

Tamil Nadu Veterinary and Animal Sciences University

ICAR Krishi Vigyan Kendra, Namakkal



Report on

Doubling the Farmers Income villages

(Ondikadai, Ganapathipalayam and Moolakadu)

ICAR Krishi Vigyan Kendra

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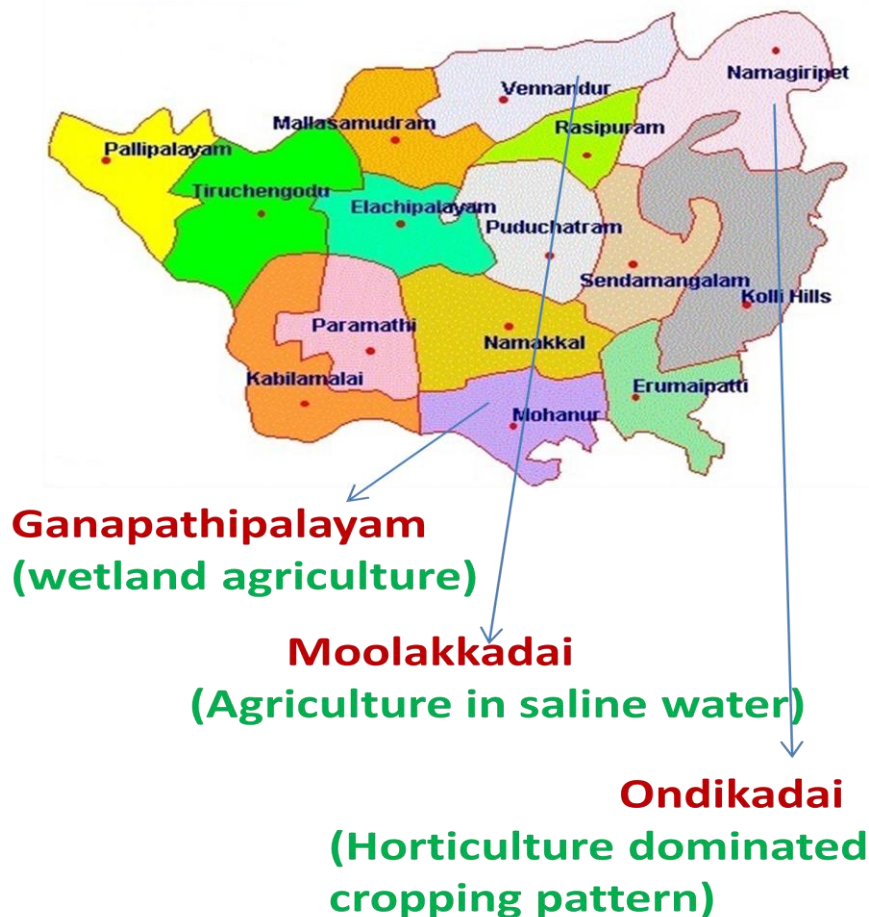
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Doubling the Farmers Income

Report

Introduction



With a view to developing models for bringing about doubling the farmers income in agriculture and socio-economic transformation among the villages in a sustained manner, the government of India introduced a new concept called Doubling the Farmers Income (DFI) which is implemented in 2018 primarily achieved through implementation of existing scheme of Central and State Governments in a convergent manner along with integration of different activities related to agriculture. To implement this activity in Namakkal district, three villages

viz; Ondikadai, Moolakadu and Ganapathipalayam were selected from Namagiripettai, Vennandhur and Mohanur blocks respectively. To develop a village like this, a development plan was framed with the following objectives

Objectives

- (i) Conduct of baseline survey and assess the existing pattern, scope and constraints
- (ii) Identification of development needs of the village in agriculture and allied sector
- (iii) Identification of existing schemes which can be used for meeting above needs
- (iv) Identification of needs which cannot be met through existing schemes
- (v) Prioritization of needs identified to ensure that most important needs of the village are met.
- (vi) Development of village plan for doubling the farmers income

Methodology

To achieve the above objectives, a baseline survey was conducted along with Focus Group Discussion with the farmers of those villages. Village level Benchmark survey was conducted by use of secondary data collected from the Village Administrative Officer. The staff of KVK, Namakkal formed a team and accomplished the work in May 2018. Focus Group Discussion and one to one survey by direct interview with farmers was conducted to collect the data on farmers and village profile, agriculture and animal husbandry scenario. An interview schedule was prepared and pre tested with the farmers before data collection. Also a questionnaire was prepared to collect secondary data. The collected data were analysed with simple statistical tools of percentage analysis and standard deviation. Based on the results the causes, issues and possibilities were analysed.

Checklist of Information gathered

Information gathered	Tools used	Responsible person
Village Profile – Total area, Cultivable area, population, major crops grown and crop wise cultivable area, irrigation sources, category of farmers, average rainfall major employment opportunity, availability of rural and financial institutions, marketing facilities, status of welfare schemes for villagers, agriculture, animal husbandry and allied sectors, status of swatchatha activities	Focus Group Discussion	KVK officials, Village Administrative Officer and officials of the Department of Agriculture
Farmer Profile – Aadhar number, age, Education,	One to one	KVK officials

Community, Family size, Family Type, contact details, occupation, income, social profile, credit behavior, extension agency contact	survey by Interview	
Land holding pattern – Category wise total land area, area under cultivation in different seasons, source of water,		
Crops grown - major crops and its return		
Livestock holding pattern and its productivity – Common livestock holding per farmer and its productivity		
Cost of cultivation – Cost of components, yield, sale price and net income derived	Focus Group Discussion and interview with farmers	KVK officials
Cost of animal rearing – Input cost, production, gross income and net return		
Additional units available for integration – availability of biogas, mushroom, bee hives, vermi compost pits		
Income from other sources – area of employment pattern that generate additional income to farm families		
Constraints and issues - Related constraints in agriculture, allied sector and issues in the village		
Recommendations – Solutions offered to overcome the constraints and results better income		

Results

i. Village Name: Ondikadai

The collected data were analysed and presented below

1. Village Profile:

1.1. Total area of the village : 256ha

1.2. Population

	Male	Female	Children	Total
OBC	104	101	45	250
SC/ST	15	12	8	35

1.3. Total number of households : 119

1.4. Land under cultivation

Land under	Area (ha)	% of total land
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Irrigated	92	35.94
Rainfed	65.018	25.77
Barren	71.22	27.82
Forest	Nil	-
Unserviceable	26.8	10.41

