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

ANNUAL REPORT 2017-18

(APRIL 2017 TO MARCH 2018)

Submitted to

The Director
ICAR-ATARI, Hyderabad

CONTENT

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(Hosted by CREED)
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ANNUAL REPORT (April-2017-March-2018)

APR SUMMARY

- **Training Programmes**

Clientele	No. of Courses	Male	Female	Total participants
Farmers & farm women	63	1575	385	1960
Rural youths	4	95	26	121
Extension functionaries	4	65	28	93
Sponsored Training	4	70	55	125
Vocational Training	3	51	40	91
Total	**78**	**1856**	**534**	**2390**

- **Frontline demonstrations**

Enterprise	No. of Farmers	Area (ha)	Units/Animals
Oilseeds	75	30	---
Pulses	25	10	---
Cereals	50	20	---
Vegetables	30	12	---
Other crops	35	12.5	---
Total	**215**	**84.5**	**---**
Livestock & Fisheries	25	---	655 animals
Other enterprises	25	0.4	---
Total	**50**	**0.4**	**655**
Grand Total	**265**	**84.90**	**655**

- **Technology Assessment & Refinement**

Category	No. of Technology Assessed & Refined	No. of Trials	No. of Farmers
Technology Assessed			
Crops	4	18	18
Livestock	1	10	10
Various enterprises	1	3	75
Total	**6**	**31**	**103**
Technology Refined			
Crops	---	---	---
Livestock	---	---	---
Various enterprises	---	---	---
Total	---	---	---
Grand Total	**6**	**31**	**103**

- **Extension Programmes**

Category	No. of Programmes	Total Participants
Extension activities	718	10554
Other extension activities	259	Mass
Total	**977**	**10554**

- **Mobile Advisory Services**

Name of KVK	Message Type	Type of Messages						
		Crop	Livestock	Weather	Mark-eting	Aware-ness	Other enterprise	Total
ICAR-KVK, Ariyalur Dt. TN	Text only	7	5	4	2	5	---	23
	Voice only	9	7	5	2	5	---	28
	Voice & Text both	---	---	---	---	---	---	---
	Total Messages	16	12	9	4	10	0	51
	Total farmers Benefitted	**1453**	**1174**	**1343**	**884**	**1774**	**0**	**6628**

- **Seed & Planting Material Production**

Particulars	Quintal/Number	Value Rs.
Seed (q)	18	1,26,000
Planting material (No.)	3,967	50,350
Bio-Products (kg)	798 Kg	39,440
	1700 lit.	1,02,000
Livestock Production (No.)	22	88,000
Fishery production (No.)	500	45,000

- **Soil, water & plant Analysis**

Samples	No. of Beneficiaries	Value (Rs.)
Soil	306	6380
Water	44	540
Plant	---	---
Total	**350**	**6920**

- **HRD and Publications**

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

DETAILED REPORT OF APRIL, 2017 TO MARCH, 2018

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	---	creedkvk@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, Aranganahtan 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 31st March, 2018)

Sl. No.	Sanctioned post	Name of the incumbent	Design-ation	Discipline	Pay Scale (Rs.)	Present basic (Rs.)	Date of joining	Perman-ent / Temp-orary	Category (SC/ST/ OBC/ Others)
1	Programme Coordinator	Dr.G.Alagukannan	Senior Scientist & Head	Horticulture	Rs.37,400-Rs.67,000	49240	02.11.15	Permanent	OBC
2	Subject Matter Specialist	A.Rajkala	Subject Matter Specialist	Agricultural Extension	Rs.15600-Rs.39100	26630	22.06.09	Permanent	OBC
3	Subject Matter Specialist	Y.Raja Joslin	Subject Matter Specialist	Horticulture	Rs.15600-Rs.39100	25850	01.07.10	Permanent	OBC
4	Subject Matter Specialist	M.Ashok Kumar	Subject Matter Specialist	Plant Protection	Rs.15600-Rs.39100	21630	02.01.17	Permanent	OBC
5	Subject Matter Specialist	Dr.M.Saravanan	Subject Matter Specialist	Agronomy	Rs.15600-Rs.39100	21630	02.01.17	Permanent	OBC

6	Subject Matter Specialist	---	---	Animal Science	---	---	---	---	---
7	Subject Matter Specialist	S.Shobana	Subject Matter Specialist	Home Science	Rs.15600-Rs.39100	21630	02.01.17	Permanent	OBC
8	PA (Computer Programmer)	B.Vivekananthan	PA (Computer Programmer)	Computer Applications	Rs.9300-Rs.34800	18320	01.07.09	Permanent	OBC
9	PA (Farm Manager)	M.Thirumalaivasan	PA (Farm Manager)	Agriculture	Rs.9300-Rs.34800	14330	02.12.15	Permanent	OBC
10	PA (Lab Technician)	S.Arivuselvi	PA (Lab Technician)	Agriculture	Rs.9300-Rs.34800	13910	02.01.17	Permanent	OBC
11	Assistant	V.Ramani	Assistant	Computer Applications	Rs.9300-Rs.34800	13910	02.01.17	Permanent	OBC
12	Stenographer	---	---	---	---	---	---	---	-
13	Driver	P.Govindasami	Driver	---	Rs.5200-Rs.20200	10240	01.11.11	Permanent	OBC
14	Driver	P.Sivaraman	Driver	---	Rs.5200-Rs.20200	9660	22.06.09	Permanent	OBC
15	Supporting staff	R.Velu	Supporting Staff	---	Rs.5200-Rs.20200	8890	22.06.09	Permanent	OBC
16	Supporting staff	S.Balu	Supporting Staff	---	Rs.5200-Rs.20200	8890	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. In lakhs)	Starting Date	Plinth area (Sq.m)	Status of construction
1.	Administrative Building	ICAR	31.03.2011	550	71.75381	---	---	---
2.	Farmers Hostel	ICAR	31.03.2011	305	49.77500	---	---	---
3.	Staff Quarters							
	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	---	---	---

B) Vehicles

Type of vehicle	Year of purchase	Cost (Rs.)	Total kms. Run	Present status
Jeep	2009	6,29,990.00	223552	Poor condition
Tractor	2009	5,64,128.00	2753	Poor condition
Power Tiller	2010	1,50,000	414	Poor condition
Two wheeler(2)				
Bajaj Pulsar	2010	1,00,000	81484	Good condition
Bajaj Platina	2010		84267	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.	05.12.2017	25	• Assessment should be made to identify suitable intercrop for Eucalyptus and casuarina to reap income during early years • KVK should involve in the doubling farmers income activities. Thirty families are to be taken in one village and their base line data should be collected. The necessary technological interventions to be made to double their income by 2022. • Video documentation should be made for IFS farmer Mr.Tamilarasan and other successful farmers • KVK should be given suitable technology to Farmers Producer Organization (FPO)

			• Banana cultivation should be promoted in Ariyalur district • To develop model unit on desi cow breed in KVK farm • KVK should promote successful big cashew farmers to establish cashew graft production unit • KVK should produce Jack grafts and supply to all over district • KVK should concentrate on problem soil and water management in cluster basis in a year • Every year KVK should select the adopted village for problem soil and water sample analysis • New technologies related to horticultural crops should disseminated to farmers • KVK should concentrate to develop FPO in Andimadam and T.Palur block • Quality seeds should be produced and training may be given in drip irrigation • KVK should continue to take part in RSETI training programme on agriculture and allied activities • KVK should support the farmers by giving season oriented technologies through radio talks • To develop suitable agro forestry model for Ariyalur district • Demonstration on groundnut digging machine for groundnut growers should be given

**** Copy of SAC proceedings along with list of participants is attached in Annexure 1***

2. DETAILS OF DISTRICT (2017-18)

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 909.18 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 ^{0} C		Relative Humidity (%)
		Maximum	Minimum	
April 2017	0	34.3	26.7	75.5
May 2017	50	38.7	27.8	74.9
June 2017	11	36.9	28.1	55.8
July 2017	40	36.8	27.9	53.5
August 2017	70	36.2	26.7	73.8
September 2017	44	35.7	28.0	74.5
October 2017	68	33.3	26.9	70.3
November 2017	62	30.1	27.1	67.6
December 2017	350	28.9	21.2	63.4
January 2018	38	32.8	22.4	66.4
February 2018	0	37.0	23.4	75.4
March 2018	0	38.3	25.2	88.9
	733 mm	**34.92**	**25.95**	**70.0**

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 (2017-18)

Year of adoption: 2017-18

Sl.No.	Taluk/ mandal	Name of the block	Name of the village	Major crops & enterprises	Major problem identified	Identified Thrust Areas
1	Udayarpalayam	T.Palur	Kasankottai	Paddy, Groundnut, Drumstick, Vegetables(Brinjal & onion) Goat, Dairy and Poultry	**Paddy** • Use of old varieties like CO 43 • Incidence of leaf folder (20 %) and stem borer (30%) • Occurrence of bacterial leaf blight and blast during samba season • Lodging problem • Yield loss 15%	Varietal Introduction & Integrated Crop Management

			Irugaiyur		**Groundnut** • Use of unknown local varieties • Use of high seed rate (200 kg/ha.) • Scanty or uneven rainfall (325 mm) during June to September • Lack of knowledge on Integrated nutrient management • Heavy pest incidence of leaf hopper (30%) and *Spodoptera litura* (20%) • Incidence of disease of tikka leaf spot and root rot • Low yield-1560 kg/ha.	Varietal Introduction & Integrated Crop Management
			Karaikuruchi		**Brinjal** • Incidence of Shoot & fruit borer damage (42%) • Sucking pests like whitefly, ahpids etc. • High cost of cultivation due to usage of more pesticides • Low yield – 8.54t/ha	Integrated Pest management
			Cholamadevi		**Tomato** • Yield loss due to Tomato leaf curl virus (LCV), bacterial wilt (BW) and early blight (EB) (30%) • Low yield– 26.49t/ha	Varietal Evaluation & Integrated Crop Management
			Kodalikaruppur		**Dairy** • Repeated cases of infertility/ repeat breeder in OP of Sripuranthan veterinary dispensary.	Integrated Feed Management
					• Repeat breeder of even after 3 – 4 successful AI • Absence of estrus after long post partum period (60%) • Increased inter calving period due to post partum anoestrum because of mineral deficiencies. (inter calving period is 1.8 years in 50 % of cross bred cows in Sripuranthan village) • High somatic cell count • incidence of subclinical mastitis • Poor self life of milk	

			Kodali		**Quail** • Need alternate species of poultry rearing • More time for weight gain in desi chicken and marketing age is high for chickens • Identified more interest in quail rearing	Scientific management
		Jayankondam	Jayankondam		• Lack of knowledge in multi nutritive value of greens and vegetables • Improper utilization of waste water • Increased cost of vegetables • Poor nutritional status of family	Organic nutrition Garden
			Devamangalam		• More labour required for grading and winnowing of pulses and millet	Drudgery reduction
2	Udayarpalayam	Andimadam	Periyakrishnapuram	Paddy, Groundnut, Cashew, Goat, Dairy and Poultry	**Groundnut** • Scanty or uneven rainfall (325 mm) during June to September • Less plant population • It led to yield loss to an extent of 30%. • Heavy pest incidence of *Spodoptera litura* • Incidence of disease of tikka leaf spot and root rot • Stripping of pod needs more women labour	Varietal Evaluation & Drudgery reduction
3	Sendurai	Ponparappi	Sirukadambur	Paddy, Bajra, Cashew, and Panthal vegetables, Goat, Dairy, Poultry and Fish `	**Bajra** • Use of unknown local variety • Improper spacing • Downy mildew incidence • Yield loss upto 30%	Varietal Introduction & Integrated Crop Management
					Blackgram • Low yield due to high pest (pod borer and leaf eating caterpillar) and disease (YMV, Powdery mildew, rust and leaf spot) • Unawareness about pest and disease resistant varieties • Farmers are using ADT 3 & 5 for a long period • More labour required for grading and winnowing of pulses and millets • Time consuming process	Varietal Introduction & Integrated Crop Management

			Sirukadambur		**Cashew** • Under utilization of resources • Low existing population (90-100/ha.) • Scarcity of fodder • Low income from cashew crop • Yield loss due to tea mosquito bug and stem borer incidence • Cultivation of old varieties of seedling origin • Soil moisture stress • Under utilization of resources • Low existing population (100Nos./ha.) as against the recommended (200Nos./ha) • Low yield (600kg/ha.)	Integrated Crop Management
			Keelamaligai & Marudhur		**Gourds** • More flower dropping 26% • Heavy incidence of fruit fly 21% • Stunted growth due to Mosaic Virus • Low yield – 7.3 t/ha	Integrated Pest management
			Keelamaligai Keelamaligai		**Goat** • Scarcity of green fodder • Lack of awareness about micro/macro nutrients utility • Poor fertility • Increased mortality rate in kids • Poor growth performance and abortion due to mineral deficiency (10% of does abort every year) • Anoestrus condition	Integrated Feed Management
			Ponparappi		**Fodder** • Scarcity of fodder in rainfed condition • Unaware about rainfed fodder	Varietal Evaluation & Integrated Crop Management
			Ponparappi		• Low technological accessibility and adoption gap	Transfer of Technology

4	Ariyalur	Ariyalur	Thelur	Cotton, Chilli, Goat, Dairy and Poultry	**Cotton** • Shedding of square buds and immature bolls (22%) • Reddening and shedding of leaves (Mg deficiency) • Lack of adoption of bund/inter crop • Low yield due to bacterial blight • Les number of bolls/ plant (20-40)	Integrated Crop Management
			Kadugur		**Maize** • Labour scarcity for main field preparation • Improper spacing • No land configuration like ridges and furrow • High seed rate • Uneven germination • Yield reduction upto 20%	Mechanizatio n
			Nagamang alam		**Guava** • Low income and yielding from field crops and low market price • Labour scarcity for agricultural operation • Water shortage	Varietal Introduction & Integrated Crop Management
			Mannuzhi		**Drumstick** • Low yielding Local varieties from unknown source • Less number of pods per plant • (90 Nos.) • Leaf Webber incidence (22%) • Occurrence of fruit fly damage (20%) • Less market preference	Varietal Introduction & Integrated Crop Management
5		Thirumanur	Mallur	Paddy, Sugarcane , Onion, Dairy and goat	**Onion** • Use of low yielding varieties susceptible to pest and diseases • Incidence of Bulb rot (24%) • Incidence of Thrips (37%) • Yield loss (32%)	Varietal Evaluation & Integrated Crop Management

2.8 Priority/thrust areas

Crop/Enterprise	Thrust area
Paddy, Bajra, Groundnut, Blackgram, Onion, Tomato, Drumstick, Guava, Fodder & quail	Improved varietal/ Hybrid Introduction
Paddy, Bajra, Maize, Cotton, Groundnut, Blackgram, Onion, Tomato, Drumstick, Gourds, Guava, Cashew & Fodder	Integrated Pest and Disease Management
Paddy, Bajra, Maize, Cotton, Groundnut, Blackgram, Onion, Tomato, Drumstick, Gourds, Guava, Cashew & Fodder	Integrated crop management
Bajra, Intercrop in cashew, Cashew & Groundnut	Dry land production system

Paddy, Bajra, 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 & Quail	Entrepreneurship development

3. TECHNICAL ACHIEVEMENTS

3.A. Details of target and achievements of mandatory activities by KVK during 2017-18

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
6	6	31	31	84.90	84.90	265	265

Training (including sponsored, vocational and other trainings carried under Rainwater Harvesting Unit)					Extension Activities			
3					4			
Number of Courses			No. Participants		Number of activities		No. of participants	
Clientele	Targets	Achievement	Targets	Achievement	Targets	Achievement	Targets	Achievement
Farmers	58	63	1600	1960	890	977	26000	31554
Rural youth	7	4	140	121				
Extn Functionaries	5	4	100	93				

Seed Production (Qtl.)			Planting material (Nos.)		
5			6		
Target	Achievement	Distributed to No. of farmers	Target	Achievement	Distributed to no. of farmers
33	25.2	366	12300	1357	121

3.b. Technology Assessment

Summary of technologies assessed under various crops by KVKs

Thematic areas	Crop	Name of the technology assessed	No. of trials	No. of farmers
Integrated Nutrient Management	---	---	---	---
Varietal Evaluation	Ground nut	Assessment of high yielding and drought tolerant varieties in groundnut	5	5
	Onion	Assessment of high yielding small onion varieties	5	5
	Tomato	Assessment of the performance of leaf curl virus resistant tomato hybrids	3	3
	Fodder	Assessment of suitable single cut fodder sorghum varieties for rainfed condition	5	5
Others (Pl. specify) Transfer of Technology	Cashew	Assessment of suitable Extension Mode for Transfer of Technology	3	3
Total			**21**	**21**

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	Dairy	Assessment of mastigaurd efficacy in the prevention of subclinical mastitis in dairy cow	10	10
Total			**10**	**10**

Summary of technologies assessed under various enterprises by KVKs

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

3. c. Technology Assessment in detail

1. OFT on Assessment of high yielding and drought tolerant varieties in Groundnut

1. Thematic area: Varietal evaluation

2. Title: Assessment of high yielding and drought tolerant varieties in Groundnut

3. Scientists involved: SMS (Agronomy), SMS (PP), SMS (Agl. Etn) and Senior Scientist and Head

4. Details of farming situation:

The study was carried out through on farm testing during *kharif* season of 2017 at Periyakrishnapuram village in Ariyalur district with an objective to assess high yielding and drought tolerant varieties in Groundnut under rainfed condition as compared to the farmers practice (VRI 2). Climate of the region is fairly hot and the average rainfall in the year during the study period from July to October was 435mm and 17 rainy days. The soil of the experimental site was sandy loam texture with medium organic carbon content (0.57 %), medium in nitrogen (282.0 kg ha^{-1}), low in phosphorus (10.7 kg ha^{-1}) and medium in potassium (176.0 kg ha^{-1}) contents. Sowing was taken up during 2^{nd} week of July and harvested during 3^{rd} week of October. Five farmers each having one acre of land cultivated the VRI 8, Dharani and VRI 2 (Farmers practice) with recommended package of practices.

