Department of Agriculture

Tamil Nadu Irrigated Agriculture Modernization Project (TNIAMP)

DETAILED PROJECT REPORT

Sub-Basin: GUMMIDIPOONDI- Phase III

Joint Director of Agriculture

Thiruvallur

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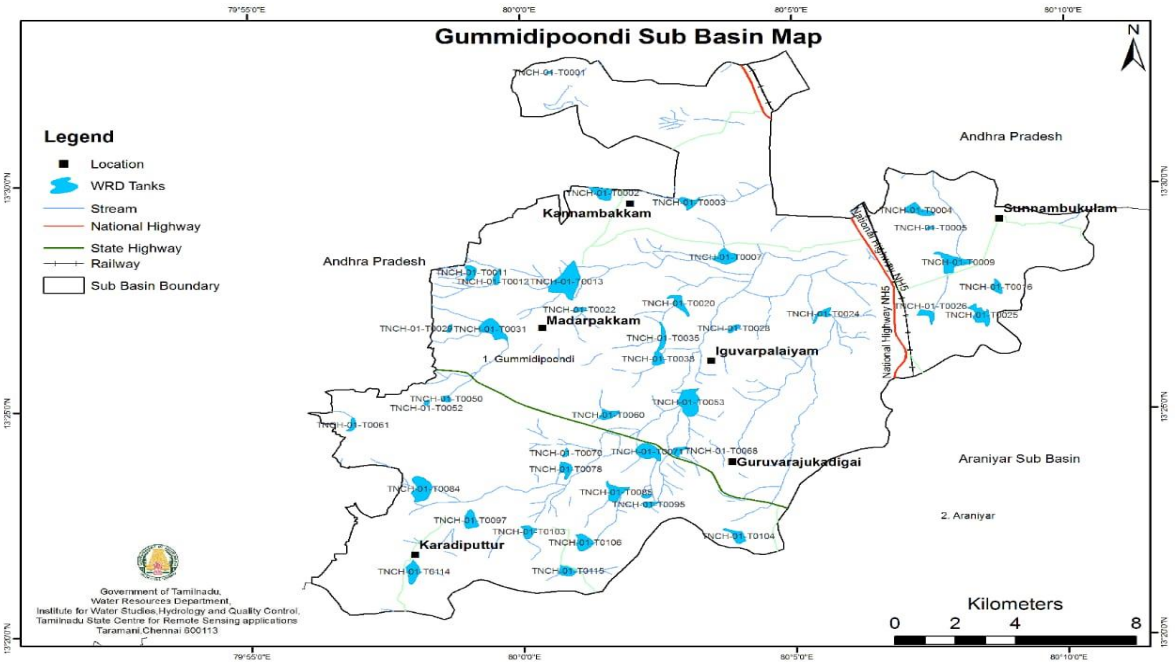
DEPARTMENT OF AGRICULTURE

TN – IAM PROJECT

PHASE – III - SUB BASIN

DETAILED PROJECT REPORT OF THE GUMMIDIPOONDI SUB BASIN

1. GUMMIDIPOONDI SUB BASIN MAP



2. INTRODUCTION

2.1 TIRUVALLUR DISTRICT

Tiruvallur district is an administrative district in the Indian state of Tamil Nadu. The fast developing city of Tiruvallur is the district headquarters. The district has a mixture of urban and rural characteristics. The Eastern part of Tiruvallur district is dominated by urban characteristics while the Northern part of the district has influence of Andhra culture due to its position and the district had a population of 3,728,104.

Tiruvallur District is the majorly paddy grown area followed by Pulses Red gram,Green gram and black gram) , oil seeds (Ground nut, Gingelly), Sugar cane and Millets (Ragi and Cumbu) is in less area. Annual rainfall is around 1200mm.

Cropping Pattern of Tiruvallur District

1.Paddy-Paddy-Paddy
2.Paddy- Millet-Paddy
3.Paddy- Pulses-Paddy
4.Paddy- oil seeds-Paddy
5.Sugarcane

2.2 GUMMIDIPOONDI BLOCK

Gummudipoondi lies on the National Highway 16 (India) from Chennai to Calcutta, which is a part of Golden Quadrilateral project. It is located at 15 km from Tada, 110 km from Nellore, 52 km from Satyavedu, and 45 km from Chennai. Gummidipoondi has a large bus stand near gummidipoondi market. There are bus routes that connects to various rural areas and to Chennai. Various buses pass through GNT road from Tirupathi, Nellore, Sulurpet to Madhavaram inter city bus terminus.

Gummidipoondi is the majorly paddy grown area followed by ground nut, Gingelly and lesser area of Green gram.

2.3 DESCRIPTION OF GUMMIDIPOONDI SUB BASIN

This sub basin orginates from Ellapuram block and passes through Gummidipoondi. The basin area underlined by crystalline rocks of Archaean age comprising granite gneiss, charnockite and associated basic igneous and metamorphic rocks. Gummidipoondi sub basin covers an area of 331.11Sq.Km. Numerous small streams originate form Sathiavedu hills at about an altitude of 261m and a few streams originate from Tamilnadu and drain most of the plain areas of Gummidipoondi. These streams flow in the North, Northeast direction filling up several tanks in Pallavada, Periyaopalapuram, Thanipoondi, Sirupulalpettai and Siruvadur. Finally to the west of Elavur, the streams join with the Pulicat lake in Andhra Pradesh. It is one of the sub basin in Chennai basin which is located in the Northen part of Chennai basin and Pulicat lake. The Gummidipoondi sub basin is located between latitude of 13° 35' to13° 5'4 and longitude of 79.94 to 80° 14'

There are four Anicuts constructed across Nandhi River in Tamil Nadu.

1. Panchalai Maduvu Anicut
2. Sedhilpackam Anicut
3. Ralla Kalvoy Anicut
4. Sanaputhur Anicut

- Total registered ayacut area of the basin -1672.03 HA.

2.4. Split up details of ayacut area.

Category	Area (Ha)
Fully irrigated area(ha)	**1076.62**
Partially irrigated area(ha)	**289.73**
Gap (ha)	**305.68**
Total ayacut area (ha)	**1672.03**

2.4 List of Blocks covered in Gummidipoondi Sub Basin with Ayacut

Sl. No.	District	Block	Taluk	No.of Tanks	Ayacut in Ha
1	**Thiruvallur**	**Gummidipoondi**	**Gummidipoondi**	26	1672.03
			Total	**26**	**1672.03**

In Gummidipoondi Sub Basin **22 System Tanks** and **4 anicuts** are available . All the 22 tanks and 4 anicuts are to be taken up for Rehabilitation and Modernization under TN-IAMP (IAMWARM – III) Project phase- III Sub Basins

2.5 Rainfall

Normal annual rainfall in 1100 mm.
South West moon soon 300 mm.
North East moon soon 800 mm.

