Tamil Nadu Irrigated Agriculture Modernization Project
(TNIAMP)

Agriculture Department

DETAILED PROJECT REPORT

Sub-Basin Name: Manimukthanadhi

Kallakurichi

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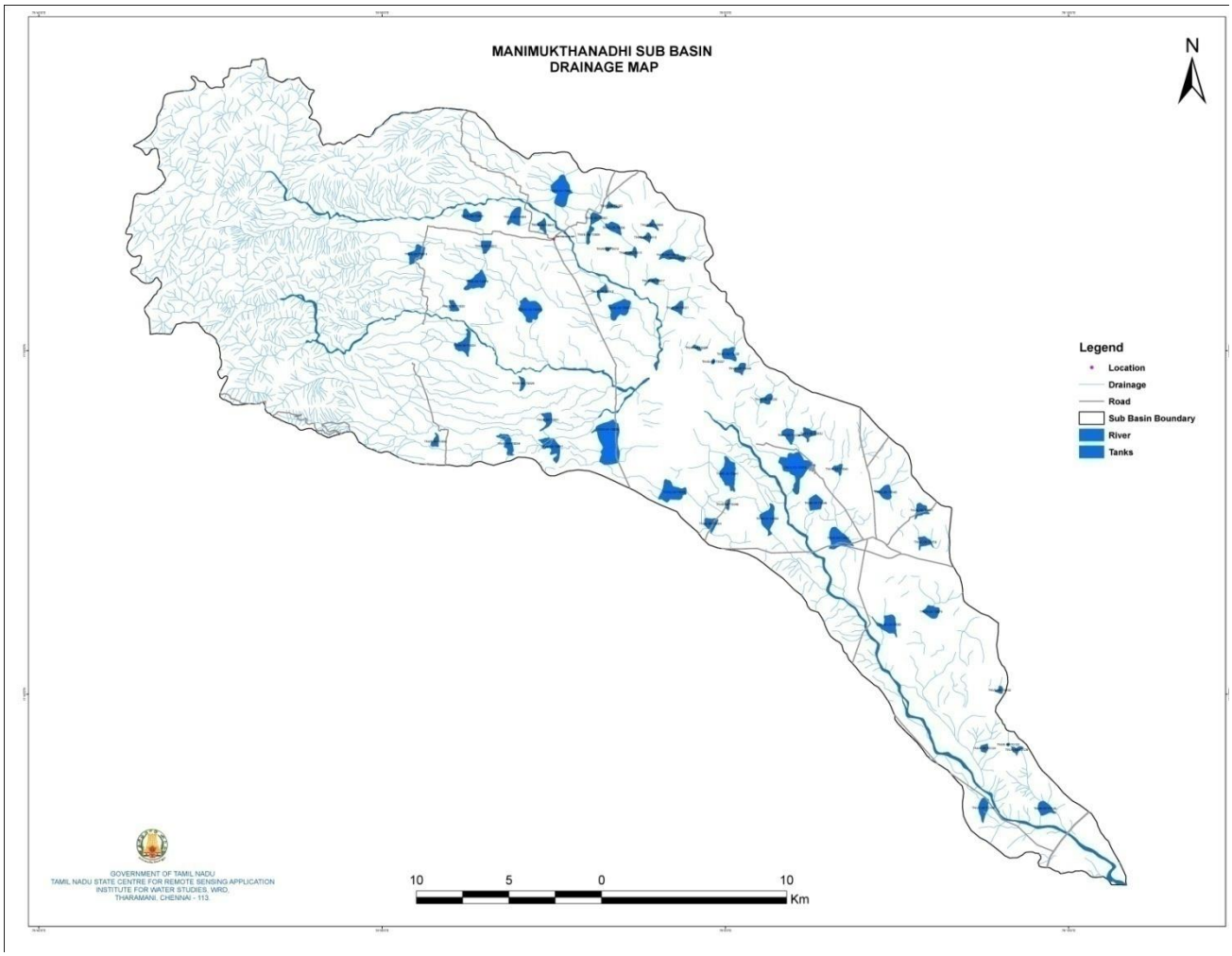
Joint Director of Agriculture,

Kallakuruchi

INDEX

Sl.No.	Particulars	Page No.
1	Sub Basin Map	3
2	Introduction and Description of Manimukthanadhi Sub Basin	4-8
3	Objectives, Implementation strategy and Existing crop scenario.	
4	Cropping Pattern, Villupuram and Cuddalore	
5	Area Production and Productivity of existing focus crops and constraints	
6	Details of walkthrough survey and Water walk survey.	
7	Interventions demanded by farmers and interventions finalized.	
8	Crop diversification and Area Production and Productivity of existing proposed crops	
9	Cost norms of interventions proposed with authority.	
10	Intervention-wise break up of cost norms	
11	Other crop based components	
12	Geo-tagging, Environmental and social safeguards, GRM	
13	IEC & Capacity Building activities, Expected outcome	
14	Interventions proposed for four years	
15	Blockwise physical split up details for interventions proposed for four years.	
16	Block-wise Financial split up details for interventions proposed for four years.	
17	Intervention wise cluster details for four years	

1. **Sub Basin Map**



2. INTRODUCTION

Agriculture is the heart beat of India and is the dominant sector in the Indian economy. Tamil Nadu depends largely on the surface and ground water potentials to the maximum limit and hence the future development and expansion depends only on the efficient and economical use of water potential and Resources.

The Government of Tamilnadu have taken number of progressive actions on Water Resources and Irrigation Management, for the modernization of the Traditional Irrigation systems in Tamilnadu with loan assistance from World Bank. Under the World Bank funded project of "Irrigated Agriculture Modernization and Water Resources Management", river sub basins have been selected and proposed to be taken up under the control of Water Resources Department Wing of Public Works Department of Tamilnadu. This Project is one among them in vellar Basin, ManimukthaNadhi Sub Basin phase III of TN-IAM Project.

The World Bank during the mission in October 2005 indicated that the irrigated modernization project should be taken as Irrigated Agricultural Modernization and Water Resources Management Project (IAMWARM). This multifaceted approach will not only increase the agricultural productivity, it will also expect to yield holistic benefits to the farm community. The IAMWARM project envisaged for Rehabilitation and Modernization of Irrigation Infrastructure in 106 sub basin out of 127 sub basin in Tamil Nadu. On successful completion of IAMWARM project, the follow on project TNIAMP was approved by World Bank. In this project, the Irrigation Infrastructure in remaining 21 sub basin out of 127 sub basins have been taken up for Rehabilitation and Modernization in the TNIAMP.