1.5. Major crops grown

S.No.	Crops	Area (ha)
1	Turmeric	16.22
2	Tapioca	9.964
3	Paddy	4.376
4	Sorghum	15.256
5	Maize	8.028
6	Blackgram	11.996
7	Green gram	12.088
8	Horse gram	4.212
9	Cowpea	3.136
10	Groundnut	10.016
11	Chick pea	2.376
12	Cumbu	3.484
13	Ragi	3.668
14	Sugarcane	5.52
15	Coconut	8.928
16	Arecanut	3.08
17	Banana	1.196
18	Sapota	0.08
19	Mango	0.812
20	Tomato	1.216
21	Radish	1.164
22	Cucurbits	0.78
23	Brinjal	4.22
24	Lablab	2.88
25	Chillies	1.14
26	Coriander	2.488
27	Greens	1.332
28	Bhendi	2.18
29	Onion	3.92
30	Neerium	6.32
31	Rose	0.616
32	Casurina	0.16
33	Sandal wood	3

34	Fodder crops	2.132
	Total	157.98 ha

1.6. Irrigation Sources:

Source	No.	%
Well	85	71.40
Bore well	30	25.21
Lift irrigation	04	3.36

1.7. Category of farmers

Category	No.	%
Landless	15	12.61
Marginal	34	28.57
Small	60	50.42
Large	10	8.40

1.8. Average rainfall : 716 mm

1.9. Livestock population:

Livestock	No.
Cattle	1000
Buffalo	25
Sheep	75
Goat	2500
Poultry – Layer	10000
Poultry – Broiler	25000
Poultry - -Desi	1700
Others	-

1.10. Availability of milk co-operative society

Society	No.	Year	Annual milk procurement
Aavin	1	2002	5000lit/day
Private	-	-	--

1.11. Availability of financial institutions: -

1.12. Number of FPO : 1

1.13. Number of SHGs : 2

1.14. Number of other groups : -

1.15. Availability of market : Through agency

1.16. Welfare schemes :

1.16.1. Men : -

1.16.2. Women : -

1.16.3. Children : -

1.16.4. Animal Husbandry : Amutha surabhi (5 Nos for Rs.125000/-)

- 1.16.5. Library : AGAMT (1 for Rs.18000/-)
 1.16.6. Temple : One
 1.16.7. Hospital : -
 1.16.8. School : Elementary school
 1.16.9. Electricity : Yes
 1.16.10. Road : Yes
 1.16.11. Transport :Yes
 1.17. Scheme on swachatha : Individual toilets for houses (15 for Rs180000/-)
 1.18. Status of PMFBY : -
 1.19. Availability of factory/industry : -

2. Farmer Profile

2.1. Age

Age (Years)	No.	%
25 - 35	5	8.47
36 – 50	33	55.93
>50	21	35.59

2.2. Community

Community	No.	%
BC	44	74.58
MBC	12	20.34
SC	3	5.08

2.3. Education

Education	No.	%
Illiterate	11	18.64
Primary	5	8.47
Secondary	26	44.07
Higher Secondary	9	15.25
Diploma	3	5.08
Graduate	4	6.78
Post graduate	1	1.69

2.4. Family Type and Family Size

Family Type	No.	%	Family size	No.	%
Joint	21	35.59	4 – 7	48	81.36
Nuclear	38	64.40	2-3	5	18.64

2.5. Primary Occupation : Agriculture

2.6. Secondary Occupation

Occupation	No.	%
Animal Husbandry	47	79.66
Govt	2	3.39
Private employment	2	3.39
Agri coolie	6	10.17
Business	2	3.39

2.7. Migration

Migration	No.	%
Regular	8	13.56
Seasonal	8	13.56
Off season	2	3.39
No	41	69.49

2.8. Income through migration

Income (Rs)	No.	%
<5000	10	55.56
5001 – 10000	7	38.89
20000	1	5.56

2.9. Months getting employment through migration

Months	No.	%
2	1	5.56
3	1	5.56
4	2	11.11
5	2	11.11
6	6	33.33
12	6	33.33

2.10. Annual Income

Income (Rs)	No.	%
<40000	8	13.56
<70000	29	49.15
<100000	11	18.64
<300000	11	18.64

2.11. Group information

Details	No.	%
SHG	22	37.29
Other groups	7	11.86
Both	4	6.78
Non group	26	55.93

members		
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2.12. Banking behavior

Details	No.	%
Account in banks	58	98.31
Credit behaviour		
Bank	33	55.93
Coop society	8	13.56
Private	1	1.69
All	2	3.39
No credit	15	25.42

2.13. Rain Water Harvesting structure

Details	No.	%
Yes	25	42.37
No	34	57.63

2.14. Extension Agency Contact

Agency	No.	%
No	17	28.81
Village panchayat	2	3.39
Cooperative society	3	5.08
Agri department	17	28.81
All	20	33.90

2.15. Income from other sources

Source	No.	%	Income
No	49	83.05	-
Employment of wards and wife	10	16.95	24000/month

2.16. Availability of biogas, vermi compost units

Details	No.	%
Biogas	6	10.17
Vermicompost	1	1.69

2.17. No. of farmers attended training for agriculture practices : 9

2.18. Land size

Category of farmer	Land size	Area under cultivation
Marginal	2.30±0.14	1.911±0.16
Small	4.07±0.47	3.87±0.26
Large	7.35±0.36	5.85±0.29

2.19. Source of irrigation (47 farmers)

Details	No.	%
Well	10	21.28

Borewell	15	31.91
Lift irrigation	-	
Well and borewell	22	46.81

2.20. Livestock rearing pattern

Livestock - Cattle		%
One animal	14	23.73
Two animals	17	28.81
3-4	10	16.95
5-7	5	8.47
No cattle	13	22.03

2.21. Value and Production parameters of dairy animals

Livestock - Cattle	
Value of adult animals	30813±16000
Value of calves and heifers	8836±4650
Average productivity	6.6 ± 1.9
Average lactation length	249±47
Cost of rearing	36490/- ±19062
Cost of rearing per month	3040±1588
Net return	21080/-±11012
Net return per month	1757±918

2.22. Livestock rearing – Small ruminants and desi birds

Livestock – size	No.	%	Size	Value
Sheep	2	3.39	Small (6 animals)	3076/animal
Goat	29	49.15	Medium (18)	3215/animal
Desi chicken	18	30.51	Small (18)	371/bird

2.23. Production parameters of small ruminants

Livestock – Small ruminants	Details
Lambs / year	8
Kids / year	38
Cost of rearing sheep	Rs.7400/annuum
Cost of rearing goats	Rs. 48650/annum
Net return - sheep	Rs.16600/annum
Net return - Goat	Rs.63850/annum

