TN – IAMWARM PROJECT

VAIPPAR MAIN RIVER SUB BASIN

WATER RESOURCE DEPARTMENT

1. WATER RESOURCES DEPARTMENT

1.1 INTRODUCTION

1.1. INTRODUCTION

1.1 GENERAL:

Agriculture is the dominant sector in the Indian economy. Tamil Nadu, which is supposed to be the next state to Rajasthan in average annual rain fall depends largely on the surface water irrigation as well as ground water irrigation. The state has used the surface and ground water potential to the maximum limit and hence the future development and expansion depends only on the efficient and economical use of water potential and resources available.

To achieve the water use efficiency it is necessary to improve and upgrade the existing conveyance system and also to introduce modern irrigation methods.

With the above objectives a comprehensive programme has been proposed with Multi disciplinary approach.

1.2 DESCRIPTION OF THE VAIPPAR BASIN:

The Vaippar river Basin is one of the Major river basins in Tamil Nadu having a drainage area of 5423 Sqkm. It is bounded by Vaigai basin and western ghats on the western side, Tamarabarani and Kallar river basin on southern side and Gundar river basin on northern side. The basin area is covered in 4 districts namely Virudhunagar 68%, Thoothukudi 20% Madurai 7% and Thirunelveli 5%. The length of the Vaippar river is 112 kms finally it debouches in to Gulf of Mannar.

This basin has been divided into 13 sub-basins namely as follows:

1. Nichabhanadhi
2. Kalinkalar
3. Deviar
4. Nagariyar
5. Sevalperiyar
6. Kayalkudiyar
7. Vallampatti odai
8. Sindaplli Uppodai
9. Arjunanadhi

10. Gowshiganadhi
11. Uppathurar
12. Senkottaiyar
13. Vaippar Main

1.3.DESCRIPTION VAIPPAR MAIN RIVER SUB BASIN

The Main river Vaippar Sub Basin includes the Tanks and Tank group entering in to Vaippar (or) Surplus flows into Vaippar river. The river attains the name Vaippar only after the confluence of Deviar with Nichabanadhi. After this confluence and joining of Kayalkudiyar Vembakottai reservoir and Irukkankudi Reservoir has been constructed from where the river has got a well defined course. It traverses in Sathur taluk of Virudhunagar District, Ettayapuram and Vilathikulam taluk of Thoothukudi District. The basin area of the main river course also lies in the above taluks. Arjuanadhi and Senkottaiyar are the two tributaries which join in the left flank of the river. Similarly Vallampatti Odai and Uppathur join in the right flank of the river. The river finally confluences in Gulf of Mannar near Vaippar village in Thoothukudi District.

There are two reservoirs and three anicuts across this river. The Vembakottai reservoir is constructed in the head reach just above the confluence of Kayalkudiyar of this river with a capacity 22.5 MCM (797 Mcft) to feed 3280 ha of dry land and Irukkankudi reservoir is under construction across Vaippar just after the confluence of Arjuanadhi with Vaippar. The capacity of the reservoir is 14.14 MCM (500 Mcft) and its command area is 3787 ha of irrigated dry crops.

Sankaranatham anicut is the next cross masonry work across this river after Vembakottai reservoir. This anicut is constructed after the confluence of Vallampatty Odai with Vaippar. The registered ayacut under the anicut is 239.17 Ha.

There is one anicut called Nenmeni anicut, which is recently constructed across Vaippar. This anicut is situated just about 2 Km downstream of the Irukkankudi reservoir site having an ayacut of 169.57 Ha..

Athangarai anicut is the last anicut across Vaippar. It is constructed after the confluence of Senkottaiyar with Vaippar. The registered ayacut under this anicut is 910.15 Ha. Below Athangarai Anicut there are a number of small streams and surplus water of rainfed tanks falling on either side of Vaippar flows to the sea. The number of rainfed tanks

and registered ayacut in this portion is about 20 and 2689.54 ha respectively. Sathur and Vilathikulam are the major towns in this basin.

This sub basin consists only plain and the total drainage area of the main course is 797 Sq. km. This basin area is very flat especially from Athangarai anicut to the sea as the confluence point of the river to the sea lies in this portion. The system ayacut under 2 tanks is (Keelanattukurichi and Vadamalapuram Tank) 143.28 ha and rainfed ayacut (under non system 20 tanks) is 2689.54 ha and the total ayacut is 2832.82 Ha.

Kovilpatti, Vilathikulam, Sivakasi and Sathur are the four rainfall stations which have got influential effect on this basin. Out of these, the influential area of Vilathikulam rainfall stations in 83.6% of the total area of the sub basin.

Ayacut Details

Virudhunagar District:

Sivakasi Taluk	:	180.91
Sattur Talk	:	739.95
Sub Total	:	920.86 Ha

Thoothukudi District:

Ettayapuram Taluk	:	1114.68
Vilathikulam Taluk	:	797.28
Sub Total		1911.96 Ha
Total		2832.82 Ha

CLUSTER WISE / INFRASTRUCTURE WISE / VILLAGE WISE

CONVERGENT TABLE

CLUSTER -1 VAIPPAR MAIN RIVER – SUB BASIN

Sl.No.	Name of the cluster/ Infrastructure/ Village	Total Ayacut (Ha)			Total Area (Ha)			WRO	
		FI	PI	Gap	Wop	WP	Gap	Act	No
1	Vembakkottai Tank	49.63	4.000	30.14	53.63.0			Bund RC/Slu Re/We	4420m 2No 1No
2	Pandiyan Tank	9.65	7.88	31.82	17.530			Bund Re/Slu Re/We	2310m 3No 1No
3	Alagapuri tank	0.00	26.840	20.95	26.840			Bund Rc/Slu Re/We	1463m 1No 1No
		59.28	38.72	82.91	98.00			Bund Re/Slu RC/Slu Re/We	8193m 3No 3No 3No

CLUSTER WISE / INFRASTRUCTURE WISE / VILLAGE WISE

CONVERGENT TABLE

CLUSTER -2 VAIPPAR MAIN RIVER – SUB BASIN

Sl.No.	Name of the cluster/ Infrastructure/ Village	Total Ayacut (Ha)			Total Area (Ha)			WRO	
		FI	PI	Gap	Wop	WP	Gap	Act	No
1	O.Mettupatti	1.01	38.98	15.28	39.99			Bund Re/Slu Re/We	1650m 2No 1No
2	Pethureddiyapatti	1.560	31.160	15.04	32.720			Bund Re/Slu Re/We	1000m 2No 1No
3	Subramaniyapuram	-	27.47	16.68	27.470			Bund Re/Slu Re/We	1650m 2No 1No
4	Kollapatti Periyakulam	214.975	4.410	19.845	219.385			Bund Re/We Re/Ani	4650m 1No 1No
5	Nenmeni	164.480	5.32	-	169.700			Bund RC/Slu Re/We Re/Ani	5500m 5No 1No 1No
6	Mudithalai	10.020	28.765	7.35	38.790			Bund RC/Slu Re/We	3100m 1No 3No
7	Ayyampatti	12.260	4.85	120.59	17.110			Bund Re/Slu Re/We	3400m 4No 1No
		404.305	140.955	194.785	545.165			Bund Re/Slu RC/Slu Re/We Re/Ani	20950m 10No 6No 9No 2No

CLUSTER WISE / INFRASTRUCTURE WISE / VILLAGE WISE

CONVERGENT TABLE

CLUSTER -3 VAIPPAR MAIN RIVER – SUB BASIN

Sl.No.	Name of the cluster/ Infrastructure/ Village	Total Ayacut (Ha)			Total Area (Ha)			WRO	
		FI	PI	Gap	Wop	WP	Gap	Act	No
1	Keelanattukurichi	17.34.5	25.62	78.46.50	42.965			Bund Re/Slu RC/Slu Re/We	3400m 1No 1No 1No
2	Arunachalapuram	11.78.0	-	59.04.0	11.780			Bund Re/Slu Re/We	2200m 2No 1No
3	Vadamalapuram	5.22.0	11.53	5.10.0	16.75			Bund Re/Slu Re/We	1150m 1No 1No
4	Nambipuram	81.33.50	54.01	163.80.5	135.34.5			Bund Re/Slu RC/Slu Re/We Re/Sur Esc Re/Ani	4000m 4No 2No 1No 2No 1No
5	Sindalakarai	0.49.0	11.88.5	90.00.5	12.37.5			Bund Re/Slu Re/We	1800m 3No 1No
		116.17.0	103.04.5	396.41.5	219.21.50			Bund Re/Slu RC/Slu Re/We Re/Sur Esc Re/Ani	12550m 11No 4No 4No 2No 1No

CLUSTER WISE / INFRASTRUCTURE WISE / VILLAGE WISE

CONVERGENT TABLE

CLUSTER -4 VAIPPAR MAIN RIVER – SUB BASIN

Sl.No.	Name of the cluster/ Infrastructure/ Village	Total Ayacut (Ha)			Total Area (Ha)			WRO	
		FI	PI	Gap	Wop	WP	Gap	Act	No
1	Arunkulam	1.25.0	28.50.0	18.41	29.75.0			Bund Re/We	1500m 1No
2	Padanthapuli	-	33.45.0	20.45	33.45.0			Bund Re/Slu RC/Slu Re/We	1180m 1No 1No 1No
3	T.Pudupatti	-	379.44.50	65.70.50	379.44.50			Bund Re/Slu Re/We	2250m 2No 1No
		1.25.0	441.39.5	104.56.50	442.64.50			Bund Re/Slu RC/Slu Re/We	4930m 5No 1No 3No

CLUSTER WISE / INFRASTRUCTURE WISE / VILLAGE WISE

CONVERGENT TABLE

CLUSTER -5 VAIPPAR MAIN RIVER – SUB BASIN

Sl.No.	Name of the cluster/ Infrastructure/ Village	Total Ayacut (Ha)			Total Area (Ha)			WRO	
		FI	PI	Gap	Wop	WP	Gap	Act	No
1	Vilathikulam	9.035	63.15.0	10.77.50	72.185			Bund Re/HeSlu Re/Ani	2650m 1No 1No
2	M.Jegaveerapuram	-	35.65.0	31.58.0	35.65.0			Bund Re/Slu Re/We	2150m 3No 1No
3	Thathaneri	5.03	125.83.0	273.82	130.86			Bund Re/Slu RC/HeSlu Re/We	5883m 5No 1No 1No
4	Melmandai	40.87.0	94.57.0	58.81	135.44			Bund RC/Slu Re/We	8168m 2No 2No
		54.93.5	319.20.0	374.98.5	374.13.5			Bund Re/Slu RC/Slu Re/We Re/HeSlu Re/Ani	18851m 5No 2No 3No 2No 1No

CONVERGENT TABLE- ABSTRACT (FOR EACH CLUSTER)

VAIPPAR MAIN RIVER – SUB BASIN

Sl.No.	Name of the cluster/ Infrastructure/ Village	Total Ayacut (Ha)			Total Area (Ha)			WRO	
		FI	PI	Gap	Wop	WP	Gap	Act	No
1	Cluster 1	59.28	38.72	82.91	98.00			Bund Re/Slu RC/Slu Re/We	8193m 3No 3No 3No
2	Cluster 2	404.305	140.955	194.785	545.165			Bund Re/Slu RC/Slu Re/We Re/Ani	20950m 10No 6No 9No 2No
3	Cluster 3	116.17.0	103.04.5	396.41.5	219.21.50			Bund Re/Slu RC/Slu Re/We Re/Sur Esc Re/Ani	12550m 11No 4No 4No 2No 1No
4	Cluster 4	1.25.0	441.39.5	104.56.50	442.64.50			Bund Re/Slu RC/Slu Re/We	4930m 5No 1No 3No
5	Cluster 5	54.93.50	319.20.0	374.98.50	374.13.50			Bund Re/Slu RC/Slu Re/We Re/HeSlu Re/Ani	18851m 5No 2No 3No 2No 1No
	Total	635.940	1043.315	1153.660	1679.160			Bund Re/Slu RC/Slu Re/We Re/HeSlu Re/Sur Esc Re/Ani	65474m 34No 16No 23No 2No 2No 4No

1.2 HYDROLOGY

VAIPPAR MAIN RIVER BASIN

1.2. HYDROLOGY

1.2.1. CATCHMENT AREA:

The catchment area of this Sub Basin is 797 Sq km. This Sub Basin receives rain fall from North – East monsoon. During summer, the rain fall received is more or less equal to that of south – West monsoon. There are 20 No of non system tanks and 2 No of System tanks under the control of WRD with a total registered ayacut of 2832.82 Ha.

1.2.2. HYDROMETROLOGY:

The weather data observed at Kavalur water shed, maintained by the Chief Engineer, WRD, State Ground Water and Surface Water Resources Data Centre, Chennai is used for analysis, since long term data is available.

1.2.3 RAIN FALL:

There are four influencing rain fall station in this Sub Basin namely Sivakasi , Sattur, Kovilpatti, Vilathikulam,. The mean arial annual rainfall of this sub basin 708 mm. The south – West monsoon rainfall is 117mm and that of North- East monsoon rainfall is 373 mm. Remaining 218 mm of rainfall is in winter and summer seasons.

1.2.4 CLIMATE:

The annual temperature varies from 23.94°C to 34.89°C The average mean temperature is 29.41°C.

RELATIVE HUMIDITY:

The average relative humidity is 62.47%

WIND SPEED:

The average wind speed is 4.75km/hour. Increase in wind speed occurs during the cyclone which occurs mostly in November.

SUN SHINE:

The average sun shine hours is 7.29 hours per day.

1.2.5. SOIL CLASSIFICATION:

Soils classification maps have been prepared in 1996 by the National Bureau of Soil Survey and Land use Planning, Bangalore (NBSS) in co operation with the Department of Agriculture of Tamil Nadu. Based on this, the predominant soil order found in this Sub Basin, are Inceptisol, Alfisol, and vetisols.

1.2.6 LAND HOLDINGS:

More than 85.6 % of the land holdings are below 1 Ha followed by 9.5 % of land holding with 1 to 2 Ha size medium farmers having 2 to 5 ha are 3.8% and big farmers contributes to 1.10% only. The total Nos of land holdings is 13800.

Category	Size of Holdings	Numbers	% to total
Marginal	Below 1.00 ha	11813	85.6
Small	1.00 – 2.00 ha	1311	9.5
Medium	2.00 – 5.00 ha	3533	12.70
Big	5.00 ha & above	1086	3.90
	TOTAL	13800	100.00

1.2.7.DEMOGRAPHY:

There are five blocks lying partially in this Sub Basin. They are Sattur and Venbakkottai Blocks of Virudhunagar District and Pudur and Vilathikulam Blocks of Thoothukudi District. The population details were obtained from the Director of Statistics , Chennai are used for calculation of domestic water requirement.

Name of sub basin	Total number of blocks	Total number of villages	Population		
			2004	2010	2025
Vaippar main river Sub Basin	4	24	215102	231976	280605

1.2.8 WATER POTENTIAL:

Surface Water Potential : 59.41 M Cum

Ground Water Potential : 49.66 M Cum

Total : 109.07 M Cum

TANKS MAINTAINED BY PANCHAYAT UNION IN VAIPPAR MAIN RIVER SUB BASIN – VIRUDHUNAGAR DISTRICT

Sl No	Name of village	Name of tank	Ayacut in Ha
1	Kottaipatti Kanmai	Kottaipatti	14.94
2	Panduvarpatti Kanmai	Panduvarpatti	21.04
3	Patandhal Kanmai	Patandhal	35.61
4	Soorankudi Kanmai	Nadusoorankudi	26.39
5	Soorankudi Kanmai	Kanmai Soorankudi	18.13
6	Chadrapatti Old Tank	Chadrapatti	18.03
7	Chadrapatti New Tank	Chadrapatti	17.4
8	Kosavankulam Tank	Nenmeni	2.04
9	Sinduvapatti Tank	Sinduvapatti	16.18
			169.76

Tanks Maintained by Panchayat Union in Vaippar Main River Sub Basin in Thoothukudi District.