2.1 Description of the Vellar Basin

There are 17 major River basins in Tamil nadu. Vellar basin is one among them. Vellar river basin located in Salem, Villupuram, Perambalur, Ariyalur and Cuddalore districts of Tamil Nadu. The Vellar river originates in the Chitteri Hills ofDharmapuri District in the name of Anaimaduvu river and Thumbal river andSingipuram river are originates at Jallattu reserve forest area at 8 Km east ofSalem in Salem district and flows through Villupuram, Namakkal , Perambalurand Ariyalur District and Cuddalore District finally falls into the Bay of Bengal.The Vellar basin is situated between the coordinates of N latitude 110 13'-12000' and E Longitude 780 13' - 790 47'. The Vellar basin is bounded by Pennaiyarand Paravanar basins at north, Cauvery basin in the west & south the Bay of Bengal in the east. This basin has been divided into 7 sub-basins namely as follows;

1. Upper Vellar
2. Swethanadhi
3. Chinnar
4. Anaivariodai
5. Gomukhi nadhi.
6. Manimukthanadhi
7. Lower vellar.

2.2 Description of the Manimuktha Sub Basin

The basin originates in Kalryan hills with drainage Area of 749.54 Km having I two drainages namely Mani river and Muktha river originating in the Northern part of the eastern slope of the Kalrayn Hills in SankarapuramTaluk at an altitude of about40 km and the Muktha River flows for 32 km. These two rivers confluence Manimukthanadhi sub basin having18 Anicuts , 49 PWD tanks, and one Manimukthanadhi reservoir having the total Ayacut of 5027 Hectares. Average rainfall is 950mm in this sub basin.

2.3 Proposed Project area at a glance

Sl. No	Particulars	Area (Ha)
1	Total registered ayacut area	2834.21
2	Full irrigated area	1275.27
3	Partially irrigated area	1011.65
4	Gap area	547.29
	Total	**2834.21**

2.4 List of Blocks covered in Manimukthanadhi Sub Basin with Ayacut

Ayacut in ha.

District	Block	Taluk	Tanks		Anicut		Total Ayacut
			Nos.	Ayacut	Nos.	Ayacut	
Kallakurichi	Kallakurichi	Kallakurichi, Sankarapuram	5	716.86	3	11.34	728.20
	Sankarapuram	Sankarapuram	9	693.95	5	88.14	782.09

	Rishivandiyam	Sankarapuram	5	118.21	0	0	118.21
	Thiagadurgam	Kallakurichi, Sankarapuram	13	946.26	2	60.77	1007.03
	Chinnasalem	Kallakurichi	2	198.68	0	0	198.68
			34	**2673.96**	**10**	**160.25**	**2834.21**

In the Manimuktha Nadhi Sub Basin, 33 Tanks (33 Non – system Tanks) 31 Supply Channel and 11 Anicuts.

Tank Ayacut (33 Tanks) : 2356.96

AnicutAyacut (11 Anicuts) : 149.88

Total Ayacuts **2506.84 Ha.**

One tank namely Alathur tank left out in this proposal. Seshasamuthram anicut included in this proposal now which is left due to taken under Kudimaramath 2019-2020 because of the dispute between the ayacutdhars and work dropped and intimated to the Government. Hence it is included in this proposal. Ka.Alambalam tank is not taken in this proposal because it was taken under Kudimaramath scheme 2020-21 and administrative sanction approvel for Rs. 50 Lakhs. But the Ayacut included in this proposal for agricultural improvements related activities doing by Line departments.

The work Proposed in this Sub Basin, 34 Tanks (Non – system Tanks) 31 Supply Channel and 10 Anicuts.

Tank Ayacut (34 Tanks) : 2673.96 ha

Anicut Ayacut (10 Anicuts) : 160.25 ha

Total Ayacuts **2834.21Ha.**

2.5 Rainfall

Sl. No	Season	Normal Rainfall (mm)	Rainfall (2019)
1	Winter season	18.35	0
2	Summer season	47.18	34.59
3	South west monsoon	356.66	500.42
4	North East Monsoon	538.11	365.12
	Total	**960.3**	**900.13**

2.6 Season-wise focus crops

Though Paddy is the mainstay of farming, the other crops also are cultivated in considerable area in the Manimukthanadhi sub-basin

Sl.No	Season	Main crops cultivated
1	Summer season	Vegetables
2	South west monsoon	Paddy,Millets,Pulses,Oilseeds,
3	North east monsoon	Paddy,Millets,Pulses,Oilseeds,Bhendi,Brinjal,Chilli
4	Perennial	Fodder crops
5	Annual	Sugarcane,Banana,Tapioco

2.7 Soil types

The predominant soil types found in this sub-basin are

1. Inceptisol,
2. Alfisol,
3. Vertisol.

Inceptisol are suitable for growing crops like, Paddy, millets and pulses. Alfisol is the soil type that best suited for cultivation of Groundnut, Pulses, Vegetables, and coconut. Vertisol is suited for cultivating rainfed Pulses, Groundnut.

2.8 Irrigation sources – borewells and open wells

Sl.No	Blocks	Open well	Borewells
1	Kallakurichi	142	41
2	Sankarapuram	245	55
3	Rishivandiyam	142	39
4	Thiagadurgam	310	102
5	Chinnasalem	55	25
	Total	**894**	**262**

2.9 SHGs in the sub-basin

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

3	Rishivandiyam	1	Self Employment	1	Collective farming
4	Thiagadurgam	2	Self Employment	1	Collective farming
5	Chinnasalem	1	Self Employment	1	Collective farming
	Total				

2.10 Infrastructure available in the sub-basin

Sl.No	Infrastructure	Kalla-kurichi	Sankara puram	Rishivan-Diyam	Thiaga-durgam	Chinna-salem
1	Agricultural Extension Centres	2	2	2	2	2
2	Agri clinic centres	2	1	1	1	1
3	Private Inputs traders	35	12	10	9	5
4	Primary Agricultural Cooperative credit society	1	1	1	1	1
5	Regulated markets	1	1	-	-	-
6	Cold storage	1	-	-	-	-
7	Uzhavarshandai	1	-	-	-	-
8	Food Corporation of India Godown	-	-	-	-	-
9	Tamil Nadu Civil Supplies godown	-	-	-	-	-
10	Seed processing unit Govt	1	-	-	-	1
11	Seed processing unit private	1	1	-	-	-
12	Marketing committee godown	1	1	1	-	-
13	Private storage godown	1	-	-	-	-
14	Milk societies	1	1	1	2	1
15	Village sandhais	-	-	-	-	-
16	Machineries custom hiring centre	1	1	-	-	-

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, Millets, Pulses, Oilseeds, Sugarcane, Vegetables, Tapiaco are important crops cultivated in the sub-basin

6. Existing cropping system in the sub-basin

1. Paddy – Vegetables (chillies, onion, bhendi, brinjal)-Fruits(Watermelon)
2. Paddy –Millets/Pulses/Oilseeds.
3. Millets-Pulses/Oilseeds
4. Sugarcane/Tapioca

