tomato, Capsicum, Dhalia, Roses, Gerbera, Cucumber, et., under protected cultivation. The loan facilities and government subsidies to establish these kinds of protected cultivation structures also took part in his presentation.

Session 5:

The last session of the day was taken by Mr.Y.Raja Joslin, SMS (Horticulture), KVK, Ariyalur on “Integrated Farming System for enhanced farm income”. He quoted that “one become a good farmer only he do Integrated Farming” which should includes various components like cattle, poultry, goat, fish, crops etc., This integrated farming stretches way to reduce cost of cultivation, as we can produce onsite inputs like panchagavya from cattles wastes, vermicompost from all agricultural wastes and cow, goat dung, poultry droppings used as a manure for crops. He also added that apart from producing it for our own purpose, vermicompost and panchagavya is being commercialized and it is highly suitable enterprise for women. Market price for vermicompost is Rs.10/Kg and panchagavya is Rs.100/litre which requires less investment or production cost and less effort. Later beneficiaries were taken to KVK institutional farm spreaded in 50 acres includes various demo units viz., cattle shed, slattered goat unit, poultry unit, azolla bed, vermin bed, mushroom unit, fish pond, silage making and protected cultivation unit. They were explained each and every demo units in detailed.

Experience sharing of Mr.Prabhu, successful honey bee entrepreneur

In the end of the day, successful entrepreneur Mr.Prabhu, who is the master trainer of KVK in honey bee rearing shared his experience to the women and motivated them to start their business. He also shared his contact number to take any help from him to start their own honey bee rearing enterprise. He explained the market demand and market price for honey as it has high medicinal value.

Followed by recalling session and take home messages were given to the farm women. Exhibitions stalls were arranged includes poultry, mushroom, amla pickles, mushroom pickle, powder, honey and millet health mix produced by SHG women. All women visited and benefitted.

II Day (07.03.19)

On second day Mr.Charles Alwin acted as a rapporteur of the day. 100 women participated in the seminar. Mr.Raja Joslin welcomed the rapporteur, resource persons and participants and requested participants to remain focussed on “How to increase the family

income through accurate farming techniques and farm related activities including appropriate livestock rearing”.

Session 1:

Dr. P.Suresh Kumar, Head, VUTRC, Perambalur, handled session on “Rural Livelihood through Animal Husbandry”. He addressed the participants on ways to get best yield in shortest span from cattle. His address covered increasing milk yield from cows, appropriate timing for fertilizing cows, measures to be taken during pregnancy and dry days of cows without yield, accurate and well calculated feeding patterns, proven feeding methods, and vaccination from time to time.

It was noted that audience who own cows had limited knowledge on the topic listed above. Repeated refreshment courses and trainings would help them optimize returns from milch animals.

Dr. Suresh also discussed salient points involved in goat rearing. He checked with the audience about the pregnancy duration and found the awareness level was high, but audience had insufficient information on how to maintain goats post-delivery, when to fertilize goats for next pregnancy and it was also noted audience had very poor information on disease cycle based on season. This may be considered seriously for further intervention to improve yield from cattle.

Vaccination also formed part of the discussion by Dr. Suresh. Discussion on income from country chicken and sale of country chicken eggs was eagerly received by the audience.

Session 2:

Dr.Backiyarani, Principal Scientist, ICAR-NRCB, Trichy handled session on “Nursery establishment and maintenance – scope, problems and solutions. She is a renowned researcher in the field of Banana cultivation, delivered a highly motivating talk effectively clubbing Women’s Day aspects and obtaining economic independence through efficient farming. She highlighted on how women over centuries emerged from zero education, zero economic activity and zero political participation to present day nation building across the world.

Her discussion enlightened women on simple and practicable aspects of cultivating banana in their fields and houses. Her discussion on banana value added products was an eye opener for the audience.

Trainings and credits to help women set up production units for banana value added products would bring a new world of opportunities for the rural women in Ariyalur District.

Session 3:

Dr.E.D.Israel Oliver King, Principal Scientist, MSSRF, Chennai, addressed participants on “Gender Mainstreaming”. In his session he told that women are having less knowledge on “what is gender mainstreaming”? but which is necessary to recognize in the current situation that women are playing equal part in all the economic activities either directly or indirectly. He told that Gender Mainstreaming is nothing but ensuring that both men and women have equal access in all aspects. He also highlighted how women plays multidimensional role in day to day life in agriculture, domestic and allied sector which

remains unnoticed in the society. He came up with statistics indicating that female agricultural labours India as per 2011 census is 61.6% (i.e) female constitutes almost equal share in labour activities. During his speech, he encourage participants farm women to break the gender stereotypes enforced on them by society such as women are dependent weak, emotional, flexible, meant for menial work etc., He added that National Rural Livelihood Mission (NRLM) has initiated special program “Mahila Kisan Sashaktikaran Pariyojna” MKSP in 2010-11 to empower women in agriculture by making systematic investments to enhance their participation and productivity, also to create sustainable agriculture based livelihoods of rural women. Women participated and actively interacted in his session as it was an eye opener for the barriers in front of them.