2.6 Season-wise focus crops

Sl.No	Season	Main crops cultivated
1	Sornavari, Samba and Navarai	Paddy
2	Rabi	Ground nut, Gingelly and Green gram
4	Perennial	Coconut and Mango
5	Annual	Sugarcane

2.7 .Soil types - Sandy loam.

2.8 .Number of open wells 80 and bore wells-400

2.9. NGO's functioning in the sub basin - NIl.

2.10. SHGs in the sub-basin

Sl.No	Blocks	No. of SHGs	Sphere of interest	No. of FIGs	Sphere of interest
1	Gummidipoondi	2	Self Employment	1	Collective farming

2.11. Infrastructure available in the sub-basin

Sl.No	Infrastructure	Gummidipoondi
1	Agricultural Extension Centres	2
2	Agri clinic centres	1
3	Primary Agricultural Cooperative credit society	6
4	Regulated markets	1
5	Private storage godown	1
6	Milk societies	1
7	Village sandhais	1
8	Machineries custom hiring centre	2

3. Objectives/Interventions:

- Agricultural intensification by Improved production technology crop demonstrations
- Crop diversification with Millets, Pulses and Minor millets
- Climate resilient activity in all the intervention crops
- Reduce the inorganic fertilizers and pesticides as it affects the Soil health and Environment
- Information Education, Communication and Capacity Building activities

4. Implementation strategy

Project will be implemented using the following strategy in order to achieve increasing water productivity in irrigated agriculture.

- Irrigated Agriculture.
- More production per drop of water.
- Work in convergence with line Departments.
- Cluster approach.
- Crop diversification.
- Sub Basin approach.
- Dove tailing with other departmental schemes.
- Interventions finalized in consultation with the stake holders base in PRA exercise.

Facilitate AMD to form crop wise commodity groups / FPO/ FPC

5. Existing crop scenario in the sub-basin

Paddy, Pulses, Oilseeds, Sugarcane, Vegetables, Sugarcane ,Mango and Coconut are important crops cultivated in the sub-basin

6. Existing Cropping Pattern of Gummidipoondi Sub basin

Paddy- Paddy- Paddy-
Paddy-Ground nut-Paddy
Paddy-Pulses-Paddy

Cropping pattern

Name of the sub Basin :Gummidipoondi
Nodal District : Tiruvallur
Registered Ayacut Area : 1672.03 ha
No. of WUAs :26

Fully Irrigated : 1076.62 Ha
Partially Irrigate : 289.73 Ha
Gap : 305.68Ha
Total Ayacut Area :1672.03 Ha

S.No.	Crop	Without Project(Ha)				With Project(Ha)				Increase
		FI	PI	RF/G	TOTAL	FI	PI	RF/G	TOTAL	
I	**Perennial crop**									
1	Coconut	0	0	0	0	0	0	0	0	0
2	Mango	40	0	0	40	48	0	0	48	8
	Total	**40**	**0**	**0**	**40**	**48**	**0**	**0**	**48**	**8**
II	**Annual Crop**									
1	Sugarcane	25	0	0	25	0	0	0	0	-25
2	Banana	0	0	0	0	0	0	0	0	0
3	Fodder Agathi	0	0	0	0	0	0	0	0	0
	Total	**25**	**0**	**0**	**25**	**0**	**0**	**0**	**0**	**-25**
III	**1st crop**									
1. a	Paddy	622.56	199.7	0	822.29	90	0	0	90	-732.29
b	Paddy SRI	10	0	0	10	805	0	0	805	795
2	Ragi	0	0	0	0	0	0	0	0	0
3	Cumbu	0	0	0	0	0	0	0	0	0
4	Red Gram	0	0	0	0	0	0	0	0	0
5	Green Gram	10	0	0	10	20	0	0	20	10
6	Groundnut	255.06	90	0	345.06	453.03	0	0	453.03	107.97
7	Gingelly	0	0	0	0	0	0	0	0	0
8	Brinjal	22	0	0	22	52	0	0	52	30
9	Bhendi	28	0	0	28	40	0	0	40	12
10	Chillies	13	0	0	13	30	0	0	30	17
11	Tapioca	8	0	0	8	18	0	0	18	10
12	Bittergourds	0	0	0	0	15	0	0	15	15
13	Sanke gourds	0	0	0	0	12	0	0	12	12
14	Moringa	2	0	0	2	40	0	0	40	38
16	Banana sucker	1	0	0	1	6	0	0	6	5
17	Colocassia Esculanta	0	0	0	0	0	0	0	0	0
18	Greens	15	0	0	15	15	0	0	15	0
19	Flowers	25	0	0	25	25	0	0	25	0
20	Non Agrl. Purposes	0	0	0	0	0	0	0	0	0
21	Fallow	0	0	305.7	305.68	0	0	0	0	-305.68
22	Fodder Sorghum	0	0	0	0	1.5	0	0	1.5	1.5
23	Fodder Cowpea	0	0	0	0	1.5	0	0	1.5	1.5
	Total	**1011.62**	**289.73**	**305.7**	**1607.03**	**1624.03**	**0**	**0**	**1624.03**	**17**
	G. Total (I+II+III)	**1076.62**	**289.7**	**305.7**	**1672.03**	**1672.03**	**0**	**0**	**1672.03**	**0**
IV	**2 nd crop**									
1. a	Paddy	210	70.58	0	280.58	90	0	0	90	-190.58
b	Paddy SRI	15	10	0	25	450	0	0	450	425
2	Black Gram	0	0	0	0	0	0	0	0	0
3	Green Gram	0	0	0	0	0	0	0	0	0
4	Groundnut	0	0	0	0	0	0	0	0	0
5	Brinjal	10	0	0	10	15	0	0	15	5
6	Bhendi	12	0	0	12	15	0	0	15	3
7	Chillies	5	0	0	5	7	0	0	7	2
8	Fodder Cholam	0	0	0	0	0	0	0	0	0
9	Fodder Cowpea	0	0	0	0	0	0	0	0	0
	Total	**252**	**80.58**	**0**	**332.58**	**577**	**0**	**0**	**577**	**244.42**
V	**3rd crop**									
1. a	Paddy	0	0	0	0	0	0	0	0	0
b	Paddy SRI	0	0	0	0	0	0	0	0	0
2	Black Gram	0	0	0	0	0	0	0	0	0
	Total	0	0	0	0	0	0	0	0	0
	Grand Total	**1328.62**	**370.31**	**305.68**	**2004.61**	**2249.03**	**0.00**	**0.00**	**2249.03**	**244.42**
	Cropping Intensity				**119.89%**				**134.50%**	