7. Details of Manimukthanadhi Sub Basin – Cropping Pattern-Kallakuruchi

Name of the sub Basin **: Manimukthanadhi**
Nodal District : Kallakuruchi
Registered Ayacut Area **: 2834.21**

Fully Irrigated : 1275.27 Ha
Partially Irrigated :1011.65 Ha
Gap : 547.29Ha
Total Ayacut Area : **2834.21** Ha

S. No.	Crop	Without Project				With Project				Increasing
		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	0	0	0	**0**	0	0	0	**0**	0
3	Guava	0	0	0	**0**	0	0	0	**0**	0
4	Casuarina	0	0	0	**0**	0	0	0	**0**	0
5	Fodder crops	10	0	0	**10**	44	0	0	**44**	34
	Total	**10**	**0**	**0**	**10**	**44**	**0**	**0**	**44**	34
II	**Annual Crop**									
1	Sugarcane	152	0	0	**152**	95	0	0	**95**	-57
2	Banana	0	0	0	**0**	0	0	0	**0**	0
3	Tapiaco	85	0	0	**85**	250	0	0	**250**	165
	Total	**237**	**0**	**0**	**237**	**345**	**0**	**0**	**345**	108

III	**1st crop**									
1. a	Paddy	886.27	0	0	**886.27**	131	0	0	**131**	-755.27
b	Paddy - SRI	85	0	0	**85**	710	0	0	**710**	625
2	Maize	0	255	0	**255**	345	0	0	**345**	90
3	Ragi	0	131	0	**131**	173	0	0	**173**	42
4	Minor Millets	0	82	0	**82**	120	0	0	**120**	38
5	Pulses	0	363.65	0	**363.65**	528.21	0	0	**528.21**	164.56
6	Groundnut	0	135	0	**135**	169	0	0	**169**	34
7	Gingelly	0	45	0	**45**	62	0	0	**62**	17
8	Bhendi	21	0	0	**21**	51	0	0	**51**	30
9	Brinjal	5	0	0	**5**	15	0	0	**15**	10
10	Chillies (Green)	10	0	0	**10**	20	0	0	**20**	10
11	Snake gourd	5	0	0	**5**	20	0	0	**20**	15
12	Bitter gourd	1	0	0	**1**	16	0	0	**16**	15
13	Small Onion	10	0	0	**10**	65	0	0	**65**	55
14	Watermelon	5	0	0	**5**	20	0	0	**20**	15
15	Fallow	0	0	547.29	**547.29**	0	0	0	**0**	-547.29
16	Non Agrl. Purposes	0	0	0	**0**	0	0	0	**0**	0
	Total	**1028.3**	**1011.65**	**547.29**	**2587.21**	**2445.21**	**0**	**0**	**2445.21**	-142
	G. Total (I+II+III)	**1275.27**	**1011.65**	**547.29**	**2834.21**	**2834.21**	**0**	**0**	**2834.21**	0

S. No.	Crop	Without Project				With Project				Increasing
		FI	PI	RF/G	TOTAL	FI	PI	RF/G	TOTAL	
IV	**2 nd crop**									
1. a	Paddy	210	0	0	**210**	110	0	0	**110**	-100
b	Paddy - SRI	65	0	0	**65**	485	0	0	**485**	420
2	Maize	0	0	0	**0**	0	0	0	**0**	0
3	Ragi	0	0	0	**0**	0	0	0	**0**	0
4	Minor Millets	0	0	0	**0**	0	0	0	**0**	0
5	Pulses	0	155	0	**155**	316	0	0	**316**	161
6	Groundnut	0	0	0	**0**	0	0	0	**0**	0
	Total	**275**	**155**	**0**	**430**	**911**	**0**	**0**	**911**	481
V	**3rd crop**									
1. a	Paddy	205	0	0	**205**	95	0	0	**95**	-110
b	Paddy - SRI	55	0	0	**55**	463	0	0	**463**	408
2	Maize	0	0	0	**0**	0	0	0	**0**	0
3	Ragi	0	0	0	**0**	0	0	0	**0**	0
4	Minor Millets	0	0	0	**0**	0	0	0	**0**	0
5	Pulses	0	0	0	**0**	0	0	0	**0**	0
6	Groundnut	0	0	0	**0**	0	0	0	**0**	0
	Total	**260**	**0**	**0**	**260**	**558**	**0**	**0**	**558**	298
	Grand Total	**1810.3**	**1166.65**	**547.29**	**3524.2**	**4303.2**	**0**	**0**	**4303.21**	779
	Cropping Intensity				**146%**				**178%**	32%

8. Area, Production and productivity of existing focus crops

S.No	Crops	Area (Ha)	Production (MT)	Productivity (MT/ha)
1	Paddy	1506	**6250**	4.15
2	Blackgram	518	**337**	0.65
3	Maize	255	**1326**	5.2
4	Groundnut	135	**311**	2.3
	Total	**2414**	**8224**	**12.3**

9. Existing constraints, challenges and countermeasures.

Constraints	Challenges	Counter measures
Lack of quality planting materials		Supply of certified seeds of agricultural crops
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 Community approach in farming	Lack of awareness	Farmer's field school on seed to seed crop production technologies
Market rejection of produces due to Pesticide residue problems	Lack of awareness	Adoption of eco-friendly practices
Residues management	lack of organized way of management	Supply of vermin-compost 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 eco-friendly inputs	Supply of bio inputs like Pseudomonas, Biofertilizers like *Azospirillum, Phosphobacteria, Rhizobium*