Session 4:

Dr.P.Kalaimathi, Agriculture Officer, SBI in her session listed an array of programs available with financial institutions which would benefit the farmers, cattle rearing families and small entrepreneurs in multiple areas. Financial services extend from crop loans, machinery loans, infrastructure loans for agriculture, and subsidies for cow loans and so on. It was felt that one such awareness might not help the less educated rural farming women to comprehend the huge list of facilities provided by a bank manager; rather a phased out awareness campaign in their villages would help them better to establish linkage with financial institutions. Such activities would ensure more effective inclusion of women in economic activities and also help empower women in a sustained manner. She also covered about the preparation of Bankable Project related to agriculture entrepreneurship.

Session 5:

Mrs.S.Shobana, SMS (Home Science), ICAR – KVK, Ariyalur in her session interacted with the farm women to know their nutritional awareness status and surprised that many of the farm women are unaware about food and health security. She quoted that women constitute about 60% of agricultural labour force in rural sector but most of the women falls under malnutrition due to intake falls below the recommended dietary allowance (RDA). She also added for women it is recommended to take an average of 2000 kcal/day for healthy life. But it is evidenced that farm women are consuming below an average. She recommended farm women to consume at least 300g of vegetables includes green leaves, tubers, fruits as per national nutrition guidelines also to intake 40g of pulses in daily diet for balanced diet as per Indian Council of Medical Research (ICMR) recommendation. She confined that most of the farm women are under weight or obese due to improper diet and lack of knowledge and nutritional security during her session. Finally she requested each and every farm women to establish kitchen garden in the small space available at their house with locally available resources like bhendi, tomato, chilli, coriander, curry leaves, greens, gourds, onion etc., which yields vegetables regularly needed for one family. It not only curtails the part of family expense but also reduces the toxic effects in the human body as we can cultivate it without the use of pesticides. “Health is Wealth” and it is women responsibility to ensure the nutritional security of the whole family was emphasized during her presentation.

Experience sharing of Mrs.R.Meena, successful poultry entrepreneur

Mrs.R.Meena is a beneficiary of KVK who has become a medium size entrepreneur with support of the KVK team operating in Cholamadevi. Meena in her testimony told the audience that she was a shy housewife not involved in any economic activity. When she was approached by KVK team to attend a training program on poultry to grow country chicken, she accepted the offer with much hesitation and without much purpose. After the training

program, she was well motivated to start an income generation activity through country chicken. In the course of time, she was also trained on various other aspects such as mushroom cultivation, millet value addition and cattle. It was a feast to listen to the testimony of Meena who said that she now employs 10 women in her business.

3. Observations:

From the two days lectures, presentations, deliberations and experience sharing the rapporteurs session observed the following:

1. There is the enormous interest among the participant farm women to enter into the agriculture based income generating activities.
2. As their education/literacy level is low the knowledge and skill on almost all the agriculture based income generating ventures are meagre.
3. Their exposures to this kinds of capacity building programmes are less as they are seldom permitted to attend this kinds of programmes conducted by formal institutes like Krishi Vigyan Kendras or Line Departments.
4. Their poor socio-economic conditions stands as the big barrier to start the new enterprises like poultry/heifer calf rearing/Dairy/value addition centre.
5. The rural farm women are in the clutches of local money lenders for meeting the cultivation expenditure in the cropping seasons.
6. They are deprived of information on government subsidy schemes operating by agricultural and allied departments viz., Horticulture, Animal Husbandry, Sericulture, Fisheries, District Industrial Centre, THADCO etc.,
7. The practically possible economic activities to improve the farm family income were observed from these two days seminar as follows:
 - Backyard poultry rearing
 - Goat rearing
 - Cattle rearing
 - Apiculture
 - Sericulture
 - Mushroom production
 - Value addition in millets
 - Nursery production

4. Recommendations / Action points

The two days seminar on “Empowering Farm Women through agriculture based economic activities” paved the way for identification of scope for agriculture based enterprises, challenges, measures to overcome those challenges and finally to arrive at the action points. The recommendation emerged out of the National Commission for Women sponsored two days seminar is summarized as below:

I. Recommendations related to local administration or its agencies

S.No	Recommendations / Action points	Department
1	Ascertaining the resource potential of farm women on cluster basis	KVK
2	Arriving at suitable agriculture based income generating activities to that particular cluster	KVK, Department of Agriculture, Horticulture,

		Animal Husbandry, fisheries, Sericulture
3	Identification of individual farm women, sensitization, mentoring and motivation	KVK along with NGO's working in that area
4	Creating awareness about State and Central government schemes by mass campaigns, group meetings etc.,	Respective block level departments, Panchayat level offices
5	Facilitating the farm women to avail those subsidies	Respective block level departments, Panchayat level offices
6	Capacity building of selected farm women on different agriculture based activities through trainings, demonstrations and exposure visits	KVK, Veterinary University Training and Research Centre
7	Preparation of project proposal to submit to bank and creating credit linkages	KVK and service banks
8	Market tie-ups for their products	Farmer producer organizations working in that area and KVK