8. Area, Production and productivity of existing focus crop

S.No	Crops	Area (Ha)	Production (MT)	Productivity (MT/ha)
1	Paddy	820	**3731**	4.5
2	Green gram	10	**6.5**	0.65
3	Ground nut	350	**1085**	3.1
	Total	**1180**	**4822.5**	**8.25**

9. Existing constraints, challenges and countermeasures.

Constraints	Challenges	Counter measures
Water shortages		Implementation of SRI in larger area in the sub-basin
Pest problems	Endemic outbreak in occasional cases	Use of biocontrol agents and integrated pest management
Lack of quality planting materials		Supply of certified seeds of agricultural crops
Lack of Community approach in farming	Lack of awareness	Farmer's field school on seed to seed crop production technologies
Residues management	lack of organized way of management	Supply of vermicompost mobile silpaulin units to on-farm composting
Soil health deterioration	Continued usage of inorganic fertilizers at considerable level.	Soil test based fertilizer application to crops
Environmental pollution	Lack of ecofriendly inputs	Supply of bio inputs like Pseudomonas, Biofertilizers like Azospirillum, Phosphobacteria, Rhizobium

10.WALKTHROUGH SURVEY DETAILS





11.TNIAMP PHASE III- GUMMIDIPOONDI WALKTHROUGH WITH ALL LINE DEPARTMENT on 08.05.2020

12. Interventions demanded by farmers

1. Green Manure Crop - SRI - Rice Fallow Pulses (3 Crop Sequence)
2. Pulses (Green gram)
3. Oilseeds (Groundnut)
4. Farmers Field Schools (FFS) and Sustainability
5. Power conoweeding
6. Trainings for SRI skills to 50 No. of Agriculture labourers for 2 day Total cost : Rs.18,500/- x 1 Training
7. Farmers training-50 Nos. for 1 day Total cost : Rs.21,000/- x 1 Trainings
8. Extensional Personnel training-30 Nos. for 2 days Total cost : Rs.27,500/- x 1 Training
9. IEC/CB activities [Field support, Sustainability etc., IEC & CB for 650 demos] for the Crop Demos Conducted
10. Documentation Charges for the Sub- basins

13. Interventions finalized

a. Green Manure Crop - SRI - Rice Fallow Pulses (3 Crop Sequence)
b. Pulses (Green gram)
c. Oilseeds (Groundnut)
d. Farmers Field Schools (FFS) and Sustainability
e. Power conoweeding
f. Trainings for SRI skills to 50 No. of Agriculture labours for 2 day Total cost : Rs.18,500/- x 1 Training
g. Farmers training-50 Nos. for 1 day Total cost : Rs.21,000/- x 1 Training
h. Extensional Personnel training-30 Nos. for 2 days Total cost : Rs.27,500/- x 1 Training
i. IEC/CB activities [Field support, Sustainability etc., IEC & CB for 408 demos] for the Crop Demos Conducted

14. Justification for the interventions

To achieve project objectives these interventions are necessary.

15. Details of crop diversification.

High water requiring crops will be replaced by less water requiring crops like Pulses, Groundnut and thereby productivity of water will be increased.

High water utility crops will be diverted to less water utility crops viz. Pulses and Oil seed crops, Fodder crops and Horticulture crops.

1. Pulses: Under the Pulses there is an increase of 20 Ha. from the existing area of 10 Ha. in garden land pulses. It is proposed to increase rice fallow pulses area

2. Oil seed crops (Groundnut):

The Groundnut area has been increased from 353 Ha. to 453 Ha. in the proposed cropping pattern. Hence, there is an additional area of 100 Ha under Groundnut crop.

16. Area, production and productivity of proposed crops.

S.No	Crops	Area (Ha)	Production (MT)	Productivity (MT/ha)
1	Paddy	850 (SRI)	**4760**	5.6
2	Green gram	20	**18**	0.9
3	Ground nut	450	**1575**	3.5
	Total	**1320**	**6353**	**10**

17. Cost norms of interventions proposed with authority

S.No	Interventions	Subsidy norms	Authority
1	Green Manure Crop - SRI - Rice Fallow Pulses (3 Crop Sequence)	Rs 10000 per Ha	Assistant Director of Agriculture
2	Pulses(Green gram)	Rs. 5000 per Ha	Assistant Director of Agriculture
3	Oilseeds (Groundnut)	Rs. 5000 per Ha	Assistant Director of Agriculture
4	Farmers Field Schools (FFS) and Sustainability	Rs. 20000 per No	Assistant Director of Agriculture
5	Power conoweeding	Rs. 1250 per Ha	Assistant Director of Agriculture
6	Trainings for SRI skills to 50 No. of Agriculture laboursfor 2 day Total cost : Rs.18,500/- x 1 Training	Rs. 18500 per training	Assistant Director of Agriculture
7	Farmers training-50 Nos. for 1 day Total cost : Rs.21,000/- x 1 Trainings	Rs. 21000 per training	Assistant Director of Agriculture
8	Extensional Personnel training-30 Nos. for 2 days Total cost : Rs.27,500/- x 1 Training	Rs. 27500 per training	Assistant Director of Agriculture
9	IEC/CB activities [Field support, Sustainability etc., IEC & CB for 408 demos] for the Crop Demos Conducted	Rs. 650 per crop demonstration	Assistant Director of Agriculture
10	Documentation Charges for the Sub-basins	Rs. 10000 per sub-basin	Assistant Director of Agriculture

18. Intervention-wise break up of cost norms

Improved Production Technology Crop Demonstrations through Agriculture Intensification: Productivity Enhancement in Paddy (IPT Demos: SRI-180 Ha)

Paddy is the main staple crop grown in the Nandiyar sub- basins where in there is still scope for improving the productivity as the yield gap varies from 1.2 - 1.6 MT / Ha both in first and second seasons (Samba and Navarai). The DoA will analyse the constraints in the sub-basin by conducting IPT Paddy Crop Demonstrations with all improved management practices, like planting of single seedling etc. and inputs like improved variety of crop, IPM, INM etc. are practiced in FFS model, and also suggesting suitable interventions viz., Introduction of three crop sequence of Green Manure – SRI Paddy – Rice Fallow Pulses.