5. Problem definition / description:

- Scanty or uneven rainfall (325 mm) during June to September
- Less plant population due to poor germination of seeds by poor soil moisture
- It led to yield loss to an extent of 30%.
- Heavy pest incidence of *Spodoptera litura*
- Incidence of disease of tikka leaf spot and root rot

6. Technology Assessed:

Varietal Character	TO 1	TO 2	TO 3
	Farmers practice variety (VRI 2)	VRI 8 (TNAU, 2016)	Dharani (ANGRAU, 2013)
Duration	110 days	105 days	100-105 days
Avg. Yield	1700 kg/ha	2700 kg/ha	1600-2600 kg/ha
Oil content	45%	49%	49%
Tolerant to	--	Drought resistance	Drought tolerant withstands up to 35 days
Resistant to	--	late leaf spot	Stem and dry root rot
Shelling percentage		70% medium bold	75-77 % medium bold

7. Critical inputs given:

Name of critical input	Quantity/Trial	Value (Rs.)
VRI 8 seed	20 kg	1,888
Dharani seed	20 kg	2,522
PPFM 1%	500 ml	180

8. Results:

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

Technology Option	No. of trials	No. of plants/m^2 (Flowering stage)	No. of pods/ plant	Duration of peg formation	Duration of maturity	Yield (Kg/ha)	Per day productivity (kg/day/ha)
Farmers' Practice	5	23.4	18.4	54.4	109.6	1843	16.8
VRI 8		26.8	36.9	51.6	112.4	2328	22.2
Dharani		28.2	35.2	52.2	103.2	2232	21.3

Table 2: Economics of different groundnut varieties assessed

Technology Option	Gross Cost(Rs.)	Gross Income(Rs.)	Net Income(Rs.)	BCR	Oil recovery %	Marketability
Farmers Practice	43600	73720	30120	1.69	49.5	Good
VRI 8	39100	93120	54020	2.38	49.2	Moderate
Dharani	39700	89280	49580	2.25	49.0	Good

Description of the results:

The results showed that VRI 8 better in growth and production related parameters. VRI 8 variety recorded the yield of 2328 kg/ha and it was followed by Dharani (2232 kg/ha). Per day productivity is also high in the variety VRI 8 (22.2kg/day). However the market preference is moderate for VRI 8 as the colour of kernel is brown. Even then VRI 8 variety recorded the highest net return of Rs.54020 with the BCR of 2.38.

Constraints faced: In this trial early stage only drought occurred and during the critical stages like Pegging and pod formation stages there was a good rainfall, so we are unable to apply the PPFM spray at critical stage, only in the early stages it was given.

9. Feed back of the farmers involved:

- The general appearance of VRI 8 variety and health of the plants itself is very good, drought withstanding capacity is very well compared to local variety.
- Good drought tolerance observed in these two varieties, particularly Dharani at the early stage where long dry spell occurs.
- More number of pegging is formed in the case of VRI 8.
- Low pest and disease incidence like tikka leaf spot also less compared to existing variety.
- Market preference is somewhat less for VRI 8 variety.

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

The OFT produces a significant positive result and provided the researcher an opportunity to demonstrate the productivity potential and profitability of the latest variety under real farming situation. Improvement in kernel colour is needed in the case of VRI 8 varieties to fetch a better price.

2. OFT on Assessment of suitable single cut fodder sorghum varieties for rainfed condition

1. Thematic area: Varietal evaluation

2. Title: Assessment of suitable single cut fodder sorghum varieties for rainfed condition

3. Scientists involved: SMS (Agronomy) & SMS (Agl. Extn.) and SS&H

4. Details of farming situation:

The study was carried out through on farm testing during *Kharif* season of 2017 at Sirukalathur village in Ariyalur district with an objective to assess the suitable single cut fodder sorghum varieties for rainfed condition as compared to the farmers practice (K 10). Climate of the region is fairly hot and the average rainfall in the year during the study period from July to September was 265 mm in 9 rainy days. The soil of the experimental site was sandy loam texture with medium organic carbon content (0.49 %), low in nitrogen (201.0 kg ha^{-1}), medium in phosphorus (11.5 kg ha^{-1}) and medium in potassium (220.0 kg ha^{-1}) contents. Five farmers each having One acre of land cultivated the CO 27, PC 23 and K10/ local variety (control) with recommended package of practices.

5. Problem definition / description:

- Low income from animal components due to scarcity of fodder in rainfed condition
- Unaware about rainfed fodder and importance of fodder
- Non adoption of improved cultivation practices and low yielding variety also reason for low yield in green fodder

6. Technology Assessed:

Varietal Character	TO 1	TO 2	TO 3
	Farmers practice variety (K10)	CO 27 (TNAU)	PC 23 (PANTCHARI, UP)
Sowing time	All season	All season	March to August
Yield	20-25 t/ha.	35-40 t/ha.	45-50 t/ha,
Drought tolerant	Drought tolerant	Thin stem, Drought tolerant	Drought tolerant

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

Name of critical input	Quantity/Trial	Value (Rs.)
Fodder seed	16 kg	1,600
Pseudomonas fluorescence	200 gm	60

8. Results:

Table : Yield and Economics of different single cut fodder sorghum varieties

Technology Option	No. of trials	Yield (t/ha)	Palatability index	Gross cost	Gross Income	Net Income	BCR
Farmers Practice (K10)	5	13.1	68.4	12420	19650	7230	1.6
CO 27		27.8	81.6	12890	41700	28810	3.2
PC 23		31.6	83.4	13660	47400	33740	3.5

Description of the results:

The OFT trial has been conducted with single cut fodder under rainfed condition using the varieties viz., CO 27, PC 23 with K 10/ local variety (Farmers practice) during *Kharif* 2017. During this period a rainfall of 265 mm has been received but the rainfall was not evenly distributed. The results showed that PC 23 variety is better in growth and biomass production related parameters. PC 23 variety recorded the highest yield of 31.6 t/ha and it was followed by CO 27 (27.8 t/ha). Palatability index is also high in the variety of PC 23 (83.4). However the palatability index is moderate for local variety due to the hairy structure in stem and leaves. The PC 23 variety recorded the highest net return of Rs.33,740 with the BCR of 3.5.

Constraints faced: The PC 23 seeds are not available in local sources. Demand of this seed is also higher.

9. Feed back of the farmers involved:

- The general appearance of PC 23 variety and health of the plants itself is very good, drought withstand capacity is very good compared to local variety.
- Farmer preferred multicut fodder variety, but if the irrigation facilities are not available in the field; farmers are going for cultivating single cut fodder.
- Under rainfed situation PC 23 and CO 27 has produced more quantity of green fodder and animals also like the taste of this fodder compared to local variety

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

- The spines or serrations in the leaves and stems in the case of Co27 may be reduced to improve the palatability.

3. OFT on Assessment of the performance of leaf curl virus resistant Tomato hybrids

1. Thematic area: Varietal evaluation

2. Title: Assessment of the performance of leaf curl virus resistant tomato hybrids

3. Scientists involved: SMS (Horticulture), SMS (PP) & SMS (Agrl. Extn.)

4. Details of farming situation:

An On farm testing was carried out during Rabi season of 2017 at Kodalikaruppur village in Ariyalur district with an objective to assess the performance of leaf curl virus resistant tomato hybrids under irrigated condition. Tomato crop generally requires an ideal temperature of 21^{o}C to 23^{o}C. During the trial period the temperature range of 20^{o}C to 33^{o}C was observed. For ideal growth and yield, tomatoes need a diverse set of climatic conditions at every stage of growth such as seed germination, flowering, fruiting, etc. Soil pH falling in the range of 6.0 to 7.0 is preferred by tomato but the pH of the soil was 7.3. During summer it was necessary to irrigate the crop once a week while irrigating it once in every two weeks is sufficient during rainy season. The soil of the experimental site was sandy loam soil texture with medium organic carbon content (0.53 %), medium in nitrogen (191.0 kg ha^{-1}), low in phosphorus (9.2 kg ha^{-1}) and medium in potassium (148.0 kg ha^{-1}) contents. The seeds were sown in protray nursery during 1st week of November, transplanted during 1st week of December, 2017 and harvested upto 3rd week of April, 2018. Three farmers each having one acre of land cultivated the Arka rakshak and COTH3 tomato hybrids with recommended package of practices. Seasonal rainfall obtained during cropping period was 358mm and the number of rainy days 31.

5. Problem definition / description:

- Yield loss to the tune of 40% due to Tomato leaf curl virus (ToLCV), bacterial wilt (BW) and early blight (EB) (30%) incidence.
- Low yield due to the cultivation of low yielding hybrids susceptible to LCV disease – 40.49 t/ha when compared to the potential yield of upto 90 t/ha in Tomato hybrids.
- Highly perishable nature of tomato and not suitability for distance market transport.
- Fruit borer damage.
- Fluctuation in the market price.

6. Technology Assessed: (give full details of technology as well as farmers practice)

Varietal Character	**TO 1**	**TO 2**	**TO 3**
	Farmers practice: Cultivation of low yielding hybrids susceptible to LCV (VNR - 3348 hybrid)	Cultivation of COTH 3	Cultivation of Arka Rakshak
Resistant	---	Resistant to TLCV Moderately resistant to Root	Resistant to TLCV, early blight & Bacterial Wilt, Semi determinate

		knot nematode Semi determinate	
Duration	150 days	140 -145 days	140 days
Fruits size	Medium to Large	Medium size, 3-5/cluster	Medium size, Light green shoulder
Yield	75 – 80 t/ha.	Yield 90t/ha.	Yield 90-100t/ha.

7. Critical inputs given:

Name of critical input	Quantity/Trial	Cost per trial
COTH 3 Seeds	20g	600
Arka Rakshak seeds	20g	600
Total		**1,200**

8. Results:

Table 1: Incidence of leaf curl virus, yield and economics of different tomato hybrids

Technology Option	No. of trials	Yield (t/ha)	Net returns (Rs. In lakhs/ha)	B:C	Data on Other performance indicators* Leaf curl virus disease Incidence (%)
Farmers Practice TO 1	3	45.6	226433	3.45	8
TO 2		54.3	285350	4.01	0.9
TO 3		50.3	258450	3.72	1.1

Description of the results:

The trial has been conducted to check the performance of leaf curl virus resistant varieties of tomato with farmers practice during Rabi 2017(November, 2017 to April, 2018). The results showed that Arka rakshak is better in growth and production related parameters. Arka rakshak hybrid recorded the yield of 54.3t/ha and it was followed by COTH 3 (50.3t/ha). However the market preference is slightly less for Arka rakshak as the size of the tomato is oval and colour of the fruits is light red. Mostly the consumers prefer round shaped tomato COTH 3 than the Arka rakshak. In this trial, the arka rakshak tomato hybrid recorded the highest net return of Rs.2, 85,350 with the BCR of 4.01 than the COTH 3 and farmers practice (VRN-3348). Incidence of Leaf curl disease is very less in Arka rakshak (0.9 %) compared to COTH 3 (1.1 %) and farmers practice (8.0%) . Hence the performance of the Arka rakshak tomato hybrid was good.

Constraints faced:

- Initially the farmers hesitate to take up the trial as the market preference was less to oval shaped fruits
- The timely availability seeds from both the sources viz., TNAU, Coimbatore and IIHR, Bengaluru was difficult.

9. Feed back of the farmers involved:

- Market preference is slightly less for Arka rakshak as the colour of the tomato is light red and colour of the COTH 3 tomato is deep red.
- The consumer's preference was good for round shaped tomato COTH 3 than the Arka rakshak which is slightly oval shaped fruit.
- Due to its thick cell wall nature of Arka rakshak it was suitable for long distance market transport.
- More number of fruit (82 fruits per plant) is found in the case of Arka rakshak hybrid than the COTH 3 (68 fruits per plant).

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

- Flower shedding (13%) is noticed in Arka rakshak tomato hybrid.
- Less consumer preference is observed for Arka rakshak tomato hybrid due to its oval shape.

4. OFT on Assessment of high yielding small onion varieties

1. Thematic area: Varietal evaluation

2. Title: Assessment of high yielding small onion varieties

3. Scientists involved: SMS (Horticulture), SMS (PP), SMS (Agl. Etn) and SS&H

4. Details of farming situation:

A trail was conducted during Rabi season, 2017 at Varanasi village in Ariyalur district with an objective to assess the performance of high yielding small onion varieties under irrigated condition. Small Onion crop generally requires an optimum temperature of 13-24˚C for vegetative phase and 16-25˚C for bulb development, 30 -35° C at maturity and harvest. It requires about 70% relative humidity for good growth. During the trial was conducted, the temperature range of 16˚C to 33˚C was observed for small onion. Heavy rainfall and a prolonged dry spell affect the growth of Onion plants. Soil pH falling in the range of 6.5 to 7.5 is preferred by Onion and the pH of the trial plots was 7.4. The soil of the experimental site was sandy loam soil texture with medium organic carbon content (0.48 %), low in nitrogen (119.0 kg ha^{-1}), medium in phosphorus (9.8 kg ha^{-1}) and low in potassium (62.0 kg ha^{-1}) contents. The seeds of small onion crops were sown in raised bed nursery during 1st week of December, transplanted during 3rd week of January, 2018 and harvested during 3rd week of April, 2018. Five farmers each having one acre of land cultivated the Arka Ujjwal and CO (On) 5 Onion varieties with recommended package of practices. The rainfall obtained during the cropping period is 358mm and the number of rainy days is 31.

5. Problem definition / description:

- Bulkiness of the seed onion bulb and its high cost prevents the farmers to go for onion cultivation.
- Use of low yielding varieties susceptible to pest and diseases
- Incidence of Bulb rots (24%)
- Incidence of Thrips (37%)

- Yield loss estimated due to various problems were upto 32%

6. Technology Assessed: (give full details of technology as well as farmers practice)

Varietal Character	TO 1	TO 2	TO 3
	Farmers practice: Cultivation of local variety(Oddanchatram)	**Cultivation of TNAU Co(On)5**	**Cultivation of IIHR Arka Ujjwal**
Seed rate	Multiplied through seed bulbs -1000 kg/ha.	Seeds – 2.5 kg/ha.	Seeds – 2.5 kg/ha.
Color	Dull pink colour small sized bulbs	Pink coloured bold size bulbs.	Uniform bright dark red bulb colour
Duration	90 days	90 days	85 days
Yield	---	18.9 t/ha.	20-25 t/ha.

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

Name of critical input	Quantity/Trial	Cost per trial
Seed Co (On) 5	0.5 kg	1,250
Seed Arka Ujjwal	0.5 kg	1,250
Azospirillum	1kg	60
Phosphobacteria	1kg	60
Pseudomonas fluorescens	1kg	100
Total		**2,720**

8. Results:

Table 1: Performance of small varieties interms of yield and returns

Technology Option	No. of trials	Yield (t/ha)	Net returns (Rs. in lakhs/ha)	BC Ratio	Data on Other performance indicators* Bulbs rot disease Incidence (%)
Farmers Practice TO 1	5	12.1	145380	2.50	18
TO 2		14.5	210550	3.65	3
TO 3		12.88	178200	3.24	4

Description of the results:

The trial has been conducted to check the performance of high yielding varieties of small onion that are propagated through seeds with farmers practice (varieties propagated through bulbs) during Rabi 2017(December, 2017 to April, 2018). The results showed that CO (On) 5 is a better in growth and production related parameters. CO (On) 5 variety recorded the yield of 14.5t/ha and it was followed by Arka ujjwal (12.88t/ha). Also the market preference is slightly less for Arka ujjwal as the size of the onion is big and colour of the onion is dull pink. Mostly the consumers prefer small sized and pink coloured onion like CO (On) 5 than the Arka ujjwal. In this trial, the CO (On) 5 recorded the highest net return of Rs.2,10,550 with the BCR of 3.65 than the Arka ujjwal and farmers practice (local). Performance of the CO (On) 5 was good. Incidence of basal rot disease is very less in CO (On) 5 compared to Arka ujjwal and farmers practice (local variety)

Constraints faced:

- In the early stage of nursery raising the damping off disease incidence (18%) is noticed which has to be controlled in small onion crop more carefully.
- During the summer season, the controlling of thrips damage was a big challenge.
- Seed availability in local sources is needed

9. Feed back of the farmers involved:

- By using seeds, we could escape from high cost of seed bulbs and we could save Rs.22,500/ha by using seeds.
- Transplanting of fragile seedlings is difficult
- The duration of onion cropping is very long (45 days in the nursery and 90 days in the main field) when compared to onion raised through bulbs (90 days)
- Market preference is slightly less for Arka ujjwal due to its bigger size (32 g) and dull pink colour
- The onion bulbs harvested by raising from seeds are not suitable for storage since the keeping quality is less. So we are forced to sell this produce immediately.

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

- Performance of the TNAU CO (On) 5 small onion varieties is good but its storage life has to be increased.
- Technology may be developed to reduce the crop duration.

5. OFT on Assessment of suitable Extension Mode for Transfer of Technology

1. Thematic area: Information Communication Technology (ICT)

2. Title: Assessment of suitable Extension Mode for Transfer of Technology

3. Scientists involved: SMS (Agricultural Extension), SMS (Horticulture) and SS&H

4. Details of farming situation:

The study was carried out through on farm testing during 2017 at Ponparappi cluster village in Ariyalur district with an objective to assess the suitable Extension Mode for Transfer of Technology. In Ariyalur District Cashew is being cultivated in an area 30,345 ha. Farming situation is rainfed. About 5 % of the farmers are irrigated. Most of the farmers used traditional varieties and plant population is 60 per acre. Cashew harvest season is from February to May. Climate of the region is fairly hot and the average rainfall in the year during the study period from July to October was 435mm in 17 rainy days. The soil of the experimental site was red soil with medium organic carbon content (0.57 %), NPK is 225:75:75 respectively. The cashew can withstand high temperatures. The cashew tree has a well-developed root system and can withstand drought conditions.

5. Problem definition / description:

Farmers get low yield due to maintenance of low plant population, unaware of pruning practices, incidence of tea mosquito bug, etc. Rain during the flowering season causes flower abortion due to anthracnose and mildew. As 80% of the Cashew growing

farmers are small and marginal, the knowledge in scientific cashewnut cultivation practices is low to medium only. Adoption level of different technologies are also low leading to low productivity in cashewnut, Hence the study has been conducted to assess the suitable extension mode to deliver the technologies to farmer to improve the knowledge level and adoption rate.