2.24. Cost of cultivation and net return of agricultural crops

Crops	Yield/acre (Kg)	Cost of cultivation (Rs)	Gross return (Rs)	Net return (Rs)
Turmeric 11	1367.273± 282.4568	53818.18± 10866.24	95681.82± 19214.93	40772.73± 23345.34
Groundnut 4	1425± 457.3474	31375± 10600.67	45625± 13136.3	14250± 8116.547
Tapioca 10	11520± 4297.751	37281± 18877.34	59215± 28062.45	21934± 11216.87
Paddy 6	2419.167± 676.1687	25601.67± 7112.413	45985± 13345	20383.33± 6902.732
Tomato 3	10666.67± 3055.05	29400± 10053.85	58000± 23065.13	28600± 24080.7
Cabbage 3	6266.667± 4148.895	29076.67± 14137.45	41200± 34063.47	12123.33± 30710.97

ii. Village Name: Ganapathipalayam

The collected data were analysed and presented below

1. Village Profile:

1.1. Total area of the village : 82 ha

1.2. Population

	Male	Female	Children	Total
OBC	126	121	22	269
SC/ST	3	3	--	06

1.3. Total number of households : 150

1.4. Land under cultivation

Land under	Area (ha)	% of total land
Rain fed	12	14.63
Irrigated	75	91.46
Barren	--	--
Forest	--	--
Unserviceable	--	--

1.5. Major crops grown

S.No.	Crops	Area	% of total land
1	Sorghum	10	12.20
2	Groundnut	02	2.44
3	Pulses	5	6.10

4	Korai	20	12.20
5	Banana	35	42.68
6	Coconut	10	12.20
7	Paddy	10	12.20

1.6. Irrigation Sources: (261)

Source		%
Well	98	37.55
Bore well	35	13.41
Lift irrigation	128	49.04

1.7. Category of farmers

Category	No.	%
Landless	22	14.70
Marginal	98	65.30
Small	12	8.00
Large	18	12.00

1.8. Average rainfall :700mm

1.9. Livestock population:

Livestock	No.
Cattle	112
Buffalo	3
Sheep	65
Goat	75
Poultry – Layer	112000
Poultry – Broiler	--
Poultry - Desi	950
Others	--

1.10. Availability of milk co-operative society

Society	No.	Year	Annual milk procurement
Aavin	1	1975	109500
Private	-	-	--

1.11. Availability of financial institutions: 2 (PACS & Canara Bank)

1.12. Number of FPO : -

1.13. Number of SHGs : 10

1.14. Number of other groups : 02

1.15. Availability of market : Banana Mandi, weekly market, Mohanur market and middlemen

1.16. Welfare schemes :

1.16.1. Men : -

- 1.16.2. Women : Lending for women SHG – Rs.1700000/-
 1.16.3. Children : -
 1.16.4. Agriculture : Agri loan, Copra society,
 1.16.5. Animal Husbandry : -
 1.16.6. Physically challenged : 6 members availed loan for self employment
 1.16.7. Library : One (Panchayat library)
 1.16.8. Temple : One
 1.16.9. Hospital : -
 1.16.10. School : -
 1.16.11. Electricity : Yes :
 1.16.12. Road : Yes
 1.16.13. Transport : Yes
 1.17. Scheme on swachatha : Individual toilets for houses (one house)
 1.18. Status of PMFBY : 105 farmers paid insurance
 1.19. Availability of factory/industry : -

2. Farmer Profile

2.1. Age

Age (Years)	No.	%
25 - 35	7	14.00
36 – 50	18	36.00
>50	25	50.00

2.2. Community

Community	No.	%
BC	48	96.00
MBC	2	4.00

2.3. Education

Education	No.	%
Illiterate	8	16.00
Primary	9	18.00
Secondary	25	50.00
Higher Secondary	6	12.00
Diploma	0	0
Graduate	2	4.00
Post graduate	0	0

2.4. Family Type and Family Size

Family Type	No.	%	Family size	No.	%
Joint	16	32.00	5 – 7	18	36.00
Nuclear	34	68.00	2-4	32	64.00

2.5. Primary Occupation : Agriculture

2.6. Secondary Occupation

Occupation	No.	%
Animal Husbandry	39	78.00
Govt	0	0
Private employment	4	8.00
Agri coolie	6	12.00
Business	1	2.00

2.7. Migration

Migration	No.	%
Regular	10	20.00
Seasonal	5	10.00
Off season	5	10.00
No	30	60.00

2.8. Income through migration

Income (Rs)	No.	%
<5000	13	26.00
5001 – 10000	5	10.00
20000	2	4.00

2.9. Months getting employment through migration

Months	No.	%
2	4	8.00
3	5	10.00
4	2	4.00
5	1	2.00
6	2	4.00
12	6	12.00

2.10. Annual Income

Income (Rs)	No.	%
<40000	10	20.00
<70000	23	46.00
<100000	12	24.00
<300000	05	10.00

2.11. Group information

Details	No.	%
SHG	14	28.00
Other groups	6	12.00
Both	2	4.00

2.12. Banking behavior

Details	No.	%
Account in banks	50	100
Credit behaviour		
Bank	24	48.00
Coop society	11	22.00
Private	3	06.00
All	2	4.00
No credit	10	20.00

2.13. Rain Water Harvesting structure

Details	No.	%
Yes	21	42.00
No	29	48.00

2.14. Extension Agency Contact

Agency	No.	%
No	18	36.00
Village panchayat	5	10.00
Cooperative society	7	14.00
Agri department	9	18.00
All	11	22.00

2.15. Income from other sources

Source	No.	%	Income
No	40	80.00	-
Employment of wards and wife	10	20.00	5000 - 10000/month

2.16. Availability of biogas, vermi compost units

Details	No.	%
Biogas	2	4.00
Vermicompost	1	2.00

2.17. No. of farmers attended training for agriculture practices : 12**2.18. Land size**

Category of farmer	Land size	Area under cultivation
Marginal	1.34±0.16	1.32±0.16
Small	3.66±0.29	2.93±0.26
Large	6.27±0.41	3.69±0.46

2.19. Source of irrigation

Details	No.	%
Well	06	12.00

Borewell	14	28.00
Lift irrigation	06	12.00
Well and borewell	13	26.00

2.20. Livestock rearing pattern

Livestock - Cattle		%
One animal	15	30.00
Two animals	10	20.00
3-4	09	18.00
5-7	5	10.00
No cattle	11	22.00