(i). Growing green manure crops especially for their organic matter and ability to improve the soil can dramatically build up poor and exhausted soils and maintain the fertility of better ones. It boosts lands' organic matter (O.M.) level. It keeps nutrients from leaching down beyond reach of crops, provides food for microbial soil life, helps legumes fix nitrogen in their root nodules and helps the soil produce good structure and maintain the air-pore spaces essential to good crop health. Green manure is less expensive than animal manure and is practically free of antibiotics and growth hormones. Green manure can also help create vital soil in areas with little or no top soil due to water runoff. It deters weeds, even without the use of harmful herbicides. Earthworms and beneficial bacteria grow well with green manure. Poor and exhausted soils get rich in nutrients through green manures. Green manure also helps with soil erosion due to weather like wind and rain.

Sl. No	Technology	Area (ha)	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	IPT Demo. Of Green Manure Crop	180	0.020	3.600

Unit Cost :Green Manure

Sl. No	Particulars	Unit Cost (Rs. / Kg)	Amount (Rs.)
1	Seed cost - 40 Kg / Ha	50	2000
	Total		**Rs.2,000**

(i) System of Rice Intensification ensures saving of seed and water as they require in less, greater root growth due to young seedlings and wider spacing, more tillers ultimately more grains and yield. There is reduction of cost due to labour saving through the usage of

power weeder, fertilizer saving through usage of Leaf Colour Chart and lesser pest and disease incidence.

(ii) Rice Fallow Pulses are sown as follow up crop after the harvest of Paddy. These rice fallow areas offer a huge potential niche for short season pulses and oilseed crops. It enhances the soil fertility status for the next crops due to nitrogen fixation.

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Sl. No	Technology	Area (ha)	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	IPT Demo SRI	180	0.060	10.800

Unit Cost : SRI [Paddy Cultivation]

Sl. No	Particulars	Unit Cost (Rs. / Kg)	Amount (Rs.)
1	Cost of Soil testing	20	20
2	Seed cost with seed treatment components – 8 Kg / Ha	50	400
3	Cost of nursery raising and Bio-fertilizers		600
4	Cost of fertilizers (150:50:50 Kg NPK / Ha)		
	Urea - 300 Kg	6	1,800
	Muriate of Potash – 80 Kg	16	1,280
	$ZnSO_4$ 25 Kg	70	1,750
5	IPM - Plant protection charges	1,000	1,000
	Total	**Rs. 6,850/- (Assistance Restricted to) Rs. 6,000 /-**	

Sl. No	Technology	Area (ha)	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	Rice Fallow Pulses	180	0.020	3.6

Unit cost: Rice Fallow Pulses

Sl. No	Particulars	Unit Cost (Rs. / Kg)	Amount (Rs.)
1	Seed cost with seed treatment components - 20 Kg / Ha	100	2,000
	Total		**Rs. 2,000/-**

Promotion of Pulses Production :

There is always huge scope for improving the productivity levels of major pulse crops and the poor seed replacement rate, timely availability of quality seeds, zero mineral nutrition, improper pest management practices, poor post-harvest practices etc., are the major constraints for increasing the productivity. The DoA would intervene the farmers with participatory approach and adoption of improved production technologies viz.

a. Usage of high yielding certified seeds of varieties.

b. Pre soaking of seed- 1 kg of seed in 1 lit. of water for 4 hrs. for increasing germination percentage.

c. Promotion of line sowing for maintaining optimum plant population.

d. Balanced Fertilization(Kg/ha) : N : P: K : S MN Mixture

25: 50:25: 10 5

e. Productivity enhancements by mass scale spraying of 2% DAP on 25th and 40th day after sowing.

Sl.No	Technology	Area (ha)	Unit Cost L.Rs.	Budget Rs. In lakh)
1	IPT Demo. of Pulses	5	0.050	0.250

Unit Cost – IPT Pulses (Garden Land):

Sl.No	Particulars	Unit Cost (Rs /Kg)	Amount (Rs.)
1	Cost of Soil testing	20	20
2	Seed cost with seed treatment components - 20 Kg /Ha	150	3,000
3	Pulse Wonder 2 Kg / ha	220	440
4	Fertilizer: i. DAP 25 Kg / Ha	29	725
5	IPM - Plant protection charges	1,000	1,000
	Total Cost	**Rs. 5,185 (Assistance Restricted to) Rs. 5,000**	

4. Revival of Oilseeds cultivation (IPT Demos: 45 Ha.):

Oilseeds are the next target group to be given special focus in the river sub basins of Tamil Nadu. As they are mostly grown in rainfed situation, the yield levels are far below than the national average and still vast potential untapped to improve the productivity of oilseeds. Like pulses, the country being the net importer of oilseeds, and because of increased demand for edible oil consumption by the households in the State, the demand - supply gap is much wider. So, special attention should be envisaged to narrow down this gap. The following interventions are proposed in Oilseeds viz.

Usage of high yielding certified seeds of varieties.

- **a.** Promoting Rice fallow Oilseeds wherever possible.
- **b.** Promoting Castor as Bund/Border crop.
- **c.** Promotion of line sowing for maintaining optimum plant population.
- **d.** Promotion of intercropping with pulses.
- **e.** Application of Gypsum in Groundnut
- **f.** Adoption of IWM-including the use of Drought Mitigation Substances and IPM techniques.

Sl.No	Technology	Area (ha)	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	IPT Demo. of Oilseeds	45	0.050	2.25

Unit Cost - Groundnut:

Sl.No	Particulars	Unit Cost (Rs. / Kg)	Amount (Rs.)
1	Cost of Soil testing	20	20
2	Cost of fertilizers (17:34:54 NPK + Gypsum 400 Kg / Ha)		
	i. Gypsum 400 Kg / Ha	4	1,600
	ii. Urea - 40Kgs	6	240
	iii. MOP - 90 Kg.	16	1,440
3	Micro nutrient spray (DAP–2.5 Kg, Ammonium sulphate – 1 Kg, Borax – 500 gm and planofix–375 Ml) @ Rs.250 for 3 sprays.	250	750
4	Bio fertilizers-20 Packet	10	200
5	IPM - Plant protection charges	1,000	1,000
	Total Cost	**Rs. 5,250 /- (Assistance Restricted to) Rs.5,000**	

II Agricultural Implements:

Cono weeding operation in SRI Paddy Cultivation:

- Cono weeder is used two times at the stage of 15th and 25th days of planting SRI .
- The weeds are incorporated into the field by this way it is utilized as nutrients in the same field itself.
- Old roots are removed and new roots have been proliferated by using the cono weeder. Since number of tillers will be increased. It leads to increase in yield (300-400 kg/acre). Hence farmers got more income compared to conventional cultivation
- It reduces labour shortage.
- In this project Conoweeding operation will be done by using the self help groups , Amma farm women groups and Farmers Interest group and farmers themselves. By this way womens will be benefited.
- The cono weeding may be done either by manual or mechanical according to the soil status and growth of the crop.
- Back ended subsidy will be given to the beneficiaries by ensuring the operation with proper Geo tagging of the intervention.