6. Technology Assessed:

Based on the problems, seven technologies were selected to disseminate through three different extension modes. The study has been conducted at Ponparappi village of Sendurai block. Three groups of beneficiaries were selected having 25 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	Techno information delivered through literatures
Technology option 2	Techno – information delivered through SMS
Technology option 3	Techno – information delivered through voice message

7. Critical inputs given:

S.No.	Inputs	Quantity (Nos.)	Value (Rs.)
1	Extension literature	25	2,100
2	Text Message	25	---
3	Voice message	25	---

8. Results:

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

Name of the technologies	Class	Technology Option 1 – Extension Literature				Technology option 2 – Text Message				Technology Option 3 – Voice Message			
		No. of Participants - 25				No. of Participants - 25				No. of Participants - 25			
		Pre-test knowledge		Post-Test knowledge		Pre-test knowledge		Post-Test knowledge		Pre-test knowledge		Post-Test knowledge	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Cashew production techniques	L	19	76	12	48	17	68	3	12	17	68	8	32
	M	4	16	8	32	4	16	6	24	4	16	8	32
	H	2	8	5	20	4	16	16	64	4	16	9	36

(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 Extension Literature		Technology option 2 - Message		Technology Option 3 – Voice Message	
			No. of Participants - 25		No. of Participants - 25		No. of Participants - 25	
			Adoption		Adoption		Adoption	
			No.	%	No.	%	No.	%
1	Pruning Practices	L	4	16	1	4	3	12
		M	8	32	2	8	12	48
		H	13	52	22	88	10	40
2	Soil & water conservation	L	3	12	0	0	3	12
		M	10	40	8	32	9	36
		H	12	48	17	68	13	52
3	Application of Manures & fertilizers	L	2	8	1	4	3	12
		M	7	28	8	32	12	48
		H	16	64	16	64	10	40
4	Spraying of Panchakavya	L	6	24	2	8	3	12
		M	8	32	5	20	14	56
		H	11	44	18	72	8	32
5	Control of Tea Mosquito bug	L	4	16	1	4	2	8
		M	8	32	6	24	12	48
		H	13	52	18	72	11	44
6	Management of Stem borer	L	6	24	2	8	3	12
		M	8	32	8	32	13	52
		H	15	60	15	60	9	36
7	Value Addition	L	15	60	20	80	19	76
		M	9	36	3	12	4	16
		H	1	4	2	8	2	8

Table : Performance of the technology

Technology delivery mechanism	Adoption percentage of different cashewnut production technologies							Average adoption %
	1	2	3	4	5	6	7	
By Extension Literature	52	48	64	44	52	60	4	**46.3**
By Text Message	88	68	64	72	72	60	8	**61.7**
By Voice Message	40	52	40	32	44	36	8	**36.0**

Description of the results:

In this OFT, one problem was selected (Cashew cultivation techniques) in Ponparappi village of Sendurai block. Three groups of beneficiaries were selected having 25 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, Extension Literature Group revealed that 8 % of the farmers noticed high level knowledge, 16 % of the farmers having medium level and 76% of famers had low level of knowledge. By conducting Pre Test for Message Group, it is revealed that the knowledge level results 16 % of the farmers noticed high level knowledge, 16 % of the farmers having medium level and 68% of famers had low level of knowledge. Technology option group 3 noticed that 36% of the farmers having high level knowledge, 32 % of the farmers having medium level and 32% of famers obtained low level of knowledge.

Post Test Knowledge level

By conducting this Post Test, Extension Literature Group revealed that 20 % of the farmers noticed high level knowledge, 32 % of the farmers having medium level and 48% of famers had low level of knowledge. The Message group revealed that the knowledge level results 64 % of the farmers noticed high level knowledge, 24 % of the farmers having medium level and 12% of famers had low level of knowledge. Technology option group 3 noticed that 36% of the farmers having high level knowledge, 32 % of the farmers having medium level and 32% 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 seven different technologies delivered through three different extension modes / delivery mechanism reveals that sending text messages as when required scores high adoption percentage for all the seven technologies and the average arrived was 61.7%. it is followed by distribution of extension literatures (46.3 %) and periodical voice messages (36.0 %). The high adoption percentage was one is the fact that the farmers could retained the text messages in their mobiles and practicing the same in their field. The extension literatures distributed to the clients are also useful and some farmers misplaced the papers and thereby the follow-up was difficult to them. Whereas the voice message recorded the adoption percentage of only 36 % as the farmers could not recall the message and face difficulty in adopting the technologies.

Constraint faced: The farmers need technology along with inputs. Voice message could not be saved in the mobile for hearing later.

9. Feed back of the farmers involved:

- Text messages are better source of information as it could be any time retrieved and used.
- We cannot remember the technologies when it is comes through voice

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.

6. OFT on Assessment of mastigaurd efficacy in the prevention of subclinical mastitis in dairy cow

1. Thematic area: Livestock enterprises – Disease management

2. Title: Assessment of mastigaurd efficacy in the prevention of subclinical mastitis in dairy cow

3. Scientists involved: Senior Scientist and Head

4. Details of farming situation:

In Ariyalur district, dairy animals are maintained in semi intensive system of rearing. Feeding management practices including feeding of green fodder like Cumbu Napier hybrid (CO4), multicut sorghum (CO (FS) 29 and dry fodders such as sorghum hay and paddy straw is being practiced. Dairy animals in 2-3 number are maintained in almost all farms. Animals are maintained in well ventilated sheds and regular cleaning and hygienic practices followed. In 60 % of the cases milking is followed with the help of milkman and 20 % of farmers use potassium permanganate solution for udder washing.

5. Problem definition / description:

Ariyalur district is the backward district in the socio-economic condition of farmers and public. The climate change and prevalence of cement industries posses serious threads to agriculture and hence the farmers are relying mainly on agricultural allied enterprises such as rearing of milch animals, goat and sheep. The milch animal rearing is the remunerative activity as it gives weekly income to the farmers. However, farmers are facing problems like infertility, mastitis and FMD in milch animals.

Sometimes Mastitis in high yielding cows incurs heavy economic losses. Though the animals are maintained under hygienic environmental conditions mastitis seems to be the major problem especially in medium to high yielders. Mastitis is one of the economically important disease of dairy cattle which affects milk production as well as the value of the dairy animal. Farmers use to spend around Rs. 2000 – Rs. 2500 every time for a course of treatment of mastitis since it requires continuous treatment for 4-5 days until complete recovery. Animals with subclinical mastitis are highly prone for clinical mastitis and there will be regular reduction in milk yield of about 500 – 700 ml/day. Sometimes severely affected cows unfit for lactation and send for slaughter house. So the farmers have to bear huge loss of upto Rs.40,000-50,000. Use of teat dips can prevent the incidence of subclinical mastitis as well as prevents the chances of becoming in to clinical mastitis. But lack of awareness on use of teat dips is the major problem in farms with high yielding crossbred animals. Assessment on effect of teat dips is the way to select the suitable teat dip for prevention of subclinical and clinical mastitis and to safeguard the animals.

6. Technology Assessed:

Farmers practice TO 1	Farmers are not using teat dip regularly, not detecting subclinical mastitis, and going for treatment only after occurrence of clinical mastitis.
TO 2	Use of teat dip with disinfectant solution e.g. KMNo4 Using teat dip with antiseptic solution reduces the incidence of mastitis by destroying disease causing pathogens Source : TANUVAS, 2012
TO 3	Masti - Guard to control mastitis Masti-Guard is the combination of Teat protection and Mastitis screening package. It contains Teat protect antiseptic for udder spray and TANU check SCC Kit for subclinical mastitis identification Source : TANUVAS, 2016

7. Critical inputs given:

S.No	Name	Qty (Kg)	Unit cost (Rs.)	Total cost (Rs.)
1.	SCC kit	10	50	500
2.	Teat dip with KMNo4	10	250	2,500
Total cost				**3,000**

8. Results:

Technology Option	No. of trials	Milk Yield (litres /day)	Net return (Rs./ animal)	B:C ratio	Data on Other performance indicators*	
					Somatic Cell Count(cells/ml) in lakhs	
					Before treatment	After 6 weeks treatment
Farmers Practice: TO 1.	10	6.8	10,300	1.55	2.4	
Technology 2: Use of KMNo4 for udder disinfection		7.1	12,080	2.10	2.5	0.8
Technology 3 – Mastigaurd spray		7.3	14,600	2.20	2.4	0.45

Description of the results:

- In farmers practice (TO 1), the farmers were not adopted any measure to prevent mastitis and the somatic cell count of milk was in higher side (> 3.1 lakhs) and if the animal went under stress (which may be of physiological, environmental etc., immediately resulted in somatic cell count beyond the threshold value (>5,00,000) and mastitis occurrence (25-30%) was noticed. The milk production during mastitis was reduced to 6.4 ltr/day and treatment cost also added in the production cost.

- In case of using KMNo4 antiseptic solution (TO 2) – The farmers are advised to use teat dip antiseptic solution KMNo4 for udder washing before milking. A pinch of KNMo4 was added in half litre of water in the teat dip and after pink coloration of the water, the farmers advised to wash all the four quarters, after that with the water, complete washing of udder also recommended before milking twice a day.

Table : Other performance indicator

Parameters	Regular treatment (check) TO 1	TO 2	TO 3 (demo)
Treatment materials used	No prevention measures	Teat cleaning with antiseptic usage	Mastiguard usage
Number of months under trial	5 months	5 months	5 months
Number of Animals taken for trial	10	10	10
Number of Mastitis occurrence	3	Nil	Nil
Somatic cell count (in lakh)	2.4	0.8	0.45
Cost of treatment (Rs.) /Trial/unit	3500	200	300
Milk yield in 5 months (lit.)	1,020	1,065	1,200
Gross cost (Rs./cow/5 months)	12,100	11,350	11,800
Gross income (Rs./cow/5 months)	22,400	23,430	26,400
Selling price /lit of milk (Rs.)	22	22	22
Net return/ 5 months (Rs.)	10,300	12,080	14,600
Benefit Cost Ratio	1.85	2.1	2.2

- In Mastiguard usage, the somatic cell count was very low (<50,000) and mastitis occurrence was nil. Additional average milk production of 0.5 ltr was also recorded. Even the animal with prior history of seasonal mastitis occurrence also have the lower somatic cell (<.5 lakh) with healthy udder.

Constraints faced:

- Whenever the milkman deployed for milking, they are not cooperating or they are not have patience to do KMNo4 cleaning or teat protects spray as it consumes their time.

- Usually immediately after milking, the farmers went to Co-opt / private milk society to pour the milk. While using TANU check SCC kit, the farmers need to wait for 30 minutes to identify Sub clinical mastitis.

9. Feed back of the farmers involved :

The farmers felt that using Mastiguard prevent their dairy animal from mastitis occurrence and save them from treatment cost of Rs.3,000-4,000 and reduces the chances of disease spread and they expressed their convenience in using teat protect.

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

SCC kit for sub clinical mastitis identical should shows the result in less than five to ten minutes instead of 30 minutes.

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	a. News paper coverage b. Radio Talk c. 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 Group meeting News paper coverag	17	204	81

9	Groundnut	Mechanization	Mechanized Groundnut cultivation 2015-16	Exposure visit Demonstration Field day Newspaper coverage	12	1024	820
10	Sesame	Varital Introduction	Integrated Crop Management with Demonstration of Sesame VRI (Sv)2 2015-16	Field day Newspaper coverage Grivence 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	Field visit Seed production News paper coverage Radio talk	20	200	45
16	Paddy	Varietal introduction and ICM	Demonstration of Paddy CO 52 variety for yield and income potential	Field day Zonal monthly meeting Grievance day	6	300	120

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

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**.)

Sl. No.	Crop	Thematic area	Technology Demonstrated	Season and year	Source of funds	Area (ha)		No. of farmers/demo			Reasons for shortfall in achievement
						Proposed	Actual	SC/ST	Others	Total	
Cereals											
1	Paddy	Varietal introduction	Demonstration of Paddy TKM(R) 13 variety for yield and income potential	Rabi 2017	ICAR	4	4	2	8	10	---
2	Paddy	Varietal introduction	Demonstration of Paddy CO (R)52 variety for yield and income	Rabi 2017	ICAR	4	4	1	9	10	---
3	Paddy	IPDM	Demonstration of IPDM in Paddy	Rabi 2017	ICAR	4	4	2	8	10	---
4	Maize	Mechanization	Demonstration of Mechanized Maize cultivation	Rabi 2017	ICAR	4	4	---	10	10	---
5	Bajra	Varietal introduction	Demonstration of Bajra CO 10 for yield and income potential	Kharif 2017	ICAR	4	4	2	8	10	---
Horticultural Crops											
6	Cashew	Intercrop	Demonstration of Fodder crops as intercrop in Cashew Gardens	Kharif 2017	ICAR	4	4	2	8	10	---
7	Cashew	ICM	Demonstration of ICM practices in Cashew nut	Kharif 2017	ICAR	4	4	---	10	10	---
8	Guava	Varietal introduction	Introduction of Red flesh Guava Arka Kiran for yield and Income potential	Rabi 2017	ICAR	2	2	---	5	5	---
9	Drumstick	Varietal introduction	Demonstration of PKM 1 variety of Drumstick with ICM practices	Rabi 2017	ICAR	4	4	---	10	10	---
10	Gourds	IPM	Demonstration of IPM in Gourds	Rabi 2017	ICAR	4	4	---	10	10	---
11	Brinjal	IPM	Demonstration of IPM practices in Brinjal	Kharif 2017	ICAR	4	4	---	10	10	---
Commercial crops											
12	Cotton	ICM	Demonstration of ICM practices in Cotton	Kharif 2017	ICAR	4	4	---	10	10	---

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 2017	Irrigated	Clay	236	60	117	Paddy	12.10.17	03.03.18	515	26
Paddy	Rabi 2017	Irrigated	Clay	231	57	115	Paddy	14.10.17	06.03.18	515	26
Paddy	Rabi 2017	Irrigated	Clay	233	61	116	Paddy	15.10.17	09.03.18	515	26
Maize	Rabi 2017	Irrigated	Sandy clay	158	42	105	Fallow	05.09.17	23.01.18	360	19
Bajra	Kharif 2017	Rainfed	Red soil	190	27	180	Groundnut	10.07.17	16.10.17	190	8
Cashew	Kharif 2017	Rainfed	Red soil	220	32	185	Cashew	25.08.17	05.01.18	480	22
Cashew	Kharif 2017	Rainfed	Red soil	218	30	184	Cashew	---	---	733	33
Guava	Rabi 2017	Irrigated	Red soil	236	58	91	Groundnut	19.08.17	Under progress	590	29
Drumstick	Rabi 2017	Irrigated	Red soil	117	13	45	Groundnut	18.12.17	Under progress	410	19
Gourds	Rabi 2017	Irrigated	Red soil	224	29	210	Gourds	21.08.17	28.02.18	480	22
Brinjal	Kharif 2017	Irrigated	Sandy clay loam	37	49	64	Fallow	14.06.17	22.11.17	270	11
Cotton	Kharif 2017	Rainfed	Sandy clay loam	150	22	125	Fallow	14.08.17	23.01.18	480	22

Technical Feedback on the demonstrated technologies

S. No	Feed Back
1	There is a reduction in stem borer, sheath blight incidence when compared to CR 1009 - the ruling variety in the area
2	Reduction in pest and disease incidence is observed
3	IPDM practices demonstrated in paddy holds good in containing pest and diseases
4	Good technology but the tractor driver should be trained to operate at specific speed tp disperse the seeds at correct spacing
5	Susceptible to smut disease
6	Demonstration helps in minimizing fodder shortage and also enriches soil nutrient status
7	Bio control measures for controlling tea mosquito bug is needed
8	On going
9	On going
10	Methyl eugenol trap was efficient in control of fruit flies. Yellow stick traps aided in controlling sucking pests like thrips, aphids

11	All the IPM practices demonstrated are highly effective and less cost
12	Though it is a BT cotton (RCH II hybrid), boll worm incidence was observed to the tune of 7%. The apical dominant make the plants to grow upto 8 feet height and it hinders cultural operations. So variety / hybrids of short to medium stature may be developed

Farmers' reactions on specific technologies

S. No	Feed Back
1	Good variety for samba season but lodging is the problem.
2	High yielding variety. The market preference is also high.
3	Adoption of integrated pest and disease management resulted in good control of pest and diseases. Reduction in pesticide sprays (2 sprays from 4 sprays). Traps, lures, *Trichogramma* and other bio agents should be made available in the local market.
4	Mechanization facilitated sowing by all farmers otherwise it could not be possible to sow all the farmers at right soil moistures with labours. Difficulty in maintaining proper spacing when sown by machine.
5	Co 10 Bajra is good yield, bigger size, ear heads but threshing is difficult when manually done . Smut problem was high as there was continuous rainfall.
6	Efficient utilization of land for raising fodder crop during rainy season. Helps in controlling weeds.
7	Repeated use of chemicals cost high. Good quality nuts of increased yield.
8	On going
9	On going
10	Fruit fly trap effective in control of insects and thereby increased yield with less chemical spray. KVK should help in getting the inputs needed for IPM.
11	Highly useful and low cost technologies. Considerable reduction in fruit borer affected fruits from 40-50 % to 8-12 %. The inputs should be available in local markets
12	IPM technologies were highly useful to control pests. Cotton plus is the very new technology and controlled boll shedding

Extension and Training activities under FLD

Sl.No.	Activity	No. of activities organised	Date	Number of participants	Remarks
1	Field days	10	10.10.17, 22.11.17, 04.01.17, 27.02.18, 28.02.18,01.03.18, 02.03.18, 13.03.18, 21.03.18, 23.03.18	308	---
2	Farmers Training	11	15.06.17, 10.07.17, 19.09.17, 22.10.17, 07.11.17, 17.01.18, 06.02.18, 14.02.18, 15.02.18 11.03.18, 12.03.18	220	---
3	Media coverage	2	26.01.18,	Mass	---
4	Training for extension functionaries	---	---	---	---

Performance of Frontline demonstrations

Frontline demonstrations on crops

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										
Pulses																			
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Oilseeds																			
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Cereals																			
Paddy	ICM	Demonstration of Paddy CO (R)52 variety for yield and income	CO 52	CR 1009	10	4	55.6	51.6	53.4	52.7	1.30	48360	80070	31710	1.66	49420	79086	31710	1.66
Paddy	ICM	Demonstration of Paddy TKM(R) 13 variety for yield and income potential	TKM 13	CR 1009	10	4	53.6	49.5	52.4	51.3	2.14	48060	78630	30570	1.64	49940	76867	26928	1.54
Paddy	IPM	Demonstration of IPDM in Paddy	CR1009	CR1009	10	4	56.5	53.5	54.4	50.3	8.23	38827	81660	42833	2.10	45645	75390	29745	1.65
Commercial crops																			
Cotton	ICM	Demonstration of ICM practices in cotton	Rasi	Rasi	10	4	21.5	19.0	20.3	17.2	18.0	26510	83189	56679	3.1	28440	70430	41990	2.5
Millets																			
Bajra	ICM	Demonstration of Bajra CO 10 for yield and income potential	CO(Cu)10	Local	10	4	24.6	21.0	23.5	18.9	24.3	17640	42363	24723	2.4	17780	34047	16267	1.9
Maize	Mechanization	Demonstration of Mechanized Maize cultivation	NK 6240	NK6240	10	4	55.3	49.7	52.5	51.9	1.15	30890	68263	37373	2.21	33340	67522	34182	2.03