Sl.No	Name of Tank	Name of Village	**Ayacut(in Ha)**
1	Mottaiyanendal	M.Shummugapuram	38.87
2	Veppankulam	M.Shummugapuram	10.93
3	M.Senkulam	Melmandai	28.34
4	Pallakulam (West)	Pallakulam	31.17
5	Pallakulam (Eest)	Pallakulam	18.85
6	Kalaikuttam	Vaippar	23.74
7	V.Senkulam	Vaippar	7.69
8	Nochikulam	Melmandai	20.24
9	Poyyankulam	Melmandai	9.27
10	Sambakulam	Melmandai	38.87
11	Sippikulam	Vaippar	3.39
12	Thulukkankulam	Vaippar	14.57
13	Ariyanakipuram	Ariyanakipuram	38.77
14	Eswaravadiammal Tank	M.Karisalkulam	16.75
15	Bommaiyankulam Tank	Ayanbommaiyapuram	4.45
16	Vedapatti Kulam	Vedapatti	20.2
17	Arasankualm	Puliyankulam	6.17
18	Puliyankulam	Puliyankulam	13.38
19	Periakulam	Muthulapuram	8.39
20	Ayansengalpadai	Ayansengalpadai	21.54
21	Marthandanpatti Tank	Marthandanpatti	28.07
			403.65.00

Water requirement - 6 Acres / MCFT for wet crops

Water requirement – 14 Acres / MCFT for dry crops

Water requirement for PWD Tanks – Wet crops (643.78 Ha or 1590.78 Ac)	:	265.13 Mcft or 7.52 Mcum
Water requirement for PWD Tanks – Dry crops (1035.39 Ha or 2558.45 Ac)	:	182.75 Mcft or 5.18 Mcum
Water requirement for PU Tanks – wet crops (30 tanks – 573.41 Ha or 1416.90 Ac)	:	101.21 Mcft or 2.87 Mcum
Total water requirement – Pre Project	:	549.09 Mcft or 15.56 Mcum

Vaippar Main River Sub Basin

CROPPING PATTERN (Without Project and With Project)

Season	Crops	Without Project				With Project			
		FI	PI	GAP	Total	FI	PI	GAP	Total
Perennial crop	Coconut (Drip)								
	Sapotta (Drip)								
	Total								
Annual crop	Sugarcane								
	Banana								
	Total								
Crop I Sep-Jan	Paddy	635.950			635.95	622.00			622.00
	Cholam		87.93		87.93				
	Cotton		72.75		72.75	50.00			50.00
	Cumbu		15.10		15.10				
	Maize		190.50		190.50	400.00			400.00
	Sun Flower		28.14		28.14	100.14			100.14
	Chillies		160.23		160.23	450.23			450.23
	Pulses		480.74		480.74	519.75			519.75
	Bhendi	7.830			7.83	74.00			74.00
	Senna	0.000				40.00			40.00
	Fodder cholam	0.000				10.00			10.00
	Tomoto	0.000							
	Prosopis			566.70				566.70	566.70
	Fallow/Gap			586.95					
	Total	**643.780**	**1035.39**	**1153.65**	**2832.82**	**2266.12**		**566.70**	**2832.82**
	Sub total								
Crop II Fep-Apr	Cotton					20.00			20.00
	Maize					170.00			170.00
	Pulses					250.00			250.00
	Sun Flower					20.00			20.00
	Total					**460.00**		**566.70**	**460.00**
G.Total	**Grand Total**	**643.780**	**1035.39**	**1153.65**	**2832.82**	**2726.12**			**3292.82**
Cropping Intensity					**59.28%**				**96.23%**

1.2.12:LIVE STOCK- POPULATION:

Name Of Sub Basin	White & Black cattle	Sheep & Goats	Pigs	Others	Poultry
Vaippar main river Sub Basin	30068	98046	2458	3423	89060
Monthly Requirement.	99.22	52.94	3.69	18.56	0.53

1.2.13 INDUSTRIES & MONTHLY WATER DEMAND in Mcum:

Name of sub basin	Medium Industries			Small Industries			Water Requirement		
	1994	2009	2024	1994	2009	2024	1994	2009	2024
Vaippar main river Sub Basin				1770	5616	17815	0.27	0.84	2.66

1.2.14 CROP WATER REQUIREMENT WITHOUT PROJECT :

Vaippar main river Sub Basin

Crop water requirement without Project.

Name of Crop		Area in Ha	Crop water requirement in mm	Total Crop water requirement in Mcum	Irrigation water requirement at source n=0.43	Total Irrigation requirement in Mcum
	Coconut					
	Bendy	7.83	500	0.04	0.09	0.09
	Sunflower	28.14	300	0.08	0.19	0.19
I Crop	Paddy	635.95	780	4.96	11.53	11.53
	Cholam	87.93	300	0.26	0.60	0.60
	Cumbu	15.1	300	0.05	0.12	0.12
	Maize	190.5	550	1.05	2.44	2.44
	Pulses	480.74	293	1.41	3.28	3.28
	Cotton	72.75	400	0.29	0.67	0.67
	Chillies	160.23	500	0.80	1.86	1.86
	Prosapis	586.95	-	-	-	
	Gap Area	566.70	-	-	-	
	Total	**2832.82**		**8.94**		**20.78**

Water Potential

Surface Water Potential(Mcm)	=	59.41
Ground Water Potential (Mcm)	=	49.66
Total Potential (Mcm)	**=**	**109.07**

Water Demand without Project

Domestic	(Mcm)	=	3.48
Livestock	(Mcm)	=	2.63
Industrial	(Mcm)	=	2.33
Irrigation	WRO	=	20.78
	PU & GW	=	3.41
Total Water Demand (Mcm)		**=**	**32.63**

Water Balance(Mcm)	=	**76.44**

1.2.15 CROP WATER REQUIREMENT WITH PROJECT :

Sl.No.	Name of Crop		Extent in Ha.	Crop Water Requirement		Irrigation Water Efficiency			Total MCM
				mm	MCM	Surface water 0.53	Drip 0.8	Sprinkler 0.7	
I PERENNIAL CROPS									
1	Coconut	SFI							
	Total								
II ANNUAL CROPS									
1	Banana	SFI							
	Total								
II	**I Crop**								
1	Paddy		622.00	780	4.85	9.15			9.15
2	Sunflower		100.14	300	0.3	0.57			0.57
3	Bhendy		74.00	500	0.37	0.70			0.70
4	Maize	SFI	400.00	550	2.20	4.15			4.15
5	Pulses	SFI	519.75	293	1.52	2.87			2.87
6	Cotton		50.00	400	0.2	0.38			0.38
7	Chillies	SFI	450.23	500	2.25	4.25			4.25
		DRIP							
8	Chenna	SFI	40.00	293	0.12	0.23			0.23
		SPRINKLER							
9	Fodder		10.00	30	0.03	0.06			0.06
	Total		**2266.12**			**22.36**			**22.36**
III	**II Crops**								
1	cotton		20.00	400	0.08	0.15			0.20
2	Sunflower		20.00	300	0.06	0.11			0.26
3	Maize		170.00	550	0.94	1.77			0.42
4	Pulses		250.00	293	0.73	1.38			0.50
5	Bhendi	SFI							0.20
		SPRINKLER							0.16
	Total		**460.00**			**3.41**			**3.41**
	Grand Total		**2726.12**			**25.77**			**25.77**

Water Potential			
Surface Water Potential(Mcm)		=	59.41
Ground Water Potential (Mcm)		=	46.66
Total Potential (Mcm)		**=**	**109.07**
Water Demand without Project			
Domestic	(Mcm)	=	3.48
Livestock	(Mcm)	=	2.63
Industrial	(Mcm)	=	2.33
Irrigation	WRO	=	25.77
	PU & GW	=	3.41
Total Water Demand (Mcm)		**=**	**37.62**
Water Balance(Mcm)		=	**71.45**

1.3 HYDRAULICS OF THE COMPONENTS

HYDRAULIC PARTICULARS
VAIPPAR MAIN RIVER – SUB BASIN

a) ANICUT

Sl.No	Name of Anicut	Village	Ayacut (Ha)	Length of Anicut(M)	Crest level of Anicut (M)	Front (M)	Free Sq.km	Combined Sq.km	Maximum flood discharge Cumecs/ Cusecs	Head sluice Location	Vent(M)	Sill Level sluice (M)	Discharge cumecs	Supply Channel					Remarks
														Length (m)	Bed width (M)	FSD (M)	Bed slope	Sluice	
1	Sankara natham	Sankara natham	239.17	271.34	+55.080	+67.00	304.53	1757.77	49840 C/s	Right Bank of Anicut	4	64.00	9.34	7600	11	2	1in 1000	-	-
2	Nenmani	Periya Kollapatti	169.57	730	+30.000	+31.50	21.42	1728	51435 C/s	Right side	2 vents	55.62	2.718	2750	6	2	1 in 1000	-	-
3	Athangarai Anicut	Athangarai	910.15	333.10m	+18.70	+21.64m	81.92	4561.92	91066 Cusecs	Athangarai LS '0' m	3 Nos 1.83x 1.22m	+17.31	7.08	7400	6.10	1.20	1.2000		
4	Nalli Uppodai Anicut	Tholmalai patti	121.11	60m	+38.60	+40.40	33.82	267.01	360 C/s	LS '0' m Tholmalaipatti	2 No 1.85 X 1.90	37.30	200/ Cs	5200m	6.00 m	1m	1.2000		

b) TANKS (System Tanks)

Sl. No	District	Taluk	Name of Tank	Ayacut in Ha	Capacity in Mcft	Number of Fillings	Free catchment in SqKm	Combined Catchment in Sq.Km	Water spread area(Sq.Km)	FTL in M	MWL in M	No.of Sluices	Nos and Length of weir (m)		Discharge in Cusecs	Length of bund (M)	Length of Supply Channel (M)	Upper Tank	Lower Tank
													Nos	Length in m					
1			Keelanattukurichi	121.43	23.38	2	18.25	18.25	24.83	20.000	20.910	3	2	33.00	1650	3400	-	-	Vadamalapuram
2			Vadamalapuram	21.85	4.70	2	10.82	10.82	0.21	30.000	30.600	1	1	38.00	1429	1150	-	Keelanattukurichi	

b) TANKS (Non System Tanks)

Sl. No	District	Taluk	Name of Tank	Ayacut in Ha	Capacity in Mcft	Number of Fillings	Free catchment in SqKm	Combined Catchment in Sq.Km	Water spread area(Sq.Km)	FTL in M	MWL in M	No.of Sluices	Nos and Length of weir (m)		Discharge in Cusecs	Length of bund (M)	Length of Supply Channel (M)	Upper Tank	Lower Tank
													Nos	Length in m					
1	Viruthunagar	Sivakasi	Vembakkottai Tank	83.77	30.90	1	5.2318	5.2318	1.02	90.98	91.74	2	1	30.02	1135	4420	1590	Nil	Pandiyan Tank
2			Pandiyan Tank	49.35	44.55	1	15.36	23.22	1.056	89.98	90.59	3	1	69.65	1964	2310	850	Vembakkottai	Nil
3			Alagapuri tank	47.79	14.00	2	4.90	4.90	0.19	58.000	58.600	2	1	38.1	1462	1463	2600	Nil	Nil
4		Sattur	O.Mettupatti Tank	55.27	6.37	1	1.94	1.94	0.19	97.100	97.700	2	1	21.00		1650	1850	Nil	Nil
5			Pethureddipatti Tank	47.76	3.93	1	3.9	9.98	1.3	46.700	47.300	2	1	65.00	2477	1000	2800	Nil	Subramaniyapuram New Tank
6			Subramaniya puram New Tank	44.15	4.54	1	4.54	8.44	0.071	99.600	100.200	2	1	96.10	3690	1650	1100	Pethureddipatti Tank	Ayyampatti Tank

Sl. No	District	Taluk	Name of Tank	Ayacut in Ha	Capacity in Mcft	Number of Fillings	Free catchment in SqKm	Combined Catchment in Sq.Km	Water spread area(Sq.Km)	FTL in M	MWL in M	No.of Sluices	Nos and Length of weir (m)		Discharge in Cusecs	Length of bund (M)	Length of Supply Channel (M)	Upper Tank	Lower Tank
													Nos	Length in m					
7.	Virudhunagar	Sattur	Ayyampatti Tank	137.7	29	1	14.16	14.16	0.932	50.325	50.925	4	1	46.00	3049	3400	2400	Subramaniya puram New Tank	Nil
8.			Mudithalai Tank	46.14	35.4	2	2.3	4.6	1.07	48.930	49.530	1	3	44.34		3100	2500	Nenmani Tank	Nil
9.			Kollapatti Big Tank	239.23	97.8	2	9.23	16.14	2.391	59.495	60.095	5	1	110.00	2834	4650	7600	Nil	Nenmani Tank
10			Nenmeni Tank	169.70	109.8	2	4	4.2	4.316	56.000	56.600	5	1	54	1040	5500	2750	Kollapatti Big Tank	Mudithalai Tank

Sl. No	District	Taluk	Name of Tank	Ayacut in Ha	Capacity in Mcft	Number of Fillings	Free catchment in SqKm	Combined Catchment in Sq.Km	Water spread area(Sq.Km)	FTL in M	MWL in M	No.of Sluices	Nos and Length of weir (m)		Discharge in Cusecs	Length of bund (M)	Length of Supply Channel (M)	Upper Tank	Lower Tank
													Nos	Length in m					
11	Thoothukudi	Ettayapuram Vilathikulam	Padanthapuli puli	53.90	16.430	2	18.43	18.43	0.35	100.80	101.70	2	1	52.00	1906	1180	-	Nil	T.Pudupatti
12			T.Pudupatti	445.15	57.320	2	134.96	134.96	3.31	48.860	49.770	2	1	80.77	6015	2250	-	Sindalakarai Tank Padanthapuli tank	Vaippar river
13			Arunkulam	48.16	17.60	2	10.23	10.23	0.35	31.400	32.00	2	1	31.00	1.250	1500	-	Nil	Vaippar river
14			Melmandai	194.25	30.58	2	13.24	41.09	2.39	6.400	7.000	3	2	92.30	8725	8168	6450	Vilathikulam	M.
15			Thathaneri	404.68	79.39	2	27.85	27.85	3.95	13.720	14.320	5	1	79.30	2461	5883	9360	Vilathikulam tank	
16			M.Jegaveerapu ram	67.23	16.60	2	16.91	16.91		99.700	100.300	3	1	38.50		2150	-	Nil	Vaippar River

Sl. No	District	Taluk	Name of Tank	Ayacut in Ha	Capacity in Mcft	Number of Fillings	Free catchment in SqKm	Combined Catchment in Sq.Km	Water spread area(Sq.Km)	FTL in M	MWL in M	No.of Sluices	Nos and Length of weir (m)		Discharge in Cusecs	Length of bund (M)	Length of Supply Channel (M)	Upper Tank	Lower Tank
													Nos	Length in m					
17	Thoothukudi	Ettayapuram	Vilathikulam	82.96	24.58	2	18.18	18.18	1.43	15.140	15.740	3	3	101.50	2192	3650	7400	Nil	Thathaneri
18			Arunachalapuram	70.82	15.62	2	39.35	39.35	0.51	25.900	26.500	2	1	62.00	2505	2200	-		Vaippar river
19			Nambipuram	299.15	99.49	2	44.21	44.21	1.87	37.745	38.345	6	1	22.40	1835	4000	5200	-	Vaippar river
20			Sindalakarai	102.38	25.30	2	37.30	37.30	0.55	104.70	105.61	3	1	83.50	2960	1800	-	-	T.Pudupatti

C) SUPPLY CHANNELS HAVING DIRECT AYACUT

VAIPPAR MAIN RIVER – SUB BASIN

Sl. No.	Name of supply channel	Start Point		End Point		Length in metres	Bed width	Bed slope	Side slope	MFD	Depth of flow	Remarks
		Location	Sill level	Location	Sill level							
					NIL							

1.4 PARTICIPATORY IRRIGATION MANAGEMENT (PIM)

1.4.Participatory Irrigation Management (PIM) Under IAM WARM Project in VAIPPAR MAIN RIVER Sub basin

1. **The Sub-Basin :** This is one of the Thirteen sub-basins of the Vaippar River Basin. Totally 22 irrigation tanks are under the control of Water Resources Department (WRD) in this sub-basin. The list of Tanks covered with more details are furnished in the Annexure-1. These 22 tanks are located within the sub-basin's hydraulic boundary spread over 24 villages of Sattur, Sivakasi Taluks in Virudhunagar District and Ettayapuram and Vilathikulam Taluks of Thoothukudi District. The total Command area under these 22 tanks works out to 2832.82 Ha. (Annexure 1)

2. **Command Area :**

i) Under system tanks(2 tanks) :143.28 Ha
ii) Under Non-system tanks (20 tanks) : 2689.54 Ha

Total (22 Tanks) 2832.82 Ha

3. **An assessment of number of WUAs**

i)	Associations already formed under WRCP	Nil
ii)	Associations proposed to be formed under IAMWARM Project covering 22 tanks	19 Nos. (2832.82 Ha)
iii)	The total command area covered	2832.82 Ha

4. **An account of "Awareness creation" among the farming community:**

Activities undertaken and "Walkthrough Surveys" carried out:

i) There are 22 tanks in the sub-basin spread over 24 village, as detailed out in Annexure – 01. All these villages were visited by the WRO officials and awareness about various activities, contemplated under IAMWARM project has been created.

ii) Details of villages covered, walkthrough surveys conducted, farmers attended, and list of works suggested by the farmers, list of works analysed and finalized by WRO officials, are all furnished in the Annexure – 02 and Annexure – 03.

5. **Schedule for completion of delineation and preparation for WUA documents, comprising of:**

i) Form – I : Details to be notified by District Collectors (End of March – 09)
ii) Form – II : WUA document to be notified by District Collectors (End of April – 09)
iii) Completion of preparatory works for the conduct of Elections for WUAs (End of May – 09)

6. **Schedule for Conduct of Elections** in the sub-basin for forming Management Committees **(End of July 2009)**

7. **Support Organisations (SOs) :**

   i) Initiating and completing the process of publishing EOI to hire Support Organisation at Sub-basin level (End of Feb 2009)

   ii) Short listing and providing Request for Proposals (RFPs) to all the short listed agencies and obtaining Technical and Cost Proposals (Middle of April, 2009)

   iii) Selection and deployment of Support Organisation to the sub-basin (End of May, 2009)

8. **Appointment and the Role of Competent Authorities :**

   i) Section 26 of the Tamil Nadu Farmer's Management of Irrigation Systems (TNFMIS) Act provides for the appointment of "Competent Authorities" to assist the respective farmers organizations (WUA, Distributory Committee and Project Committee), in the Implementation and execution of all decisions taken by such farmers organization. Similarly, every farmer's organization shall extend such co-operation or assistance, as may be required by the Competent Authority, for

   ii) carrying out all the tasks related to implementation of TNFMIS Act.

   iii) Appointment of Competent Authorities for the WUAs proposed to be formed under IAMWARM project is based on the "WRO Section officer wise" distribution as indicated below.