Sl.No	Technology	Area (ha)	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	Cono weeding operation	90	0.01250	1.125

Unit Cost for Cono weeding:

Sl.No	Particulars	Unit Cost (Rs. / Ha)	Amount (Rs.)
1	Cost of two times of Cono weeding on 15th and 25 th days after planting	1250	1250

III. Other Crop based Components:

1. Farmers Field School

- Farm Schools would be operationalized at Block level in sub basins
- These FFS would be set up in the field of outstanding or achiever farmers.
- "Trainee farmers" would also have the responsibility of providing extension support to other farmers in the respective village or neighboring villages.

SlNo	Technology	Nos.	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	Farm Schools	10	0.200	2.0

Unit Cost:

Sl.No.	Operationalizing Farmers Field School	Cost Norms in Rs.
1	Frontline demonstration at Farm School on a maximum area of 2 Ha. at same rates as approved under the Guidelines of National Food Security Mission for the crops.	7,500
2	Grant towards logistics support to Farm School	1,000
3	Contingency	2,000
4	Details of interactions / training at Farm School	
a.	*Honorarium for maximum two external trainer for maximum 6 visit @ maximum of Rs.250 per visit per trainer*	3,000
b.	*Travel expenses for maximum two external trainer for maximum 6 visits @ maximum of Rs.150 per trainer per visit*	1,800
c.	*Food expenses for 28 participants @ Rs.30 per participant per day for 6 events.*	5,040
d.	*Printed literature @ Rs.50 per participant for 28 participants and trainers*	1,400
	Total	**21,740**
	Grand Total:	**Rs.21,740 (Assistance Restricted to)Rs.20,000**

2. Seed Village Programme for Groundnut:

- The farmers may be encouraged to produce the seeds required for their villages on their own especially for the crops Oilseeds by provision of assistance to the farmers.
- Groups are formed for the production of required seeds for the Farmers in the Village itself.
- The Group Members are given Seed Village Concept and Farm management Training (Rs.4,400 / group) and also for the Group upliftment, provided revolving fund (Rs.50,000 / Group) with Bank tie-up.
-

Sl.No	Technology	Nos.	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	Groundnut	2	0.544	1.088
	TOTAL	**2**	**0.544**	**1.088**

19. Geo-tagging

Activities to be undertaken by the Agriculture department like Improved Production Technology crop demonstrations, Other Crop Based Components like IPM Villages,Farm Field School, INM- Vermicompost units and Cono weeding operation will be geo-tagged using a specialized app developed by TNIAMP.

20. Environmental and Social Management Framework (ESMF)
Socio Economic Profile:

This sub basin orginates from Ellapuram block and passes through Gummidipoondi. Gummidipoondi sub basin covers an area of 331.11Sq.Km. Numerous small streams originate form Sathiavedu hills at about an altitude of 261m and a few streams originate from Tamilnadu and drain most of the plain areas of Gummidipoondi. These streams flow in the North, Northeast direction filling up several tanks in Pallavada, Periyapalapuram, Thanipoondi, Sirupulalpettai and Siruvadur. Finally to the west of Elavur, the streams join with the Pulicat lake in Andhra Pradesh.

This basin consists of 24 villages with the total population of 0.90 lakh among males are 0.50 lakh and females are 0.40 lakh. The rural literacy level of this basin is 75 %. It involves 30000 house holdings among this 12000 house holdings are farming families in which small and marginal farmers , big farmers are 80% and 20% respectively and women land holders around 5%.The major irrigation sources of this basin are bore well and tank well.

Stakeholder Consultations and Feedback:

A. Walk-through Survey:

Walkthrough surveys were conducted through 24 villages situated in Thiruvallur Gummidipooni Sub basin during the month of June 2020 and Officials from Water Resources Department (WRD), Agriculture Department, Horticulture Department, Tamil Nadu Agricultural

University (TNAU), Agriculture Engineering Department (AED), Animal Husbandry and Fisheries Department jointly conducted the survey. Around 350 public people from farming and allied sector participated and shared their views and expectations. Regarding WRD, 24 tanks, 4 *anicuts* and supply channels for a total length of 40.13km in Gummidi poondi Sub basin were selected and proposed for rehabilitation under TNIAMP Phase III. Interaction with farmers was made for improving agriculture and allied activities.

B. Awareness Meetings:

The awareness meeting has been conducted in 20 villages and around 350 public people from farming and allied sectors were participated and shared their views and expectations.

C. Stakeholder feedback:

The farmers are mostly relying on conventional farm methodologies and following same cropping pattern. Hence, to make them adopting new methodologies, the following activities are proposed. Farmers can be educated through introduction of field demonstration of improved production technology. Farmer's field schools to educate farmers shall be operationalized at block levels followed by capacity building through exposure field visits. During the survey, it was reported by the farmers about reduced soil fertility; hence, it was proposed to encourage the farmers for growing green manure crops, practicing rice fallow pulses cropping in order to enhance the soil fertility. Another common problem prevailing in agriculture is water scarcity. Farmers have reported that often they cannot avail water for their crops upto full maturity. For this, it was proposed to switch from conventional paddy cultivation method to System of Rice Intensification (SRI). Through this, they can save appreciable quantity of water and also seed. It was also proposed to divert from high water guzzling crops to less water consuming crops like Pulses, oil seeds and horticulture crops.

ESMF application in Livelihood Support Interventions:

A. Details of Interventions on Agriculture

The following interventions is proposed to improve the livelihood of the farmers

- **System of Rice Intensification (SRI)** demonstration would be implemented in the Sub basin to reduce the water demand and also to reduce the green house gases emission.
- **Promotion of Less water Loving Crops** such as Pulses, Oilseeds and Millets.
- **Sustain the soil fertility** by growing the green manure and pulses in order to fix the atmospheric nitrogen in soil.