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										
Vegetables																			
Brinjal	IPM	Demonstration of IPM practices in Brinjal	Parool	Local	10	4	314.5	303.0	307.7	226.9	35.6	80751	276948	196197	3.43	79651	204228	124577	2.56
Gourds	IPM	Demonstration of IPM in Gourds	MHSN 17	Local	10	4	254.0	229.0	242.0	199.2	27.5	89901	314639	224738	3.5	99569	258953	159385	2.60
Drumstick	Variety	Demonstration of PKM 1 variety of Drumstick with ICM practices	PKM 1	Ottanchathiram	10	4	Flowering & Fruit formation stage												
Fruits																			
Guava	Variety	Introduction of Red flesh Guava Arka Kiran for yield and Income potential	Arkha Kiran	Local	5	0.5	Vegetative stage												
Plantation crops																			
Cashew	ICM	Demonstration of ICM practices in Cashew nut	VRI 3	VRI 3	10	4	6.8	6.3	6.53	5.39	21.1	25477	65370	39892	2.57	24401	53920	29518	2.21
Cashew	Intercrop	Demonstration of Fodder crops as intercrop in Cashew Gardens	Local	-	10	4	6.2(82)	5.6(77)	5.9(79.7)	5.5	7.3	22035	74186	52151	3.38	22820	59462	36642	2.61
Spices and condiments																			
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Flowers																			
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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																	
	Reproduction Management	Demonstration of Infertility management with Progesterone Intra vaginal sponge for estrous synchronization in dairy cows	10	10	Conception percentage (%)		57	Exhibition of heat signs		14400	36300	21900	2.52	13600	32100	18500	2.36
					55	35		75	30								
								No. of services per conception (No.)									
								1.5	3								
Buffalo																	
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Dairy																	
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Poultry																	
Quail	Varietal Introduction	Demonstration of Japanese quail rearing	5	125	Egg production - 2550	-	-	Chicks Production -2100	-	11604	8904	4.3	-	-	-	-	-
Sheep																	
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Goat																		
Goat	Integrated feed management	Demonstration of Integrated Feed Management practices in small Ruminants (Goats)	10	10	Body weight gain (3-9 months)		23.7	Survival at 9th month		2600	5800	3200	2.23	2350	4600	2250	1.96
					8 kg – 17.70 kg	8 kg – 14.3 kg		100%	80%								

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)
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FLD on Other enterprises

Category	Name of the technology demonstrated	No. of Farmer	No.of units	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.) or Rs./unit				Economics of check (Rs.) or Rs./unit			
				Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Mushroom																
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Apiculture																
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Maize Sheller																
Groundnut Stripper	Demonstration of modified groundnut pod stripper for reducing women Drudgery	10	1	Labours required/ha.			Stripping efficiency/hr		4350/ha.	---	---	---	7500/ha.	---	---	---
				15	50		20 kg	5 kg								
Pulses Separator	Method of operation of Spiral Separator	10	1	Relative % of impurities			Man requirement / 100 kg		37.50/ 100 kg	---	---	---	600/ 100 kg	---	---	---
				6.8	3.5		2	32								
Value Addition																
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Vermi Compost																
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FLD on Women Empowerment

Category	Name of technology	No. of demonstrations	Name of observations	Demonstration	Check
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FLD on Farm Implements and Machinery

Name of the implement	Crop	Technology demonstrated	No. of Farmer	Area (ha)	Major parameters	Filed observation (output/man hour)		% change in major parameter	Labor reduction (man days)				Cost reduction (Rs./ha or Rs./Unit etc.)			
						Demo	Check		Land preparation	Sowing	Weeding	Total	Land preparation	Labour	Irrigation	Total
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FLD on Other Enterprise: Kitchen Gardening

Category and Crop	Thematic area	Name of the technology demonstrated	No. of Farmer	No. of Units	Yield (Kg)		% change in yield	Other parameters		Economics of demonstration (Rs./ha)				Economics of check (Rs./ha)			
					Demonstration	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
Vegetables	Kitchen Gardening	Demonstration of Organic Kitchen Garden	5	5	100.8	---	---	---	---	2770	5568	2798	2.01	---	---	---	---

FLD on Demonstration details on crop hybrids *(Details of Hybrid FLDs implemented during 2016-17)*

Crop	technology demonstrated	Hybrid Variety	No. of Farmers	Area (ha)	Yield (q/ha)				% Increase in yield	Economics of demonstration (Rs./ha)			
					Demo			Check		Gross Cost	Gross Return	Net Return	BCR (R/C)
					High	Low	Average						
Oilseed crop													
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Pulse crop													
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Cereal crop													
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Vegetable crop													
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Fruit crop													
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Other (specify)													
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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	T9	25	10	7.90	6.70	7.34	4.5	63.0	16500	29360	12860	1.77	17500	18627	1127	1.06
Groundnut		Varietal Introduction &ICM	Demonstration of Groundnut VRI 8, Dharani with ICM practices	VRI 8 Dharani	VRI 2	75	30	26.5	20.1	25.2	18.6	35.4	39100	98423	59323	2.52	43600	73720	30120	1.69

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																	
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Buffalo																	
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Dairy																	
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Poultry																	
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Sheep																	
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Goat																	
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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)
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FLD on Other enterprises

Category	Name of the technology demonstrated	No. of Farmer	No.of units	Major parameters		% change in major parameter	Other parameter		Economics of demonstration (Rs.) or Rs./unit				Economics of check (Rs.) or Rs./unit			
				Demo	Check		Demo	Check	Gross Cost	Gross Return	Net Return	BCR (R/C)	Gross Cost	Gross Return	Net Return	BCR (R/C)
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FLD on Women Empowerment

Category	Name of technology	No. of demonstrations	Name of observations	Demonstration	Check
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FLD on Farm Implements and Machinery

Name of the implement	Crop	Technology demonstrated	No. of Farmer	Area (ha)	Major parameters	Filed observation (output/man hour)		% change in major parameter	Labor reduction (man days)				Cost reduction (Rs./ha or Rs./Unit etc.)			
						Demo	Check		Land preparation	Sowing	Weeding	Total	Land preparation	Labour	Irrigation	Total
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4. Training Programmes

Farmers' Training including sponsored training programmes (on campus)

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
I Crop Production										
Micro Irrigation/irrigation	4	146	13	159	10	4	14	156	17	173
Seed production	1	22	1	23	0	1	1	22	2	24
Integrated Crop Management	2	29	15	44	2	1	3	31	16	47
Production of organic inputs	1	6	19	25	1	6	7	7	25	32
Others (pl specify)										
Total	**8**	**203**	**48**	**251**	**13**	**12**	**25**	**216**	**60**	**276**
II Horticulture										
a) Vegetable Crops										
Production of low value and high volume crops	1	32	0	32	3	0	3	35	0	35
Total (a)	**1**	**32**	**0**	**32**	**3**	**0**	**3**	**35**	**0**	**35**
b) Fruits	---	---	---	---	---	---	---	---	---	---
Total (b)	---	---	---	---	---	---	---	---	---	---
c) Ornamental Plants	---	---	---	---	---	---	---	---	---	---
Total (c)	---	---	---	---	---	---	---	---	---	---
d) Plantation crops										
Production and Management technology	1	16	7	23	1	1	2	17	8	25
Total (d)	**1**	**16**	**7**	**23**	**1**	**1**	**2**	**17**	**8**	**25**
e) Tuber crops	---	---	---	---	---	---	---	---	---	---
Total (e)	---	---	---	---	---	---	---	---	---	---
f) Spices	---	---	---	---	---	---	---	---	---	---
Total (f)	---	---	---	---	---	---	---	---	---	---
g) Medicinal and Aromatic Plants	---	---	---	---	---	---	---	---	---	---
Total (g)	---	---	---	---	---	---	---	---	---	---
GT (a-g)	**2**	**48**	**7**	**55**	**4**	**1**	**5**	**52**	**8**	**60**
III Soil Health and Fertility Management										
Total	---	---	---	---	---	---	---	---	---	---
IV Livestock Production and Management										
Dairy Management	1	41	3	44	3	0	3	44	3	47
Poultry Management	5	154	21	175	28	1	29	182	22	204
Animal Nutrition Management	1	15	0	15	0	3	3	15	3	18
Disease Management	1	13	14	27	3	6	9	16	20	36
Total	**8**	**223**	**38**	**261**	**34**	**10**	**44**	**257**	**48**	**305**
V Home Science/Women empowerment	---	---	---	---	---	---	---	---	---	---
Total	---	---	---	---	---	---	---	---	---	---

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
VI Agril. Engineering										
Total	---	---	---	---	---	---	---	---	---	---
VII Plant Protection										
Integrated Pest Management	3	58	7	65	6	2	8	64	9	73
Total	**3**	**58**	**7**	**65**	**6**	**2**	**8**	**64**	**9**	**73**
VIII Fisheries										
Total	---	---	---	---	---	---	---	---	---	---
IX Production of Inputs at site										
Organic manures production	1	19	3	22	0	0	0	19	3	22
Mushroom Production	1	0	5	5	0	8	8	0	13	13
Apiculture	1	23	0	23	1	0	1	24	0	24
Total	**3**	**42**	**8**	**50**	**1**	**8**	**9**	**43**	**16**	**59**
X Capacity Building and Group Dynamics										
Leadership development	1	16	0	16	0	0	0	16	0	16
Group dynamics	5	90	8	98	5	0	5	95	8	103
Entrepreneurial development of farmers/youths	1	75	0	75	0	0	0	75	0	75
WTO and IPR issues	1	23	1	24	3	0	3	26	1	27
Total	**8**	**204**	**9**	**213**	**8**	**0**	**8**	**212**	**9**	**221**
XI Agro-forestry										
Total	---	---	---	---	---	---	---	---	---	---
GRAND TOTAL	**32**	**778**	**117**	**895**	**66**	**33**	**99**	**844**	**150**	**994**

Farmers' Training including sponsored training programmes (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										
Integrated Farming	1	41	2	43	6	2	8	47	4	51
Micro Irrigation/irrigation	1	32	1	33	2	0	2	34	1	35
Integrated Crop Management	3	48	9	57	3	0	3	51	9	60
Production of Organic inputs	2	36	10	46	2	21	23	38	31	69
Total	**7**	**157**	**22**	**179**	**13**	**23**	**36**	**170**	**45**	**215**
II Horticulture										
a) Vegetable Crops										
Production of low value and high volume crops	3	68	1	69	8	0	8	76	1	77
Exotic vegetables	2	47	3	50	6	2	8	53	5	58
Protective cultivation	1	30	2	32	6	4	10	36	6	42
Total (a)	**6**	**145**	**6**	**151**	**20**	**6**	**26**	**165**	**12**	**177**
b) Fruits	---	---	---	---	---	---	---	---	---	---

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Total (b)	---	---	---	---	---	---	---	---	---	---
c) Ornamental Plants	---	---	---	---	---	---	---	---	---	---
Total (c)	---	---	---	---	---	---	---	---	---	---
d) Plantation crops	---	---	---	---	---	---	---	---	---	---
Total (d)	---	---	---	---	---	---	---	---	---	---
e) Tuber crops	---	---	---	---	---	---	---	---	---	---
Total (e)	---	---	---	---	---	---	---	---	---	---
f) Spices	---	---	---	---	---	---	---	---	---	---
Total (f)	---	---	---	---	---	---	---	---	---	---
g) Medicinal and Aromatic Plants	---	---	---	---	---	---	---	---	---	---
Total (g)	---	---	---	---	---	---	---	---	---	---
GT (a-g)	**6**	**145**	**6**	**151**	**20**	**6**	**26**	**165**	**12**	**177**
III Soil Health and Fertility Management										
Integrated Nutrient Management	1	16	3	19	4	2	6	20	6	26
Soil and Water Testing	1	56	14	70	18	4	22	74	18	92
Total	**2**	**72**	**17**	**89**	**22**	**6**	**28**	**94**	**24**	**118**
IV Livestock Production and Management	---	---	---	---	---	---	---	---	---	---
Total	---	---	---	---	---	---	---	---	---	---
V Home Science/Women empowerment										
Storage loss minimization techniques	1	31	0	31	2	0	2	33	0	33
Location specific drudgery reduction technologies	1	24	6	30	2	0	2	26	6	32
Rural Crafts	1	0	10	10	0	0	0	0	10	10
Total	**3**	**55**	**16**	**71**	**4**	**0**	**4**	**59**	**16**	**75**
VI Agril. Engineering	---	---	---	---	---	---	---	---	---	---
Total	---	---	---	---	---	---	---	---	---	---
VII Plant Protection										
Integrated Pest Management	3	55	8	63	1	0	1	56	8	64
Bio-control of pests and diseases	1	30	0	30	0	0	0	30	0	30
Production of bio control agents and bio pesticides	1	16	4	20	3	2	5	19	6	25
Others (pl specify)										
Total	**5**	**101**	**12**	**113**	**4**	**2**	**6**	**105**	**14**	**119**
VIII Fisheries	---	---	---	---	---	---	---	---	---	---
Total	---	---	---	---	---	---	---	---	---	---
IX Production of Inputs at site										
Bio-agents production	1	32	16	48	11	3	14	43	19	62

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Vermi-compost production	2	10	0	10	6	29	35	16	29	45
Mushroom Production	3	26	18	44	12	33	45	38	51	89
Total	**6**	**68**	**34**	**102**	**29**	**65**	**94**	**97**	**99**	**196**
X Capacity Building and Group Dynamics										
Formation and Management of SHGs	2	29	17	46	12	8	20	41	25	66
Total	**2**	**29**	**17**	**46**	**12**	**8**	**20**	**41**	**25**	**66**
XI Agro-forestry	---	---	---	---	---	---	---	---	---	---
Total	---	---	---	---	---	---	---	---	---	---
GRAND TOTAL	**31**	**627**	**124**	**751**	**104**	**110**	**214**	**731**	**235**	**966**

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										
Integrated Farming	1	41	2	43	6	2	8	47	4	51
Micro Irrigation/irrigation	5	178	14	192	12	4	16	190	18	208
Seed production	1	22	1	23	0	1	1	22	2	24
Integrated Crop Management	5	77	24	101	5	1	6	82	25	107
Production of organic inputs	3	42	29	71	3	27	30	45	56	101
Total	**15**	**360**	**70**	**430**	**26**	**35**	**61**	**386**	**105**	**491**
II Horticulture										
a) Vegetable Crops										
Production of low value and high valume crops	4	100	1	101	11	0	11	111	1	112
Exotic vegetables	2	47	3	50	6	2	8	53	5	58
Protective cultivation	1	30	2	32	6	4	10	36	6	42
Total (a)	**7**	**177**	**6**	**183**	**23**	**6**	**29**	**200**	**12**	**212**
b) Fruits	---	---	---	---	---	---	---	---	---	---
Total (b)	---	---	---	---	---	---	---	---	---	---
c) Ornamental Plants	---	---	---	---	---	---	---	---	---	---
Total (c)	---	---	---	---	---	---	---	---	---	---
d) Plantation crops										
Production and Management technology	1	16	7	23	1	1	2	17	18	25
Total (d)	**1**	**16**	**7**	**23**	**1**	**1**	**2**	**17**	**18**	**25**
e) Tuber crops	---	---	---	---	---	---	---	---	---	---
Total (e)	---	---	---	---	---	---	---	---	---	---
f) Spices	---	---	---	---	---	---	---	---	---	---
Total (f)	---	---	---	---	---	---	---	---	---	---
g) Medicinal and Aromatic Plants	---	---	---	---	---	---	---	---	---	---
Total (g)	---	---	---	---	---	---	---	---	---	---
GT (a-g)	**8**	**193**	**13**	**206**	**24**	**7**	**31**	**217**	**30**	**237**

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
III Soil Health and Fertility Management										
Integrated Nutrient Management	1	16	3	19	4	2	6	20	6	26
Soil and Water Testing	1	56	14	70	18	4	22	74	18	92
Total	**2**	**72**	**17**	**89**	**22**	**6**	**28**	**94**	**24**	**118**
IV Livestock Production and Management										
Dairy Management	1	`41	3	44	3	0	3	44	3	47
Poultry Management	5	154	21	175	28	1	29	182	22	204
Animal Nutrition Management	1	15	0	15	0	3	3	15	3	18
Disease Management	1	13	14	27	3	6	9	16	20	36
Total	**8**	**223**	**38**	**261**	**34**	**10**	**44**	**257**	**48**	**305**
V Home Science/Women empowerment										
Storage loss minimization techniques	1	31	0	31	2	0	2	33	0	33
Location specific drudgery reduction technologies	1	24	6	30	2	0	2	26	6	32
Rural crafts	1	0	10	10	0	0	0	0	10	10
Total	**3**	**55**	**16**	**71**	**4**	**0**	**4**	**59**	**16**	**75**
VI Agril. Engineering	---	---	---	---	---	---	---	---	---	---
Total	---	---	---	---	---	---	---	---	---	---
VII Plant Protection										
Integrated Pest Management	6	113	15	128	7	2	9	120	17	137
Bio-control of pests and diseases	1	30	0	30	0	0	0	30	0	30
Production of bio control agents and bio pesticides	1	16	4	20	3	2	5	19	6	25
Total	**8**	**159**	**19**	**178**	**10**	**4**	**14**	**169**	**23**	**192**
VIII Fisheries	---	---	---	---	---	---	---	---	---	---
Total	---	---	---	---	---	---	---	---	---	---
IX Production of Inputs at site										
Bio-agents production	1	32	16	48	11	3	14	43	19	62
Vermi-compost production	2	10	0	10	6	29	35	16	29	45
Organic manures production	1	19	3	22	0	0	0	19	3	22
Mushroom Production	4	26	23	49	12	41	53	38	64	102
Apiculture	1	23	0	23	1	0	1	24	0	24
Total	**9**	**110**	**42**	**152**	**30**	**73**	**103**	**140**	**115**	**255**
X Capacity Building and										

Thematic area	No. of courses	Participants								
		Others			SC/ST			Grand Total		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Group Dynamics										
Leadership development	1	16	0	16	0	0	0	16	0	16
Group dynamics	5	90	8	98	5	0	5	95	8	103
Formation and Management of SHGs	2	29	17	46	12	8	20	41	25	66
Entrepreneurial development of farmers/youths	1	75	0	75	0	0	0	75	0	75
Others (pl specify) ICT in Agriculture	1	23	1	24	3	0	3	26	1	27
Total	**10**	**233**	**26**	**259**	**20**	**8**	**28**	**253**	**34**	**287**
XI Agro-forestry	---	---	---	---	---	---	---	---	---	---
Total	---	---	---	---	---	---	---	---	---	---
GRAND TOTAL	**63**	**1405**	**241**	**1646**	**170**	**143**	**313**	**1575**	**385**	**1960**

Training for Rural Youths 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
Nursery Management of Horticulture crops	1	24	7	31	1	0	1	25	7	32
Integrated farming	1	25	0	25	4	0	4	29	0	29
Seed production										
Production of organic inputs	1	6	9	15	12	10	22	18	19	37
Mushroom Production	1	21	0	21	2	0	2	23	0	23
TOTAL	**4**	**76**	**16**	**92**	**19**	**10**	**29**	**95**	**26**	**121**

Training for Rural Youth including sponsored training programmes (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
TOTAL	---	---	---	---	---	---	---	---	--	---

Training for Rural Youths 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
Nursery Management of Horticulture crops	1	24	7	31	1	0	1	25	7	32
Integrated farming	1	25	0	25	4	0	4	25	4	29
Production of organic inputs	1	6	9	15	12	10	22	18	19	37
Mushroom Production	1	21	0	21	2	0	2	23	0	23
TOTAL	**4**	**76**	**16**	**92**	**19**	**10**	**29**	**91**	**30**	**121**