Name of the WRO Sub Divisional Officers working in the
Vaippar Main River Sub Basin

Virudhunagar District

Er.R.SORNAKUMAR, B.E.
Assistant Executive Engineer, WRD.,
Vaippar Basin Sub Division, Virudhunagar

Thoothukudi District

Er..P.RAJENDRAN, B.E.
Assistant Executive Engineer, WRD., ,
Vaippar Basin Sub Division, Vilathikulam.

List of Competent Authorities :

a.	Section Officer, WRD, Vaippar Basin Section, Sivakasi	WUAs 1
b..	Section Officer, WRD, Vaippar Basin Section, Sattur	WUAs 2,3,4, 5,6
c.	Section Officer, WRD, Vaippar Basin Section, Ettayapuram	WUAs 7,8,9,14,15,16
d.	Section Officer, WRD, Vaippar Basin Section, Vilathikulam	WUA - 10,11,12,13
e.	Section Officer, WRD, Vaippar Basin Section, Pudur	WUAs 17

9. Involvement of farmers in the preparation "Scheme Modernisation Plans".

i) Based on the outcome of the "Awareness Creation Programme" and Walkthrough survey carried out with the involvement of farmers, a list of tasks proposed to be taken up for "Modernisation" under IAMWARM project was discussed with Nos of farmers from 24 villages. The final list of tasks was also prepared and exhibited in the Notice Board of the Village Administrative Officers Office and Panchayat Office. These details were also discussed with the farmers and the tasks to be taken up under scheme modernisation finalized on

ii) During the meeting, the farmers present were also informed that soon after finalization of contract for carrying out "Modernization of Irrigation Systems" a 'Notice Board' with the details about the nature of works, its cost, period of contract and Name of the contractor will all be fixed at the site of the work, as well as in the Panchayat Office of the Villages concerned for information of the farmers. They have also been informed that they are free to supervise the work by the contractor and any lapse in the quality of work may be reported to the field officers of WRO, as well as the Executive Engineer of WRO, who has been designated as the Nodal Officer for the sub-basin concerned.

iii) The field officers of WRO are all aware of the problems in handing over the operation and maintenance responsibilities to the farmers concerned, if the tasks as desired by the farmers in the command area are not included in the

modernization of the system and also in case, some of the tasks already included and planned are not implemented due to some reasons or other.

iv) The WRO officers were also informed that they are personally responsible for handing over the irrigation systems after completing the tasks related to modernization of Irrigation systems, under IAMWARM Project.

10. Current status of Recovery of water charges :

i) An enquiry conducted with the 'Village Administrative Officers' (VAOs) of randomly selected villages (10 numbers out of 24 villages) located with in the sub-basin the normal water charges recovery as informed by the VAO, works out to 50-60% only, about the expected percentage of 80-90%.

ii) With the proposal to form new WUAs under IAMWARM in 'Vaippar Main River sub-basin', the Managing Committee will be trained to take up the responsibility of improving the Water charges recovery percentage. These will be followed up, after completing the modernization tasks and handing over of the O & M responsibilities to WUAs.

11. "Capacity Building" of the WUA farmers :

i) The "Support Organisation Group" will prepare "Training Modules" required for building the capacity of the WUA farmers, based on a "Training Needs" Analysis. They will also organize various "Capacity building" programmes at suitable locations within the sub-basin command area, to benefit the farmers of the WUAs in the sub-basin.

ii) The "Support Organisation" will also arrange for organizing the "Study Tours" both within and outside the state to enhance their knowledge and experiences which will help them to improve the crop productivity and there by the farmer's income.

iii) The support organisation will also conduct necessary "awareness programme" and impart training to educate the farmers of the WUAs in all aspects of the TNFMIS Act, TNFMS Rules and Election procedures for constituting the "Managing Committees" of the WUAs.

12. The "Competent Authorities" appointed for the sub-basin will also be trained to effectively to interact with WUA farmers and maintain good report and relationship with the farming community in the sub-basin.

Annexure – 1

An Assessment of Command Area and WUAs under the control of WRD in VAIPPAR MAIN RIVER Sub-basin

Sl. No	Name of Irrigation System and Tanks	Command area in (ha)	Location of the Command Area			Coverage of Command Area under different projects (ha)		Status of Formation of WUAs in the sub-basin	
			Village	Taluk	District	WRCP and others	IAMWARM	Formed under WRCP (Code)	To be formed under IAMWARM (Code)
1	2	3	4	5	6	7	8	9	10
	Rain Fed Tanks								
1	Vembakkottai Tank	83.77	Vembakkottai	Sivakasi	Virudhunagar	Nil	83.77	Nil	VAI - VNR 1
2.	Pandiyan Tank	49.35	Vijayakarisalkulam	Sivakasi		Nil	49.35	Nil	VAI - VNR 2
3.	Alagapuri Tank	47.79	Sankaranatham	Sivakasi		Nil	47.79	Nil	VAI - VNR 3
4.	O.Mettupatti Tank	55.27	O.Mettupatti	Sattur		Nil	55.27	Nil	VAI - VNR 4
5.	Pethureddipatti Tank	47.76	Pethureddipatti	Sattur		Nil	47.76	Nil	
6.	Subramaniyapuram New Tank	44.15	Mulliseval	Sattur		Nil	44.15	Nil	VAI – VNR -5
7	Ayyampatti Tank	137.70	Ayyampatti	Sattur		Nil	137.70		VAI – VNR -6
8	Mudithalai Tank	46.14	M.Nagalapuram	Sattur		Nil	46.14		VAI –VNR -7
9	Nenmeni Tank	169.70	Nenmeni	Sattur		Nil	169.70	Nil	
10	Kollapatti Big Tank	239.23	Periyakollapatti	Sattur		Nil	239.23		VAI –VNR 8

Sl. No	Name of Irrigation System and Tanks	Command area in (ha)	Location of the Command Area			Coverage of Command Area under different projects (ha)		Status of Formation of WUAs in the sub-basin	
			Village	Taluk	District	WRCP and others	IAMWARM	Formed under WRCP (Code)	To be formed under IAMWARM (Code)
1	2	3	4	5	6	7	8	9	10
11	Padanthapuli	53.90	Padanthapuli	Ettayapuram		Nil	53.90	Nil	VAI –THOO 9
12	T.Pudupatti	445.15	T.Pudupatti	Ettayapuram		Nil	445.15	Nil	VAI –THOO -10
13	Arunkulam	48.16	Arunkulam	Vilathikulam		Nil	48.16	Nil	VAI –THOO- 11
14	Melmandai	194.25	Melmandai	Vilathikulam		Nil	194.25	Nil	VAI –THOO -12
15	Thathaneri	404.68	Thathaneri	Vilathikulam		Nil	404.68	Nil	VAI –THOO -13
16	M.Jegaveerapuram	67.23	Meenakshipuram	Vilathikulam		Nil	67.23	Nil	VAI –THOO -14
17	Vilathikulam	82.96	Vilathikulam	Vilathikulam		Nil	82.96	Nil	VAI –THOO -15
18	Arunachalapuram	70.82	Arunachalapuram	Ettayapuram		Nil	70.82	Nil	VAI –THOO -16
19	Nambipuram	299.15	Nambipuram	Ettayapuram		Nil	299.15	Nil	VAI –THOO -17
20	Sindalakkarai	192.38	Sindalakkarai	Ettayapuram		Nil	102.38	Nil	VAI –THOO -18

Sl. No	Name of Irrigation System Tanks	Command area in (ha)	Location of the Command Area			Coverage of Command Area under different projects (ha		Status of Formation of WUAs in the sub-basin	
			Village	Taluk	District	WRCP and others	IAMWARM	Formed under WRCP (Code)	To be formed under IAMWARM (Code)
1	2	3	4	5	6	7	8	9	10
21	Keelanattukurichi	121.43	Keelanattukurichi	Ettayapuram		Nil	121.43	Nil	VAI –THOO -19
22	Vadamalapuram	21.85	Ayanvadamalapuram	Ettayapuram		Nil	21.85	Nil	

ABSTRACT

1. Command Area already covered under WRCP and other projects / schemes. : Nil
2. Command Area Proposed to be covered under IAMWARM project (Grand total of Column-8) : 2832.82 Ha
3. Total Command area controlled by WRO PWD in the sub basin (Sl.No 1+2 as above) : 2832.82 Ha
4. Total No. of WUAs already formed under WRCP : Nil
5. Total No. of WUAs proposed to be formed under IAMWARM : 19 Nos

Total No. of WUAs that will cover the entire sub-basin : 19Nos

Annexure – 2
Details of "Awareness Creation Activities and Walk-through Surveys".

Sl. No	Date of Visit	Names of the Villages Visited	Awareness Programme (No. of farmers attended)	Walk-Through Survey (No. of farmers Participated)	Remarks
1.	29.01.09	Vembakkottai Tank		6	
2.	29.01.09	Pandiyan Tank		10	
3.	29.01.09	Alagapuri Tank		4	
4.	30.12.08	O.Mettupatti Tank		5	
5.	30.12.08	Pethureddipatti Tank		11	
6.	30.12.08	Subramaniyapuram New Tank		6	
7	30.12.08	Ayyampatti Tank		8	
8	30.12.08	Mudithalai Tank		7	
9	30.12.08 10.02.09	Kollapatti Big Tank		8 25	
10	30.12.08 10.02.09	Nenmeni Tank		11 28	
11	02.12.08	Padanthapuli		4	
12	02.12.08	T.Pudupatti		5	
13	02.12.08	Arunkulam		20	
14	03.12.08	Melmandai		12	
15	03.12.08	Thathaneri		6	
16	03.12.08	M.Jegaveerapuram		2	
17	03.12.08	Vilathikulam		6	
18	04.12.08	Arunachalapuram		15	
19	04.12.08	Nambipuram		6	
20	04.12.08	Sindalakarai	48	12	
21	04.12.08	Keelanattukurichi		10	
22	04.12.08	Vadamalapuram		15	

ANNEXURE – 03
Details of Modernisation works as suggested by the Farmers and as finalized by the officials of WRO

Sl No	Date of visit	Name of the villages visited	Out come of walk through survey and discussions with farmers	
			Works suggested by the farmers	Works finalized by WRO Officials
1	29.1.2009	Vembakkottai Tank	Bund strengthening Sluice repairs & Lining of field channel Weir repair	Standardisation of bund for the entire length of 4420m Repairs to sluices Repairs to weir apron and body wall Supply channel sand vent Repairs and repairs to head sluice.
2	29.1.2009	Pandian tank	Bund strengthening Sluice repairs & Lining of field channel Weir repair	Standardisation of bund for the length of 2310m Repairs to sluices & sand vent Repairs to weir apron and body wall Desilting the supply channel for a length of 850 m
3	29.1.2009	Alagapuri tank	Sluice repairs & Lining of field channel Weir repair	Raising the top bund level 1463m Repairs to sluices Repairs to weir apron and body wall
4	30.12.2008	O.Mettupatti tank	Bund strengthening Sluice repairs Weir repair Water out flanks in supply channel and enters into fields	Standardisation of bund for the entire length of 1650m Repairs to Sluice 1 & 2 Repairs to weir apron and body wall
5	30.12.2008	Pethureddiapatti tank	Bund strengthening Sluice reconstruction & Lining of field channel Weir repair	Standardisation of bund for the entire length of 1000m Repairs to sluices 1&2 Repairs to weir apron and body wall
6	30.12.2008	Subramaniyapuram tank	Bund strengthening Sluice reconstruction & Lining of field channel Weir repair	Standardisation of bund for the entire length of 1650 m Repairs to sluices 1 & 2 Repairs to weir apron and body wall
7	30.12.2008	Ayyampatti tank	Sluice reconstruction Weir repair Lining of field channel	Standardisation of bund for the length of 900M. Repairs to sluices, Repairs to weir second apron and & wings and return walls &

				Repairs to SG shutters
8	30.12.2008	Mudithalai tank	Bund strengthening Sluice repairs & Lining of field channel Weir repair	Standardisation of bund for the entire length of 3100m Repairs of sluice 1 Repairs to weir apron and body wall
9	30.12.2008 10.02.2009	Periyakollapatti tank	Bund strengthening Sluice repairs & Lining of field channel Weir repair	Standardisation of bund for the entire length of 4560m Repairs to sluices 1 & 2 Repairs to weir apron and body Wall
10	30.12.2008 10.02.2009	Nenmeni tank	Bund strengthening Sluice repairs & Lining of field channel Weir repair	Standardisation of bund for the entire length of 5500m Repairs to sluice Repairs to weir apron and body wall
11	2.12.2008	Padanthapuli tank	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To provide sand vent to avoid further silt deposition. 4) To clear the jungle inside the water spread area and bund and strengthen the bund	Standardisation of bund for the length of 1180m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
12	2.12.2008	T.Pudupatti tank	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To provide sand vent to avoid further silt deposition. 4) To clear the jungle inside the water spread area and bund and strengthen the bund	Standardisation of bund for the length of 2250m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
13	2.12.2008	Arunkulam tank	1) To desilt the water spread area. 2) To avoid leakage in weir . 3) To clear the jungle inside the water spread area and bund and strengthen the	Standardisation of bund for the length of 1500m Repairs to weir apron and body wall .

			bund	
14	3.12.2008	Melmandai tank	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Standardisation of bund for the length of 8168m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
15	3.12.2008	Thathaneri tank	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Standardisation of bund for the length of 5883m Repairs to sluice . Repairs to weir apron and body wall
16	3.12.2008	M.Jegaveerapuram tank	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Standardisation of bund for the length of 2150m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
17	3.12.2008	Vilathikulam tank	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Standardisation of bund for the length of 2650m Repairs to head sluice Repairs to weir apron and body wall
18	4.12.2008	Arunachalapuram tank	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Standardisation of bund for the length of 2200m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall

19	4.12.2008	Nambipuram tank	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Standardisation of bund for the length of 4000m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
20	4.12.2008	Sindalakarai tank	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to sluices. Repairs to weir apron and body wall
21	4.12.2008	Keelanattukurichi tank	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Standardisation of bund for the length of 3400m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
22	4.12.2008	Ayan vadamalapuram tank	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Standardisation of bund for the length of 1150m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall

DETAILS OF WUAS PROPOSED IN VAIPPAR MAIN RIVER SUB BASIN.

Sl.No	WUA No.	Name of Tank	Name of Villages	Name of WUA	Ayacut in Ha
1	**I**	Vembakkottai Tank	Vembakkottai	Vembakkottai Tank Water Users Association.	83.77
2		Pandiyan Tank	Vijayakarisalkulam	PandiyanTank Water Users Association.	49.35
3	II	Alagapuri Tank	Sankaranatham	Alagapuri Tank Water Users Association.	47.79
4	III	O.Mettupatti Tank	O.Mettupatti	O.Mettupatti Tank and Pelthurediapatti tank Water Users Association	103.03
5		Pelthurediapatti Tank	Pelthurediapatti		
6	**IV**	Subramaniyapuram New Tank	Mulliseval	Subramaniyapuram tank Water Users Association	44.15
7		Ayyampatti Tank	Ayyampatti	Ayyampatti Tank Water Users Association	137.70
8	**V**	Kollapatti Tank	Periyakollapatti	Kollapatti Tank Water Users Association.	239.23
9	**VI**	Nenmeni Tank	Nenmeni	Nenmeni Tank and Mudithalai Tank Water Users Association	**215.84**
10		Mudithalai Tank	N.Nagalapuram		
11	VII	Padarndapuli Tank	Padarndapuli	Padarndapuli Tank Water Users Association	53.90
12	VIII	T.Pudupatti Tank	T.Pudupatti	T.Pudupatti Tank Water Users Association	445.15
13	IX	Arunkulam Tank	Arunkulam	Arunkulam Tank Water Users Association	48.16
14	X	Melmandai Tank	Melmandai	MelmandaiTank Water Users Association	194.25

15	XI	Thathaneri Tank	Thathaneri	Thathaneri Tank Water Users Association	404.68
16	XII	M.Jegaveerapuram Tank	Meenachipuram	M.Jegaveerapuram Tank Water Users Association	67.23
17	XIII	Vilathikulam Tank	Vilathikulam	Vilathikulam Tank Water Users Association	82.96
18	XIV	Arunachalapuram Tank	Arunachalapuram	Arunchalapuram Tank Water Users Association	70.82
19	XV	Nambipuram Tank	Nambipuram	Nambipuram Tank Water Users Association	299.15
20	**XVI**	Sindalakarai Tank	Sindalakarai	Sindalakarai Tank Water Users Association	102.38
21	XVII	Keelnattukurichi Tank	Keelnattukurichi	Keelnattukurichi Tank and Vadamalapuram Tank Water Users Association	143.28
22		Vadamalapuram Tank	Ayanvadamalapuram		