B. Details of applicable ESMF actions on Agriculture

- **Promotion of IPM village**- To adopt IPM strategy and approaches, farmers would be trained on "on farm production of bio control agents".

- **Promotion of INM village**- Farmers awareness campaign would also be organized to promote wide use of organic inputs, like vermicompost, Bio pesticides, Bio fertilizers and Bio control agents to protect the environment and produce pesticide reduced agro products.

Other activities:

- Capacity building & Change management Trainings would be organized to farmers, agricultural labourers and Extension Personnel to create awareness on the water saving crop production technologies.
- IEC material in local language for generating awareness regarding safe use of pesticides.
- Soil testing followed with right dosage of agrochemicals.
- Promote wide application of safe and bio-pesticides, wherever possible.
- Encourage that pesticide application is done using proper equipment and in accordance with the available guideline.

Beneficiary Targetting and Inclusion:

Most of the beneficiaries of the project areas are small and marginal farmers. About 50% representation would be given to small and marginal farmers while selecting the beneficiary.It would be ensured that he/she has the capability and resources to follow the instructions provided by the experts in a timely and complete manner. The selected beneficiary should disseminate the demonstrated technologies to fellow farmers in the village(s) and the adjoining areas. They must use all the inputs provided by the project (like seed, fertilizer, IPM kit, etc.) for the demonstration plot only, and should neither sell nor divert these on his other land. And also the farmer must grow a small control plot by following the farmer's practice in the area. This is required for comparison of results with the improved package of practices followed in the demonstration plot.

In the project, from proposed SRI interventions and other crop diversification programmes the small and marginal farmers will be benefited due to more yields and it leads to obtain the more income. Increasing the net income of the farmer is possible through agricultural mechanization by way of reducing cost through precise application of Seeds, Manures, Fertilizers, Bio pesticides etc., through machines besides eliminating the drudgery of farming operations. Small and Marginal farmers are not in a position to purchase and maintain Hi-tech and costly farm machinery, on their own. In order to help them, subsidy assistance is provided for the establishment of block based and village based Custom Hiring Centers by progressive farmers, Farmers Groups, Entrepreneurs and FPOs for hiring out the agricultural machinery and implements to the needy farmers on nominal hire charges.

Key Gender Actions:

Gender mainstreaming plays a vital role in water management and agriculture allied activities. In gender concerns, about **35 to 40% representation** would be given **to women farmers** while selecting the beneficiary farmers.To enhance women participation in the project, women farmers will be informed and made aware of their role in operation and maintenance of water management activities, decision making in the agriculture, labour opportunities in agriculture, encourage their participation in WUA, involvement in livelihood activities etc. Specific capacity building programs like exposure visits would be organized for WUA representatives, women in Farmer Producer Organizations (FPO), Farmer Producer Companies (FPC), Dairy Interest Groups (DIG),etc. Team involvement of women in organized groups such as Self Helping Groups will be encouraged. In anticipation, the percentage of women expected to involve in Agri related activities are 30%.

Component B: (a) Agriculture Productivity Enhancement, Diversification, Marketing and Value Addition

1. General	
1.1. Name of the villages in sub-basin	Amarambedu, Parikkeri ,Amarambedu ,Amirthamangalam ,Aramani, Budur, Chinna Bommanjikulam, Kanalur, Periya Bommanjikulam ,Pondavakkam, Sedilpakkam Edur, Thervoy Kandigai Chitteri ,Vanamalli Elavoor, Eguvarpalayam ,OdaperiNarasingapuram, Peria Natham Melapakkam ,Poovalai and Thervali
1.2. Population	90000
1.3. Village falls under command area of	Tank and bore well
1.4. Area under irrigation (Ha)	1400
2. Agriculture	
2.1. Major Crops Present	Paddy, Green gram and Ground nut
2.2. Cropping pattern	Crop-rotation- Paddy-Pulses, Groundnut -Paddy
2.3. Whether license under Fruits Products Order (FPO), 1955 obtained (Not for every crop)	No
3. Irrigation systems	
3.1. Source of water	Ground water Tank and Bore well

3.2. Field channels	Existing – non-functional -30% Existing – functional – 10% New required-50%		
3.3. Current irrigation systems in practice	Traditional- 70% Micro-irrigation systems-30%		
3.4. Water User Associations (i) Existing (ii) Functional (iii) No. of members	To be formed		
3.5. Pesticides supported by the project currently in use (list)	Bio Agents like *T.Viride, Trichogramma sp.* and Registered pesticides and fungicides like Profenophos, Tricyclozole etc which are less or moderately toxic recommended by TNAU are supported in the project.		
3.6. Provision of training for safe use of pesticides exists? 3.7. If yes, briefly mention the training program	Yes Awareness about safe use of pesticides is created among farmers and agricultural laborers during trainings for farmers and Agri.labourer trainings.		
3.8. Fertilizers supported by the project currently in use	Soil sample based fertilizer application of complex and straight fertilizers, Bio fertilizers and organic manure are supported in the project.		
3.9. Cultivated area under organic farming (ha)	nil		
	Category 1	***Category 2***	***Category 3***
3.10. Proposed activities under the project	Procurement of pesticides ☐Other interventions (list)-NIL.	Promotion of new crop and agronomic practices Promotion of modern technologies ✓ Promotion of high value crop using micro-irrigation system ✓ Rehabilitation of existing/ new field channels ✓ Green manure crops -SRI -Rice fallow pulses	✓ Training in safe use of pesticides is proposed. Training on vermin compost and bio agents' production is proposed. Creation of FIGs is proposed.