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	12	6	18	0	0	0	12	6	18
Production and use of organic inputs	1	13	5	18	2	1	3	15	6	21
TOTAL	**2**	**25**	**11**	**36**	**2**	**1**	**3**	**27**	**12**	**39**

Training programmes for Extension Personnel including sponsored training programmes (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
Protected cultivation technology	1	16	7	23	2	2	4	18	9	27
Any Other (Pl. specify) Innovative Interventions of Doubling the Farmers income	1	18	5	23	2	2	4	20	7	27
TOTAL	**2**	**34**	**12**	**46**	**4**	**4**	**8**	**38**	**16**	**54**

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	1	12	6	18	0	0	0	12	6	18
Protected cultivation technology	1	16	7	23	2	2	4	18	9	27
Production and use of organic inputs	1	13	5	18	2	1	3	15	6	21
Any Other (Pl. specify) Innovative Interventions of Doubling the Farmers income	1	18	5	23	2	2	4	20	7	27
TOTAL	**4**	**59**	**23**	**82**	**6**	**5**	**11**	**65**	**28**	**93**

Table. 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										
Production and value addition	2	68	8	76	2	0	2	70	8	78
Total	**2**	**68**	**8**	**76**	**2**	**0**	**2**	**70**	**8**	**78**
Post harvest technology and value addition										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Farm machinery										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Livestock and fisheries										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Home Science	2	0	29	29	0	18	18	0	47	47
Total	**2**	**0**	**29**	**29**	**0**	**18**	**18**	**0**	**47**	**47**
Agricultural Extension										
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
GRAND TOTAL	**4**	**68**	**37**	**105**	**2**	**18**	**20**	**70**	**55**	**125**

Name of sponsoring agencies involved

1. Directorate of Cashewnut and Cocoa Development Board, Kochi
2. SAMETI, Kudimiyanmalai
3. Mahalir Thittam, Ariyalur District

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										
Others (pl. specify) Integrated Farming System	1	28	0	28	0	0	0	28	0	28
Total	**1**	**28**	**0**	**28**	**0**	**0**	**0**	**28**	**0**	**28**
Post harvest technology and value addition	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0
Livestock and fisheries	0	0	0	0	0	0	0	0	0	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Income generation activities										
Rural Crafts	1	0	21	21	0	4	4	0	25	25
Total	1	0	21	21	0	4	4	0	25	25

Agricultural Extension										
Capacity building and group dynamics	1	0	0	0	23	15	38	23	15	38
Total	1	0	0	0	23	15	38	23	15	38
Grand Total	**3**	**28**	**21**	**49**	**23**	**19**	**42**	**51**	**40**	**91**

5. Extension Programmes

Activities	No. of programmes	No. of farmers	No. of Extension Personnel	Total
Advisory Services	153	581	16	597
Diagnostic visits	41	487	12	499
Field Day	10	300	8	308
Group discussions	17	194	8	202
Kisan Ghosthi	---	---	---	---
Film Show	4	168	1	169
Self -help groups	2	60	---	60
Kisan Mela	3	1711	12	1723
Exhibition	2	1629	10	1639
Scientists' visit to farmers field	9	52	5	57
Plant/animal health camps	1	189	4	193
Farm Science Club	6	120	2	122
Ex-trainees Sammelan	---	---	---	---
Farmers' seminar/workshop	1	156	4	160
Method Demonstrations	12	148	6	154
Celebration of important days	2	876	8	884
Special day celebration	1	928	4	932
Exposure visits	6	100	6	106
Others (pl. specify)				
Field visit	179	814	12	826
Farmers visit to KVK	266	1749	26	1775
PRA	3	146	2	148
Total	**718**	**10408**	**146**	**10554**

Details of other extension programmes

Particulars	Number
Electronic Media (CD./DVD)	---
Extension Literature	15
News paper coverage	16
Popular articles	3
Radio Talks	27
TV Talks	9
Animal health camps (Number of animals treated)	248
Others (pl. specify)	---
Total	**318**

Messages sent

MOBILE ADVISORY SERVICES THROUGH MKISAN PORTAL

No of registered farmers: 897

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

No of registered farmers: 20,150

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	7	586	5	412	4	416	2	412	5	862	---	---	23	2688
Voice only	9	867	7	762	5	927	2	472	5	912	---	---	28	3940
Voice & Text both	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Total Messages	16	---	12	---	9	---	4	---	10	---	0	---	51	---
Total farmers Benefitted		1453		1174		1343		884		1774		0		6628

6. DETAILS OF TECHNOLOGY WEEK CELEBRATIONS - NIL

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

Production of seeds by the KVKs (seed in quintals)

Crop	Name of the crop	Name of the variety /hybrid	Quantity of seed produced (q)	Value (Rs)	Seed supplied to farmers		Supplied to other agencies (q)
					Quantity (q)	No of farmers	
Cereals	---	---	---	---	---	---	---
Oilseeds	Groundnut	VRI 2	10	60,000	10	23	---
		Dharani	4	16,000	4	11	---

		VRI 8	2	8,000	2	6	---
Pulses	Blackgram	VBN 6	3.6	50,400	3.2	53	---
		VBN 8	3.2	44,800	3.0	31	---
Commercial crops	---	---	---	---	---	---	---
Vegetables	---	---	---	---	---	---	---
Flower crops	---	---	---	---	---	---	---
Spices	---	---	---	---	---	---	---
Fodder crop seeds	Fodder Sorghum	COFS 29	0.8	40,000	0.79	92	---
		COFS 31	0.8	40,000	0.78	66	---
	Velimasal	---	0.45	25,875	0.44	58	---
	Fodder Cowpea	---	0.1	1600	0.1	7	---
Fiber crops	---	---	---	---	---	---	---
Forest Species	---	---	---	---	---	---	---
Others	Azolla	Local	0.25	1,293	0.25	19	---
Total			**25.2**			**366**	

Production of planting materials by the KVKs

Crop	**Name of the crop**	**Name of the variety / hybrid**	**Number**	**Value (Rs.)**	**Planting material supplied to farmers**		**Supplied to other agencies (No)**
					No	**No of farmers**	
Commercial	---	---	---	---	---	---	---
Vegetable seedlings	---	---	---	---	---	---	---
Fruits	Guava	L 49	867	43,350	680	40	---
	Mango	Senthura	260	19,500	130	49	---
	Amla	NA 7	50	3,750	32	12	---
	Sapota	PKM 1	50	3,750	43	7	---
	Red flush guava	Arka Kiran	50	400	50	5	---
Ornamental plants	---	---	---	---	---	---	---
Medicinal and Aromatic	---	---	---	---	---	---	---
Plantation	Coconut	T X D	80	14,400	58	8	---
Spices	---	---	---	---	---	---	---
Fodder crop saplings	---	---	---	---	---	---	---
Forest Species	---	---	---	---	---	---	---
Others	---	---	---	---	---	---	---
Total			**1,357**		**993**	**121**	

Production of Bio-Products

Bio Products	**Name of the bio-product**	**Quantity (Kg)**	**Value (Rs.)**	**Supplied to farmers**		**Supplied to other agencies**
				Kg.	**No of farmers**	**Kg.**
Bio Fertilisers	Azophos	81	4,050	15	11	---
	Rhizophos	74	3,700	20	10	---
	Phosphobacteria	45	2,250	6	4	---
	VAM	330	2,640	2	1	---
Bio-pesticide	---	---	---	---	---	---
Bio-fungicide	Pseudomonas	119	11,900	119	35	---
	Trichoderma viride	149	14,900	57	37	---

Bio Agents	Panchakavya	1,700	1,02,000	1600	119	---
Others	---	---	---	---	---	---
Total		**798 kg 1700 lit**	**39,440 1,02,000**	**1,819**	**217**	

Production of livestock materials

Particulars of Live stock	**Name of the breed**	**Number**	**Value (Rs.)**	**Supplied to farmers**		**Supplied to other agencies (No)**
				No.	**No. of farmers**	
Dairy animals						
Cows	Jercy Cross	7	2,10,000	3	3	---
	Umblachery	1	30,000			
Buffaloes	---	---	---	---	---	---
Calves	---	1	3,000	---	---	---
Others (Pl. specify)	---	---	---	---	---	---
Poultry						
Chicks	Desi	499	20,299	195	55	---
Broilers	---	---	---	---	---	---
Layers	---	---	---	---	---	---
Duals (broiler and layer)	---	---	---	---	---	---
Japanese Quail	---	---	---	---	---	---
Turkey	---	---	---	---	---	---
Emu	---	---	---	---	---	---
Ducks	---	---	---	---	---	---
Others (Pl. specify)	Guinea fowl	4	1600	3	3	---
Piggery						
Piglet	---	---	---	---	---	---
Others (Pl.specify)	---	---	---	---	---	---
Fisheries						
Indian carp	---	---	---	---	---	---
Exotic carp	---	---	---	---	---	---
Others (Pl. specify)	---	---	---	---	---	---
Total	**---**	**512**	**2,64,899**	**201**	**61**	**---**

8. DETAILS OF SOIL, WATER AND PLANT ANALYSIS

Samples	**No. of Samples**	**No. of Farmers**	**No. of Villages**	**Amount realized (Rs.)**
Soil	319	306	68	6,380
Water	54	44	34	540
Plant	---	---	---	---
Manure	---	---	---	---
Others (Pl. specify)	---	---	---	---
Total	**373**	**350**	**105**	**6,920**

9. SCIENTIFIC ADVISORY COMMITTEE

Date of SAC meeting	**Number of members attended**
05.12.2017	25

Note: The proceedings of sac meeting along with the list of participants attached in Annexure I

10. PUBLICATIONS

Publications in Journals

S. No	Authors	Year	Title	Journal
1	Dr.M.Saravanan Dr.G.Alagukannan	2017-18	Sustainable Groundnut cultivation	Naveena Velanmai

Other publications

S.No	Item	Year	Authors	Title	Publisher
1	Books	2017-18	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.
		2017-18	Dr.G.Alagukannan, Y.Raja joslin, A.Rajkala, Dr. M.Saravanan, M.Ashok kumar, S.Ilavarasan, S.Shobana, M.Thirumalaivasan	Integrated Farming System	ICAR-KVK, Ariyalur Dt.
		2017-18	Dr. M.Saravanan, Dr.G.Alagukannan, Y.Raja joslin, A.Rajkala, M.Ashok kumar, S.Ilavarasan, S.Shobana, M.Thirumalaivasan	Agricultural Technologies for Ariyalur District	ICAR-KVK, Ariyalur Dt.
2	Book chapters / manuals	---	---	---	---
3	Training manuals	2017-18	S.Ilavarasan, Dr.G.Alagukannan S.Shobana	A practical guide on Poultry	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,	2017-18	A.Rajkala	Maize cultivation techniques	Dinathanti

	popular articles, Bulletins, Short communications	2017-18	M.Ashok Kumar	Honey Bee rearing	Dinamani
5	Technical bulletin/ Folders				
	Leaflet	2017-18	S.Arivuselvi,A.Rajkala & Dr.G.Alagukannan	Collection of soil sample and its importance	ICAR-KVK, Ariyalur Dt.
	Leaf let	2017-18	A.Rajkala, Dr.G.Alagukannan	Cultivation Techniques in Blackgram	ICAR-KVK, Ariyalur Dt.
	Leaf let	2017-18	M.Thirumalaivasan, Dr.G.Alagukannan & A.Rajkala	Azolla Cultivation	ICAR-KVK, Ariyalur Dt.
	Folder	2017-18	Y.Raja joslin, Dr.G.Alagukannan & A.Rajkala	Hi –Tech Tuberose Cultivation	ICAR-KVK, Ariyalur Dt.
	Folder	2017-18	Dr.M.Saravanan, Dr.G.Alagukannan & A.Rajkala	Cultivation techniques in Groundnut	ICAR-KVK, Ariyalur Dt.
	Folder	2017-18	M.Ashok kumar, Dr.G.Alagukannan & A.Rajkala	Cultivation techniques in Maize	ICAR-KVK, Ariyalur Dt.
	Folder	2017-18	M.Ashok kumar & Dr.G.Alagukannan	IPM in Paddy	ICAR-KVK, Ariyalur Dt.
	Folder	2017-18	M.Ashok Kumar & Y.Raja Joslin	IPM in Cashew	ICAR-KVK, Ariyalur Dt.
	Folder	2017-18	Dr.M.Saravanan, Dr.G.Alagu Kannan	Cotton cultivation techniques	ICAR-KVK, Ariyalur Dt.
	Folder	2017-18	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.
6	Reports	---	---	---	---
7	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	Duration	Organized by
S.Arivuselvi	Procedures of soil testing method	1 day (17.04.17)	KVK, Dindigul
Dr.M.Saravanan	Workshop on Drought assessment in Tamil Nadu	2 days (20.04.17 – 21.04.17)	NABARD, Chennai
Dr.M.Saravanan	Capacity building for NABARD POPI	1 day (06.06.17)	NABARD, Erode
S.Shobana	Extension strategies for main streaming women in agriculture	3 days (19.06.17 – 21.06.17)	MANAGE, Hyderabad
Dr.G.Alagukannan	Training on Oilseed production	1 day (04.07.17)	TNAU, Coimbatore
Dr.G.Alagukannan Y.Raja Joslin A.Rajkala Dr.M.Saravanan M.Ashok Kumar S.Shobana M.Thirumalaivsan S.Arivuselvi	Capacity building for KVK Staff	2 days (21.07.17-22.07.17)	MYRADA KVK,Erode
Y.Raja Joslin	International symposium on Horticulture : Priorities and Emerging Trends	4 days (05.09.17 – 08.09.17)	IIHR, Bengaluru
Dr.M.Saravanan	Capacity building for NABARD POPI	3 days (25.10.17 - 27.10.17	Vaitheeswarankovil
Dr.G.Alagukannan	Annual Review Workshop	3 days (03.05.17-05.05.17)	Goa
Dr.G.Alagukannan	24th Foundation Day	1 day (21.08.17)	NRCB, Trichy
Dr.G.Alagukannan	Vigilance awareness meeting	1 day (01.11.17)	TNAU, Coimbatore
Dr.G.Alagukannan	DST Annual Meet	2 days (08.11.17-09.11.17)	JNTU, Hyderabad
Y.Raja joslin Dr.M.Saravanan MN.Ashok Kumar M.Thirumalaivasan S.Shobaba S.Arivuselvi	Exposure cum Training on Cashew cultivation and Value addition	3 days (16.11.17-18.11.17)	Puthur, Karnataka
Y.Raja Joslin	New Vistas in Vegetable production	2 days (07.12.17-08.12.17)	TNAU, Coimbatore

S.Arivuselvi	Agro forest model establishment and management	3 days (29.01.18-31.01.18)	IFG & TB, Coimbatore
A.Rajkala	Innovative intervention of agriculture for doubling the farmers income	5 days (05.02.18 - 09.02.18)	AC & RI, Madurai

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.)**
5	10	---	325	23

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**
Groundnut	150	Drought during initial stage of growth. The crop was rescued by PPFM sprays	18 ha.
Total	150	---	18 ha.

Major area coverage under alternate crops/varieties

Crops	**Area (ha)**	**Number of beneficiaries**
Oilseeds	---	---
Pulses	---	---
Cereals	---	---
Vegetable crops	---	---
Tuber crops	---	---
Total	---	---

Farmers-scientists interaction on livestock management

Livestock components	**Number of interactions**	**No. of participants**
---	---	---

Animal health camps organised

Number of camps	**No. of animals**	**No. of farmers**
4	642	275
---	---	---
Total	---	---

Seed distribution in drought hit states

Crops	Quantity (qtl)	Coverage of area (ha)	Number of farmers
---	---	---	---

Large scale adoption of resource conservation technologies

Crops/cultivars and gist of resource conservation technologies introduced	Area (ha)	Number of farmers
Micro irrigation in vegetable and flower crops	550	1025

Awareness campaign

Meetings		Gosthies		Field days		Farmers fair		Exhibition		Film show	
No.	No.of farmers	No.	No.of farmers	No.	No.of farmers	No.	No.of farmers	No.	No.of farmers	No.	No.of farmers
12	420	---	---	10	325	3	2800	4	815	12	248

13. Awards/Rewards by KVK and staff

Recognitions &Awards/Special attainments and Achievements of Practical Importance

Mr.Rasathi, W/o.Rajendran, Kayarlabath village, Ariyalur district received Krishi Karman Award for the year 2017-18 in the hands of honorable Prime Minister at the occasion of KVK conference held at IARI, New Delhi on 17.03.2018. She bagged the award for reaping highest productivity in paddy. The prize carry a cash prize of Rs. 5 lakhs.

Recognitions & Awards (Team Award/individual)

Item of Recognition	Year	Awarding Organization National / International / Professional; Society	Individual/ collaborative
-	-	-	-

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

Retire Youth – Rural Youth (RY-RY model)

The hindrance in retaining youth in agriculture is the lack of credit facilities to them through banks. We face severe hurdle in seeking financial assistance through banks to help the rural youth. An innovative idea of farming a club for Retired persons especially for Ex-serviceman came to our mind and we have approached the key persons of Ex-service men association of Ariyalur district. They readily imbibed our idea of developing rural youth admired our ideas and expressed their interest to support rural youth financially (as loan) to start their income generating activities. Currently there are 50 ex-service men formed a club and this club is named as “Retired Youth Club”. Currently the Retired youth Club members are rendering financial assistance to “Rural Youth Club” members and youths are starting their activities. This model is named as “RY-RY model”.

Dr.Y.G.Prasad, the revered Director, ICAR-ATARI, Hyderabad has highly appreciated this model while his visit to our KVK on 06.12.2017 and disbursed the seed money of R.1.0 lakhs from Retired Youth club to Rural Youth club and blessed our youth members to became a successful agripreneurs. This has been flashed in The Hindu dated 27.10.17.