PARTICULARS OF WALK THROUGH SURVEY

Sl No	Date of walk through survey	Location	Name of the department	Farmers request	Technical solution	Proposal made
1	30.12.2008	O.Mettupatti Tank	WRD	Bund strengthening Sluice repairs Weir repair Water out flanks in supply channel and enters into fields	Strengthening of the tank bund Repairs to sluice and fixing S.G. plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the entire length of 1650m Repairs to Sluice 1 & 2 Repairs to weir apron and body wall
2	30.12.2008	Pethureddipatti Tank	WRD	Bund strengthening Sluice reconstruction & Lining of field channel Weir repair	Strengthening of the tank bund and construction of retaining wall in weaker portion Repairs to sluice and fixing S.G. plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the entire length of 1000m Repairs to sluices 1&2 Repairs to weir apron and body wall
3	30.12.2008	Subramaniyapuram New Tank	WRD	Bund strengthening Sluice reconstruction & Lining of field channel Weir repair	Strengthening of the tank bund and construction of retaining wall in weaker portion Repairs to sluice and fixing S.G. plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the entire length of 1650 m Repairs to sluices 1 & 2 Repairs to weir apron and body wall

1	**2**	**3**		**4**	**5**	**6**
4	30.12.2008	Ayyampatti Tank	WRD	Sluice reconstruction Weir repair Lining of field channel	Strengthening of the tank bund . Repairs to sluice and fixing S.G. plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the length of 900M. Repairs to sluices, Repairs to weir second apron and & wings and return walls & Repairs to SG shutters
5	30.12.2008	Mudithalai Tank	WRD	Bund strengthening Sluice repairs & Lining of field channel Weir repair	Strengthening of the tank bund Repairs to sluices and fixing S.G. plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the entire length of 3100m Repairs of sluice 1 Repairs to weir apron and body wall
6	30.12.2008	Kollapatti Big Tank	WRD	Bund strengthening Sluice repairs & Lining of field channel Weir repair	Strengthening of the tank bund Repairs to sluices 1 & 2 Repairs to weir apron and body wall	Standardisation of bund for the entire length of 4560m Repairs to sluices 1 & 2 Repairs to weir apron and body wall

7	30.12.2008	Nenmeni Tank	WRD	Bund strengthening Sluice repairs & Lining of field channel Weir repair	Strengthening of the tank bund Repairs to sluices and fixing S.G. plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the entire length of 5500m Repairs to sluice Repairs to weir apron and body wall
8	02.01.2009	Alagapuri Tank	WRD	Sluice repairs & Lining of field channel Weir repair	Strengthening of the tank bund for raising the top bund level Repairs to sluices and fixing S.G. plug shutter to arrest leakages Repairs to weir apron and body wall	Raising the top bund level 1463m Repairs to sluices Repairs to weir apron and body wall
9	02.01.2009	VembakkottaiTank	WRD	Bund strengthening Sluice repairs & Lining of field channel Weir repair	Strengthening of the tank bund Repairs to sluices and fixing S.G. plug shutter to arrest leakages Repairs to weir apron and body wall sand vent Standardisation of bund for the entire length of 3100m Supply channel sand vent Repairs and repairs to head sluice	Standardisation of bund for the entire length of 4420m Repairs to sluices Repairs to weir apron and body wall Supply channel sand vent Repairs and repairs to head sluice

10	2.01.2009	Pandiyan Tank	WRD	Bund strengthening Sluice repairs & Lining of field channel Weir repair	Strengthening of the tank bund Repairs to sluices and fixing S.G. plug shutter to arrest leakages Reconstruction of sand vent Repairs to weir apron and body wall Desilting the supply channel	Standardisation of bund for the length of 2310m Repairs to sluices Repairs to sand vent Repairs to weir apron and body wall Desilting the supply channel for a length of 850 m
11	2.12.2008	Padarnthapuli	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To provide sand vent to avoid further silt deposition. 4) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to sluice and fixing S.G. Plug shutter to arrest leakages. Repairs to weir apron and body wall	Standardisation of bund for the length of 1180m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall

12	2.12.2008	T.Pudupatti	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To provide sand vent to avoid further silt deposition. 4) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the length of 2250m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
13	2.12.2008	Arunkulam	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir . 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to weir apron and body wall	Standardisation of bund for the length of 1500m Repairs to weir apron and body wall
14	3.12.2008	Melmandai	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the length of 8168m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
15	3.12.2008	Thathaneri	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to sluice Repairs to weir apron and body wall	Standardisation of bund for the length of 5883m Repairs to sluice . Repairs to weir apron and body wall

16	3.12.2008	M.Jegaveerapuram	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the length of 2150m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
17	3.12.2008	Vilathikulam	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to Head sluice . Repairs to weir apron and body wall	Standardisation of bund for the length of 2650m Repairs to head sluice Repairs to weir apron and body wall
18	4.12.2008	Arunachalapuram	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the length of 2200m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
19	4.12.2008	Keelanattukurichi	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the length of 3400m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall

20	4.12.2008	Vadamalapuram	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the length of 1150m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
21	4.12.2008	Nambipuram	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall	Standardisation of bund for the length of 4000m Repairs to sluice and fixing S.G. Plug shutter to arrest leakages Repairs to weir apron and body wall
22	4.12.2008	Sindalakkarai	WRD	1) To desilt the water spread area. 2) To avoid leakage in weir and sluice. 3) To clear the jungle inside the water spread area and bund and strengthen the bund	Strengthening of the tank bund Repairs to sluices. Repairs to weir apron and body wall	Standardisation of bund for the length of 1800m Repairs to sluices . Repairs to weir apron and body wall

1.5 IRRIGATION INFRASTRUCTURE

1.5.1 LIST OF ANICUTS

Sl. No	Anicuts	Village	Block	Taluk	District	Direct Ayacut Area in Ha	Capacity
1	Sankaranatham	Sankaranatham	Sattur	Sattur	Virudhunagar	Nil	Nil
2	Nenmeni	Periya Kollapatti.	Sattur	Sattur	Virudhunagar	Nil	Nil
3	Athangarai	Athangarai	Vilathikulam	Vilathikulam	Thoothukudi	Nil	Nil
4	Nalli Uppodai	Tholmalaipatti	Pudur	Pudur	Thoothukudi	Nil	Nil

1.5.2.List of system tank

Sl.No	Name of Tank	Village	Block	Taluk	District	Direct Ayacut Area in 'Ha'	Capacity in m.Cft
1	Keelanattukurichi	Keelanattukurichi	Pudur	Ettayapuram	Thoothukudi	121.43	23.38
2	Vadamalapuram	Ayanvadamalapuram	Pudur	Ettayapuram	Thoothukudi	21.85	4.70
					Total	**143.28**	

1.5.3.List of Non--system tank

Sl.No	Name of Tank	Village	Block	Taluk	District	Ayacut(in Ha)	Capacity in M.Cft
1	Vembakkottai Tank	Vembakkottai	Vembakkottai	Sivakasi	Virudhunagar	83.77	30.90
2	Pandiyan Tank	Vijayakarisalkulam	Vembakkottai	Sivakasi	"	49.35	44.55
3	Alagapuri Tank	Sankaranatham	Sattur	Sivakasi	"	47.79	14.00
4	O.Mettupatti Tank	O.Mettupatti	Sattur	Sattur	"	55.27	6.37
5	Pelthurediapatti Tank	Pelthureddiapatti	Sattur	Sattur	"	47.76	3.93
6	Sabramaniyapuram New Tank	Mulliseval	Sattur	Sattur	"	44.15	4.54
7	Ayyampatti Tank	Ayyampatti	Sattur	Sattur	"	137.70	29.00
8	Mudithalai Tank	M.Nagalapuram	Sattur	Sattur	"	46.14	35.40
9	Kollapatti Big Tank	Periyakollapatti	Sattur	Sattur	"	239.23	97.80
10	Nenmeni Tank	Nenmeni	Sattur	Sattur	"	169.70	109.80
11	Padarndapuli	Padarndapuli	Vilathikulam	Ettayapuram	Thoothukudi	53.90	16.43
12	T.Pudupatti	T.Pudupatti	Vilathikulam	Ettayapuram	Thoothukudi	445.15	57.32
13	Arunkulam	Arunkulam	Vilathikulam	Vilathikulam	Thoothukudi	48.16	17.60
14	Melmandai	Melmandai	Vilathikulam	Vilathikulam	Thoothukudi	194.25	30.58
15	Thathaneri	Thathaneri	Vilathikulam	Vilathikulam	Thoothukudi	404.68	79.39
16	M.Jegaveerapuram	Meenachipuram	Vilathikulam	Vilathikulam	Thoothukudi	67.23	16.60
17	Vilathikulam	Vilathikulam	Vilathikulam	Vilathikulam	Thoothukudi	82.96	24.58
18	Arunachalapuram	Arunachalapuram	Pudur	Ettayapuram	Thoothukudi	70.82	15.62
19	Nambipuram	Nambipuram	Pudur	Ettayapuram	Thoothukudi	299.15	99.49
20	Sindalakarai	Sindalakarai	Kovilpatti	Ettayapuram	Thoothukudi	102.38	25.30
					Total	**2689.54**	

List of Supply Channel

Sl. No	Name of Supply Channel	Village	Block	Taluk	District	Ayacut in Ha	Capacity in cusecs
1	Thathaneri tank supply channel	Thathaneri	Vilathikulam	Vilathikulam	Thuthukudi	404.68	250
2	Melmandai tank supply channel	Melmandai	Vilathikulam	Vilathikulam		194.25	250
3	Nambipuram tank supply channel	Nambipuram	Pudur	Ettayapuram		299.15	200

List of tanks/Anicuts executed under various schemes (Viz, Part II Scheme, NABARD, WRCP I etc.,) since 2003.

Sl.No.	Name of Anicut / Tank	Ayacut in Ha	Scheme in which executed	Amount in Lakhs	Details of components executed	Remarks
1	Kollapatti big Tank	239.23	NABARD RIDF IX	38.66	Reconstruction of sluices 5nos, Bund standardisation 4650m, and weir repair 20m	Work completed on 3/2008
2	Ayyampatti Tank	137.70	Desilting Two Tanks in MLA constituency	10.00	Bund standardisation 2500m, and weir repair.	Work completed on 9/2008
3	Sindalakarai Tank	102.38.	NABARD RIDF IX	30.24	Field Channels lining 1000m, Bund standardisation 1800m, Desilting Supply channel 2000m & Sluice improvements.	Work completed on 3/2006
4	Arunkulam Tank	48.16.	NABARD RIDF X	12.02	Field channels lining 550m, Sluice improvements & Thrashing floor	Work completed on 4/2007
5	Vilathikulam Tank	82.96.	NABARD RIDF X	20.74	Field Channels lining 950m.	Work completed on 4/2007
6	Thathaneri Tank	404.68	Desilting Two Tanks in MLA constituency	10.00	Bund standardisation 1050m , Desilting Supply channel 660m and Field channels lining 75m.	Work completed on 9/2008
		1015.11				

List of tanks/Anicuts executed under various schemes (Viz, Part II Scheme, NABARD, WRCP I etc.,) since 2003.

SL NO	NAME OF TANK	Details of components executed in various scheme since 2003	Works taken up under IAMWARM Project	REMARKS
1	kollapatti big tank	Reconstruction of sluices 5nos, Bund standardisation 4650m, and weir repair 20m	Raising the TBL of bund for the entire length of 4650m Repairs to weir, apron and body wall for remaining length of 90m.	
2	Ayyampatti tank	Bund standardisation 2500m, and weir repair.	Repairs to sluices . Repairs to weir second apron and & wings and return walls Repairs to SG shutters	
3	Sindalakarai Tank	Field Channels lining 1000m, Bund standardisation 1800m, Desilting Supply channel 2000m & Sluice improvements.	Raising the TBL of bund for the length of 1800m Repairs to sluices. Repairs to weir apron and body wall	
4	Arunkulam Tank	Field channels lining 550m, Sluice improvements & Tharshing floor	Standardisation of bund for the length of 1500m Repairs to weir apron and body wall	
5	Vilathikulam Tank	Field Channels lining 950m.	Standardisation of bund for the length of 2650m Repairs to head sluice Repairs to weir apron and body wall	
6	Thathaneri Tank	Bund standardisation 1050m , Desilting Supply channel 660m and Field channels lining 75m.	Raising the TBL of bund for the length of 5883m Repairs to sluice Repairs to weir apron and body wall	

ABSTRACT ON THE DETAILS OF IRRIGATION INFRASTRUCTURE AVAILABLE AND WORKS TAKEUP UNDER IAMWARM PROJECT

Name of Sub Basin: Vaippar Main River

SL.NO.	DETAILS	ANICUT			SYSTEM TANK			NON- SYSTEM TANK			ANY OTHER SUPPLY CHANNEL		REMARKS
		NOS	SUPPLY CHANNEL IN KM	DIRECT AYACUT	NOS	SUPPLY CHANNEL IN KM	AYACUT	NOS	SUPPLY CHANNEL IN KM	AYACUT HEC	LENGTH	DIRECT AYACUT	
1	Available Infrastructure in sub basin	4	-	-	2	-	143.28	20	28.41	2689.54	-	-	-
2	Infrastructure excluded in iamwarm project since works carried out under various schemes from 2000	-	-	-	-	-	-		2.66		-	-	-
3	Infrastructures that does not require any rehabilitation works	-	-	-	-	-	-	-	25.75	-	-	-	-
4	Works taken up in iamwarm project	4	-	-	2	-	143.28	20	NIL	2689.54	-	-	Component of works that are not taken up in various schemes alone proposed in IAMWARM Project for 6 tanks.

1. Certified that the Panchayat Union Tanks are not considered in this project.
2. Certified that the components of the works in the tanks which were executed under various schemes (Viz, WRCP I, NABARD, PART II schemes etc.,) since 2003 are not proposed in this project.

1.6 Rehabilitation of IRRIGATION Infrastructure

A. REHABILITATION OF IRRIGATION INFRASTRUCTURE OF THE SUB BASIN

STRUCTURAL STATUS & DEFICIENIES IN THE SYSTEM :

Necessary walk through surveys in these tanks and its ayacut were performed with line departments on 2.12.2008, 3.12.2008,4.12.2008 28.12.2008, 29.1.2009,and10.2.2009. Based on the observations made, the following are the present structural condition of the Vaippar main river Sub -Basin system.

- This system is a good old system existing for more than 100 Years as such requires Rehabilitation.
- No scheme works were done during the Past years results non effective Irrigation systems.
- The damaged or dilapidated condition of the existing anicuts, diversion head works etc., and supply channels causes to poor standard of the entire conveyor system.
- This Vaippar main river Sub -Basin totally consists of Non system tanks and no reservoir in the sub basin area. Hence the sub basin requires restoration.

In order to improve the conveyance and Operational Efficiency proposed to improve and modernise the Irrigation Infrastructures in Vaippar main river Sub -Basin .

- Repairs to the damaged anicuts.
- Providing revetments and Retaining walls in selective locations of tanks and supply channels.
- Providing model sections to maintain the top of the bund, front and rear slopes of the tank bund.
- Providing steps in the tank bund for easy approach to the fields by the farmers wherever necessary.
- Restoring the capacity of the tanks, supply channels by desilting .
- Strengthening the bunds of the tanks and channels wherever necessary for effective storing of water and conveying it to the entire command area and also for conveying agricultural inputs to the field.
- Repairs to the damaged weirs
- Reconstruction of Collapsed Sluices.
- Repairs to the damaged Sluices.
- Providing S.G. Shutter / Plug arrangements to Sluices, Head sluices, Scour vents of weir etc.,

- Removing, Repairing and refixing in position of the existing S.G. shuttering arrangements and providing locking arrangements etc.,

  Out come of the Project :

  1. Increase in conveyance efficiency by %

  2. The present Gap area of 566.70 Ha is to be converted as a fully irrigated area.

  The following irrigation infrastructures development works are proposed in the sub basin.

  Rehabilitation works for 4 anicuts.

  Rehabilitation works for 22 tanks.