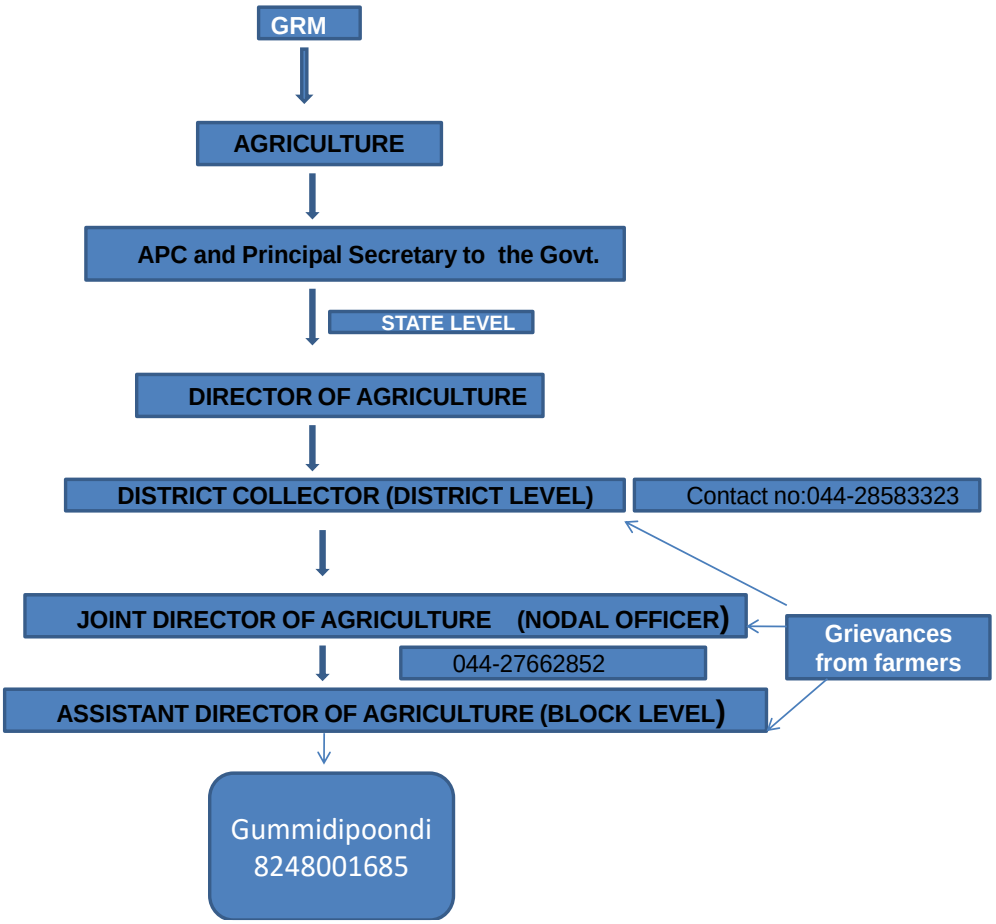
		proposed	
4 Social Screening			
4.1 Scope for involvement of Women, Vulnerable groups and Marginal farmers in project activities and benefits	Yes		
4.2 Have the beneficiaries been identified?	Yes		
4.3 Are WUAs willing to take up activities under the project?	Yes		
4.4 Gender Action Plan required? 4.5 If Yes, is the Plan prepared?	Yes	Involvement of women farmers in demo plots, SRI planting,	
4.6 Open to local labours and vulnerable households in project related labour activities	NA		
4.7 Establishing Eco friendly markets free from natural features with adequate public conveniences.	NA		

21. Grievance Redressal Mechanism:

Grievance Redressal Mechanism (GRM) is an essential component of any project implementation, particularly if the project involves the local communities with diverse socio economic backgrounds as the major stakeholders. The grievance redress process will be a continuous, transparent and participatory process that would be an integral part of the project's accountability and governance agenda.

A project level GRM will be in place for addressing social, environmental and project related grievances. The GRM will have multi-level structures and processes. At the district level the committee is made up of respective JDs of line departments of the sub-basin, this committee meets on weekly basis. This committee will look after the grievances related to irrigation and water management. At the next level the Collector heads the committee and convenes the meetings monthly once. The Collectors will take care of the other grievances related to the project activities. The next level is the HODs at the state level they contact remotely monthly once and organize meetings at every redress; he calls for a meeting once in six months and annually. For every six months report is prepared at all levels and send to the Secretary. Secretary of the Department concerned occupies the next level in the structure and in charge of overall appeals and supervision of grievance at all levels.

GRM ESCALATION HIERARCHY



24. CLUSTER WISE / INFRASTRUCTURE WISE / VILLAGE WISE CONVERGENT TABLE

Sl No	Name of the cluster/ Infrastructure/ Village	Total Ayacut (Ha)			Total Ayacut (Ha)			WRD	Agriculture	
		FI	PI	Gap	Wop	WP	Gap		Act	No./ Ha
1	2	3	4	5	6	7	8	9	10	11
Cluster I										
1	Amarambedu Parikkeri	26.18	6.560	7.920	32.740	40.660		Strengthening of tank bund, Repairs to Sluice & Weir, Improvements to Supply Channel, & Fixing of tank Boundary stones and Repairs to Kondam.	SRI	7
2	Amarambedu Tank	43.89	12.840	10.850	56.730	67.580			SRI and Ground nut	13
3	Amirthamangalam tank	29.52	7.380	9.240	36.900	46.140			SRI	7
4	Aramani Tank	31.05	7.760	9.410	38.810	48.220			SRI	8
5	Budur Anicut Thangal	48.9	13.100	13.270	62.000	75.270			SRI	10
6	Chinna Bommanjikulam Tank	29.73	7.450	9.170	37.180	46.350			SRI and Ground nut	13
7	Kanalur Pedu Eri	38.59	9.640	12.070	48.230	60.300			SRI	10
8	Periya Bommanjikulam Tank	40.07	10.020	12.140	50.090	62.230			SRI and Pulses	13
9	Pondavakkam PuduTank	32.58	9.140	8.870	41.720	50.590			SRI and Pulses	10
10	Sedilpakkam Tank	28.91	7.220	8.770	36.130	44.900			SRI	5
11	Edur Tank	32.2	8.050	9.750	40.250	50.000			SRI and Ground nut	12
12	Thervoy Kandigai Chitteri	29.23	7.300	9.150	36.530	45.680			SRI	8