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	• 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

Note: Detailed report of project is attached in Annexure II

15. A. Success stories

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

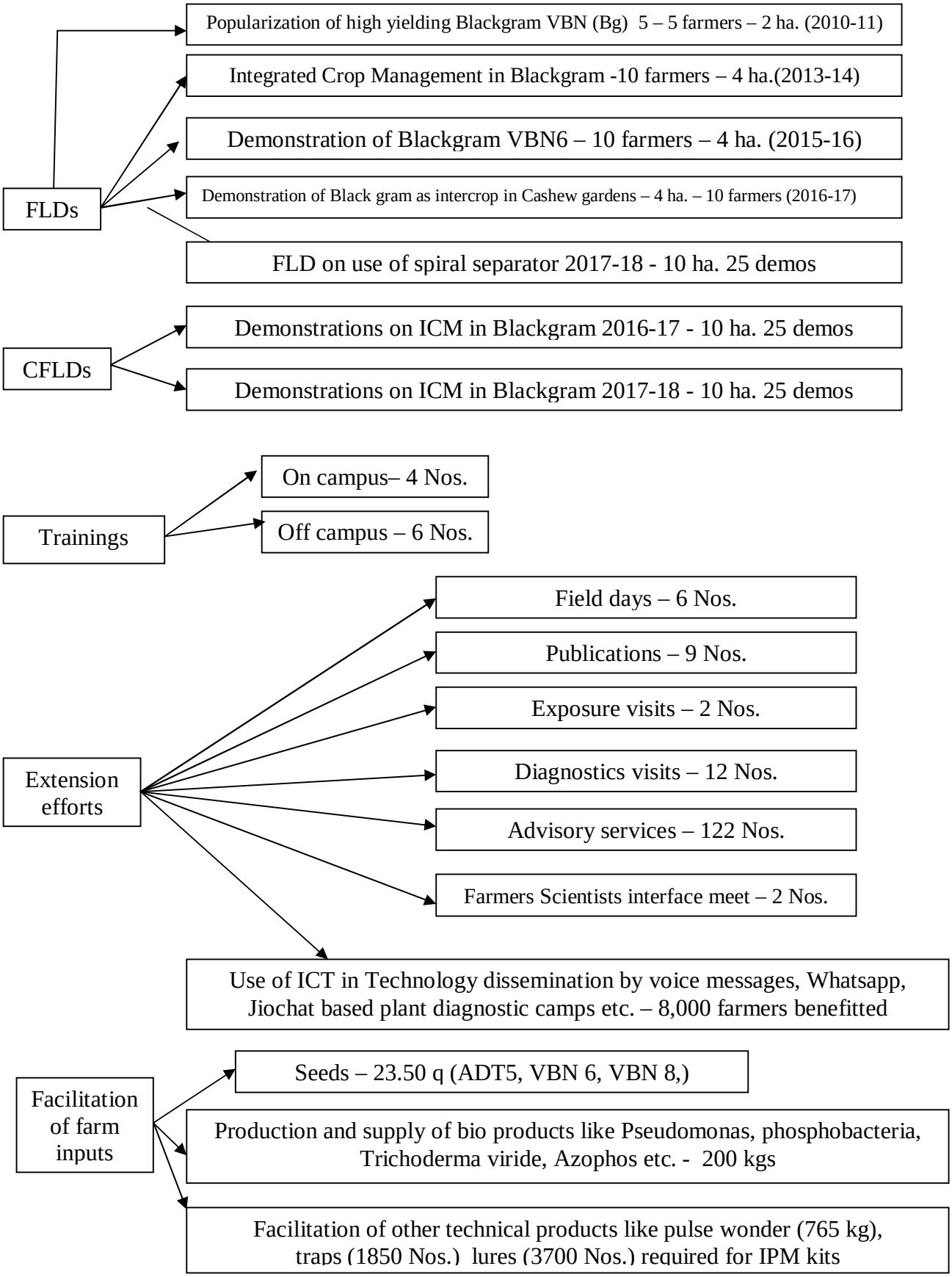
a. Problem Statement

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.


FLDs
Popularization of high yielding Blackgram VBN (Bg) 5 – 5 farmers – 2 ha. (2010-11)
Integrated Crop Management in Blackgram -10 farmers – 4 ha.(2013-14)
Demonstration of Blackgram VBN6 – 10 farmers – 4 ha. (2015-16)
Demonstration of Black gram as intercrop in Cashew gardens – 4 ha. – 10 farmers (2016-17)
FLD on use of spiral separator 2017-18 - 10 ha. 25 demos
CFLDs
Demonstrations on ICM in Blackgram 2016-17 - 10 ha. 25 demos
Demonstrations on ICM in Blackgram 2017-18 - 10 ha. 25 demos
Trainings
On campus– 4 Nos.
Off campus – 6 Nos.
Extension efforts
Field days – 6 Nos.
Publications – 9 Nos.
Exposure visits – 2 Nos.
Diagnostics visits – 12 Nos.
Advisory services – 122 Nos.
Farmers Scientists interface meet – 2 Nos.
Use of ICT in Technology dissemination by voice messages, Whatsapp, Jiochat based plant diagnostic camps etc. – 8,000 farmers benefitted
Facilitation of farm inputs
Seeds – 23.50 q (ADT5, VBN 6, VBN 8,)
Production and supply of bio products like Pseudomonas, phosphobacteria, Trichoderma viride, Azophos etc. - 200 kgs
Facilitation of other technical products like pulse wonder (765 kg), traps (1850 Nos.) lures (3700 Nos.) required for IPM kits

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.

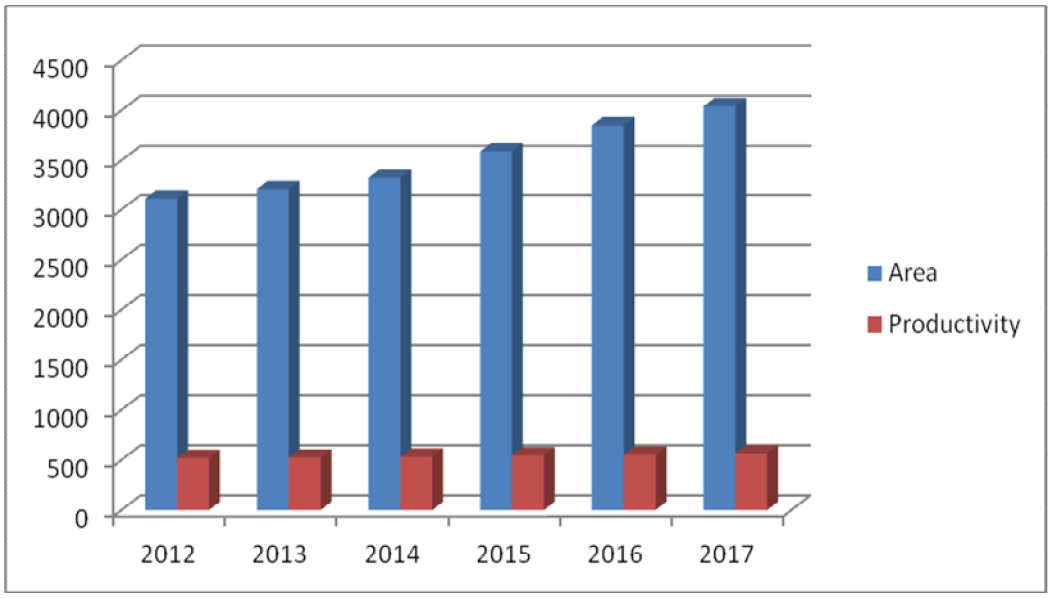
Sl.No.	Crop	Year	Productivity / ha.			Increase in income / ha.	
			From	To	% increase	From	To
1	FLD	2016-17	6.24 q	8.84 q	42	26,085	45,564
2	CFLD	2017-18	5.9 q	8.5 q	44	38,200	62,160

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

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	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 *T.viridi*, *Rhizobium*, *Phosphobacteria*	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
Total	**43.8**	**235.0**	**278.8**

- 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 (2.25mt) and productivity (570kg/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.

Success Story 2

Title : Ariyalur District is marching towards self sufficiency in fodder production

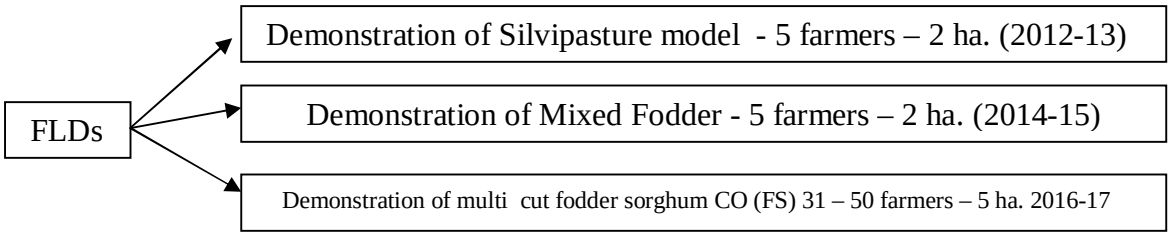
a. Problem:

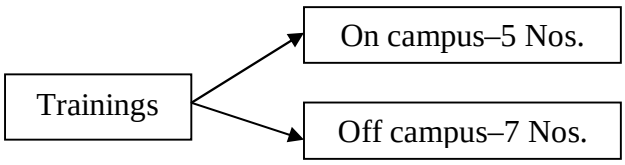
Ariyalur District is classified as Backward district in Tamil Nadu comprising six blocks. Of which Thirumanur, T.Palur and Jayankondam blocks are potential for irrigation facilities favours cultivation of Sugarcane, Paddy and Vegetables. Other three blocks are dry and mostly depends on monsoon showers 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.

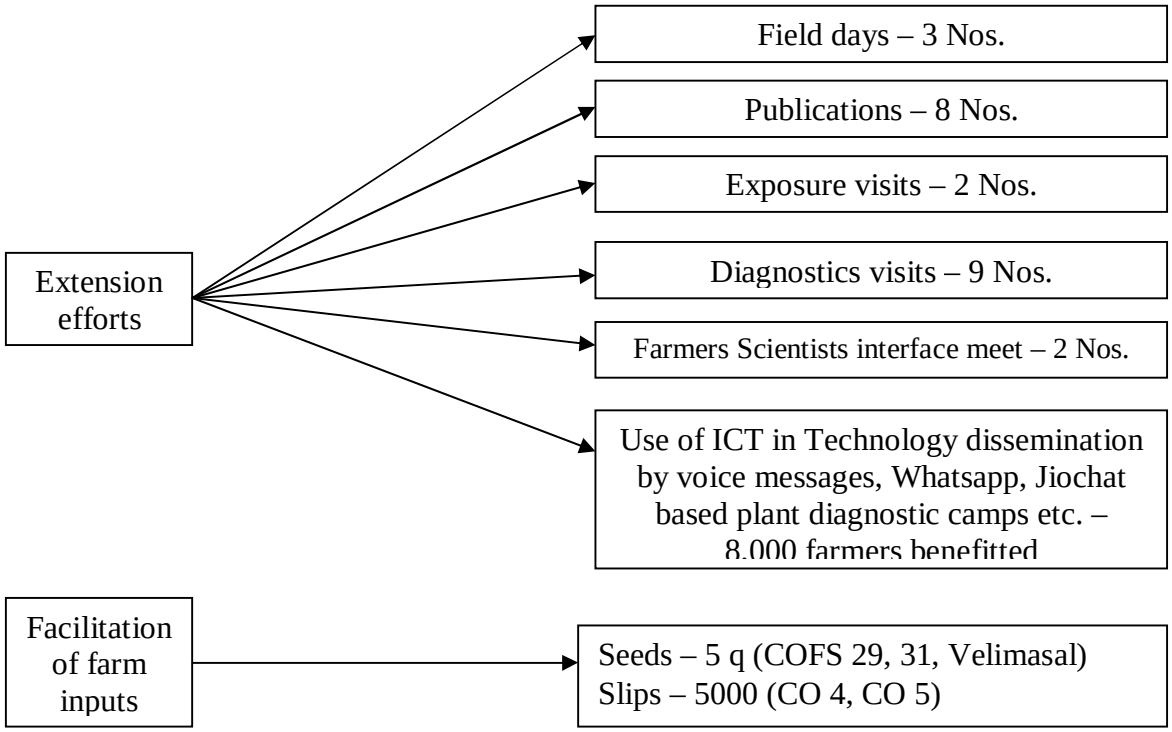
- Less preference of farmers to allocate a piece of land to raise fodder crops and thereby poor nutrition of animals
- Lack of awareness and knowledge on different fodder crops required to provide balanced diet to farm animals
- High cost of concentrate feed results in less remuneration from milch animals. 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.

b. 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 :







c. 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 yeld / 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.

Success story 3. Native chicken rearing

Mr.S.Rajadurai, S/o.Saminathan, age 26 residing at Azhisukudi, Parukkal (PO), Udayarpalayam Tk. Ariyalur Dt. practicing Native chicken rearing for the past three years under the guidance of KVK, Ariyalur.

Problem/Challenge addressed

Unemployment and under employment among the rural youth is the curse for the development and the nation as a whole. The uncertainty in agriculture and unsustained income drive away the rural youth from involving in agriculture in their own villages.

Mr.S.Rajadurai is being developed by ICAR-KVK, Ariyalur as our youth entrepreneur involving in rearing of native chicken and getting an income of Rs.30,000/month. His innovation in development of low cost feed, incubation of eggs using low cost hatchery, ethno veterinary practices and an unique marketing style make his venture more profitable. Now he is the master trainer for poultry related trainings and role model for other youth members.

Description of Innovative practice/ Technology

Mr.S.Rajadurai has completed Diploma in Civil Engineering during the year 2015. He has attended the native chicken rearing training at our campus and got inspired by our training. He has started his professional as Native chicken rearing in a smallest scale with 20 birds.

Innovation made for Native chicken

He started feeding his birds with locally available feed stocks to reduce the cost on feed. Later, by seeing the demand of chicks he has expanded his poultry unit with 150 parent birds belongs to different varieties as below:

Sl.No.	Variety	Mother parent	
		Hen	Cock
1	Kuruvai	100	12
2	Kadaknath	20	6
3	Nicobari	6	3

To utilize the eggs effectively for the production of chicks he has purchased one low cost hatchery from Mr.Suresh (An innovator developed by ICAR-KVK, Ariyalur Dt.) with the capacity of 120 eggs.

Innovation made for Poultry feed

As out of box thinking he has developed his own low cost feed consisting of locally available resources.

The composition of the low cost feed developed by him is as follows :

Sl.No.	Name of the Ingredient	Quantity
1	Maize	40 kg
2	Rice	10 kg
3	Cholam (Sorghum)	10 kg
4	Groundnut cake	14 kg
5	Blackgram hush	8 kg
6	Rice bran	13 kg
7	Killinjal (Clam)	3 kg
8	Mineral mixture	2 kg
	Total	**100 kg**

Innovation made for Ethno veterinary practices

The speciality of Mr.S.Rajadurai is advocating ethno veterinary practices for his birds.

Sl.No.	Name of the practice	Purpose	Period
1	Turmeric + Acoruscalamus + Water	Antibiotics	Weekly
2	Ash gourd + Aloevera + Curd + Onion	To prevent heat strokes	Summer period
3	Sukku + Pepper + Turmeric / Onion	Disease	Pre monsoon 9NEM)
4	Neem leaf + Acalypha indica	Deworming	3 months interval

Innovation made for Egg storage

To store the eggs, he is following the techniques of storing the eggs in mud pot half filled with sand. The entire pot is being covered with cotton cloth and soaked periodically to reduce the heat waves and to store the eggs for longer period (like in a refrigerator).

Innovation made for Marketing

He has developed a model of direct marketing of his eggs and chicken meat that is familiar among the residency of Jayankondam area. He is giving 50 desi bird eggs and 2 kgs meat per month to one family (Rs.1,000 package). This package cost Rs.1,000 and he will be collecting on the days of salary. The customers are happy with this package and more and more customers are adding in the list. He is assuring the quality always.

Practical Utility

As an youth, he is becoming an entrepreneur in poultry farming. He is supplying chicks to the large number of farmers and also serving as master trainer in the poultry programme being conducted at our KVK.

He is earning an income of Rs.60,000/month and being role model for other youth members. His low cost feed and ethno veterinary practices is becoming popular among the backyard poultry/native chicken growers in Ariyalur district.

Source of Information

He was unemployed after completion of Diploma in Civil Engineering. During 2016, he has approached ICAR-KVK, Ariyalur regarding ideas to start self enterprises to earn income. Our KVK has suggested Mr.S.Rajadurai to start his native chicken rearing as a venture.

We also supported to buy one unit of low cost hatchery under our KVK Entrepreneurship Development Programme (EDP) 2016-17.

Details of scientific verification

Whenever he develops the low cost feed and Ethno Veterinary practices, he usually contact our KVK and get idea on that. The low cost feed developed by him was judged as good feed by our KVK experts. Regarding Ethno Veterinary practices our KVK has confirmed about its effectiveness with Dr.Punniyamoorthy, Professor, Tamil Nadu University of Veterinary Animal Sciences is the authority in Ethno Veterinary Medicine in Tamil Nadu. Dr.Y.G.Prasad, Director, ICAR-ATARI visited his farm on 17.02.17 and appreciated

Funding Support

So far he has not received any support from Bank or Department. However our KVK has supported him to buy a low cost hatchery unit.

Potential : Acceptance level, horizontal spread of innovation and number of farmer Adopting

His technologies and innovative marketing ideas attracting large number of rural youths those who attend the training and visiting his poultry unit. His technology was spread through All India Radio, Trichy and Karaikal at several occasions. He is acting as a resource person for the beginners in the aspect of constructing shed, selection of parent breeds, care of chicks and marketing.

Currently he is having market tie-up with 42 farmers belongs to Ariyalur District and 150 farmers from other districts. He is networking all his clients and farmers through a WhatsApp group named "Gramathu Pokkisam" (Village Treasure).

It is expected that a minimum of 120 youth will be motivated in this venture during the year 2018.

Success story 4. ICAR KVK, Ariyalur paved the way for Double the Income in Groundnut through Cluster Frontline Demonstration

Mr.G.Kolanchidevan, S/o.Gurusamy, age 51 residing at Kasankottai, Ariyalur District. Practicing Groundnut cultivation for the past 5 years.

Background

Groundnut is an important oilseed crop grown both during Kharif and Rabi season in Ariyalur District, in an area of 17,500ha. Cultivation of groundnut becomes popular in Kasankottai cluster where farmers have been growing groundnut for many years with available local varieties. These local varieties are of unknown origin, having low vigor, viability and susceptible to many of the pest and disease which results in low yield and quality of the groundnut.

Our KVK analyzed the constraints of the farmers in groundnut cultivation and planned to conduct cluster FLD at Kasankottai village with newly released variety GJG-9 during the year 2016 -2017 (Rabi Season).

Technological Interventions

A few groundnut growers (75 farmers) of Kasankottai were identified and FLD along with local variety were laid out with improved variety GJG-9 and package of practices.

- Seed and soil application of *Trichoderma viride, Rhizobium and Pseudomonas* @ 2.5kg/ha.
- Soil test based fertilizer application
- Machine sowing
- Spraying of groundnut rich @10kg/ha
- Application of post emergence herbicide pursuid 875ml/ha
- Spraying of NPV virus @ 1lit/ha
- Phermone trap @ 12No.s/ha
- Application of TNAU micro nutrient mixture @12.5kg/ha
- Foliar spraying of Carbendazim + Mancozeb @ 250gm + 1kg/ha

- As the result of FLD on mechanized sowing in groundnut conducted during 2016 – 2017, 36 farmers of this cluster FLD adopted machine sowing.

Yield and Economics

Through the adoption of these technologies suggested by our KVK, better plant population with good vigour, more number of pegs per plant and number of pods per plant has been observed. He has gained net income of Rs.68, 300/ha as he has adopted machine sowing and all other technologies.