2.21. Value and Production parameters of dairy animals

Livestock - Cattle	
Value of adult animals	43409±25559
Value of calves and heifers	11563±7266
Average productivity	6.70 ± 2.74
Average lactation length	208±67
Cost of rearing	30721 ±16275
Cost of rearing per month	2560/-
Net return	19302±10210
Net return per month	1608/-

2.22. Livestock rearing – Small ruminants and desi birds

Livestock – size	No.	%	Size	Value
Sheep	1	2.00	Small (20 animals)	6000/animal
Goat	13	26.00	Small (10)	3150/animal
Desi chicken	08	16.00	Medium (40)	300/bird

2.23. Production parameters of small ruminants

Livestock – Small ruminants	Details
Lambs / year	15
Kids / year	18
Cost of rearing sheep	Rs.10000/annum
Cost of rearing goats	Rs. 28500/annum
Net return - sheep	Rs.21000/annum
Net return - Goat	Rs.33050/annum

2.24. Cost of cultivation and net return of agricultural crops

Crops	Yield/acre	Cost of	Gross return	Net return
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	(Kg)	cultivation (Rs)	(Rs)	(Rs)
Banana 15	426±59	32246±12145	88829± 9745	56583± 8711
Groundnut 6	1650± 485	31375± 10600.67	45912± 12100	14537± 7415
Tapioca 17	11909± 4907	27198± 9672	84738± 18123	57540± 11400
Paddy 4	1715± 427	21076± 4100	43520± 10145	22444± 11260

iii. **Village Name: Moolakadu**

The collected data were analysed and presented below

1. Village Profile:

1.1. Total area of the village : 253 ha

1.2. **Population**

	Male	Female	Children	Total
OBC	718	535	225	1478
SC/ST	118	123	48	289

1.3. Total number of households : 576

1.4. **Land under cultivation**

Land under	Area	% of total land
Rain fed	18	7.11
Irrigated	162	64.03
Barren	22	8.70
Forest		
Unserviceable	51	20.16

1.5. **Major crops grown**

S.No.	Crops	Area	% of total land
1	Sorghum	70	27.67
2	Groundnut	28	11.07
3	Pulses	5	1.98
4	coconut	34	13.44
5	Tapioca	11.5	4.55
6	Maize	37.6	14.86
7	Onion	8.8	3.48

1.6. **Irrigation Sources:**

Source		%
Well	150	56.82
Bore well	50	18.94

Lift irrigation	--	--
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1.7. Category of farmers (264 farmers) 45.83%

Category	No.	%
Landless	312	54.17
Marginal	138	52.27
Small	115	43.56
Large	11	4.30

1.8. Average rainfall : 705mm

1.9. Livestock population:

Livestock	No.
Cattle	378
Buffalo	40
Sheep	50
Goat	700
Poultry – Layer	180000
Poultry – Broiler	--
Poultry - -Desi	2500
Others	--

1.10. Availability of milk co-operative society

Society	No.	Year	Annual milk procurement
Aavin	1	1978	58214
Private	1	2008	175000

1.11. Availability of financial institutions: 1 (PACS)

1.12. Number of FPO : -

1.13. Number of SHGs : 10

1.14. Number of other groups : --

1.15. Availability of market : Rasipuram market and middlemen

1.16. Welfare schemes :

1.16.1. Men : -

1.16.2. Women : Lending for women SHG – Rs.1000000/-

1.16.3. Children : -

1.16.4. Animal Husbandry : Goat farming Rs.300000/- for 7 members

1.16.5. Library : 01

1.16.6. Temple : 01

1.16.7. Hospital : -

1.16.8. School : 2

1.16.9. Electricity : Yes

1.16.10. Road : Yes

1.16.11. Transport : Yes

- 1.16.12. PDS : Yes
- 1.17. Scheme on swachatha : Public toilets – 2-Rs.400000/-
- 1.18. Status of PMFBY : Farmers become beneficiaries
- 1.19. Availability of factory/industry : -

2. Farmer Profile (53 farmers)

2.1. Age

Age (Years)	No.	%
25 - 35	2	3.77
36 – 50	25	47.17
>50	26	49.06

2.2. Community

Community	No.	%
BC	47	88.68
MBC	5	9.43
SC	1	1.89

2.3. Education

Education	No.	%
Illiterate	10	18.87
Primary	8	15.09
Secondary	16	30.19
Higher Secondary	11	20.75
Diploma	-	-
Graduate	07	13.21
Post graduate	01	1.87

2.4. Family Type and Family Size

Family Type	No.	%	Family size	No.	%
Joint	20	37.74	5 – 7	20	37.74
Nuclear	33	62.26	2-4	33	62.26

2.5. Primary Occupation : Agriculture

2.6. Secondary Occupation

Occupation	No.	%
Animal Husbandry	33	62.26
Govt	-	-
Private	5	9.43

employment		
Agri coolie	12	22.64
Business	3	5.67

2.7. Migration

Migration	No.	%
Regular	9	16.98
Seasonal	5	9.43
Off season	4	7.55
No	35	66.04

2.8. Income through migration

Income (Rs)	No.	%
<5000	8	15.09
5001 – 10000	3	5.66
20000	6	11.32

2.9. Months getting employment through migration

Months	No.	%
2	-	-
3	3	5.66
4	2	3.77
5	3	5.66
6	1	1.89
12	9	16.98

2.10. Annual Income

Income (Rs)	No.	%
<40000	22	41.51
<70000	10	18.87
<100000	09	16.98
<300000	12	22.64

2.11. Group information

Details	No.	%
SHG	16	30.19
Other groups	07	13.21
Both	02	3.77

2.12. Banking behavior

Details	No.	%
Account in banks	53	100
Credit behaviour		
Bank	09	16.98

Coop society	07	13.21
Private	13	24.53
All	10	18.87
No credit	14	26.42

2.13. Rain Water Harvesting structure

Details	No.	%
Yes	01	1.89
No	52	98.11

2.14. Extension Agency Contact

Agency	No.	%
No	19	35.85
Village panchayat	6	11.32
Cooperative society	12	22.64
Agri department	08	15.09
All	08	15.09

2.15. Income from other sources

Source	No.	%	Income
No	51		-
Employment of wards and wife	02		10000/month

2.16. Availability of biogas, vermi compost units

Details	No.	%
Biogas	1	96.23
Vermicompost	1	3.77

2.17. No. of farmers attended training for agriculture practices : 0

2.18. Land size

Category of farmer	Land size	Area under cultivation
Marginal	1.80±0.41	1.67±0.32
Small	3.45±0.78	3.0±0.45
Large	7.60±0.61	4.28±0.56