  Rehabilitation of Supply channels (Construction of Retaining wall)

Sl. No	Name of tank/ Anicut/ Reservoir	Bund		Sluice					Weir				Repairs to Anicut		Supply Channel		Measuring Devices		Amount in lakhs
		Length	Amt	Total nos	Repair	Amt	Recon	Amt	Recon	Amt	Repair	Amt	No	Amt	RW	Amt	Nos	Amt	
1	Vembakottai Tank	0	0	2	0	0	2	10.19			1	5.02	0	0	0	0	2	0.34	15.55
2	Pandian Tank	2310	15.97	3	1	2.12	0	0			0	0	0	0	0	0	3	0.48	18.57
3	Alagapuri Tank	0	0	1	0	0	1	2.73			1	5.58	0	0	0	0	1	0.16	8.47
4	O.Mettupatti Tank	0	0	2	2	2.11	0	0			1	7.05	0	0	0	0	2	0.32	9.48
5	Pethureddipatti Tank	0	0	2	1	0.79	0	0			1	6.55	0	0	0	0	2	0.32	7.66
6	Subramaniyapuram	1650	9.16	2	2	2	0	0			1	6.66	0	0	0	0	2	0.32	18.14
7	Kollapatti Periyakulam Tank	0	0	5	2	2.6	0	0			1	15.9			0	0	5	0.82	19.32
8	Nenmeni tank	5500	30.33	5	0	0	5	17.44			1	7.94			0	0	5	0.82	56.53
9	Mudithalai Tank	3100	17.14	1	0	0	1	2.62			3	3.59	0	0	0	0	1	0.16	23.51
10	Ayyampatti Tank	0	0	4	4	8.3	0	0			1	4.93	0	0	0	0	4	0.68	13.91
	Sankaranatham anicut												1	44.49				0	44.49
	Nenmeni Anicut												1	19.37				0	19.37
	Package 1	**12560**	**72.6**	**27**	**12**	**17.92**	**9**	**32.98**			**11**	**63.2**	**2**	**63.86**	**0**	**0**	**27**	**4.42**	**255.00**
11	Arunachalapuram Tank	2200	11.8	2	2	4.65					1	8.02					2	0.66	25.13
12	Keelnattukurichi Tank	3400	26.03	3	1	2.33	1	4.29	1	10.80							2	0.66	44.11
13	Vadamalapuram tank	1150	5.61	1	1	2.33					1	4.01					1	0.33	12.28
14	Nambipuram Tank	4000	42.21	6	4	9.22	2	10.31			1	0.40			200	6.62	6	1.95	70.71
15	Sinthalakarai tank	1800	14.14	3	3	6.97					1	15.08					3	0.98	37.17
16	Padarnthapuli Tank	1180	7.33	2	2	4.77					1	6.58					2	0.67	19.35
17	T.Puthupattti Tank	2250	28.16	2	2	4.77					1	10.63					2	0.67	44.23
18	Arunkulam Tank	1500	9.84	2	2	4.43					1	4.16					2	0.67	19.10
19	M.Jegaveerapuram tank	2150	12.51	3		0	3	12.52			1	5.69					3	1.02	31.74
20	Vilathikulam Tank	3650	13.49	3	3	7.34									100	3.53	2	0.68	25.04
21	Thathaneri Tank	5883	26.12	5	0	0	2	6.77			0	0			200	7.03	3	1.02	40.94
22	Melmandai Tank	8168	36.66	3	0	0	2	8.34			1	0.4					2	0.68	46.08
	Package 2	**37331**	**233.9**	**35**	**20**	**46.81**	**10**	**42.23**	**1**	**10.80**	**9**	**55**	**0**	**0**	**500**	**17.2**	**30**	**9.99**	**415.88**
	Total	**49891**	**306.5**	**62**	**32**	**64.73**	**19**	**75.21**	**1**	**10.8**	**20**	**118.19**	**2**	**63.86**	**500**	**17.18**	**57.00**	**14.41**	**670.88**

I – TANK COMPONENT

Sl No		Component	Qty		Amount in Lakhs
I		**Tank Bund Improvement**			
		Earthwork for bund, Retaining wall, Model Section, Steps	49891	m	306.50
II		**Improvement to Sluices**			
1		**Reconstruction**			
	a	Tower Head	11	nos	37.15
	b	Wing Wall	8	nos	30.79
2		**Repair**			
	a	Tower Head	6	nos	20.24
	b	Wing Wall	26	nos	41.79
3		Well syphon			
III		**Improvements to Weir**			
1		Reconstruction	1	no	9.90
2		Repair	18	nos	110.72
IV		**Shutter Arrangement**			
1		**Sluice**			
	a	SG Plug	41	nos	9.97
	b	SG Shutter	5	nos	1.70
2		**Weir**			
	a	SG Shutter in scour vents	9	Nos	6.67
3		**Anicut**			
		Anicut shutter			
		Head sluice shutter	13	Nos	9.12
V		**Supply Channel Improvement**			
1	a	Earthwork for bund			
2	b	Retaining Wall	500	m	17.18
VI		**River Training**			
1		**Anicut**			
	a	Repair	2	nos	54.74
VII		In Tank Bed			
		Measuring Devices	57	Nos	14.41
		Total cost of Civil Works			**670.88**
IX		**Environmental Cell Activities**			7.00
		Total Amount			**677.88**

II – NON TANK COMPONENT ….. **NIL**

(PACKAGE NO ;1)

I – TANK COMPONENT

Sl No		Component	Qty		Amount in Lakhs
I		**Tank Bund Improvement**			
		Earthwork for bund,Retaining wall,Model Section,Steps	12560	m	72.60
II		**Improvement to Sluices**			
1		**Reconstruction**			
	a	Tower Head	9	nos	28.15
	b	Wing Wall			
2		**Repair**			
	a	Tower Head	3	nos	9.65
	b	Wing Wall	9	nos	7.50
3		Well syphon			
III		**Improvements to Weir**			
1		Reconstruction	_	_	
2		Repair	9	nos	56.55
IV		**Shutter Arrangement**			
1		**Sluice**			
	a	SG Plug	18	Nos	5.60
	b	SG Shutter			
2		**Weir**			
	a	SG Shutter in scour vents	9	nos	6.67
3		**Anicut**			
		Anicut shutter			
		Head sluice shutter	13	nos	9.12
V		**Supply Channel Improvement**			
1	a	Earthwork for bund	-	-	-
2	b	Retaining Wall	-	-	-
VI		**River Training**			
1		**Anicut**			
	a	Repair	2	nos	54.74
VII		In Tank Bed			
VIII	a	Add Provisions for Measuring devices such as V.notches (27nos)	27	Nos	4.42
		Total cost of Cilvil Works			**255.00**
		Total Amount			**255.00**

II – NON TANK COMPONENT ….. **COST NIL**

(PACKAGE 2)

I – TANK COMPONENT

Sl No		Component	Qty		Amount in Lakhs
I		**Tank Bund Improvement**			
		Earthwork for bund, Retaining wall, Model Section, Steps	37331	m	233.90
II		**Improvement to Sluices**			
1		**Reconstruction**			
	a	Tower Head	2	Nos	9.00
	b	Wing Wall	8	nos	30.79
2		**Repair**			
	a	Tower Head	3	nos	10.59
	b	Wing Wall	17	nos	34.29
3		Well syphon			
III		**Improvements to Weir**			
1		Reconstruction	1	No	9.90
2		Repair	7	nos	54.17
IV		**Shutter Arrangement**			
1		**Sluice**			
	a	SG Plug	23	Nos	4.37
	b	SG Shutter			
2		**Weir**			
	a	SG Shutter in scour vents	5	Nos	1.70
3		**Anicut**			
		Anicut shutter			
		Head sluice shutter			
V		**Supply Channel Improvement**			
1	a	Earthwork for bund			
2	b	Retaining Wall	500	M	17.18
VI		**River Training**			
1		**Anicut**			
	a	Repair			
VII		In Tank Bed			
		Measuring devices			9.99
		Total cost of Cilvil Works			**415.88**
		Total Amount			**415.88**

II – NON TANK COMPONENT ….. **NIL**

B.WRO COST TABLE

Sl.No	Description of Work	Quantity	Amount in Lakhs	Remarks
1. Tank Component				
1	Strengthening Tank bund	49891 M	306.50	
2	Repairs to sluices	51 Nos	154.35	
3	Repairs to Weir	19 Nos	128.99	
4	Repairs to Anicut	2 Nos	63.86	
5	Rehabilitation of Supply channels (Returning wall)	500M	17.18	
	Sub total		**670.88**	
2.Non Tank Component			**NIL**	
	Environment cell		**7.00**	
	Ground water		**Nil**	
	Total		**677.88**	

C. (PHYSICAL AND FINANCIAL PROGRAM)

Sl. No	Description	I Year		II Year		Total	
		Quantity	Amount in Lakhs	Quantity	Amount in Lakhs	Quantity	Amount in Lakhs
1	Strengthening Tank bund	34925	215.00	14966	91.50	49891	306.50
2	Repairs to sluices	36	110.00	15	44.35	51	154.35
3	Repairs to Weir	19	128.99	-	-	19 Nos	128.99
4	Repairs to Anicut	2	63.86	-	-	2 Nos	63.86
5	Rehabilitation of Supply channels	500	17.18	-	-	500m	17.18
	Total		535.03		135.85		**670.88**

VAIPPAR MAIN RIVER SUB BASIN- PACKAGE 1
Calculation of machineries Requirement

Hydraulic excavator &			
4 Tippers / Lorries		6 Hours / Day	
	(4 No x 2 loads/ hour x 6 Hr x 4 m^3/ trip)		192 m^3 /Day
	For 1 month (20 Working days)	20 x 192 m^3	3840 m^3/ month
	Total quantity of earth work	122590 m^3	
	Working period for earth work	9 months +3 Months rainy season	
Machinaries required for earth work :			
1. Hydraulic excavator	- 4 nos		
2. Tippers / Lorries	- 15 nos		
3. Power roller	- 4 nos		
4. Vibrated compactor	- 4 nos		
5. Water lorries	- 4 nos		
Mixer machine	2 m^3 / hour	For 6 hours / day	12 m^3 / day
Total quantity of concrete		4280 m^3	
Mixer machine required		**7 Nos** for 11 days / month -- 9 months	
	Material conveyence	**Tippers / Lorries**	
Cement	10 mt / Trip	1 trip / day	10 mt / day
Sand	5.66 m^3 / Trip	2 trips / day	11.32m^3 /day
Metal / stone	5.66 m^3 / Trip	3 trips / day	16.98 m^3 /day
Total quantity of cement		942 mt	
Lorry required for conveyence		942 / 10	94 Lorries
Total quantity of sand		2429 m^3	
Lorry required for conveyence		2429 / 11.32 m^3	215 Lorries
Total quantity of metal		3852 m^3	
Lorry required for conveyence		3852 /16.98 m^3	227 Lorries
Total quantity of stone		1048 m^3	
Lorry required for conveyence		1048 /16.98 m^3	62 Lorries
Total quantity of Gravel		29 m^3	
Lorry required for conveyence		29 /16.98 m^3	2 Lorries
Total quantity of Steel		39.73 mt	
Lorry required for conveyence		39.73 / 10 mt	4 Lorries
		Total	604 Lorries
Tipper / Lorries for conveyance of materials		**4 Nos** for 10 days for 15 months	

VAIPPAR MAIN RIVER SUB BASIN - PACKAGE 1
Construction Methodology

Sl No	Description of Item	Working Months									Rainy season			Total
		1	2	3	4	5	6	7	8	9	10	11	12	
	Earth work excavation													
1	Channel	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Bund	-	15323	15323	15323	15323	15323	15323	15323	15329	-	-	-	122590
3	Gravel	-	-	10	10	9	-	-	-	-	-	-	-	29
4	Foundation	789	789	789	789	789	789	789	789	793	-	-	-	7105
	Concrete													
5	M 7.5 grade	122	122	122	122	122	122	122	122	119	-	-	-	1095
6	M 10 grade	143	143	143	143	143	143	143	143	146	-	-	-	1290
7	M 15 grade	158	158	158	158	158	158	158	158	162	-	-	-	1426
8	M 20 grade	52	52	52	52	52	52	52	52	53	-	-	-	469
9	RR masonry	-	-	-	129	129	129	129	129	128	-	-	-	773
10	Rough stone	-	-	-	90	90	90	90	90	90	-	-	-	540
11	Plastering	-	-	-	177	177	177	177	177	177	-			1062
12	Pointing	-	-	-	-	-	938	938	938	941	-	-	-	3755
13	Trimming	-	-	2568	2568	2568	2568	2568	2568	2570	-	-	-	17978

VAIPPAR MAIN RIVER SUB BASIN - PACKAGE NO 1

REQUIREMENT OF EQUIPMENTS AND MATERIALS

PACKAGE NUMBER	EQUIPMENTS REQUIRED IN NUMBERS							MATERIAL REQUIRED							
	HYDRAULIC EXCAVATOR	POWER ROLLER	VIBRATED COMPACTOR	TIPPER / LORRY	WATER LORRY	CONCRETE MIXER MACHINE	CONCRETE VIBRATOR	CEMENT IN M.T.	SAND IN m3	STEEL IN M.T.	METAL 40MM IN m3	METAL 20MM IN m3	RR IN m3	GRAVEL IN m3	FUEL
	4	4	4	15	4	7	4	942	2429	39.73	2321	1531	1048	29	

VAIPPAR MAIN RIVER SUB BASIN- PACKAGE 2
Calculation of machineries Requirement

Hydraulic excavator &			
4 Tippers / Lorries		6 Hours / Day	
(4 No x 2 loads/ hour x 6 Hr x 4 m^3/ trip)			192 m^3 /Day
For 1 month (20 Working days)		20 x 192 m^3	3840 m^3/ month
Total quantity of earth work		311626 m^3	
Working period for earth work		15 mon ths + 3 Months rainy season	
Machinaries required for earth work :			
1. Hydraulic excavator - 6 nos			
2. Tippers / Lorries - 24 nos			
3. Power roller - 6 nos			
4. Vibrated compactor - 6 nos			
5. Water lorries - 6 nos			
Mixer machine	2 m^3 / hour	For 6 hours / day	12 m^3 / day
Total quantity of concrete		5026 m^3	
Mixer machine required		**3 Nos** for 11 days / month -- 15 months	
	Material conveyence	**Tippers/ Lorries**	
Cement	10 mt / Trip	1 trip / day	10 mt / day
Sand	5.66 m^3 / Trip	2 trips / day	11.32m^3 /day
Metal / stone	5.66 m^3 / Trip	3 trips / day	16.98 m^3 /day
Total quantity of cement		2460 mt	
Lorry required for conveyence		2460 / 10 mt	246 Lorries
Total quantity of sand		2959 m^3	
Lorry required for conveyence		2959 / 11.32 m^3	261 Lorries
Total quantity of metal		4523.4 m^3	
Lorry required for conveyence		4523.4 /16.98 m^3	266 Lorries
Total quantity of stone		490 m^3	
Lorry required for conveyence		490 /16.98 m^3	29 Lorries
Total quantity of Gravel		261 m^3	
Lorry required for conveyence		261 / 16.98 m^3	16 Lorries
Total quantity of Steel		32.5 mt	
Lorry required for conveyence		32.5 / 10 mt	3 Lorries
		Total	821 Lorries
Tipper / Lorries for conveyance of materials		**6 Nos** for 10 days for 15 months	

VAIPPAR MAIN RIVER SUB BASIN - PACKAGE 2
Construction Methodology

Sl No	Description of Item	Working Months															Rainy season			Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	Earth work excavation																			
1	Channel	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	Bund	20600	20600	20600	20600	20600	20600	20600	20600	20600	20600	20600	20600	13400	9826	-	-	-	-	311626
3	Gravel	-	-	20	20	20	20	20	20	20	20	20	20	20	20	21	-	-	-	261
4	Foundation	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	933	-	-	-	-	-	-	13033
	Concrete																			
5	M 7.5 grade	95	95	95	95	95	95	95	95	95	95	95	95	95	95	100	-	-	-	1430
6	M 10 grade	205	205	205	205	205	205	205	205	205	205	205	205	205	205	211	-	-	-	3081
7	M 20 grade	34	34	34	34	34	34	34	34	34	34	34	34	34	34	39	-	-	-	515
8	Random rubble masonry	-	-	74	74	74	74	74	74	74	74	74	74	74	74	76	-	-	-	964
9	Rough stone	-	-	55	55	55	55	55	55	55	55	55	55	55	55	50	-	-	-	710
10	Plastering	-	-	137	137	137	137	137	137	137	137	137	137	137	137	128	-	-	-	1772
11	Turfing	-	16400	16400	16400	16400	16400	16400	16400	16400	16400	16400	16400	16400	16400	16360	-	-	-	229560
12	Trimming	-	9400	9400	9400	9400	9400	9400	9400	9400	9400	9400	9400	9400	9400	8917	-	-	-	131117

VAIPPAR MAIN RIVER SUB BASIN - PACKAGE NO 2

REQUIREMENT OF EQUIPMENTS AND MATERIALS

PACKAGE NUMBER	EQUIPMENTS REQUIRED IN NUMBERS							MATERIAL REQUIRED							
	HYDRAULIC EXCAVATOR	POWER ROLLER	VIBRATED COMPACTOR	TIPPER / LORRY	WATER LORRY	CONCRETE MIXER MACHINE	CONCRETE VIBRATOR	CEMENT IN M.T.	SAND IN m3	STEEL IN M.T.	METAL 40MM IN m3	METAL 20MM IN m3	RR IN m3	GRAVEL IN m3	FUEL
	6	6	6	24	6	3	3	2460	2959	32.5	2930	2525	964	261	

TANK DETAILS WITH FREE BOARD PROVIDED
VAIPPAR MAIN RIVER – SUB BASIN

Sl. No.	Name of the Tank	Maximum Height of Bund	Free Board		Length of Bund (m)
			Provided previously	Provided now	
1	Vembakottai Tank	3.94	1.00	1.5	4420
2	Pandian Tank	4.19	0.91	1.5	2310
3	Alagapuri Tank	2.8	1.00	1.25	1463
4	O.Mettupatti Tank	2.4	1.00	1.25	1650
5	Pethureddipatti Tank	1.9	1.00	1.25	1000
6	Subramaniyapuram Tank	2.1	1.00	1.25	1650
7	Kollapatti Periyakulam	3.95	1.00	1.5	4650
8	Nenmeni tank	4.25	1.00	1.5	5500
9	Mudithalai Tank	3.65	1.00	1.5	3100
10	Ayyampatti Tank	3.2	1.00	1.5	3400
11	Padarthapuli	3.00m	0.90	1.25	1180
12	T.Pudupatti	4.20m	1.30	1.50	2250
13	Arunkulam	3.50m	1.00	1.50	1500
14	Melmandai	2.60	0.90	1.25	8168
15	Thathaneri	3.63	1.50	1.50	5883
16	M.Jegaveerapuram	2.70	1.00	1.25	2150
17	Vilathikulam	3.75	0.90	1.50	3650
18	Arunachalapuram	3.40	0.90	1.50	2200
19	Nambipuram	6.355	1.25	1.50	4000
20	Sindhalakkarai	4.260	0.95	1.50	1800
21	Keelnattukurichi	3.710	0.60	1.50	3400
22	Vadamalapuram	2.500	0.90	1.25	1150