10. Details of Walkthrough survey

MEETING CONDUCTED BY NODAL OFFICER WITH

LINE DEPARTMENTS ON 21.05.2020



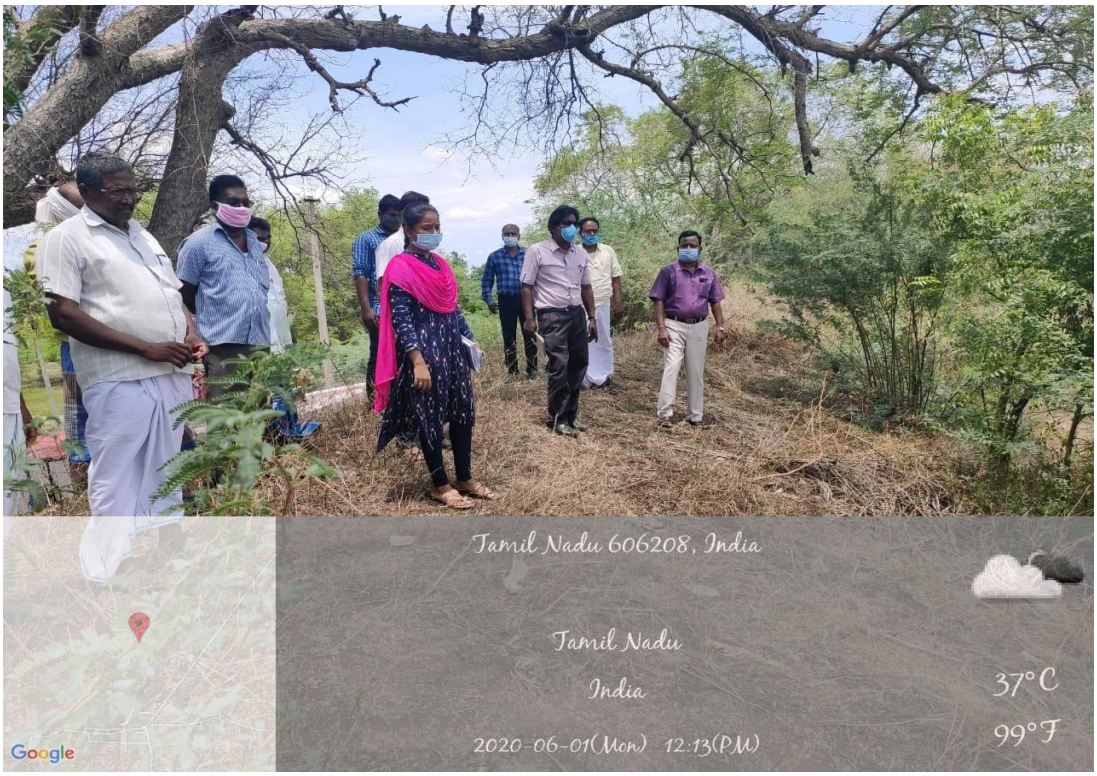


11. Details of Water Walk and Walk through Survey with date and photos etc.

WALK THROUGH SURVEY TO THANDALAI VILLAGE ON 01.06.2020



WALK THROUGH SURVEY TO ALATHUR VILLAGE ON 01.06.2020



WALK THROUGH SURVEY TO PERUVANGUR VILLAGE ON 01.06.2020



WALK THROUGH SURVEY TO THIYAGAI VILLAGE ON 02.06.2020



WALK THROUGH SURVEY TO UDHAYAMAMPATTU VILLAGE ON 02.06.2020



WALK THROUGH SURVEY TO PALLAGACHERRY VILLAGE ON 05.06.2020



WALK THROUGH SURVEY TO PALLAGACHERRY VILLAGE ON 05.06.2020



12. Interventions demanded by farmers

1. Green Manure Crop - SRI - Rice Fallow Pulses (3 Crop Sequence)
2. Maize
3. Ragi
4. Minor Millets(Tenai)
5. Pulses(Blackgram)
6. Oilseeds (Groundnut)
7. Farmers Field Schools (FFS) and Sustainability
8. INM–Vermi compost (Silpaulin) Units (@ 5 Nos./Village) dovetailing with IPM Villages
9. Seed Village - a. Pulses
    - b.Groundnut
    - c.Greenmanure
10. Power conoweeding
11. Trainings for SRI skills to 50 No. of Agriculture labourers for 2 day Total cost : Rs.18,500/- x 1 Training
12. Farmers training-50 Nos. for 1 day Total cost : Rs.21,000/- x 1 Trainings
13. Extensional Personnel training-30 Nos. for 2 days Total cost : Rs.27,500/- x 1 Training
14. IEC/CB activities [Field support, Sustainability etc., IEC & CB for 408 demos] for the Crop Demos Conducted
15. Documentation Charges for the Sub- basins

13. Interventions finalized

a. Green Manure Crop - SRI - Rice Fallow Pulses (3 Crop Sequence)
b. Maize
c. Ragi
d. Minor Millets(Tenai)
e. Pulses(Blackgram)
f. Oilseeds (Groundnut)
g. Farmers Field Schools (FFS) and Sustainability
h. INM–Vermi compost (Silpaulin) Units (@ 5 Nos./Village) dovetailing with IPM Villages
i. Seed Village - a. Pulses
    i. b.Groundnut
    ii. c.Greenmanure
j. Power conoweeding
k. Trainings for SRI skills to 50 No. of Agriculture labours for 2 day Total cost : Rs.18,500/- x 1 Training
l. Farmers training-50 Nos. for 1 day Total cost : Rs.21,000/- x 1 Training
m. Extensional Personnel training-30 Nos. for 2 days Total cost : Rs.27,500/- x 1 Training
n. 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. Crop diversification

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

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

1 . Maize:

The area of the maize has been increased from 255 Ha to 345 Ha in the proposed cropping pattern. Hence there is an increase of 90 Ha in Maize crop.

2. Ragi: The area of the Ragi has been increased from 131 Ha to 171 Ha in the proposed cropping pattern.

3. Minor Millets: The area of the Minor millets has been increased from 82 Ha to 120 Ha in the proposed cropping pattern.

4. Pulses: Under the Pulses there is an increase of 844 Ha. from the existing area of 518 Ha. in garden land pulses. It is proposed to increase rice fallow pulses area by the tune of 45 Ha.

5. Oil seed crops (Groundnut):

The Groundnut area has been increased from 135 Ha. to 169 Ha. in the proposed cropping pattern. Hence, there is an additional area of 34 Ha under Groundnut crop.

16. Area, production and productivity of proposed crops.

S.No	Crops	Area (ha)	Production (MT)	Productivity (MT/ha)
1	Paddy	1994	9771	4.9
2	Blackgram	844	768	0.91
3	Maize	345	2329	6.75
4	Groundnut	169	439	2.6
	Total	**3352**	**13307**	

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	Maize	Rs. 10000 per Ha	Assistant Director of Agriculture
3	Ragi	Rs. 5000 per Ha	Assistant Director of Agriculture

4	Minor Millets(Tenai)	Rs. 4000 per Ha	Assistant Director of Agriculture
5	Pulses(Blackgram)	Rs. 5000 per Ha	Assistant Director of Agriculture
6	Oilseeds (Groundnut)	Rs. 5000 per Ha	Assistant Director of Agriculture
7	Farmers Field Schools (FFS) and Sustainability	Rs. 20000 per No	Assistant Director of Agriculture
8	IPM Village	Rs. 100000 per No	Assistant Director of Agriculture
9	INM–Vermi compost (Silpaulin) Units (@ 5 Nos./Village) dovetailing with IPM Villages	Rs. 6000 per No	Assistant Director of Agriculture
10	Seed Village - a. Pulses	Rs. 54400 per group	Assistant Director of Agriculture
11	b.Groundnut	Rs. 54400 per group	Assistant Director of Agriculture
12	c.Greenmanure	Rs. 54400 per group	Assistant Director of Agriculture
13	Power conoweeding	Rs. 1250 per Ha	Assistant Director of Agriculture
14	Trainings for SRI skills to 50 No. of Agriculture labours for 2 day Total cost : Rs.18,500/- x 1 Training	Rs. 18500 per training	Assistant Director of Agriculture
15	Farmers training-50 Nos. for 1 day Total cost : Rs.21,000/- x 1 Trainings	Rs. 21000 per training	Assistant Director of Agriculture
16	Extensional Personnel training-30 Nos. for 2 days Total cost : Rs.27,500/- x 1 Training	Rs. 27500 per training	Assistant Director of Agriculture
17	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
18	Documentation Charges for the Sub-basins	Rs. 10000 per sub-basin	Assistant Director of Agriculture

18. Intervention-wise break up of cost norms

Productivity Enhancement in Paddy (IPT Demos: 180 Ha)

In this sub- basin there is scope for improving the productivity to bridge the yield gap (1.0 - 1.2 MT / Ha) both in first and second seasons (Samba and Navarai). The DoA will conduct 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 mode, and also suggesting suitable interventions viz., Introduction of three crop sequence of Green Manure – SRI Paddy – Rice Fallow Pulses.