2.19. Source of irrigation

Details	No.	%
Well	28	52.83
Borewell	12	22.64
Lift irrigation	-	

2.20. Livestock rearing pattern

Livestock – Cattle		%
One animal	07	13.21
Two animals	22	41.51

3-4	13	24.53
5-7	08	15.09
No cattle	13	24.53

2.21. Value and Production parameters of dairy animals

Livestock - Cattle	
Value of adult animals	26111±15909
Value of calves and heifers	9375±4250
Average productivity	6.34 ± 3.65
Average lactation length	195±19
Cost of rearing	59570 ±18481
Net return	26880±11424

2.22. Livestock rearing – Small ruminants and desi birds

Livestock – size	No.	%	Size	Value
Sheep	1	1.89	Small 30 animals)	5300/animal
Goat	39	73.58	Small (10)	3000/animal
Desi chicken	36	67.92	Medium (40)	300/bird

2.23. Production parameters of small ruminants

Livestock – Small ruminants	Details
Lambs / year	15
Kids / year	18
Cost of rearing sheep	Rs.10000/annum
Cost of rearing goats	Rs. 28500/annum
Net return - sheep	Rs.21000/annum
Net return - Goat	Rs.33050/annum

2.24. Cost of cultivation and net return of agricultural crops

Crops	Yield/acre (Kg)	Cost of cultivation (Rs)	Gross return (Rs)	Net return (Rs)
Groundnut 12	1408±537	33684±15335	63655±26011	29970±16202
Onion 9	6786±1219	79478±22237	148056±30876	68579±27234
Tapioca 10	9388± 3533	43158±17761	92898±28230	49739± 25025

The above results are the yield that farmers get in normal rainfall. When monsoon failure occurs, expected yield and return become failed. Based on the survey report, a village development plan to double the income of farmers is planned in agriculture as follows.

2.25. Household Income

The household income was calculated village wise for all the three villages and farmers category wise for Moolakadu village and presented below.

I. Moolakadu

Landsize	Agriculture	Horticulture	Livestock	Secondary source	Migration	Total
3.87	62036	36000	57816	26921	6500	189273

II. Ondikadai

Landsize	Agriculture	Horticulture	Livestock	Secondary source	Migration	Total
4.08	89487	114000	38597	12932	3000	258016

III. Ganapathipalyam

Land size	Agriculture	Horticulture	Livestock	Secondary source	Migration	Total
3.2	71990	44000	43200	9000	13200	181390

Category wise household income

Village: Moolakadu

Landless (13)

Landsize	Agriculture	Horticulture	Livestock (3)	Secondary source (13)	Migration(5)	Total
-	-	-	37000	65250	9600	111850

Source of income	Number of households	Income	Farm size
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Migration+Other source	3	44700	Landless
Livestock+Migration	1	54600	
Livestock+Migration+Other source	1	59000	
Other source	8	67250	

Marginal farmers (15)

Land size	Agriculture	Horticulture	Livestock	Secondary source (6)	Migration(5)	Total
1.77	32208	26000	48823	38785	2500	148316

Source of income	Number of households	Income	Farm size
Agriculture+Livestock	5	103722	2.17
Agriculture+Horticulture+Livestock+ members in the family earning through some other occupation	5	118075	2
Agriculture+Horticulture+Livestock+ members in the family earning through some other occupation+Migration	2	149000	1.85
Agriculture+Horticulture+Livestock+ Migration	3	106490	1.7

Small farmers (13)

Land size	Agriculture	Horticulture	Livestock	Secondary source (5)	Migration(2)	Total
	66761	23700	71471	16416	2923	181271

Source of income	Number of households	Income	Farm size

Agriculture	1	100000	3
Agriculture+Livestock	5	128213	2.9
Agriculture+Horticulture+Livestock+ members in the family earning through some other occupation	5	195975	3.85
Agriculture+Horticulture+Livestock+ members in the family earning through some other occupation+Migration	2	198627	4.1

Large farmers (11)

Land size	Agriculture	Horticulture	Livestock	Secondary source (2)	Migration	Total
	76000	36700	63100	130000	-	305800

Source of income	Number of households	Income	Farm size
Agriculture	1	248900	8
Agriculture+Livestock	8	175810	5.8
Agriculture+Horticulture+Livestock+ members in the family earning through some other occupation	2	294350	7

In Total

S.No.	Source of income	Number of households	Income	Farm size
1	Agriculture	2	174450	5.5
	Agriculture+Livestock	18	205915	3.85
	Agriculture+Horticulture+Livestock+ members in the family earning through some other occupation	12	212810	4.28
	Agriculture+Horticulture+Livestock+	5	243813	2.77

	members in the family earning through some other occupation+Migration			
	Agriculture+Horticulture+Livestock+Migration	3	106490	1.7
	Migration+Other source	3	44700	Landless
	Livestock+Migration	1	54600	
	Livestock+Migration+Other source	1	59000	
	Other source	8	67250	

By analyzing the data of the above three villages, the following cause, issues and possibilities are identified.

2.26. Cause, Issues and possibilities

Cause	Issue	Possibilities
Refusal of discussion by agri officials	Improper supply of inputs Not getting needed inputs	Making awareness towards Govt schemes
Pest and diseases	Low production, Loss in yield	Training and demonstration on IPM practices
Weeds	Yield reduction, High input cost	Introduction of weeder and management practices
Damage due to wind	Crop loss and reduction in yield	Suitable compensation
Poor monsoon, Decreasing rainfall	Water scarcity	Rain water storage
Infertility in dairy animals	Increase cost of rearing, Low yield	Proper training in breeding and feeding dairy animals
Drainage problem	Water stagnation	--
Water scarcity and depleting ground water	Crop failure	Introduction of Water conservation technologies
Demand for agri labourer	Delayed operation, low performance, yield reduction	Conversion of 100days workers into agriculture, Mechanization in agriculture
Low market price Price fluctuation	Low return	Vegetable procurement in village Value addition, IFS
Low net return	Poor economic status	IFS, reduction in cost of cultivation by subsidies for inputs, Cottage industries

		based on agriculture New varieties and new technologies
Traditional varieties and conventional practices	Low yield and low return	Scientific agriculture
Soil infertility	Poor yield	Soil test based fertilizer application Green manure application
Post harvest loss	Low return	Introduction of storage unit
No employment during off season / monsoon failure	No income and no sustenance in livelihood	Introduction of small unit of desi chicken and goats for alternate income, training for income generation through livestock farming Sewing machine, educational loan

Activities proposed and initiated in DFI villages

After the baseline survey, the following activities were planned to implement to increase the farmers income.