Note:-

1) For height of bund up to 3.0 m – Free board is 1.25m

2) For height of bund more than 3.0m – Free board is 1.50 m

AWARENESS CREATION PROGRAMME IN SINDALAKARAI VILLAGE ON 26.01.09

VAIPPAR MAIN RIVER SUB BASIN --- WALKTHROUGH SURVEY

AYYAMPATTI TANK – DISCUSSION WITH FARMERS -- 30.12.2008

NENMENI TANK – DISCUSSION WITH FARMERS --- 30.12.2008

MUDITHALAI TANK --DISCUSSION WITH FARMERS -- 30.12.2008

PETHUREDDIPATTI TANK DISCUSSION WITH FARMERS -- 30.12.2008

kOLLAPATTI BIG TANK DISCUSSION WITH FARMERS -- 30.12.2008

MELMANDAI TANK - DISCUSSION WITH FARMERS 3.12.2008

3.12.2008

VILATHIKULAM TANK - DISCUSSION WITH FARMERS 3.12.2008

PADARNDHAPULI TANK-- DISCUSSION WITH FARMERS-- 2.12.2008

ARUNKULAMI TANK-- DISCUSSION WITH FARMERS—2.12.2008

M.JEGAVERAPURAM TANK - DISCUSSION WITH FARMERS—3.12.2008

NAMBIPURAM TANK - DISCUSSION WITH FARMERS – 4.12.2008

KEELANATTUKURICHI VILLAGE - DISCUSSION WITH FARMERS-4.12.2008

T.PUDUPATTI VILLAGE – DISCUSSION WITH FARMERS-2.12.2008

SINDALAKARAI TANK - DISCUSSION WITH FARMERS—4.12.2008

AYAN VADAMALAPURAM TANK - DISCUSSION WITH FARMERS-4.12.2008

THATHANERI VILLAGE - DISCUSSION WITH FARMERS—3.12.2008

ARUNACHALAPURAM TANK - DISCUSSION WITH FARMERS-4.12.2008

SINTHLAKKARAI TANK---DAMAGED WEIR

M.JEGAVEERAPURAM TANK—DAMAGED SLUICE

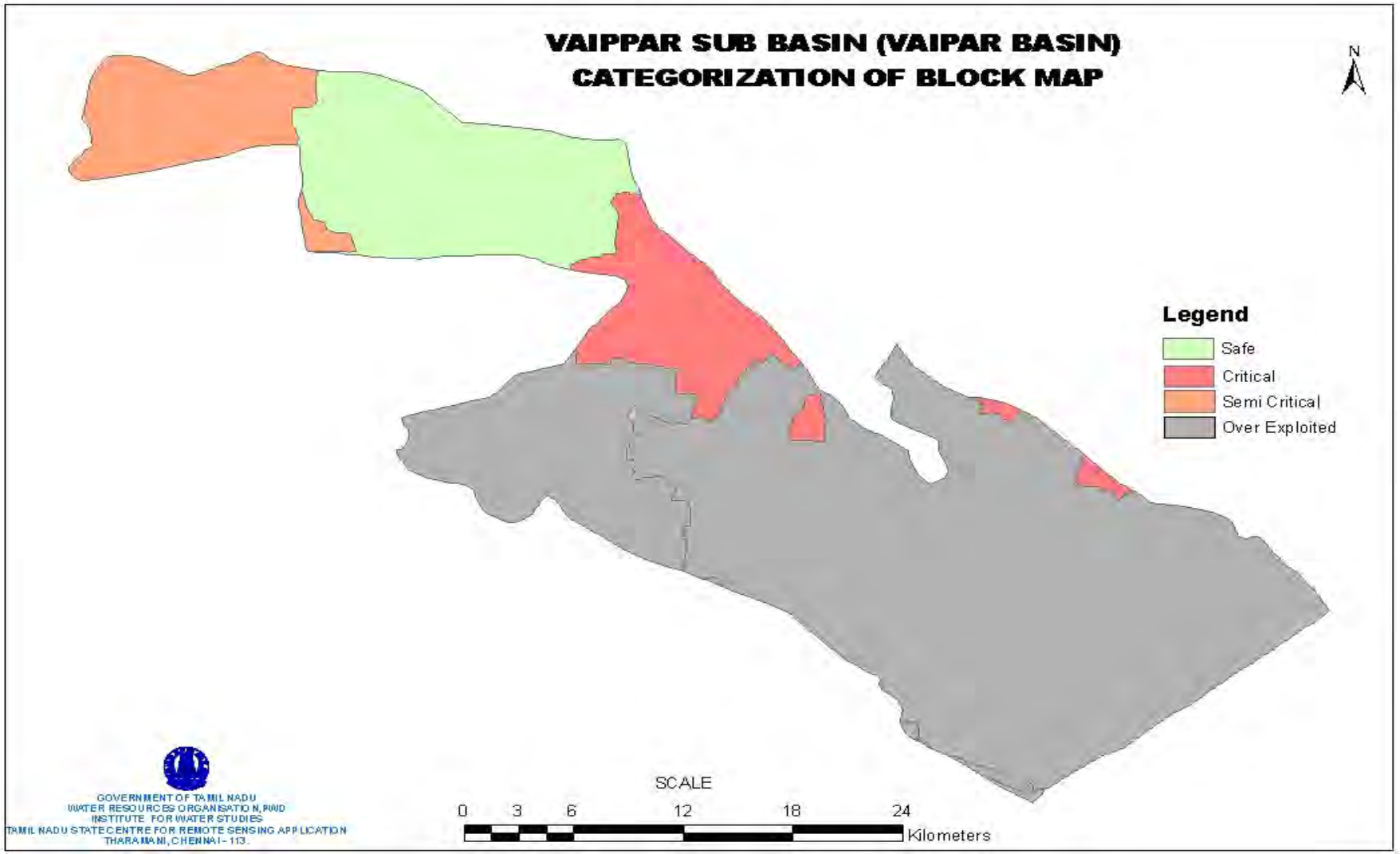
MELMANDAI TANK –DAMAGED SLUICE

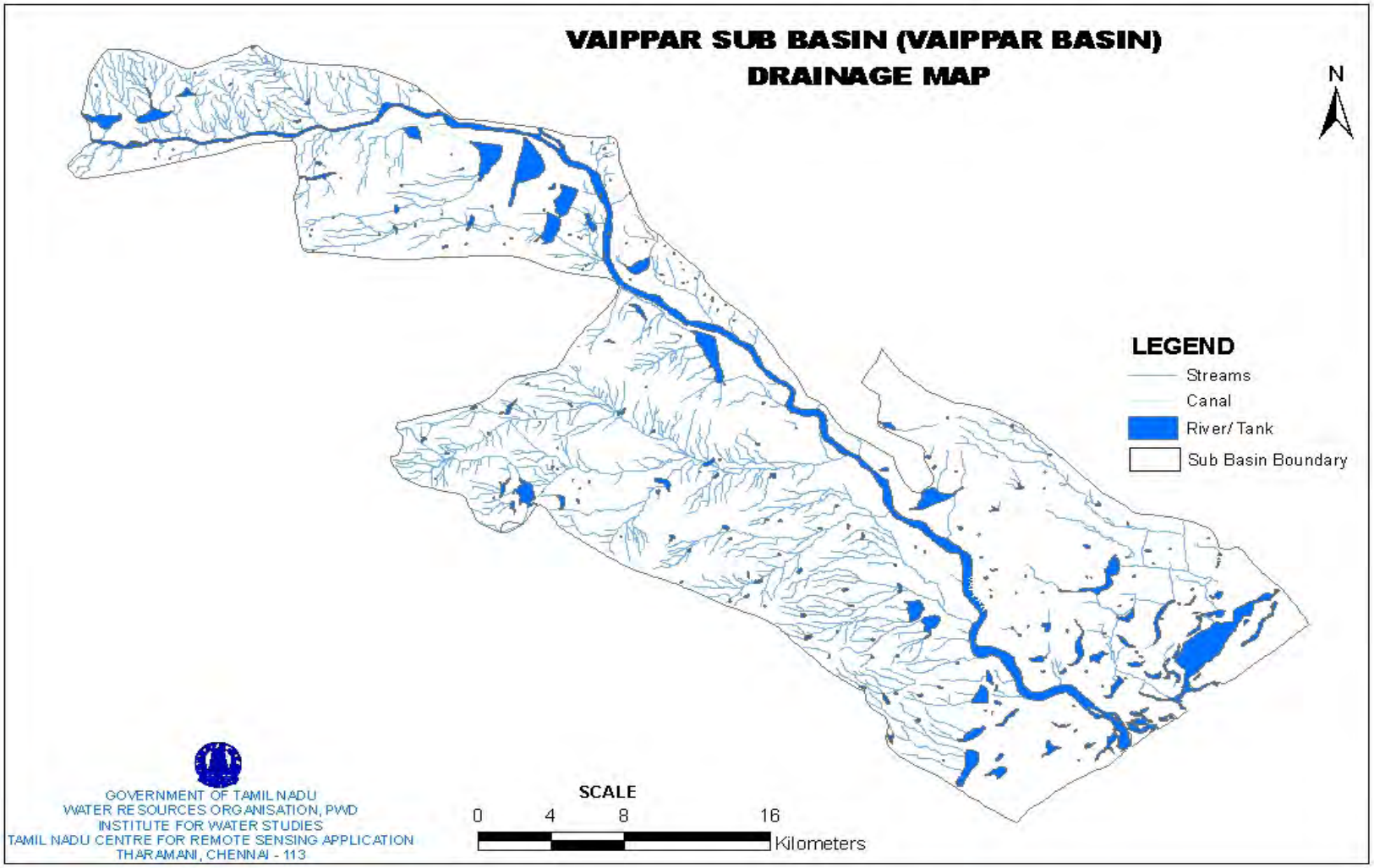
VILATHIKULAM TANK—HEAD SLUICE

ARUNACHALAPURAM TANK BUND

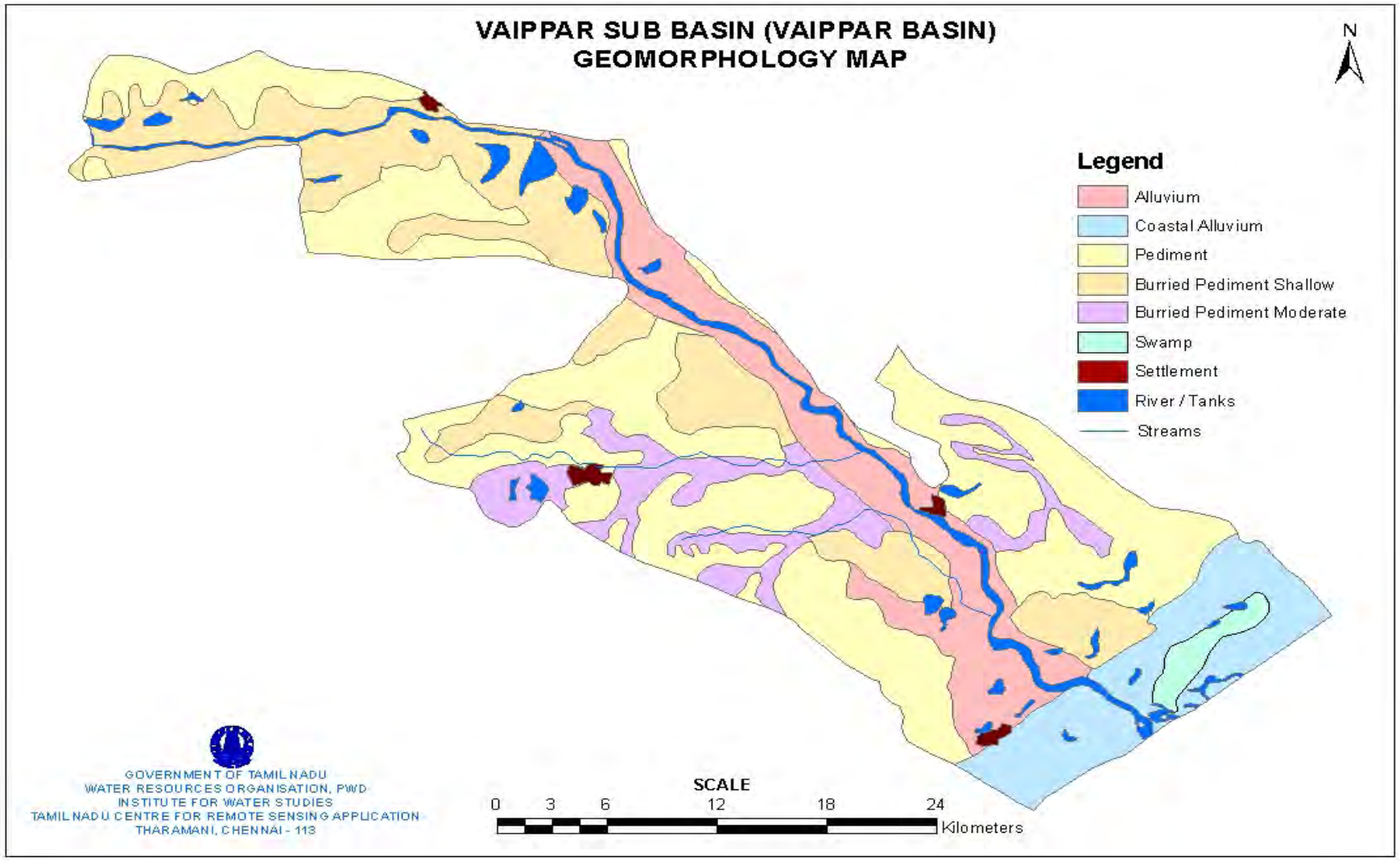


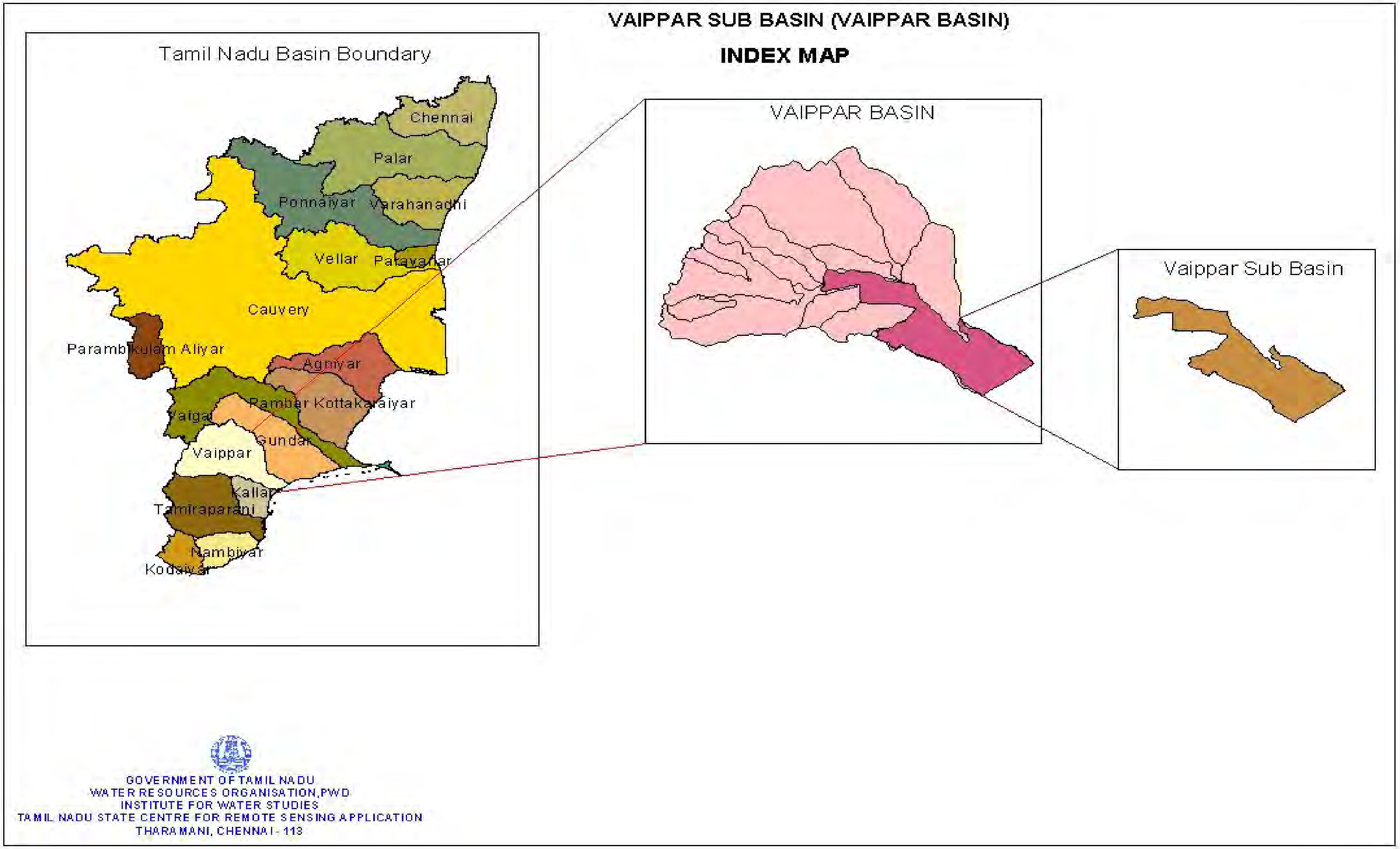
VAIPPAR SUB BASIN (VAIPAR BASIN)
ADMINISTRATIVE MAP
N
Vembakottai
Sathur
Pudur
Kovilpatti
Kayatharu
Vilathikulam
Ottapidaram
LEGEND
Block Boundary
Sub Basin Boundary
SCALE
0 3.5 7 14
Kilometers
GOVERNMENT OF TAMIL NADU
WATER RESOURCES ORGANISATION, PWD
INSTITUTE FOR WATER STUDIES
TAMIL NADU STATE CENTRE FOR REMOTE SENSING APPLICATION
THARAMANI, CHENNAI - 113.