Growing green manure crops especially for their organic matter and ability to improve the soil fertility to augment to supply of requires nutrients. Green manuring is demonstrated preceding to SRI crop to supply the required nutrients through the in-situ incorporation.

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.

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. In this relay cropping sequence sowing of pulses is being followed before/after the harvest of SRI Paddy, under CA system (zero till). The rice fallow pulses are effectively utilizing the available residual moisture and nutrients after the harvest of the rice crop. It enhances the soil fertility status for the next crops due to nitrogen fixation.

Sl.No	Technology	Area (ha)	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	IPT Demo. Of Green Manure Crop - SRI - Rice Fallow Pulses (3 Crop Sequence)	180	0.100	18.000

Unit Cost - SRI Crop Demonstration:

a) Green Manure

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

b) SRI [Paddy]

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	LS	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**	

Rice Fallow Pulses

Sl. No	Particulars	Unit Cost (Rs. / Kg)	Amount (Rs.)
1	Seed cost with seed treatment components - 20 Kg / Ha	100	2000
	Total		**Rs.2,000**

II. Improved Production Technology Crop Demos through Crop Diversification:

1.Promotion of Hybrid Maize production (IPT Demos: 40 Ha.):

In the river basins, Maize crop is grown mostly with varieties, Now, it is proposed to shift from variety to hybrids in the Maize crop so as to increase the yield potential by conducting IPT Maize Crop Demos and suggest suitable interventions viz..

a. Usage of high quality, high yielding hybrid seeds.

b. Crop Diversification of Paddy area during second season especially to Maize to increase water productivity by minimizing water requirement.

c. Spraying with Maize Growth promoter (TNAU promoter) - Maize Maxim

d. Adopting the latest innovative technologies

Sl. No	Technology	Area (ha)	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	IPT Demo. of Maize	40	0.10	4.00

Unit Cost – Maize:

Sl. No	Particulars	Unit Cost (Rs. / Kg)	Amount (Rs.)
1	Seed Cost @ 15Kg/Ha.	320	4800
2	Cost of Fertilizers(150:75:75 kg/NPK/Ha		1980
3	Cost of Biofertilizers-Azospirillum & Phosphobacteria@10 nos each	10/Packet (200gm each)	200
4	Seed Treatment with *Beauveria bassiana* 10g/kg	200g/ha	75
5	Raising border crops either sunflower or cowpea or sesame (2-3 rows around Maize)		500
6	Monitoring with Pheromone trap @ 12Nos/ha and @ 36 sex lures /ha (at monthly interval)	Rs.62.50 & Rs.27.80	1750
7	Spraying with *Metarhizium anisopiliae* on 20days after sowing @ 4kg/ha	400	1600
8	2nd spray with azadirachtin 1% @1000ml/ha		1700
		Total Cost	**12605**
	Assistance Restricted to Rs.10000/-		

2. Stabilizing the area under Ragi and Minor Millets:

(IPT Demos: a. Ragi 24 Ha. and b.Minor Millets 32 Ha.)

The area of cultivation of Minor millets viz. Ragi (Finger Millet), Samai (Little Millet), Varagu (Kodo Millet), Pani Varagu (Proso Millet), Thenai (Fox Tail Millet) and Kuthiraivaali (Barnyard Millet) has come down by 50 per cent in three decades. Millets are healthy food irrespective of the age group. Hence, it is proposed to stabilize the depleting area under Minor Millets, The DoA would analyse the constraints in each sub-basin by conducting Improved Production Technology Minor Millets Crop Demonstrations and suggest suitable interventions viz..

a. Usage of high quality, high yielding variety seeds, adapting the technologies viz., Integrated Nutrient Management (INM), Integrated Weed Management and Integrated Water Management (IWM) – including the use of Drought Mitigation Substances, Integrated Pest Management (IPM).

b. Diversification of Paddy area during second season especially to Minor Millets to increase water productivity by minimizing water requirement.

Sl.No	Technology	Area (ha)	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	IPT Demo. of Ragi	24	0.050	1.200
2	IPT Demo. of Minor Millets(Tenai)	32	0.040	1.280

Unit Cost - Ragi (Finger Millet)

Sl.No	Particulars	Unit Cost (Rs. / Kg)	Amount (Rs.)
1	Cost of soil testing	20	20
2	Seed cost with seed treating components 5 kgs	75	375
3	Fertilizer cost - (60:30:30 kg N P K ha^{-1})		
	i) Urea -130 kg	6	780
	ii) Super phosphate-188 kg	9	1,692
	iii) Muriate of potash-50 kg	16	800
4	Foliar application of nutrients 2 % DAP-10 kg	29	290
5	Bio-fertilizer-10 packet	20	200
6	IPM - Plant protection charges	1,000	1,000
	Total Cost	**Rs. 5,157 (Assistance Restricted to) Rs.5,000**	

Unit Cost-Minor Millets(Tenai)

Sl.No	Particulars	Unit Cost (Rs. / Kg)	Amount (Rs.)

1	Cost of Soil testing	20	20
2	Seed cost with seed treating components 12.5 kgs	85	1,063
3	Fertilizer cost - (44:22:0 kg N P K ha^{-1})		
	i) Urea -96 kg	6	576
	ii) Super phosphate-138 kg	9	1242
4	Foliar application of nutrients 2 % DAP-10 kg	29	290
5	Cost of Bio fertilizer-10 packet	20	200
6	IPM - Plant protection charges		800
	Total Cost	**Rs. 4,191 (Assistance Restricted to) Rs.4,000**	

3. Promotion of Pulses Production (IPT Demos: 96 Ha.):

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 MNMixture
25:50:25: 10 5
e. Productivity enhancement 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	96	0.050	4.800

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	Pulses wonder 2 Kg/Ha.	220	440
4	Fertilizer: i.. DAP 20 Kg. / Ha	29	725
5	IPM - Plant protection charges	1,000	1,000
	Total Cost	**Rs. 5,185 (Assistance Restricted to) Rs.5000**	

4. Revival of Oilseeds cultivation (IPT Demos: 20 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 under irrigated conditions. 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.

a. Usage of high yielding certified seeds of varieties.