Name of the villages: Ganapathipalayam, Moolakadu and Ondikadai

➤ **Minimization /Reduction of Input Cost – Activities**

▪ **Technical interventions**

- Soil test based fertilizer application, Green manure application
- Banana – cowpea intercropping with integrated crop management
- Alternate forages for livestock
- Mulberry leaves for better weight gain in small ruminant production system
- Endo parasitic control by ethno veterinary medicines

▪ **Inputs**

- Water soluble fertilizer and bio inputs from Dept of Horticulture (Convergence)
- Introduction of farm Machineries for drudgery reduction (Convergence)

➤ **Enhancing /Increasing Gross Income – Activities**

▪ **Technical interventions**

- High yielding paddy variety (Co52)
- Seed production of new Groundnut variety (TMV-14) & ICM practices & buyback arrangement made by KVK
- High yielding Black gram variety (VBN-8) and ICM practices
- Bellary onion var.Arka Bheem with ICM practices
- Masti guard to prevent mastitis and high milk production in dairy animals

▪ **Alternate practice and group activity**

- Integrated Farming System
- Value addition and EDP activities (Convergence & CSR)

- Group based approach / Commodity Groups / FPO
- **Inputs**
- Introduction of small unit of desi chicken and goats for alternate income (Convergence)
- Credit linkage programme (Banks and NABARD)
- Watersheds, drip irrigation(Convergence)
- **Knowledge updation**
- Use of ICT (whatsapp groups, SMS service, weather forecast)
- Awareness creation in scientific technologies
- Training/Farm school
- Skill Training(200 hrs)
- **Sustainable Income/Resource conservation – Activities**
- **Technical interventions**
- Waste decomposition and compost making by suitable microbial consortium
- Nitrate poisoning detection in fodder and water (VCRI)
- **Inputs & Facilities**
- Cattle Insurance Scheme(Convergence TNSAHD)
- Introduction of storage units (Convergence)
- Awareness towards Govt schemes
- World Environment day celebrations and Tree plantation (Forestry)
- Installation of biogas and compost pits (TNAU Bio energy)

DFI Villages Activities implemented & its Achievements 2018-19

S. No	Activity	Total beneficiaries	Number of house holds				Technical impact
			LL	MF	SF	LF	
I							
1	Oft (1)	10	0	4	4	02	NCOF waste decomposer and UAS, Dharwad composting culture performed well in decomposition. 650 kg of composted manure gained from 1 tonne of waste after composting within 3 months of incubation. 5.3 kg N, 2.8 kg P & 9.1 kg K from one tonne of compost obtained. Farmers learnt practical experience with composting.
2	FLDs (3)	55	0	18	29	08	
i.	Demonstration of Banana-Cowpea Intercropping						On going Harvesting will be made in middle of

	with ICM practice						April 2019
ii.	ICM Practices in French bean var. Arka Sharath						Yield : 40 kg / day/ 5 cent/harvest Total harvest made : 15 First harvesting : 45 DAS Sale @ Rs.40/kg Marketing : Jayasurya super market directly purchased from farmer field Income :24,000/ 5 cent/3 months
iii.	ICM Practices in Bellary onion var.ArkaBheem						Yield : 7 tonnes/ acre Sale @ Rs.10/kg Income : 70,000/acre Net profit Rs.50,000/ acre
3	CFLD	2	0	24	17	11	
i.	Demonstration of high yielding groundnut varieties and ICM practices						Total No. Of beneficiaries: 25 farmers Name of the crop: Groundnut <u>For Demo</u> Variety used: GJG-9 Season: Kharif 2018-19 Average demo yield achieved: 1252 kg/ha Number of pods per plant: 36.5 Less root rot incidence: 2.4% Gross income Rs.82293/ha Net income Rs.46388 /ha BCR:2.29 Higher haulm yield recorded and used as dry fodder for their small & large animals.

							<p><i>For Check variety (TMV-7)</i></p> <p>Check yield: 910 kg/ha</p> <p>Root rot incidence: 5.2%</p> <p>Gross Income Rs.61850/ha</p> <p>Net Return Rs.26290/ha</p> <p>BCR: 1.73</p>
ii.	Demonstration of high yielding groundnut variety (TCGS-1073) and ICM practices						<p>Total No. Of beneficiaries: 27 farmers</p> <p>Name of the crop: Groundnut</p> <p><i>For Demo</i></p> <p>Variety used: TCGS-1073</p> <p>Season: Rabi 2018-19</p> <p>Crop status: Crops under maturity stage.</p>
4	Soil Health cards issued	85 soil health card+80 water health cards	0	24	50	11	<p>Based on the results, the following parameters were deficient</p> <p>OC – 72.6 %</p> <p>N - 65.7 %</p> <p>Zn - 57.3 %</p> <p>B - 16.7 %</p> <p>New practices introduced to improve the fertility status of soil</p> <ol style="list-style-type: none"> 1. Multigrain green manuring with mixture of cereals, pulses, oilseeds, green manuring seeds, spices @ 50 kg / ha to meet out the organic manure requirement for paddy, banana, tapioca & sorghum - 5 farmers with 12.5 acres 2. Uses of biofertilizers Azospirillum, phosphobacteria each @ 2.5 kg / ac along with 75% RDF fertilizers - 48 farmers – 23 acres 3. Enriched micronutrient mixture

							<p>application to improve Zn & B content of soil - 8 farmers 3 acres</p> <p>4. Foliar spraying of pulse wonder @ 5 kg/ha for pulses and ground rich @ 10kg/ha for groundnut – 25 farmers – 18 acres</p> <p>5. Residual mulching with left out portion of mulberry leaved & twigs in between the rows of mulberry – 10 farmers – 14 acres</p>
5	Integrated farming system	2	0	0	2	0	
i.	Established garden land IFS Model comprising Crops + dairy + Poultry + Vermicompost + Fodder crops + Honey bee rearing + Panchagaviya.						Fodder sorghum, Fodder maize, Hedge Lucerne seeds were given and developed mini fodder bank in a area of 20 cent, One month old 30 number of Vanaraja poultry chicks given in February 2019. Green fodder harvest and feeding to dairy animals is in progress. Daily green fodder harvest is 110 kg and fed to the dairy animals. Daily average milk yield of 0.5 lt/animal is increased due to regular feeding of green fodder with leguminous. 75 litres of Panchagaviya prepared and sprayed (3%) for bhendi and tomato fields and controlled sucking pests. Final yield will be recorded.
ii.	Supplied Vanaraja poultry chicks for IFS farm						Twenty number of one month old vanaraja chicks given to one IFS farmer during February 2019 for egg purpose to get additional income.
6	Off campus training(2)	48	0	22	25	1	
i.	Nursery management in Bellary onion on 02.08.18						
ii.	Seed treatment with bio agents in						