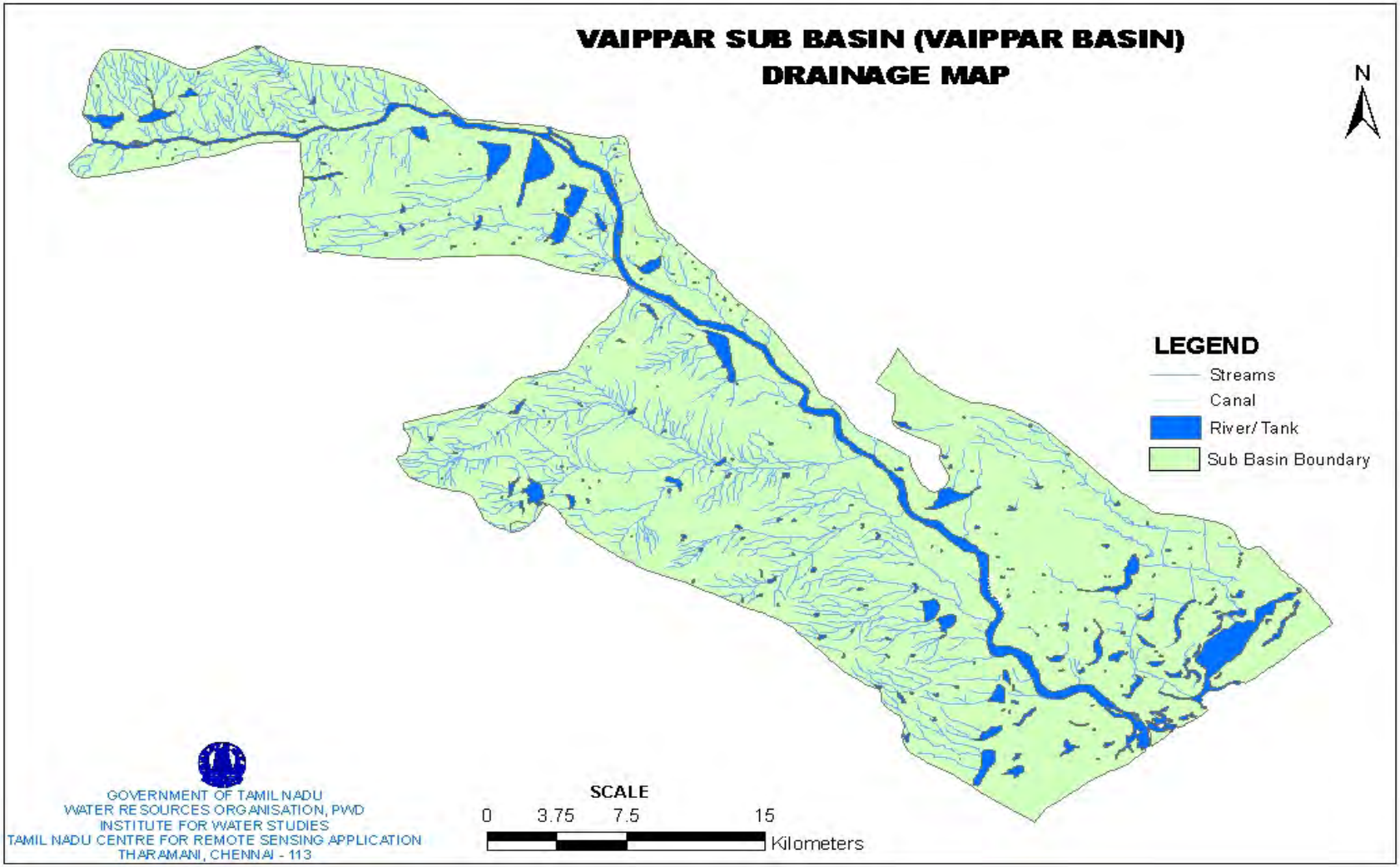

VAIPPAR SUB BASIN (VAIPAR BASIN)
CATEGORIZATION OF BLOCK MAP
N
Legend
Safe
Critical
Semi Critical
Over Exploited
GOVERNMENT OF TAMIL NADU
WATER RESOURCES ORGANISATION, PWD
INSTITUTE FOR WATER STUDIES
TAMIL NADU STATE CENTRE FOR REMOTE SENSING APPLICATION
THARAMANI, CHENNAI - 113.
SCALE
0 3 6 12 18 24
Kilometers

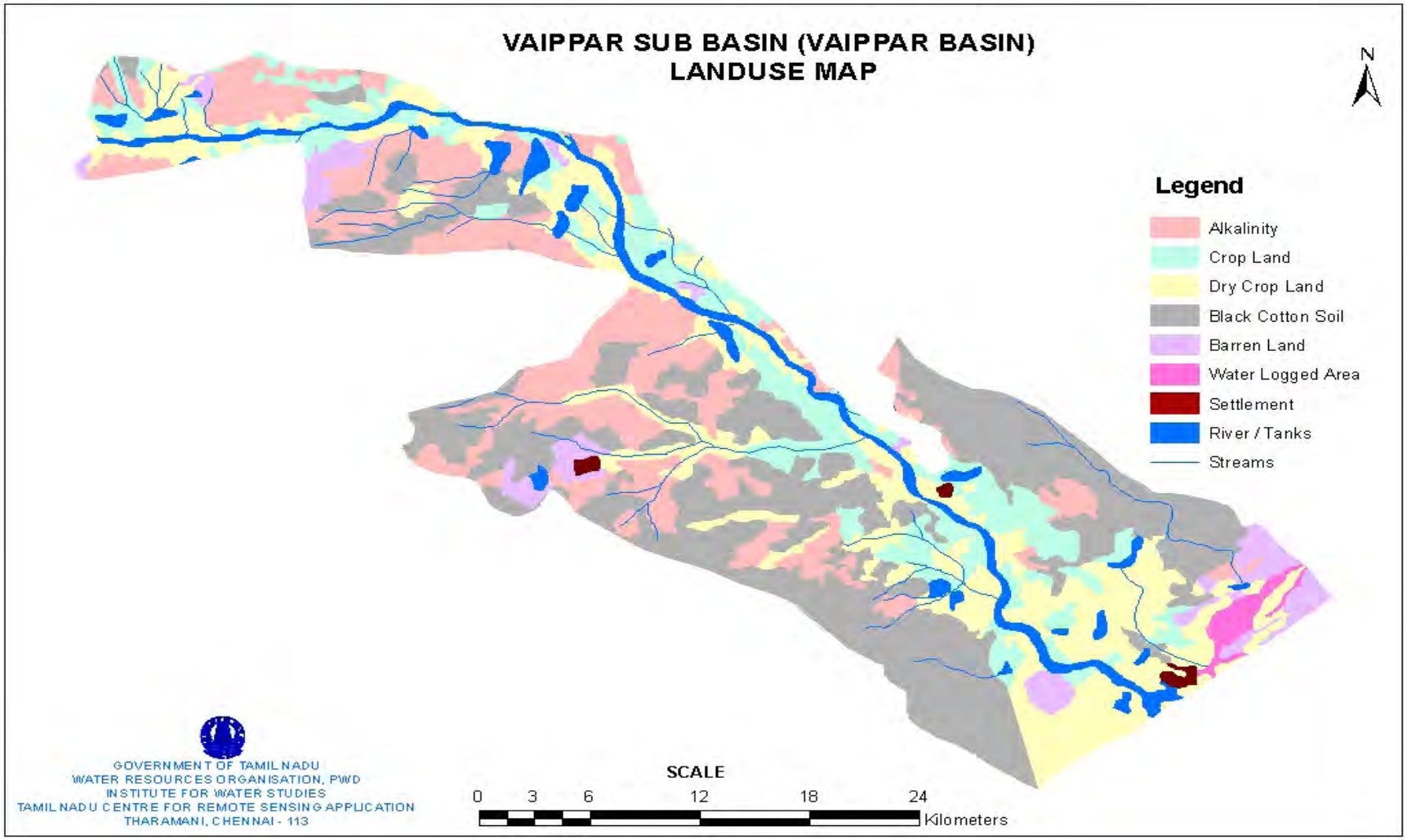

VAIPPAR SUB BASIN (VAIPPAR BASIN)
DRAINAGE MAP
N
LEGEND
Streams
Canal
River/ Tank
Sub Basin Boundary
GOVERNMENT OF TAMIL NADU
WATER RESOURCES ORGANISATION, PWD
INSTITUTE FOR WATER STUDIES
TAMIL NADU CENTRE FOR REMOTE SENSING APPLICATION
THARAMANI, CHENNAI - 113
SCALE
0 4 8 16
Kilometers

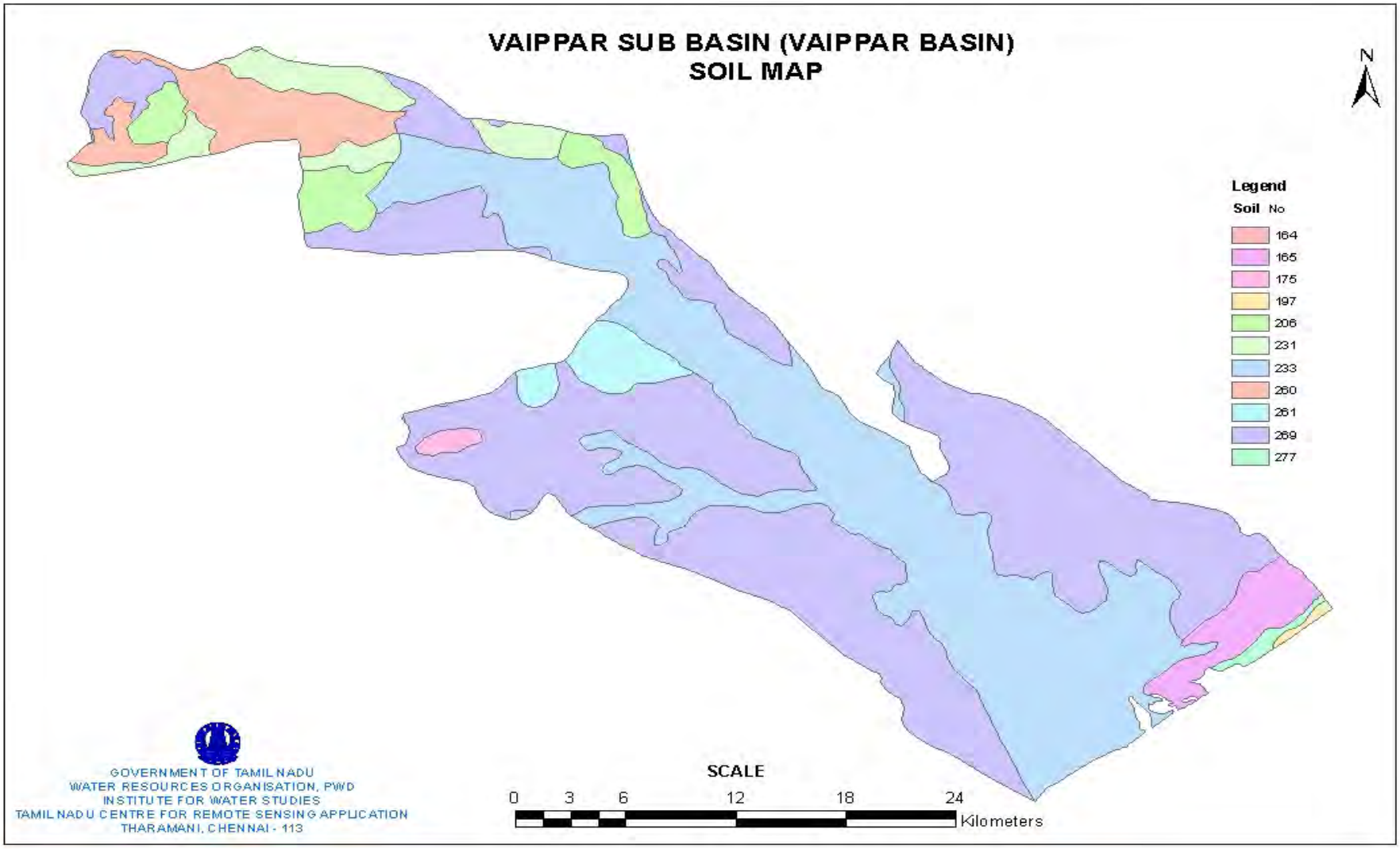

VAIPPAR SUB BASIN (VAIPPAR BASIN)
GEOLOGY MAP
N
Legend
Alluvium
Tanks
River
Charnockite
Coastal Alluvium
Crstalline Limestone
Granite Gneiss
Settlement
Swamp
GOVERNMENT OF TAMIL NADU
WATER RESOURCES ORGANISATION, PWD
INSTITUTE FOR WATER STUDIES
TAMIL NADU CENTRE FOR REMOTE SENSING APPLICATION
THARAMANI, CHENNAI - 113
SCALE
0 3 6 12 18 24
Kilometers

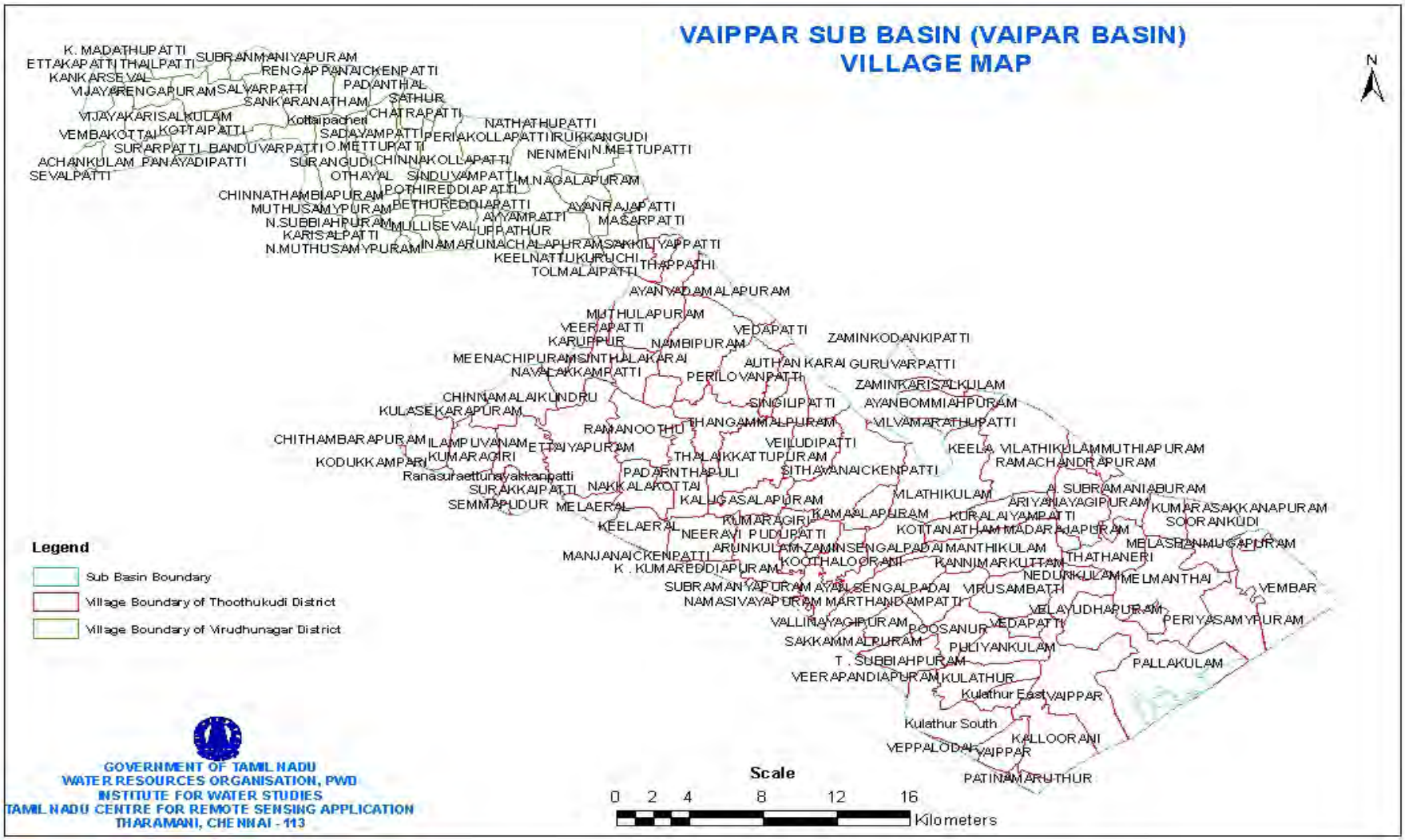

VAIPPAR SUB BASIN (VAIPPAR BASIN)
GEOMORPHOLOGY MAP
N
Legend
Alluvium
Coastal Alluvium
Pediment
Burried Pediment Shallow
Burried Pediment Moderate
Swamp
Settlement
River / Tanks
Streams
GOVERNMENT OF TAMIL NADU
WATER RESOURCES ORGANISATION, PWD
INSTITUTE FOR WATER STUDIES
TAMIL NADU CENTRE FOR REMOTE SENSING APPLICATION
THARAMANI, CHENNAI - 113
SCALE
0 3 6 12 18 24
Kilometers