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

c. Application of Gypsum in Groundnut and Manganese Sulphate in Gingelly.

Sl.No	Technology	Area (ha)	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	IPT Demo. of Oilseeds	20	0.050	1.000

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
	iv. 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**	

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.

Sl.No	Technology	Nos.	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	Farm Schools	15	0.200	3.000

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. a. IPM–Integrated Pest Management Villages:

- The Project aims at transfer of an elite, novel, low cost and eco-friendly pest management technology like Ecological Engineering, Agro-Eco System analysis (AESA) based Plant Health Management.
- To promote the "On farm Production" techniques especially for bio control agents.
- The Bio-control agents are excellent alternatives for chemical pesticides besides being eco friendly and farmers friendly.
- On farm production and augmentation of *Trichoderma viride, Trichogramma*sp and reduvid bugs" will be taken up by selected Farmers group / clusters.

Sl.No	Technology	Nos.	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	Integrated Pest Management Villages	2	1.0	2.000

Unit Cost

Sl.No.	Name of the content	Production Cost/Unit. (Rs.)
1	On farm Production of*Trichoderma viridi*/fruit fly trap / Vermicomposting (heap method)	58,700

2	On farm Production of *Trichogramma* sp.	14,000
3	On farm Production of Reduvid bugs, Adoption of Ecological Engineering based PHM and AESA based IPM	18,550
4	Farmers training (with in district)	5,000
5	Farmers training at NIPHM Hyderabad(other state)	11,250
	Total	**1,07,500(Restricted to) Rs.1,00,000**

2.b. INM–Vermi compost (Silpaulin) Units @ 5 Nos./ Village[dovetailing with IPM Villages]:

- The farmers in the IPM Villages are to be demonstrated by growing green manure crops and
- Also with the production of Vermi compost with 5 units./ Village, so as to make them trained for production of organic manures for their use
- As well as other needy farmers also, spreading the concept.

Sl.No	Technology	Nos.	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	Vermi compost (Silpaulin) Units	10	0.060	0.600

Sl. No	Particulars	Unit Cost (Rs. / Kg)	Amount (Rs.)
1	Capital cost - Vermi bag (12' x 4' x 3')	2,000	2,000
2	Cost of earth worms -10 Kg	150	1,500
3	Cost of Poles (60' length with 1½" Dia) and Shade net (60 Sq.ft.)	750	750
4	Cost of FYM (1.5 MT)	1,170	1,750
5	Capacity Building activities (Funds to be transferred to TNAU)	1,000	1,000
	Total Cost	**Rs. 7,000 (Restricted to) Rs.6,000**	

3. Seed Village Programme for Pulses, Groundnut &Green manure seeds:

- The farmers may be encouraged to produce the seeds required for their villages on their own especially for the crops viz., Pulses, Oilseeds and Green manure seeds 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	Pulses	4	0.544	2.176
2	Groundnut	4	0.544	2.176
3	Green manure	2	0.544	1.088
	TOTAL	**10**	**0.544**	**5.440**

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:

Manimukthanadhi Sub basin is having a drainage area of about 749.54 sqkm falling in Kallakuruchi,Chinnasalem, Thiyagadurgam,Rishivandium and Sankarapuram Blocks in Kallakuruchi,Sankarapuram and Chinnasalem Taluks in Kallakuruchi District. The Manimukthanadhi Sub Basin is located between the N Latitude 110 13'12000' and E Longitude 780 13'-790 47'.

The sub basin originates in Kalvarayan hills with two drainages namely Mani river and Muktha river originating in the Northeren part of the eastern slope of Kalvarayan Hills in Sankarapuram Taluk at an altitude of about 40 km and the Muktha river flows for 32 Km.These two rivers confluence Manimuktha Nadhi sub basin having 18 Anicuts,49 PWD Tanks. This basin consists of 37 villages with the total population of 5.60 lakhs among males are 2.85 lakh and females are 2.75 lakh. The rural literacy level of this basin is 70.50 %. It involves 122000 house holdings among this 24400 house holdings are farming families in which small and marginal farmers are 70% and 30% respectively and women land holders around 5%. The major irrigation sources of this basin are bore well and tank well.

Stakeholder Consultations and Feedback:

Walk-through Survey:

Walkthrough surveys were conducted through 34 villages situated in Kallakuruchi Manimukthanadhi Sub basin during the month of May and 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 1231 public people from farming and allied sector participated and shared their views and expectations. Regarding WRD, 34 PWD tanks, 10 *anicuts* and supply channels for a total length of 73.12 km in Manimukthanadhi Sub basin were selected and proposed for rehabilitation under TNIAMP Phase III. Interaction with farmers was made for improving agriculture and allied activities.

A. Awareness Meetings:

The awareness meeting has been conducted in 34 villages and around 1231 public people from farming and allied sectors were participated and shared their views and expectations.

B. 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, Vermi-composting, 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 maize, 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 vermin compost, 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:

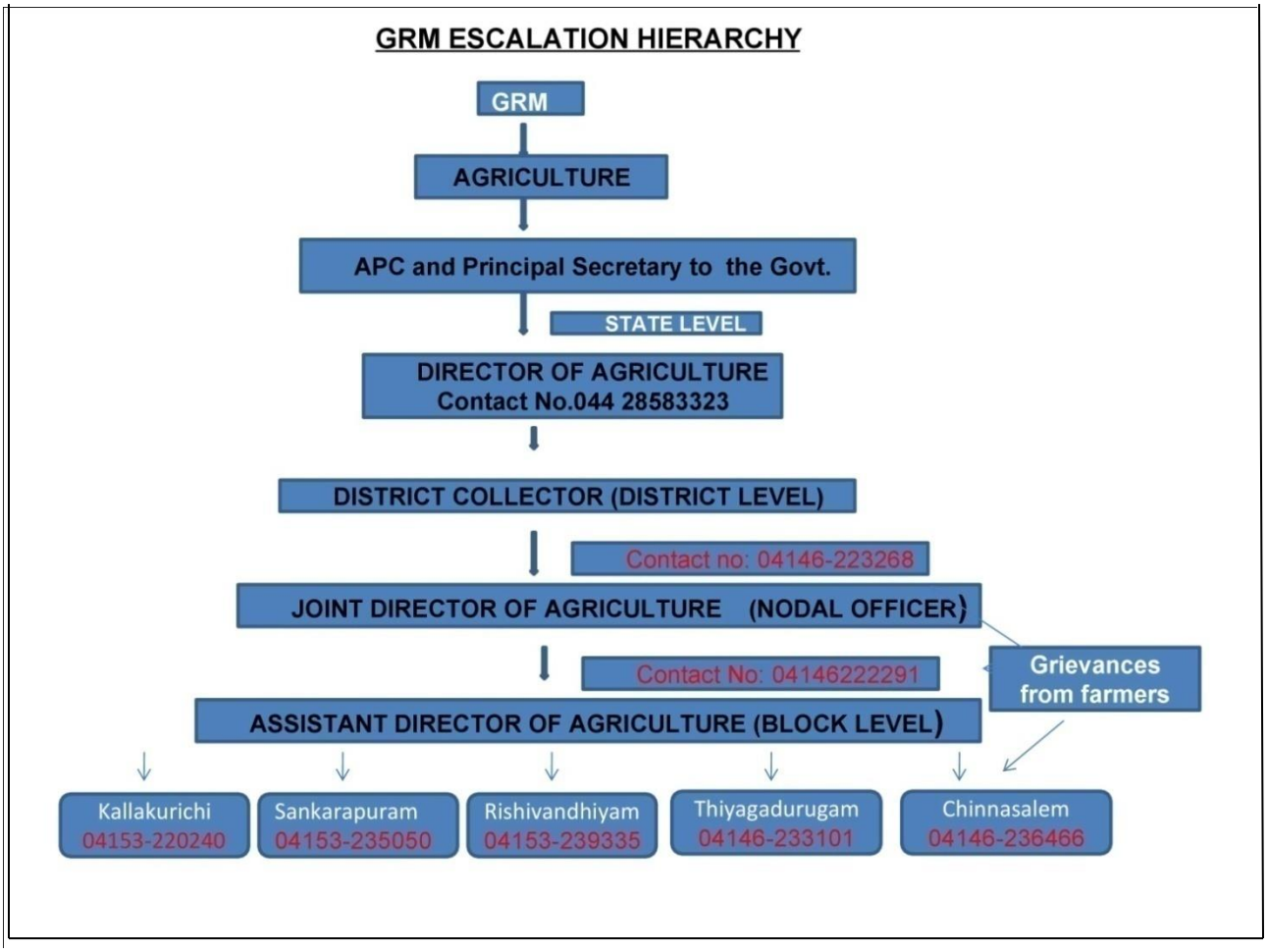
Gender mainstreaming plays a vital role in water management and agriculture allied activities. In gender concerns, about **20% representation** would be given **to women farmers** while selecting the beneficiary farmers.To enhance women participation in the project, women farmers will be informed and 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%.

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.



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

1. General	
1.1. Name of the villages in sub-basin	Peruvangur, Thandalai, Thirukkanangur, Ka.Alambalam, Alathur, Kumarapalayam, Chittalur, Kalayanallur, Koothakudi, Pallagacheri, Prithvimangalam, Udayanatchi, Vadathorasalur, Kudiyanallur, Ninaiyur, Sithathur, Thiyagai, Udamampattu, Chellampattu, Kosapadi Manjapthur, Pandalam, Poottai, Sembarampattu, Urangani, Vadachettiyandal, Panaiyankaal, Seshasamuthiram, Kallerikuppam, Palaya Siruvangur, Palaya Korakachandal, Pallipattu, Velanmandal, Kachirayapalayam, Vadakkanandhal
1.2. Population	560000
1.3. Village falls under command area of	Tank and bore well
1.4. Area under irrigation (Ha)	2286.92 Ha.
2. Agriculture	
2.1. Major Crops Present	Paddy, Black gram, Ground nut, Maize,Ragi and Sugarcane
2.2. Cropping pattern	Crop-rotation- Paddy-Pulses/Millets, Paddy-Groundnut
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- 80% Micro-irrigation systems-10%		
3.4. Water User Associations (i) Existing (ii) Functional (iii) No. of members	Yes- 34 tanks WUA 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 Bio pesticides like Neem oil, T.Viride and Pseudomonas	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, IPM Villages-on farm production of bio agents and seed village groups.	
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.	Yes	Promotion of IPM villages and production of bio-agents.	

20. Grievance redressal mechanism (GRM)

Wide publicity will be made in each revenue villages where project will be implemented for farmers to lodge complaints to address their problems in a timely manner to Assistant Director of Agriculture and Joint Director of Agriculture.

21. 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 for 2 days	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**

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

In the sub-basins, the total Crop based demonstrations to be conducted are 392Ha, 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 of Rs. 2.648 Lakh.

Sl.No	IEC & Capacity Building – Change Management Trainings	Nos.	Unit Cost L.Rs.	Budget (Rs. In lakh)
1	IEC/CB activities [Field support, Sustainability etc., IEC & CB for the Crop Demos Conducted	392	0.0065	2.548
2	Documentation Charges for the Sub-basins	1	0.100	0.100
				2.648

EXPECTED OUTCOME OF THE PROJECT:

1. Entire sub basin area is expected to be brought under irrigated condition with effective usage of water with diversified cropping pattern.

2. Soil health will be enhanced with balanced usage of fertilizers, bio – fertilizers and green manure seeds along with reduction in cost of cultivation and enhanced productivity. Crop residue management not only helps us to rebuild soil fertility but also to reduce pollution.

3. Ecological balance will be sustained which will reduce pest incidences and pesticide usage.

4. Crop diversification will pave way for climate resilient agriculture and also avoids market glut and price reduction

5. Reduced labour usage by adopting farm mechanization will help farmers to reduce cost of cultivation, timely operation and to increase the income level.

6. Value addition with multiple processing machines will help farmers to improve the product value and there by income. Value addition enhances shelf life of products and there by farmers can store and sell the products based on demand to get maximum possible price.

7. Capacity building trainings to extension functionaries, farmers and farm labourers will improve water productivity.

MANIMUKTHANADHI SUB BASIN Component wise Physical and Financial Requirement-Kallakuruchi District