	French bean on 12.11.18						
II	By convergence						
7	ATMA Programme (6)	126	0	56	40	30	
i.	Honey bee rearing (5 no) units distributed to the farmers through ATMA Programme	1	-	-	1	-	Installed 4 honey bee units kept in integrated farm and collected honey during January 2019. So far collected 1.0 litres of honey and used for own purpose.
ii.	ATMA – Solar light	3	-	3	-	-	3 Solar trap given to 3 farmers for pest control in agricultural crops. Solar light trap installed in maize and pulses and reduced pesticide spray and controlled pest in 15%.
iii.	ATMA Farm school	80	-	14	18	8	Imparted ICM practices in hybrid maize cultivation and Fall Armyworm management practices during Rabi season.
iv.	ATMA Farm school - Maize		-	24	8	8	
v.	ATMA Farm school – Groundnut	40	-	15	12	13	Imparted ICM practices in Groundnut and seed production technologies.
vi.	MANAGE – STRY Training	2	-	-	1	1	Two beneficiaries underwent training in Production of biocontrol agents during January 2019 and practicing in their farm.
8.	NADP (Horti Dept)	1		-	1	-	
i.	Shade net unit for production of off season vegetables – Coriander & greens with Dept of Horticulture, Vennan dhur Block						Area – 500 sq.m Date of completion – 20.03.19 Crop cultivation to be started during Kharif 19
9.	Dept of Bio energy, TNAU, Coimbatore	6	0	5	1	0	
i.	Installation of						So far 6 farmers enrolled for

	Biogas production unit						<p>installation of biogas unit</p> <p>Completed unit -1 No</p> <p>Deenabandhu Model</p> <p>Area : 6.5 feet height and 9 feet dia</p> <p>Total Cost Rs.37,000/-</p> <p>Subsidy – Rs.12,000/-</p> <p>Cost saving towards purchase of Gas cylinder / Month Rs.800/-</p>
10.	Dept of Horticulture (3)	27	0	18	7	2	
i.	<p>under Perimetro scheme Programme for vegetable growers</p> <p>Supply of Hybrid Tomato seedlings</p>	5	0	4	1	0	<p>No.of seedlings supplied : 40,000</p> <p>Area covered : 2ha</p> <p>No.of farmers benefitted : 5</p> <p>Yield/ acre : 32 tones</p> <p>Income : Rs.2,24,000 (@Rs.7/kg)</p> <p>Expenditure : Rs.86,000/acre</p> <p>Net profit :1,38,000</p> <p>Increased area under tomato cultivation : 12 ha (18 farmers)</p>
ii.	<p>under Rainfed Area Development Programme</p> <p>Minikit for Tapioca growers</p>	10	0	7	3	0	<p>Subsidy amount Rs.10,000/farmer</p> <p>Area : 10 acres</p> <p>Yield : 18 tones</p> <p>Income : Rs.77100</p> <p>Net profit : Rs.40100</p>
iii.	<p>Dept of Horticulture, Namagiripettai block, Namakkal District</p> <p>Exposure visit to Centre of excellence</p>	12	0	7	3	2	-

	for vegetable, Reddiyarchathiram, Dindigulon 9 & 10.1.19						
11	Indian Institute of Spices Research, Calicut		0	0	0	1	
i.	Turmeric cultivation var. IISR Pragathi						Yield as dry rhizome : 2.6 tonnes / acre Income : Rs.1,56,00/- Net profit : Rs.1,02,000/-
12.	Convergence under CSR						
i.	RashtriyaMahila KisanDiwas	130	32	31	55	12	Ten women farmers honored. Assistance given to six landless women for their livelihood security.
ii.	Honor and Assistance	6	5	1	-	-	<u>Name of the assistance:</u> Wet grinding machine 4 unit – 4 women Dairy heifer 1 no – 1 women. Rain hose system – 1 women for 0.5acre
13	Awareness campaign by TNLDA	501	--	241	167	93	
14	Agromet centre, VCRI, Namakkal Supply of Rain gauge	2	0	0	2	--	
15	District Forest Office Supply of tree saplings	53	0	28	25	0	150 tree saplings given to 53 farmers for tree coverage

16	Support to FPO						
i.	Training on value addition in millets	1 FPO with 100 members					Processing millets and value added products
ii.	Supply of millet processing machineries & Popularizing their products in exhibitions and other programmes of KVK						

Total number of households: 845

Number of farmers benefitted: 1097 farmers

S.No.	Farmer category	Total population	Benefitted
1	Landless	349	37
2	Marginal	270	467
3	Small	187	423
4	Large	39	170
	One FPO with 100 members		

No. of ICAR technologies spread

- IIOR, Hyderabad Var. DCH-519
- IIHR French bean var. Arka Sharath
- IIHR Bellary onion var. Arka Bheem
- Demonstration of Banana-Cowpea intercropping with ICM practice, NRCB, Trichy 1996-1997
- Assessment of suitable composting culture in waste decomposition, NCOF, Ghaziabad & UAS Dharwad

Proposed activities 2019-20

District/ Taluk/ Block	Name of cluster villages	Major crops & Enterprise s	Major problems identifies in each crop/enterprise	Proposed type of interventions (OFT/ FLD/ Training/ Field day/ Method demonstrations/ Awareness camp)
Namakkal/ Rasipuram/ Namagiripettai Namakkal/ Rasipuram/ Venanathur	Ondikkadai Moolakkadu	Maize	<ul style="list-style-type: none"> • Suck the sap of tender parts and reducing vigour of plants • Feeds on foliage, • Destroying the mature & immature cob. • Yield loss (15-75 %) • Heavy dose spraying insecticide (50ml) 	<p>OFT - IPM of Fall Army worm (<i>Spodoptere fugiperda</i>) on Maize</p> <p>Training</p> <p>Improved Production packages techniques in Maize crop.</p> <p>IPDM practices in Maize crop.</p> <p>Extension activity</p> <p>Demonstration of IPM of fall army worm practices</p> <p>Field day</p>
Namakkal/ Rasipuram/ Vennandur Namakkal/ Rasipuram/ Namagiripettai	Moolakkadu Ondikkadai	Maize	<ul style="list-style-type: none"> • Lack of knowledge on Fall Armyworm management practices in Maize 	<p>Farm school on Integrated crop management in maize through ATMA Programme</p>
Namakkal/ Rasipuram/	Moolakkadu	Pulses	<ul style="list-style-type: none"> • Non availability of HYV • Higher incidence of YMV 	<p>CFLD- Demonstration of High yielding green gram (CO-8) and black gram (VBN-</p>