Details	Check	Demo	Percentage (%)
Yield	885kg/ha	1750kg/ha	49.40
Gross Income	Rs. 53,100	Rs. 105000	49
Expenditure	Rs. 36700	Rs. 36700	0
Net Income	Rs. 16,400	Rs. 68,300	75
BCR	1.45	2.86	49.30

Field day and Farmers feedback

The beneficiaries are happy as they could raise income by 49%. They appreciated the interventions made by KVK and dissemination of technology to the farmers. The field day has been conducted on 21.03.2017 at Kasankottai in which 72 farmers and extension functionaries from the Department of Agriculture were participated. During field day, few farmers exchanged their views on the success of demonstrations and greater satisfaction towards the technological package adopted in the demo.

The farmers whoever adopted machine sowing expressed that there was a cut in seed rate to the tune of 20% and cost of sowing per acre was also reduced from Rs. 6000 to Rs.3750.

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

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.

Participatory Rural Appraisal (PRA)

CREED KVK conducted PRA at each of its operational villages to assess situation and collect the baseline data on factors contributing production outcome. Thereby the issues identified to plan the interventions. The following tools were used while conducting PRA study.

Tools:

i) Resource Mapping
ii) Social Mapping
iii) Seasonality Calendar
iv) Transect walking
v) Venn diagram

Group interactions & deliberations

1. On – site interactions during field visits.
2. Group meetings with commodity groups, FFS group, SHG group.
3. Individual farmers while visiting the KVK for opinion seeking,

Aforementioned methodological approaches, tools were used in finding the needs based on which the required course materials for training farmers and farm women, other related activities were planned.

An innovative approach to attract and retain youth in Ariyalur district

Developing the capacity of Rural Youth in agricultural and allied sector and retain them in rural areas by creating self-employment opportunities is one among the vision of ICAR-KVK, Ariyalur. We found potential youth members from rural areas with good qualifications, but they are unemployed and /or under employed. Foreign returns also include in this youth group searching self employment in rural areas itself.

By seeing the interest and enthusiasm of rural youth in becoming agripreneurs, our KVK has formed 'Youth Club' and currently the rural youth are the members in this club. We are conducting regular meetings to the youth members and providing regular meetings to the youth members and providing technological advisories and motivation to run their existing farms scientifically and to start new ventures.

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

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 stiring in morning and evening two times done. 1 litre gunapanjajam 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

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	80	26410	39300
2% DAP spray in pulses	55	40	24700	31200
Vegetable seedling production through protray	42	70	114350	144500
ICM in cashew	35	70	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

16.B. 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(R) 50	Varietal introduction CO(R) 50	After seeing the performance of CO(R)50 over CR1009. The farmers were very much interested in cultivation of CO(R)50. With the advice of our Kendra and by the demand from the farmers. The state agricultural department has itself started distribution of CO(R)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 mixture through soil and foliar application.	40
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	Farmers are regularly spraying 2%	70

Villages	Crop/Enterprise	Technology	Treatment	% of Adoption
		spray in pulses	DAP at flowering and pod formation stage. So, they are obtaining bold grains and thereby increased yield.	
Silal	Vegetables	Vegetable seedling production through protray	Now the farmers using good quality seedling raised in protrays. 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
Naayakanaipriyal, Nagamangalam	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

Large scale adoption – Few cases

Intervention made in Groundnut – Drumstick mixed cropping

Situation before KVK intervention

Groundnut is cultivated in area of 500 ha. at T.Palur block of Ariyalur district as the sole crop during 2010-11. The net return was Rs.65,000/- per hectare.

KVK intervention

Our KVK intervened to raise annual drumstick in the groundnut field to gain additional income. The technologies were demonstrated by method and result demonstrations.

- Varieties of Drumstick : PKM -1, Bhagya
- Both groundnut and drumstick sown on same date during the month of November
- Care to groundnut until its harvest on 100 or 105 DAS.
- After harvesting groundnut, intensive care given to drumstick – Nipping, fertilizer application, plant protection measures.
- Yield from drumstick starts three months after the harvest of groundnut and fetches premium price (July-October).

Economic analysis

During the year 2014-15, FLD on Integrated Crop Management of in Groundnut technology implemented in Kasankottai village of T.Palur block.

Situation before KVK intervention :

Average productivity yield/ha. : 1.9t/ha
Potential yield / ha. : 2.8t/ha

Problems

- Use of age old varieties like VRI 2
- Incidence of root rot and tikka leaf spot diseases
- Heavy infestation of *Spodoptera litura* and *Helicoverpa* pest results in more that 30% yield loss.
- Labour scarcity for sowing, weeding, harvesting and processing operation.
- Imbalanced fertilizer application.
- Weed menace.

Technological intervention

- Use of High yielding varieties of groundnut like GJG9, VRI 8, Kadhiri 9
- Intercropping with Drumstick (Annual Moringa)
- Seed treatment with *Trichoderma viride* @4g/kg of seed.
- Soil test based fertilizer application.
- Mechanization using tractor drawn seed drill sowing, weeding by wheel hoe, stripping of pods using Groundnut stripper.
- Integrated pest and disease Management practices both in Groundnut and Drumstick

Economic analysis of Groundnut as sole crop Vs Groundnut + Drumstick intercropping

S.No.	Particulars	After intervention	Before intervention
1	Yield (t/ha)	Groundnut – 2.1 t/ha	1.9 t/ha
		Drumstick- 42.5t/ha	--
2	Gross cost (Rs.)	1,30,000	60,200

3	Gross income (Rs.)	4,66,000	1,26,000
4	Net return (Rs.)	3,36,000	65,800
5	BCR	3.58	2.09

Conclusion

The average productivity of Groundnut in Ariyalur district has increased from 1.9-2.1t/ha over the period of two years. The land is put under effective utilization as the Drumstick grow in the same field for 3.5 months. So they could able to take very good income from Drumstick and the same land will be ready for next year same cropping in the same season. By our intervention, now 625 acres of land brought under groundnut and drumstick intercropping system and farmers are getting higher income.

Besides, farmers are getting good economic returns (Rs.3,36,000/h.a with BC ratio of 3.58) than earlier mono cropping with groundnut. By this way, the socio-economic conditions of the farmers have improved substantially. Now this technology is being horizontally spread to neighbouring block viz., Jayankondam.

Case II. Enhancement of Yield and income in Cashew

During the year 2015-16, FLD on Management of stem borer in cashew technology implemented to Veerakkan village of Sendurai block.

Situation before KVK intervention :

Total area under Cashewnut : 27671 ha.
Average productivity yield/ha. : 480 kg
Potential yield / ha. : 2500 kg.

Problems

- About 90 % of the cashew area under rainfed.
- Use of seedlings of country varieties
- Heavy infestation of Tea Mosquito Bug (TMB) results in more that 40% yield loss.
- Reduced plant population due to the damage of Cashew Stem and Root Borer (CSRB)

Technological intervention

Tea mosquito bug management (TNAU, 2011)

- Spraying of profenophos @ 1.5ml/lit., chlorpyriphos @ 2.5ml/lit, Acephate (70%WP) @ 2g/lit at the time of new flesh initiation, flowering and fruit formation respectively.

Stem and root borer Management (IIHR, 2013) – Sealer cum Healer

- Cleaning of stem/root borer affected portion
- Application of toxicant 50 ml (containing 5ml of Dichlorvos and 20ml of COC in 1 lit of water) using a syringe and brushing with toxicant
- 1kg of sealer and healer mixed with 500ml toxicant into a slurry form and sealing of exposed portion of the bark

Economic analysis

S.No.	Particulars	After intervention	Before intervention
1	Yield (kg/ha)	675 (29.8% increase)	520
2	Gross cost (Rs.)	24,000	22,000
3	Gross income (Rs.)	67,500	44,000
4	Net return (Rs.)	43,500	22,000
5	BCR	2.81	2.00

Conclusion

The average of productivity of Cashewnut in Ariyalur district has increased from 520 to 675 kg/ha over the period of five years with the BC Ratio of 2.8. Apart from this yield and income increase the farmers are well versed in pest management in cashew.

Large scale adoption

Now these two technologies are practiced by 45% of the farmers in an areas of 11,000 ha. every year.

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

Impact of Training on Desi bird rearing

Introduction

Our country has vast resource of livestock and poultry, which play a vital role in improving the socioeconomic conditions of the rural masses. Moreover, growing human population, rapid urbanization, increasing domestic income and changing lifestyles of the people have led to high demand for livestock products. With a vision of meeting out the increased demand of livestock products like meat, egg, milk and sustaining human health, our Kendra has chalked out many training programmes to increase livestock and its products. Among the livestock sector, backyard poultry rearing continues to be one of the important livelihood option of several poor farmers in rural areas. In backyard poultry, desi birds exhibit superior adaptability in their habitat and possess the ability to survive, produce and reproduce on low plane of nutritious and optimal management. It has distinct advantages over other vocations, as the land requirement is small; returns are faster with little initial capital investment. The inputs requirements are low and are raised with little veterinary care. The egg and meat of desi chicken fetch double the price than the eggs and meat of exotic breed, thereby leading to higher income (about 10-40%) to the rural people. Also, desi bird rearing serves as an excellent mode for employment generation for farmers and farm women.

Krishi Vigyan Kendra (KVK) of Ariyalur district started to conduct the training programme since 2013 to upgrade the knowledge of poultry farmers on backyard poultry farming and to motivate the farmers to adopt poultry farming with improved varieties of bird to increase the income through more production of egg and meat in those rural areas.

Methodology

Training programme conducted to the farmers

KVK made an intervention to improve this enterprise by conducting on campus and vocational training programmes on desi bird farming to farmers, farm women and rural youth. A total number of 226 farmers and farm women participated in the training from Ariyalur and other districts. The need based training programmes were conducted by the Kendra. The training was imparted on skill development regarding backyard desi bird poultry production, housing, feeding management, selection of eggs for better hatchability, hatching management, brooding management for care of the newly hatched chicks, control of internal and external parasites and 95 diseases, vaccination methods and marketing linkages etc. For better understanding of the farmers, field visits were made to study the feasibility of the desi bird rearing in their own land.

General profile of the Trainees

The general profile of the trainees was collected by using the proforma prepared by the Kendra during each training period. The trained farmers were categorized into three categories on the basis of age: (a) Age of 20 to 35, classified as young (b) Age of 36 to 50, classified as middle (c) Age of 51 and above, classified as old. The educational status of the farmers was classified gender wise as literate and illiterate. Occupations of the responded farmers were classified into agriculturists and others. The other occupation status included business, Government service and labour.

Data collection

A detailed survey was conducted through face to face interview among randomly selected 100 trained farmers. Selection of the farmers was conducted by using a stratified random sampling technique. The respondents were interviewed in depth regarding their desi bird rearing practices viz. housing, feeding, hatchability, problems and constraints faced in the farming condition after attending the training programme and their suggestions were carefully recorded to enable KVK in drawing out a curriculum for the special training program.

Results and Discussion

Level of adoption

A total of 226 farmers and farm women participated in the training for poultry farming practices in the year 2013-14 to 2016-17. Out of 226 farmers and farm women, only 78 farmers adopted desi bird farming practices (Table 1).

Table1. Impact of training programme of desi bird farming

Year	Number of training	Number of participants of training	Number of participants adopting desi bird farming	Percent adoption
2013-14	1	12	6	50.00
2014-15	1	26	11	42.03
2015-16	2	76	23	30.26
2016-17	3	112	38	33.93
2017-18	5	204	124	60.78
Total	**7**	**226**	**78**	**Avg: 43.40**

The average rate of adoption from the year of 2013-14 to 2016-17 was 43.40%. The highest rate of adoption was noticed in the year of 2017-18 (60.78%), where as the lowest rate of adoption was noticed in the year of 2015-16 (30.26%) (Table.1). The low adoption of desi bird farming in the year of 2015-16 may be due to hesitation on adoption of new technology as the desi bird in farming level and lack of availability of improved varieties of birds. In consequent years, the adoption level increased on seeing of neighbour farms of benefited farmers.

General profile of the Trainees

The respondent's age were categorized into three groups, i.e., young, middle and old. The survey revealed that, majority of the respondents (41%) belonged to young age group, while 37 % were from middle age group and 22 per cent were from the old age group. This implies that the young age farmers were more involved in this occupation. The educational level of the respondents showed that 11 % of them were illiterate. Out of the remaining 89 %, 20% had primary level of education, 23% had high school standard, 29% had higher secondary level and 17% had a degree. The results revealed that education is not a factor to take up of poultry farming practices. Agriculture was the main occupation among 71% of the farmers, they were involved in both crop and livestock production. In rest of 39%, only 17% of farmers had service and business occupation and other 12% were labourers. The survey revealed that all the respondents were keeping their desi bird farming as a subsidiary occupation. (Table 2)

Table 2: General profile of trainee's

Age	Male	Female
20-35(Young)	23	18
36-50(Middle)	21	16
50 and above (old)	17	5
Educational status		
No formal education	7	4
Primary level	12	8
SSLC	17	6
Higher secondary	20	9
Degree holder	14	3
Caste		
Scheduled caste/	8	4
Scheduled tribe	0	0
Ohters	76	12
Occupation		
Agriculturist	42	29
Service	5	0
Business	12	0
Labour	0	12

Desi bird rearing practices

Housing and feeding

Most of the farmers provided night shelter to their birds, whereas 21 % constructed separate house for birds, keeping a commercial desi bird farm under semi-intensive and intensive system with flock size of 150 to 200 birds. They provided commercial poultry feeds

to the birds at least twice a day, in the morning and in the evening. The remaining 89% kept their birds near their houses; birds were kept in bamboo basket made up of bamboo sticks called as “Moongil koodai” in local language, or in cages made with wire net or small mud house etc. with flock size of 15 to 50 birds. The birds received housing only in the form of night shelter and they were allowed to scavenge by themselves in the surroundings of the household during day time and the farmers provided locally available feeds (broken rice, rice bran, crushed maize, sorghum etc.) after the birds return to the shelter. Some farmers even did not even provide any house and the birds used to take shelter in the bushes or trees for shelter at night and the feeding practices are very casual with no separate feeding for chicks and adults. The respondents expressed that the income from poultry was meager and that they were afraid to rear poultry in larger numbers for the fear of an outbreak of an epidemic that would kill the entire poultry population.

Hatching and brooding management

Only 6 % of the respondents used improved backyard poultry breeds (i e Kadaknath, Gramapriya, Azil, Naked neck and Siruvidikozhi) for breeding. All the respondents reported that natural hatching was the main source of chicks with brooding hen. Eighty eight percent of farmers allowed laying eggs by provision of laying box with dry bedding materials like paddy straw or ground nut husk in shallow bamboo basket or plastic ponds kept in the corner of house to avoid any disturbance. Generally 8-12 eggs were set under each broody hen and after 21 days, chicks were hatched out. After hatching, the chicks were generally removed on the second or third day from the broody hens and allowed to scavenge with their mother. Eleven percent of farmers, who maintaining commercial farms, purchased chicks from hatcheries. Remaining one percent of farmer had the incubator for hatching. Respondents said that their birds lay between 8-60 eggs/hen/ year and hatched between 1-30 chicks per year. The respondents said that they generally do not sell the eggs and chick, but rather they hatch them and rear the chicks, as this is more profitable. Among the respondents, women tend to have a primary responsibility for the duties such as caring of broody hens by providing them nesting place, food and water till hatching.

Health care

Majority of the respondents in this study vaccinated the birds against Ranikhet disease regularly. This could be the intensive efforts of training provided by the Kendra. For the veterinary care 15% of respondents were involved in self medication to the birds and 12% were approached local veterinary doctors for treatment. Others were not much bothered about disease aspect of the birds.

Marketing

Desi bird’s meat fetches more price as compared to broiler’s meat. The average selling price of desi bird was Rs.250 per kilogram of live weight whereas in the case of eggs, the average selling price was Rs.8.00 per egg. The respondents reported that, the price of birds and eggs varied according to season and festivals. The study revealed that the entire respondent sold the birds and did not sell the eggs, but used it for hatching purpose.

Most of the respondents (65%) marketed their birds to middleman; they used to collect the live birds at owner’s house itself. In 35% of the remaining respondents, 25% marketed the birds to shopkeepers and 5 to village market respectively (Table 3).

Table 3: Marketing channel of the respondents

Marketing channel	Number of Respondents	Percentage
Middleman	65	65%
Shopkeepers	25	25%
Village market	10	10%

Income

The desi bird farming units were having an average of 40 birds. Out of hundred, 48% of the respondents had an annual earning of up to Rs. 7500, 24% of respondent had up to Rs. 13000/- and 28% had Rs.20,000 and above. The average cost benefit ratio of one unit was 1:3.4. The respondents indicated that majority of them earned reasonably well from desi birds as a supplementary income and most of them sell the birds only if there is an urgent necessity of cash. The findings revealed that desi bird rearing has a strong potential as an income-generating activity in the rural areas.

Constraints in desi bird farming

The constraints as perceived by the rural poultry owners were recorded in the schedule prepared for the purpose of the study. The important constraints perceived by the respondents was death of birds due to predators attack, disease, theft by strangers, road accident (Table 4) and they were not getting the right price for birds due to exploitation by brokers and middlemen.

Table 4: Causes of death of desi birds

Sl.No.	Causes of death	% of respondent
1	Predators attack	38
2	Disease	45
3	Theft by strangers	15
4	Road accident	2

Conclusion

- The study has shown that the average percent of adoption of backyard poultry farming was 43.40% from the trained farmers. In the year 2017-18, the percent adoption was highest (60.78)

- Desi bird farming plays an important role as a secondary occupation for the adopted farmers. Empowerment through training in the areas of feeding, housing, hatching and brooding management would go a long way to sustain desi bird farming under backyard system.

- The study showed that the respondents had more involvement in improving health care of birds through vaccination and using veterinary experts for treatment.

- Desi bird farming had increased socio-economic status of rural community and employment in these areas.

- Further, popularizing the successful cases of desi bird farmers in various media like print and electronic media would motivate other farmers to adopt this enterprise.