Sl. No	Name of the cluster/ Infrastructure/ Village	Total Ayacut (Ha)			Total Ayacut (Ha)			WRD	Agriculture	
		FI	PI	Gap	Wop	WP	Gap		Act	No./ Ha
Cluster II										
13	Vanamalli Tank	40.47	10.080	12.300	50.550	62.850		Strengthening of tank bund, Repairs to Sluice & Weir, Improvements to Supply Channel, & Fixing of tank Boundary stones and Repairs to Kondam.	SRI	8
14	Elavoor Hissa Kattu Thangal	51.52	13.880	14.600	65.400	80.000			SRI and Ground nut	15
15	Elavoor Katteri Tank	47.68	11.920	14.450	59.600	74.050			SRI	10
16	Elavur Large Tank	92.84	29.220	22.110	122.060	144.170			SRI	15
17	Eguvarpalayam Odaperi	64.41	18.120	17.500	82.530	100.030			SRI	15
18	Narasingapuram Tank	25.24	6.120	7.840	31.360	39.200			SRI	5
19	Peria Natham Thattan Tank	44.43	13.120	11.450	57.550	69.000			SRI and Ground nut	5
20	Melapakkam Pettai Cheruvu	27.37	7.850	7.280	35.220	42.500			SRI	5
21	Poovalai Large Tank	51.77	14.940	13.680	66.710	80.390			SRI and Ground nut	11
22	Thervali Thamarai Tank	31.48	8.870	8.550	40.350	48.900			SRI	5
23	Panchalai Maduvu Anicut	65.170	16.280	19.72	81.450	101.170			SRI and Ground nut	10
24	Sedhilpackam Anicut	38.940	9.730	12.03	48.670	60.700			SRI and Ground nut	10
25	Ralla Kalvoy Anicut	32.650	8.170	9.88	40.820	50.700			SRI and Ground nut	10
26	Sanaputhur Anicut	51.800	14.970	13.68	66.770	80.450			SRI and Ground nut	10
	Grand Total	**888.060**	**240.580**	**250.370**	**1128.64**	**1379.01**				**180+5 +45**
	Agricultural activity-	**SRI-180 demos,Pulses-5 demos, Ground nut-45 demos Total-230 demos**								

25. Institutional Strengthening – IEC & Capacity Building Activities

The Capacity building and Change management training are given to the Agricultural Labourers, Farmers and Extensional Personnel viz., Assistant Director of Agriculture, Agricultural Officers, Deputy Agricultural Officers, Assistant Seed Officers and Assistant Agricultural Officers which are imparted by the reputed Capacity building and Change management Training organizations.

Sl.No	IEC & Capacity Building – Change Management Trainings	Nos.	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	Trainings for SRI skills to 50 No. of Agriculture labours	1	0.185	0.185
2	Farmers training-50 Nos. for 1 day	2	0.210	0.420
3	Extensional Personnel training-30 Nos. for 2 days	1	0.275	0.275
	Total	**4**		**0.880**

EC/CB activities [Field support, Sustainability, Documentation Charges etc.,):

In the sub-basins, the total Crop based demonstrations to be conducted are 230 Ha, As these crop demonstrations are conducted on FFS mode, the Village meetings, Seminars, Village Melas, other Publicity & Propaganda activities, POL, Printing of Leaflets / Pamphlets, Posters, Banners, Relevant Materials for the functions and fields, Documentation Charges etc., are to be imparted in the proposed Crop based demonstrations to be conducted with the allotted amount

GUMMIDIPOONDI SUB BASIN **Thiruvallur District Component wise Physical and Financial Requirement**

Sl. No.	Name of the component	Unit	Unit Cost L.Rs.	Project Activities				Financial in Lakh Rs			
				I Year	II Year	III Year	Total	I Year	II Year	III Year	Total
I. A. Increasing Crop Productivity by Best Management Practices & Innovations (IPT Demos): [Involving more Women Farmers & addressing Climate Resilient Issues] :											
1	Green Manure Crop	Ha.	0.02	60	60	60	180	1.200	1.200	1.200	**3.600**
2	SRI	Ha.	0.06	60	60	60	180	3.600	3.600	3.600	**10.800**
3	Rice Fallow Pulses	Ha.	0.02	60	60	60	180	1.200	1.200	1.200	**3.600**
4	Maize	Ha.	0.1	0	0	0	0	0	0	0	**0**
5	Cholam	Ha.	0.05	0	0	0	0	0	0	0	**0**
6	Ragi	Ha.	0.05	0	0	0	0	0	0	0	**0**
7	Minor Millets	Ha.	0.04	0	0	0	0	0	0	0	0
8	Pulses	Ha.	0.05	5	0	0	5	0.250	0	0	**0.250**
9	Oilseeds	Ha.	0.05	15	15	15	45	0.750	0.750	0.750	**2.250**
	IPT Demo. Total	**-**	**-**	**80**	**75**	**75**	**230**	**7.000**	**6.750**	**6.750**	**20.500**
B. Other Crop based Components [Involving more Women Farmers & addressing Climate Resilient Issues] :											
1	Farmers Field Schools (FFS)	Nos.	0.2	4	4	2	10	0.800	0.800	0.400	**2.000**
2	Promotion of IPM										
	a) IPM Villages	Nos.	0	0	0	0	0	0	0	0	**0.000**
	b)INM-Vermicompost (Silpaulin)	Nos.	0.06	0	0	0	0	0	0	0	**0.000**
9	SeedVillage a).Groundnut	Nos.	0.544	2	0	0	2	1.088	0	0	**1.088**
Other Crop based Components Total		-		**6**	**4**	**2**	**12**	**1.888**	**0.800**	**0.400**	**3.088**

C. Agricultural Implements:											
10	SRI-Conoweeder operation	Nos.	0.0125	30	30	30	90	0.375	0.375	0.375	1.125
	Agri. Implements Total	**-**	**-**	30	30	30	**90**	**0.375**	**0.375**	**0.375**	**1.125**
	Agri. Crop Based Components Total (A+B+C)	**-**	**-**					**9.263**	**7.925**	**7.525**	**24.713**
Institutional Strengthening - IEC & Capacity Building Trainings: [Encouraging More Women Farmers & addressing Climate Resilient Issues											
11	Trainings for SRI skills to 50 No. of Agriculture labours for 2 day Total cost : Rs.18,500/- x 1 Training	Nos.	0.185	1	-	-	1	0.185	-	-	**0.185**
12	Farmers training-50 Nos. for 1 day Total cost : Rs.21,000/- x 2 Trainings	Nos.	0.21	1	1	-	2	0.210	0.210	-	**0.420**
13	Extensional Personnel training-30 Nos. for 2 days Total cost : Rs.27,500/- x 1 Training	Nos.	0.275	1	-	-	1	0.275	-	-	**0.275**
14	IEC/CB activities [Field support, Sustainability etc., IEC & CB for the Crop Demos Conducted	Ha	0.0065	80	75	75	230	0.520	0.4875	0.4875	**1.495**
15	Documentation Charges for the Sub- basins	Nos.	0.1	1	0	0	1	0.100	-	-	**0.100**
II.	**IEC & CB Trainings Total**	**-**	**-**	**84**	**81**	**70**	**235**	**1.290**	**0.6975**	**0.4875**	**2.475**
	Grant total	**-**	**-**	**320**	**310**	**297**	**927**	**10.553**	**8.6225**	**8.0125**	**27.188**