Vennandur Namakkal/ Rasipuram/ Namagiripettai	Ondikkadai		<ul style="list-style-type: none"> • Less yield (355 kg/ha) 	8) varieties and ICM Practices. Training on ICM in groundnut Extension activity-Field day
Namakkal/ Vennandur/ Namagiripettai	Moolakkadu Ondikkadai	Groundnut	<ul style="list-style-type: none"> • Cultivation of local variety (TMV-7) • Non availability of HYV • Diseases incidence (Root rot) • Non adoption of ICM practices. 	CFLD- Demonstration of high yielding groundnut variety (CO-7) and ICM practices Training on ICM in groundnut Extension activity-Field day
Namakkal/ Rasipuram/ Vennandur Namakkal/ Rasipuram/ Namagiripettai	Moolakkadu Ondikkadai	Chilli	<ul style="list-style-type: none"> • Heavy incidence of thrips, mite, fruit borer, resulted heavy yield loss of 30 per cent • Lack of knowledge on improved eco-friendly crop protection practices 	FLD – Demonstration on Bio intensive IPM Module in Chillies Training ICM Practices in Chilli IPDM practices in Chilli Extension activity Demonstration Field day
Namakkal/ Rasipuram/ Namagiripettai	Ondikkadai	Small onion	<ul style="list-style-type: none"> • Low yield in small onion due to pest & disease incidence • In efficient utilization of nutrients applied to the soil 	OFT - Assessment of vegetable + flower based intercropping system in Namakkal District Training ICM practices & intercropping system in Small onion

				<p>Extension activity</p> <p>Demonstration</p> <p>Field day</p>
Namakkal/ Rasipuram/ Namagiripettai	Ondikkadai	Tapioca	<ul style="list-style-type: none"> • Sole cropping (99%) • Weed menace in 3-4 months after planting • Soil loss by erosion 	<p>FLD- Demonstration of row intercropping system in Tapioca with ICM practices.</p> <p>Trainings</p> <p>Cropping system in Tapioca</p> <p>ICM Practices in Tapioca</p> <p>Extension activity- Demonstration and Field day</p>
Namakkal/ Rasipuram/ Namagiripettai	Ondikkadai	Tomato	<ul style="list-style-type: none"> • Soil deficient in OC (69%), • N (63 %), Zn (86%) & B (23%). • Continuous & excess application of chemical fertilizer affects the soil fertility • Lack of awareness about biofertilizer application 	<p>FLD – Demonstration of ICM practice in Tomato</p> <p>Training – ICM in tomato</p> <p>Extension activities- Demonstration, Field visit & Field day</p>
Namakkal/ Rasipuram/ Namagiripettai	Ondikkadai	Poultry manure	<ul style="list-style-type: none"> • Lack of information on composting & enriched poultry manure preparation 	<p>FLD-Demonstration of enriched poultry waste compost preparation</p> <p>Training - Enriched poultry waste preparation</p> <p>Extension activity- Demonstration & Field day</p>
Namakkal/ Mohanur/ Mohanur	Ganapathipalayam	Sugarcane	<ul style="list-style-type: none"> • Burning of trash affects the soil quality • Poor recycling of organic resources 	<p>Special campaign - Demonstration of insitu incorporation of sugarcane trash mulching in ratoon</p>

			<ul style="list-style-type: none"> • Loses of nutrients from the soil (OC & available NPS) • Yield loss 	<p>sugarcane- Burn free village</p> <p>Training - Uses of composting with different cultures , shredding</p>
Namakkal/ Rasipuram/ Vennandur	Moolakkadu	Agri & Horticultural crops	<ul style="list-style-type: none"> • No awareness on recent techniques in crop production • Upgrade skill on micro irrigation and IFS system 	Interstate exposure visit through ATMA fund
Namakkal/ Rasipuram/ Namagiripettai	Ondikkadai			
Namakkal/ Mohanur/ Mohanur	Ganapathipalayam	Dairy	<ul style="list-style-type: none"> • Ketosis is a common metabolic disorder of adult cattle typically occurring in dairy cows in early lactation. 	<p>FLD-Demonstration of Rapid detection kit (Ketocheck) for ketosis in bovine</p> <p>Training</p> <p>Nutritional Management of ketosis in dairy animals</p> <p>Extension activity</p> <p>Demonstration of Rapid detection kit (Ketocheck) for ketosis in bovine</p>
Namakkal/ Rasipuram/ Namagiripettai	Ondikkadai	Dairy	<ul style="list-style-type: none"> • During early lactation, the amount of energy required for milk production often exceeds the amount of energy available from the diet. • The negative energy balance in 	<p>FLD- Demonstration of bypass fat supplementation for better milk yield in HF Crossbred cows</p> <p>Training</p> <p>Feeding management of Dairy cows in early lactation</p>

			<p>early lactation affects the milk yield.</p> <ul style="list-style-type: none"> In early lactation, to meet energy requirement, animals have to be fed on a diet supplemented with bypass nutrients. 	<p><i>Extension activity</i></p> <p>Demonstration of feeding bypass fat to HF cross animals</p>
Namakkal/ Rasipuram/ Vennandur	Moolakkadu	Dairy	<ul style="list-style-type: none"> Feeding concentrates and forages for animals leads to High cost of production Improper utilization/ wastage of mulberry leaves to dairy animals by sericulture farmers 	<p>FLD-Demonstration of Mulberry leaves for better milk yield in crossbred dairy animals</p> <p>Training</p> <p>Feeding value of Mulberry leaves for dairy animals</p> <p>Extension activity</p> <p>Method demonstration on use of mulberry leaves in dairy animals during fodder scarcity</p>
Namakkal/ Rasipuram/ Vennandur	Moolakkadu	Agriculture	<ul style="list-style-type: none"> Lack of information on composting & value addition in Fish waste Fish waste from fish landing and cleaning centre is a major pollutant. Accumulated fish waste leads to unpleasant odours, infestation of rats, Maggots. Fish waste are being disposed off into environment through land filling or illegal dumping activities. 	<p>FLD-Eco-friendly and modern methods of Fish waste recycling for enhancing farm profitability</p> <p>Training/ Field day/ Awareness camp</p>
Namakkal/ Rasipuram/ Namagiripettai	Ondikkadai			

By convergence

Namakkal/ Rasipuram/ Namagiripett ai	Ondikadai	Livestock	Frequent disease occurrence Unavailability of quality breed stock	Formation of CIGs and integrated livestock entrepreneurs through NABARD and CSR
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