Sl. No.	Name of the component	Unit	Unit Cost L.Rs.	Project Activities					Financial in Lakh Rs				
				I Year	II Year	III Year	IV Year	Total	I Year	II Year	III Year	IV 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.	0.020	45	45	45	45	180	0.900	0.900	0.900	0.900	**3.600**
2	SRI	Ha.	0.060	45	45	45	45	180	2.700	2.700	2.700	2.700	**10.800**
3	Rice Fallow Pulses	Ha.	0.020	45	45	45	45	180	0.900	0.900	0.900	0.900	**3.600**
4	Maize	Ha.	0.100	10	10	10	10	40	1.000	1.000	1.000	1.000	**4.000**
5	Cholam	Ha.	0.050	0	0	0	0	0	0.000	0.000	0.000	0.000	**0.000**
6	Ragi	Ha.	0.050	6	6	6	6	24	0.300	0.300	0.300	0.300	**1.200**
7	Minor Millets	Ha.	0.040	8	8	8	8	32	0.320	0.320	0.320	0.320	**1.280**
8	Pulses	Ha.	0.050	24	24	24	24	96	1.200	1.200	1.200	1.200	**4.800**
9	Oilseeds	Ha.	0.050	5	5	5	5	20	0.250	0.250	0.250	0.250	**1.000**
	IPT Demo. Total	**-**	**-**	**98**	**98**	**98**	**98**	**392**	**7.570**	**7.570**	**7.570**	**7.570**	**30.280**
B. Other Crop based Components [Involving more Women Farmers & addressing Climate Resilient Issues] :													
1	Farmers Field Schools (FFS)	Nos.	0.200	15	0	0	0	15	3.000	0.000	0.000	0.000	**3.000**
2	Promotion of IPM												
	a) IPM Villages	Nos.	1.000	2	0	0	0	2	2.000	0.000	0.000	0.000	**2.000**
	b)INM-Vermicompost (Silpaulin)	Nos.	0.060	10	0	0	0	10	0.600	0.000	0.000	0.000	**0.600**
9	Seed Village - a. Pulses	Nos.	0.544	4	0	0	0	4	2.176	0.000	0.000	0.000	**2.176**
	b.Groundnut	Nos.	0.544	4	0	0		4	2.176	0.000	0.000	0.000	**2.176**
	c. Green Manure	Nos.	0.544	2	0	0	0	2	1.088	0.000	0.000	0.000	**1.088**
	Other Crop based Components Total	-		**37**				**37**	**11.040**	**0.000**	**0.000**	**0.000**	**11.040**

Sl. No.	Name of the component	Unit	Unit Cost L.Rs.	Project Activities					Financial in Lakh Rs				
				I Year	II Year	III Year	IV Year	Total	I Year	II Year	III Year	IV Year	Total
C. Agricultural Implements:													
10	SRI-Conoweeding operation	Ha.	0.0125	24	22	22	22	90	**0.3**	**0.275**	**0.275**	**0.275**	**1.125**
	Agri. Implements Total	**-**	**-**	24	22	22	22	90	**0.3**	**0.275**	**0.275**	**0.275**	**1.125**
	Agri. Crop Based Components Total (A+B+C)	**-**	**-**						**18.91**	**7.845**	**7.845**	**7.845**	**42.445**
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.	0.1850	1				1	0.185				**0.185**
12	Farmers training-50 Nos. for 1 day Total cost : Rs.21,000/- x 2 Trainings	Nos.	0.2100	2				2	0.420				**0.420**
13	Extensional Personnel training-30 Nos. for 2 days Total cost : Rs.27,500/- x 1 Training	Nos.	0.2750	1				1	0.275				**0.275**
14	IEC/CB activities [Field support, Sustainability etc., IEC & CB for the Crop Demos Conducted	Ha	0.0065	98	98	98	98	392	0.637	0.637	0.637	0.637	**2.548**
15	Documentation Charges for the Sub- basins	Nos.	0.1000	1				1	0.100				**0.100**
II.	**IEC & CB Trainings Total**	**-**	**-**	**103**	**98**	**98**	**98**	**412**	**1.617**	**0.637**	**0.637**	**0.637**	**3.528**
	Grant total	**-**	**-**	**350**	**308**	**308**	**308**	**1274**	**20.527**	**8.482**	**8.482**	**8.482**	**45.973**

26.a. Block-wise physical split up details for interventions proposed for 4 years

SL. No	Block	Ayacut area (Ha)	GM(Ha)	SRI(Ha)	RFP(Ha)	Maize (Ha)	Ragi(Ha)	Minor millets (Ha)	Pulses (Ha)	Groundnut (Ha)	FFS (Nos)	IPM Vilge	Vermiunit (Nos)	Seed villages pulses	Seed villages Groundnut	Seed villages Green manure	Power cono-weeding (Ha)	SRI skill training	Farmer training	Extension personnel training	IEC/CB	Documen-tation
1	Kallakuruchi	728.2	40	40	40	8	8	7	20	4	3	0	0	1	0	1	20	0	0	0	95	0
2	Thiyagadurgam	1007.03	50	50	50	14	8	9	32	7	5	1	5	1	1	1	25	1	1	1	120	1
3	Sankarapuram	782.09	40	40	40	8	8	7	20	4	3	1	5	1	1	0	20	0	1	0	85	0
4	Rishivandium	118.21	20	20	20	4	0	4	12	2	2	0	0	0	1	0	10	0	0	0	40	0
5	Chinnasalem	198.68	30	30	30	6	0	5	12	3	2	0	0	1	1	0	15	0	0	0	52	0
	Total	**2834.21**	**180**	**180**	**180**	**40**	**24**	**32**	**96**	**20**	**15**	**2**	**10**	**4**	**4**	**2**	**90**	**1**	**2**	**1**	**392**	**1**

26.b.Block-wise Financial split up details for interventions proposed for 4 years (Amount in L.Rs)

SL. NO	Block	Ayacut area (Ha)	GM(Ha)	SRI(Ha)	RFP(Ha)	Maize (Ha)	Ragi(Ha)	Minor millets (Ha)	Pulses (Ha)	Groundnut (Ha)	FFS (Nos)	IPM Vilge	Vermiunit (Nos)	Seed villages pulses	Seed villages Groundnut	Seed villages Green manure	Power cono-weeding (Ha)	SRI skill training	Farmer training	Extension personnel training	IEC/CB	Documentation	Total
1	Kallakuruchi	728.2	0.8	2.4	0.8	0.8	0.4	0.28	1	0.2	0.6	0	0	0.544	0	0.544	0.25	0	0.21	0	0.566	0	**9.394**
2	Thiyagadurgam	1007.03	1	3	1	1.4	0.4	0.36	1.6	0.35	1	1	0.3	0.544	0.544	0.544	0.3125	0.185	0.21	0.275	0.78	0.1	**14.9045**
3	Sankarapuram	782.09	0.8	2.4	0.8	0.8	0.4	0.28	1	0.2	0.6	1	0.3	0.544	0.544	0	0.25	0	0	0	0.566	0	**10.484**
4	Rishivandium	118.21	0.4	1.2	0.4	0.4	0	0.16	0.6	0.1	0.4	0	0	0	0.544	0	0.125	0	0	0	0.273	0	**4.602**
5	Chinnasalem	198.68	0.6	1.8	0.6	0.6	0	0.2	0.6	0.15	0.4	0	0	0.544	0.544	0	0.1875	0	0	0	0.364	0	**6.5895**
	Grand Total	**2834.21**	**3.6**	**10.8**	**3.6**	**4**	**1.2**	**1.28**	**4.8**	**1**	**3**	**2**	**0.6**	**2.176**	**2.176**	**1.088**	**1.125**	**0.185**	**0.42**	**0.275**	**2.549**	**0.1**	**45.973**

27. Intervention wise cluster details

Enclosed in Annexure.

Joint Director Of Agriculture

Kallakuruchi