II. Recommendations related state administration or its agencies

S.No	Recommendations / Action points	Department
1	Special projects to empower farm women may be formulated and implemented to cater the needs of the farm women.	State government – The project may be implemented through 'Mahalir Thittam' or State Level Rural Livelihood Mission
2	There should be the reservation for farm women in all agriculture related schemes and subsidies.	Concerned department (Agriculture, Horticulture, Animal Husbandry, Sericulture, Fisheries etc.,)
3	Standardization technologies for suitable income generating activities pertaining to particular district.	State Universities like Agriculture, Veterinary and Fisheries
4	As the farm women comprising of 30% of the district, a separate department for farm women at district level may be established to serve the farm women with fullest attention.	State government

III. Recommendations related to Government of India and / or its agencies

S.No	Recommendations / Action points	Department
1	The Government of India should give special importance in terms of schemes and subsidies under NRLM.	Government of India
2	Government of India should direct the banks to extend credit facilities for farm women to start agriculture based income generating activities.	Concerned Ministry and CEOs of Banks
3	Identification of centres or areas for establishment of value addition units considering the resource availability.	Government of India
4	Framing of necessary policies for inland consumption and easy export of value added products.	Government of India
5	Funding of capacity building programmes to capacitate farm women.	NCW, New Delhi
6	Formation of Farmer Interest Groups (FIG's) and Farmer	NABARD

	Producer Companies (FPC's) exclusively for farm women and extending financial support.	
7	Instituting and conferring awards to the successful farm women at district level every year.	NCW through respective KVKs

Conclusion:

The two days seminar on “Empowering Farm Women through Agriculture based Economic Activities” was conducted successfully by ICAR – KVK (Hosted by CREED) funded by National Commission for Women, New Delhi. The discussion with the participant farm women, deliberation of dignitaries took part in the programme, lectures of experts and experience sharing of successful entrepreneurs gave good inputs to identify the potential of farm women, sorting of suitable agriculture based activities suits to the farm women and to suggest suitable action points at District, State and National Level Administration and agencies.

Project III**Report of
District level Seminar on Cashew**

The District level Seminar on Cashew was organized by ICAR Krishi Vigyan Kendra (Hosted by CREED), Chola madevi, Ariyalur District, Tamil Nadu at Community Hall, Veerakkan village on 04.12.2018 with the financial support of Directorate of Cashewnut and Cocoa Development, Kochi. The registration of the farmers was started by 09.45 am.

The District level seminar on Cashew was started with welcome address given by Dr.G.Alagukannan, Senior Scientist and Head, ICAR KVK, Ariyalur District. Mrs.Saranya, Assistant Director of Horticulture, T.Palur block of Ariyalur district gave special addresses for the Seminar. In her lecture, she explained about the various schemes available in the Department of Horticulture.

Technical lecture on Cashew cultivation was given by Dr.Ramesh, Associate Professor, Regional Research Station, Vriddhachalam Tamil Nadu Agricultural University, Cuddalore district, Tamil Nadu gave technical lecture for the Seminar on Scientific management of cashew garden and insisted the farmers to form Cashew Farmer Producer Company and to sell the cashew nut after processing and grading in the market to fetch good price.

Mr.Ashok Kumar, Scientist (Plant Protection), ICAR KVK, Ariyalur District gave lecture on Integrated Pest and Disease Management on Cashew. In his lecture, he explained about the spraying of organic pesticides like Mooligai Poochivirati, Panchakavya, etc.

Next, Mrs.A.Rajkala, Scientist (Agricultural Extension), ICAR KVK gave lecture on Present scenario of cashew production, research and its varieties. Lecture on Cashewnut processing and entrepreneurship development was given by progressive farmer cum Entrepreneur Mr.Rajiv Gandhi, Edayakurichi, Ariyalur district.

Next session on the topic of High density planting of cashew and planting material production techniques was handled by Mr.Y.Raja Joslin, Scientist (Horticulture), ICAR-KVK. In his lecture he explained about the advantages of high density planting in cashew crop, grafts techniques, Integrated Nutrient Management in cashew and Soil test based fertility management and also about irrigation management and water conservation in cashewnut. Selvi.S.Arivuselvi, Programme Assistant (Lab technician) explained about importance of soil and water management.

Final session was handled by Mrs.S.Shobana, Scientist (Home Science) CREED KVK on Value addition in cashew apple. In her session, she explained about the preparation of cashew apple juice, pickle, murabba sweet, etc. The Seminar on cashew was concluded with vote of thanks given by Mrs.A.Rajkala, Scientist (Agricultural Extension), ICAR KVK.

About 150 farmers from different blocks of Ariyalur district were actively participated in this Seminar.