17. LINKAGES

17.A. Functional linkage with different organizations

Name of organization	Nature of linkage
Department of Agriculture, Ariyalur District	Training, Demonstration, Farm School and Meetings (ATMA, Zonal Monthly Meeting),
Department of Horticulture, Ariyalur District	Training and Demonstration
Department of Animal Husbandry, Ariyalur District	Training and Demonstration
Department of Agricultural Engineering	Training and Demonstration
Department of Agricultural Marketing	Training
Department of Seed Certification	Training & Seed production
Department of Sericulture	Training and demonstration
Directorate of Cashewnut and Cocoa Development Board, Cochin	Seminar & Training
Department of Science and Technology, New Delhi	Training and Demonstration
AIR, TRICHY	Radio Talk
AIR,Karaikal	Radio Talk
NABARD	Farmers club, Training and FPO promotion
Pudu Vaazhvu Thittam, Ariyalur District	Training
Mahalir Thittam	Training and Demonstration
LEAD Bank (SBI), Ariyalur	Training
SBI-Rural Self Employment Training Institute(RSETI)	Training
Reliance Foundation	Capacity building and Voice message
OSAI NGO	Training
RISE NGO	Training

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	29.01.18 – 03.02.18	SAMETI, Kudimiyanmalai	27,000
Community Resource person	22.01.18-25.01.18 29.01.18-01.02.18	Mahalir thittam	42,000
Seminar on Cashewnut cultivation	15.03.18	Directorate of Cashenut and Cocoa Development Board, Kochi	50,000
Training programme on Cashewnut cultivation	21.12.2017- 23.12.2017	Directorate of Cashenut and Cocoa Development Board, Kochi	90,000
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	2016 - 2017	Department of Science and Technology, Ministry of Science and Technology, Government of India, New Delhi	18,98,000

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Annexure 1

SAC proceedings along with list of participants

Fifth Scientific Advisory Committee meeting of ICAR Krishi Vigyan Kendra, Ariyalur was held at the premises of ICAR KVK, Ariyalur District on 05.12.2017 by 2.00 pm. Among 32 SAC members, twenty five 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. Y.G.Prasad, Director, ICAR-ATARI, Hyderabad

- To identify suitable intercrop for eucalyptus and casurina to reap income during initial years
- KVK should involve in the doubling farmers income activities. Thirty farm family are to be taken in one village and suitable interventions and convergence activities to be carried out to double farmers income.
- Awareness to be given to farmers on safe use of pesticide spraying
- To develop suitable IFS model for small and marginal farmers in Ariyalur district
- To collaborate with all Research Station for technology acquisition and delivery
- To promote rural feed processing unit based on maize crop
- To develop a hydrophinic model in farm
- To create awareness about ranikhet disease and vaccination schedule to farmers
- KVK should facilitate prevention of mastitis problem in dairy cow
- Impact study may be done in five technology in five years
- KVK should be maintain a close relationship with near research stations
- KVK activity should be based on group approach
- Technology week on organic farming within the month of January 2018.
- Video documentation of IFS farmer Mr.Tamilarasan and other successful farmers
- KVK should be given suitable technology to Farmers Producer Organization (FPO)

Dr.Jayabaskar, Principal Scientist, NRCB, Trichy

- To promote banana cultivation in Ariyalur district
- To promote high density planting of banana and drip irrigation technology to farmers
- To promote banana (Sakthi) booster application to farmers
- To analyse with the keeping quality of Uthayam banana variety
- KVK should concentrate in the training on value addition in banana

Professor, VUTRC, Perembalur

- To develop model unit on desi cow breed in KVK farm
- Management of feed for cattle (feed cost analysis)
- KVK should concentrate on animal husbandry related trainings
- KVK should concentrate disease management in livestock in collaboration with Department of Animal Husbandry.

Professor, RRS, Vridhachalam

- KVK should promote successful big cashew farmers to establish cashew seedling production unit
- KVK should produce Jack seedling and supply to all over district

Assistant Director of Agriculture, T.Palur block, Department of Agriculture, Ariyalur

- KVK should concentrate on problem soil and water management in cluster basis in a year
- Every year KVK should select and adopt village for problem soil and water sample analysis

Assistant Director of Horticulture (/c.), Department of Horticulture, Andimadam

- New technologies related to horticultural crops should disseminated to farmers

Inspector, Department of Sericulture, Ariyalur

- KVK should motivate the farmers for silk warm rearing

District Development Manager, NABARD, Ariyalur

- KVK should concentrate to develop FPO in Andmadam and T.Palur block
- Quality seeds should be produced and training may be given in drip irrigation
- Suitable crops should be analysed for rainfed situation in Ariyalur district

Director, SBI –RSETI, Ariyalur

- KVK should continue to **t**ake part in RSETI training programme on agriculture and allied activities

All India Radio, Karaikakl

- KVK support the seasonal basis radio talk to farmers

Programme Coordinator, KVK, Theni

- To promote the cashew seedling production to farmers level and tie-up

Project Manager, Reliance Foundation, Tanjore

- To analyse appropriate calcarious recommended fertilizer dose in Ariyalur district
- To promote Panchakavya application to cotton farmers
- Voice message based on the crop sent to all the farmers periodically
- To develop IPM practices to farmers in major crops of Ariyalur district

Mr.Natarajan, Farmer

- Need of permanent soil test laboratory in KVK

Mr.P.Sivakumar, Farmer

- KVK should concentrate on IPM in brinjal technology which will be disseminated to the farmers
- To develop grafted brinjal technology in KVK farm

Mr.G.Rajasekar, Farmer

- To develop suitable agro forestry model for Ariyalur district
- Demonstration on groundnut digging machine for groundnut growers should be given
- Training on organic practices to farmers especially for horticulture crops

Mr. Thangarasu, Farmer

- Awareness should be given about soil test analysis to farmers

Mr.Indrajith, President, Rural Youth

- To facilitate credit linkage to rural youth

Mr.Rajadurai, Rural Youth

- To filled the post of SMS (Animal Science) for animal science related training programme

List of Participants

S.No	Name	Designation
1.	Dr.Y.G.Prasad ICAR-ATARI Hyderbad	Director
2.	Dr.V.Nadanasabapathy CREED KVK Cholamadevi	Chairman
3.	Dr.Patchimal CENDECT KVK Theni	Chairman
4.	Dr.Jaya Baskaran National Research Centre for Banana Trichy	Principal scientist
5.	Dr.R.Ushakumari Regional Research Station Virudhachalam	Professor and Head
6.	L.S.Naveen Kumar NABARD	DDM
7.	Dr.Balasubramaniyan Veterinary University Training and Research Centre Perembalur	Professor and Head
8.	Mr. Venkitachalam SBI – Rural Self Employment Training Institute Ariyalur	Director
9.	A.K.Ravichandran Department of agriculture T.Palur	Assistant Director of Agriculture
10.	R.Venkateswaran All India Radio Karaikal	Programme Excutive
11.	V.Sivakumar Department of Horticulture Ariyalur	Horticulture Officer
12.	M.Ganaesh Sericulture Department permbalure	Assistant Inspector of Sericulture
13.	Dr.P.Marimuthu CENDECT KVK Theni	Senior Scientist and Head

14.	V.Jothi Sericulture Department Ariyalur	Field Inspector
15.	S.Elancheran Ariyalur	Lead District Manager
16.	N.kalaivani Reliance foundation	Project Manager
17.	L.Arul Doss RISE NGO varatharajanpettai	Director
18.	S.Rajadurai azhukudi	Farmer
19.	B.Sumathi Melur	Farmer
20.	R.Meena Periyakrishnapuram	Farmer
21.	T.Visvanathan Silal	Farmer
22.	S.Thangarasu Kuvagam	Farmer
23.	K.Chinnapa Devamangalam	Farmer
24.	P.Sivakumar Vanatheraiyan pattinam	Farmer
25.	C.Nadarajan Kodali karuppur	Farmer

Annexure 2

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:

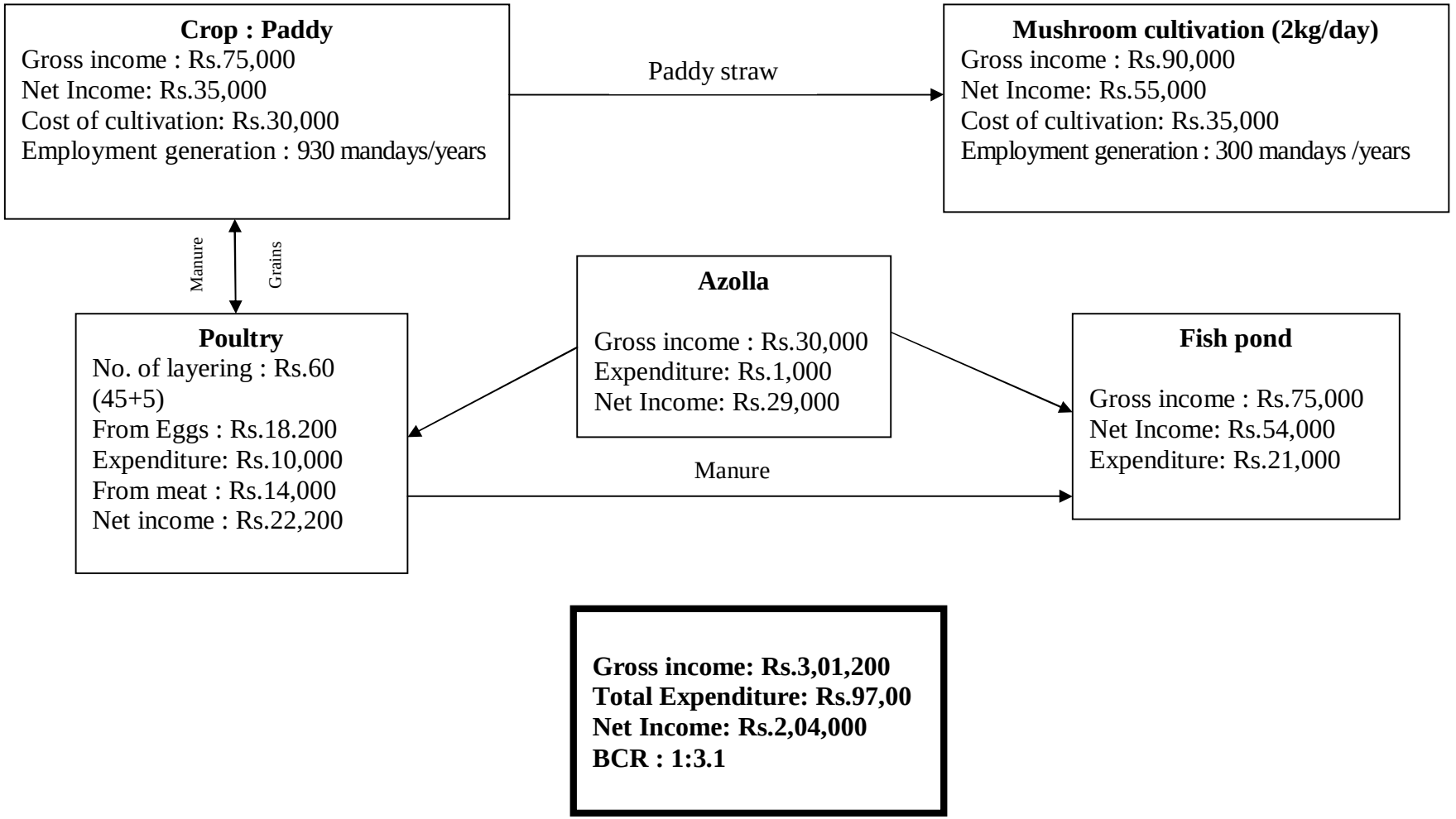
Sl. No.	Activity	Start month	End month
1	Pre project implementation appraisal in 30 villages	1st month of the project implementation (October 2016)	3rd month of the project implementation (December 2016)
2	Trainings – 30 batches to cover 1000 SC/ST farmers	4th month (January 2017)	18th month (March 2018)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

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

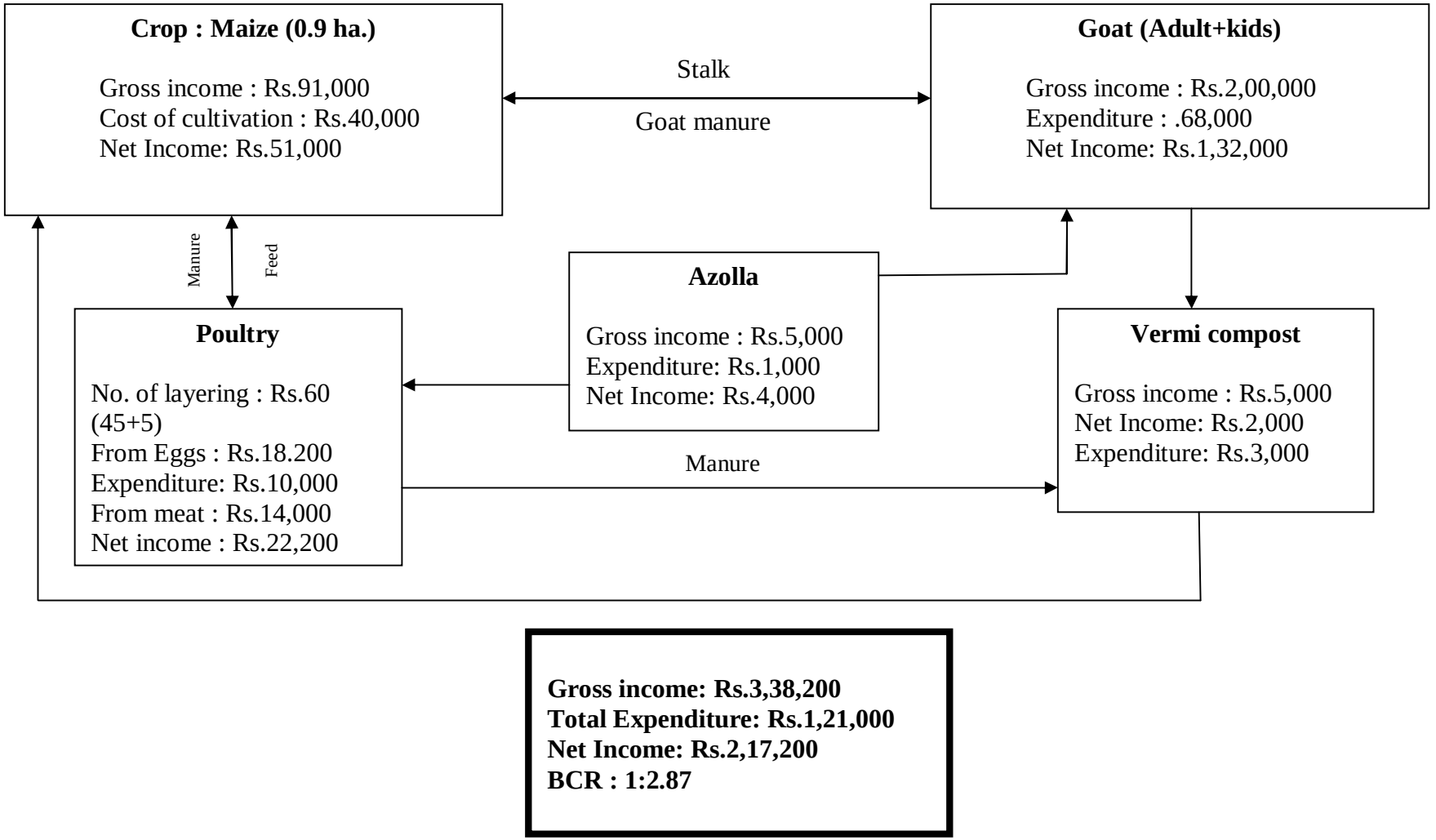
Ariyalur district is diversified in its soil types, land use pattern and rainfall and water availability. This district comprises of six blocks viz., T.Palur, Andimadam, Jayankondam, Thirumanur, Ariyalur and Sendurai. Thirumanur block receives Cauvery river water from Mettur dam and mostly paddy and 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.

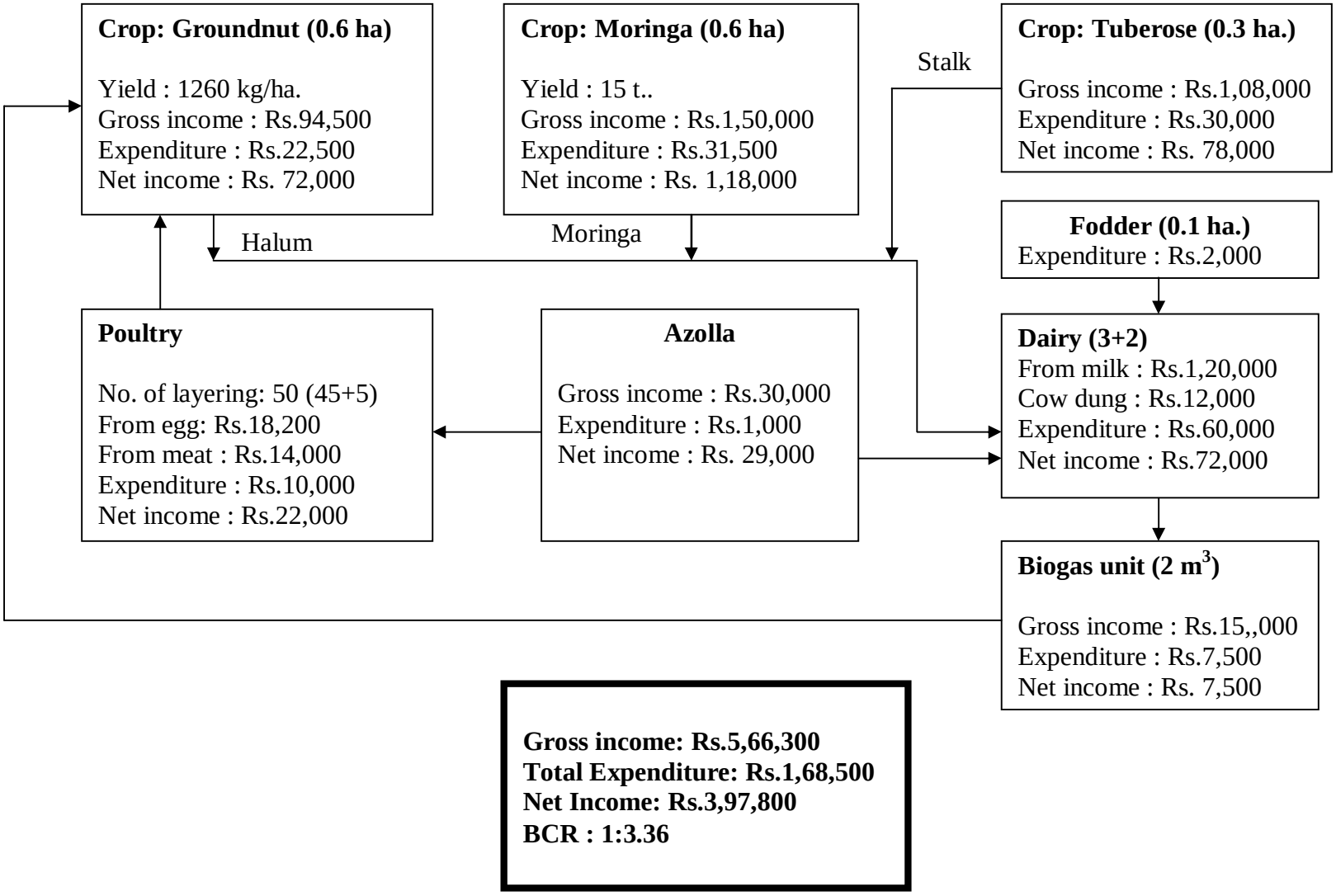
IFS model developed for Wetland



IFS model developed for Dryland



IFS model developed for Gardenland



Gross income: Rs.5,66,300
Total Expenditure: Rs.1,68,500
Net Income: Rs.3,97,800
BCR : 1:3.36

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 compsoting 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 Beer 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.

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