VAIPPAR SUB BASIN (VAIPPAR BASIN)
INDEX MAP
Tamil Nadu Basin Boundary
Chennai
Palar
Ponnaiyar
Varahanadhi
Vellar
Paravanar
Cauvery
Parambikulam Aliyar
Agniyar
Pambar Kottakaraiyar
Vaigai
Gundar
Vaippar
Kallar
Tamiraparani
Nambiyar
Kodaiyar
VAIPPAR BASIN
Vaippar Sub Basin
GOVERNMENT OF TAMIL NADU
WATER RESOURCES ORGANISATION,PWD
INSTITUTE FOR WATER STUDIES
TAMIL NADU STATE CENTRE FOR REMOTE SENSING APPLICATION
THARAMANI, CHENNAI - 113


VAIPPAR SUB BASIN (VAIPPAR BASIN)
DRAINAGE MAP
N
LEGEND
Streams
Canal
River/ Tank
Sub Basin Boundary
GOVERNMENT OF TAMIL NADU
WATER RESOURCES ORGANISATION, PWD
INSTITUTE FOR WATER STUDIES
TAMIL NADU CENTRE FOR REMOTE SENSING APPLICATION
THARAMANI, CHENNAI - 113
SCALE
0 3.75 7.5 15
Kilometers


VAIPPAR SUB BASIN (VAIPPAR BASIN)
LANDUSE MAP
N
Legend
Alkalinity
Crop Land
Dry Crop Land
Black Cotton Soil
Barren Land
Water Logged Area
Settlement
River / Tanks
Streams
GOVERNMENT OF TAMIL NADU
WATER RESOURCES ORGANISATION, PWD
INSTITUTE FOR WATER STUDIES
TAMIL NADU CENTRE FOR REMOTE SENSING APPLICATION
THARAMANI, CHENNAI - 113
SCALE
0 3 6 12 18 24
Kilometers


VAIPPAR SUB BASIN (VAIPPAR BASIN)
SOIL MAP
N
Legend
Soil No
164
165
175
197
206
231
233
260
261
269
277
GOVERNMENT OF TAMIL NADU
WATER RESOURCES ORGANISATION, PWD
INSTITUTE FOR WATER STUDIES
TAMIL NADU CENTRE FOR REMOTE SENSING APPLICATION
THARAMANI, CHENNAI - 113
SCALE
0 3 6 12 18 24
Kilometers


VAIPPAR SUB BASIN (VAIPAR BASIN)
VILLAGE MAP
N
Legend
Sub Basin Boundary
Village Boundary of Thoothukudi District
Village Boundary of Virudhunagar District
GOVERNMENT OF TAMIL NADU
WATER RESOURCES ORGANISATION, PWD
INSTITUTE FOR WATER STUDIES
TAMIL NADU CENTRE FOR REMOTE SENSING APPLICATION
THARAMANI, CHENNAI - 113
Scale
0 2 4 8 12 16
Kilometers
K. MADATHUPATTI
ETTAKAPATTI
THAILPATTI
SUBRANMANIYAPURAM
KANKARSEVAL
RENGAPPANAICKENPATTI
VIJAYARENGAPURAM
SALVARPATTI
PADANTHAL
SANKARANATHAM
SATHUR
VIJAYAKARISALKULAM
Kottaipachen
CHATRAPATTI
VEMBAKOTTAI
KOTTAIPATTI
SADAYAMPATTI
NATHATHUPATTI
PERIAKOLLAPATTI
IRUKKANGUDI
SURARPATTI
BANDUVARPATTI
O.METTUPATTI
N.METTUPATTI
ACHANKULAM
PANAYADIPATTI
SURANGUDI
CHINNAKOLLAPATTI
NENMENI
SEVALPATTI
OTHAYAL
SINDUVAMPATTI
M.NAGALAPURAM
CHINNATHAMBIAPURAM
POTHIREDDIAPATTI
MUTHUSAMYPURAM
BETHUREDDIAPATTI
AYANRAJAPATTI
N.SUBBIAHPURAM
AYYAMPATTI
MASARPATTI
KARISALPATTI
MULLISEVAL
UPPATHUR
N.MUTHUSAMYPURAM
INAMARUNACHALAPURAM
SAKKILIYAPPATTI
KEELNATTUKURUCHI
THAPPATHI
TOLMALAIPATTI
AYANVADAMALAPURAM
MUTHULAPURAM
VEERAPATTI
VEDAPATTI
ZAMINKODANKIPATTI
KARUPPUR
NAMBIPURAM
MEENACHIPURAMSINTHALAKARAI
AUTHAN KARAI
GURUVARPATTI
NAVALAKKAMPATTI
PERILOVANPATTI
ZAMINKARISALKULAM
CHINNAMALAIKUNDRU
SINGILIPATTI
AYANBOMMIAHPURAM
KULASEKARAPURAM
THANGAMMALPURAM
VILVAMARATHUPATTI
RAMANOOTHU
CHITHAMBARAPURAM
ILAMPUVANAM
ETTAIYAPURAM
VEILUDIPATTI
KEELA VILATHIKULAMMUTHIAPURAM
KODUKKAMPARI
KUMARAGIRI
THALAIKKATTUPURAM
RAMACHANDRAPURAM
Ranasuraettunayakkanpatti
PADARNTHAPULI
SITHAVANAICKENPATTI
SURAKKAIPATTI
NAKKALAKOTTAI
A. SUBRAMANIAPURAM
SEMMAPUDUR
MELAERAL
KALUGASALAPURAM
MLATHIKULAM
ARIYANAYAGIPURAM
KUMARASAKKANAPURAM
KAMAALAPURAM
KURALAIYAMPATTI
SOORANKUDI
KEELAERAL
NEERAVI PUDUPATTI
KOTTANATHAM
MADARAJAPURAM
MELASRANMUGAPURAM
MANJANAICKENPATTI
ARUNKULAM
ZAMINSENGALPADAI
MANTHIKULAM
THATHANERI
K. KUMAREDDIAPURAM
KOOTHALOORANI
KANNIMARKUTTAM
NEDUNKULAM
MELMANTHAI
SUBRAMANYAPURAM
AYALSENGALPADAI
VIRUSAMBATTI
VEMBAR
NAMASIVAYAPURAM
MARTHANDAMPATTI
VELAYUDHAPURAM
VALLINAYAGIPURAM
POOSANUR
VEDAPATTI
PERIYASAMYPURAM
SAKKAMMALPURAM
PULIYANKULAM
T. SUBBIAHPURAM
PALLAKULAM
VEERAPANDIAPURAM
KULATHUR
Kulathur East
VAIPPAR
Kulathur South
KALLOORANI
VEPPALODAI
VAIPPAR
PATINAMARUTHUR

1.7 ENVIRONMENTAL COMPONENT

INDEX

IAMWARM Project

(Environmental Component in Vaippar Sub basin)

Name of the River Basin	Vaippar River Basin
Name of Sub basin	Vaippar Sub basin
Name of WUA	**To be formed**
Name of Division	1. The Executive Engineer, PWD-WRO., Vaippar Basin division, Virudhunagar.
Name of Sub division	1. The Assistant Executive Engineer, PWD-WRO., Vaippar Basin Sub division, Virudhunagar. 2. The Assistant Executive Engineer, PWD-WRO., Vaippar Basin Sub division, Vilathikulam.
District	1.Virudhunagar District 2.Thoothukudi District
Taluk	Virudhunagar District 1**. Sivakasi Taluk** **2. Sattur Taluk** Thoothukudi District **3. Kovilpatti Taluk** **3. Ettayapuram Taluk**
Block	Virudhunagar District **1.Vembakottai Block** **2.Sattur Block** Thoothukudi District **3. Kovilpatti Block** **4.Pudur Block**
I) Name of tank severely affected by Aquatic weeds	Enclosed Annexure - I
II) Domestic Sewage	Enclosed Annexure - II
III) Municipal solid Waste	---------
IV) Industries	Enclosed Annexure - III
V) Water quality status	i)Surface water **The surface water samples were collected and tested periodically by the Environmental Cell Division, Madurai The surface water quality is generally good in this sub basin, low in TDS (< 0.5gms/cm), chloride is medium to hard (temporary) and alkaline in nature. All the streams and tanks are complied with drinking and irrigation quality standards.**

	ii) Ground water **The ground water samples were collected from open walls and bore wells located at Vembakottai, Chelliahpuram, Sattur, Meenakshipuram, N.Mettupatti, Subramaniapuram, Ettayapuram, Kulathur,Marthandampati, Kalugachalapuram, Melakaranthai, Nagalapuram, T.Muthulapuram, T.Duraisamypuram, Arungulam, Kulathur therku, Padarnthapuli, Vilathilkuam and tested periodically by the Geo chemical laboratory, Madurai. The water analysis data indicate that the shallow ground water quality in the Vaippar sub basin is moderately suitable for drinking and irrigation purposes as the parameters like electrical conductivity, chloride, sulphate, hardness and fluorides values are all found to be with in the permissible limits. The excess nitrate content is present in 1 or 2 places. As excessive nitrate values are not persistently present in the ground water, the nitrate pollution has not taken place in this sub basin.**

ANNEXURE – I

Tanks affected by Aquatic weeds

Sl. No	Name of tank	Name of village	Ayacut in Ha	Type of weed
1	**Vembakottai tank**	**Vembakottai**	**85.89**	**Prosopis Julie flora**
2	**Pandiyan tank**	**Vijayakarisalkulam**	**49.35**	**Prosopis Julie flora**
3	**Alagapuri tank**	**Alagapuri**	**47.79**	**Prosopis Julie flora**
4	**O.Mettupatti tank**	**O.Mettupatti**	**55.27**	**Prosopis Julie flora**
5	**Pethureddiyapatti tank**	**Pethureddiyapatti**	**47.88**	**Prosopis Julie flora**
6	**Subramaniyapuram tank**	**Subramaniyapuram**	**44.15**	**Prosopis Julie flora**
7	**Ayyampatti tank**	**Ayyampatti**	**137.70**	**Prosopis Julie flora**
8	**Mudithalai tank**	**Mudithalai**	**46.17**	**Prosopis Julie flora**
9	**Periyagollapatti big tank**	**Periyagollapatti**	**239.36**	**Prosopis Julie flora**
10	**Nenmeni tank**	**Nenmeni**	**169.70**	**Prosopis Julie flora**
11	**T.Pudupatti tank**	**T.Pudupatti**	**566.72**	**Prosopis Julie flora**
12	**Meenakshipuram tank**	**Meenakshipuram**	**55.66**	**Ipomoea cornea**
13	**Sindalakarai Tank**	**Sindalakarai**	**102.41**	**Water hyacinth& Ipomoea cornea**
14	**Arunachalapuram Tank**	**Arunachalapuram**	**70.84**	**Prosopis Julie flora**
15	**Arunkulam tank**	**Arunkulam**	**48.17**	**Prosopis Julie flora**
16	**Ayyan Karisalkulam Tank**	**Ayyan Karisalkulam**	**57.48**	**Prosopis Julie flora**
17	**Boothalapuram Tank**	**Boothalapuram**	**117.41**	**Prosopis Julie flora**
18	**M. Jagaveerapuram Tank**	**K.Kumarapuram**	**166.13**	**Prosopis Julie flora**
19	**Mavilodai Tank**	**Mavilodai**	**176.08**	**Prosopis Julie flora**
20	**Mavilpatti Tank**	**Mavilpatti**	**103.66**	**Prosopis Julie flora**
21	**Melmandai Tank**	**Melmandai**	**194.30**	**Prosopis Julie flora**

22	**Nambipuram Tank**	**Nambipuram**	**299.27**	**Prosopis Julie flora**
23	**Padarthapuli Tank**	**Padarthapuli**	**53.91**	**Prosopis Julie flora**
24	**Perayakudi Tank**	**Perayakudi**	**76.91**	**Prosopis Julie flora**
25	**Ramachandrapuram Tank**	**Ramachandrapuram**	**176.89**	**Prosopis Julie flora**
26	**Thatanaeri Tank**	**Thatanaeri**	**404.80**	**Prosopis Julie flora**
27	**Vilathikulam Peria Eri**	**Vilathikulam**	**83.38**	**Water hyacinth& Ipomoea cornea**
			3677.23	

ANNEXURE – II

Domestic Sewage Inlet

Sl. No	Name of Town / Village	Name of water bodies in to which the sewage is discharged
1	**Sattur**	**Part of untreated sewage of Sattur municipality is let in to the Vaippar river.**
2	**Vilathikulam**	**Part of untreated sewage of Vilathikulam town panchayat is let in to the Vaippar river.**
3	**Vilathikulam**	**Part of untreated sewage of Vilathikulam panchayat is let in to the Vilathikulam tank**

ANNEXURE – III
List of Industries

Sl. No	Name and Address of the industries	Type	Category
1	Sattur taluk **Mercury Cloride (P) Ltd.,** **69, Kovilpatti main Road, Sattur.**	**Chemical**	**Red/Small**
2	**Somasundaram Chemicals, 90, Patel Road, Chatrapatti.**	**Chemical**	**Red/Small**
3	**Yellow Chemicals (P) Ltd.,** **172, Vannankottai Road, Sattur.**	**Chemical.**	**Red/Small**
4	**Sri Thanga Vinayaga Industry,** **90, Nataraja Theatre Road, Sattur.**	**Match**	**Red/Small**
5	**Aruna Match Industries,Padandal.**	**Match**	**Red/Small**
6	**Dhamayanthi Match Factory, Sattur.**	**Match**	**Red/Small**
7	**Crown Match Works, Othyl.**	**Match**	**Red/Small**
8	**The Pioneer Match Works,** **Vannarapet Road, Sattur.**	**Match**	**Red/Small**
9	**Sandard Fire Works (P) Ltd., Surarpatti.**	**Match**	**Red/Small**
10	**Vinobha Granites, RS.NO.270/3, 270/2, Chinnakollapatti.**	**Granites**	**Red/Small**
11	**Emerald Textiles P Ltd.,** **Manipparaipatti.**	**Spinning**	**Orange/Medium**
12	**Sri Umayambigai Mills Ltd., Sattur.**	**Spinning**	**Orange/Small**
13	**TNSTC Ltd., Madurai Division, Sattur.**	**Engineering**	**Orange/Small**
14	**Venkateshwara Card Board, Sattur.**	**Pulp &Paper**	**Orange/Small**
15	**Alagiri Card Board, 31, Jothi Nagar 1st Street, Kovilpatti, Sattur.**	**Pulp &Paper**	**Orange/Small**
16	**Sri Ganesh Blue Metals,** **RS No. 100/1, Sevalpatti.**	**Stone crusher**	**Orange/Small**
17	**Sri Venkateshwara Paper Boards, Sattur.**	**Paper & Board**	**Orange/Small**
18	**Karuppusamy Quarry, Sattur.**	**Stone Crusher**	**Orange/Small**
19	**Chinna Karuppusamy Quarry, Nallmanickenpatti.**	**Stone Crusher**	**Orange/Small**
20	**Valli Garments (P) Ltd.,** **N. Subbiahpuram.**	**Dry Garments**	**Green/Medium**

21	Sivakasi Taluk **Sri Palanimurugan Fire Works, Vembakottai**	**Fire Works.**	**Red/Small**
22	**Baby Fire Works, Salvarpatti.**	**Fire Works.**	**Red/Small**
23	**Meenambigai Match Industries, 104/2-A, Vadamalapuram**	**Match**	**Red/Small**
24	**Geetha Fire Works Factory, Vembakottai**	**Fire Works**	**Red/Small**
25	**Vigneshwara Fire Works, Vembakottai.**	**Fire Works**	**Red/Small**
26	**Hari Narayana Fire Works, Vembakottai.**	**Fire Works**	**Red/Small**
27	**Sri Murugavel Fire Works Factory, Surarpatti.**	**Fire Works**	**Red/Small**
28	**Anil Fire Works Factory, RS 1/2, Surapatti.**	**Fire Works**	**Red/Small**
29	Kovilpatti Taluk **Antony Match Industries, Kadalayur. .**	**Match Units**	**Red/Small**
30	**Mahesh Match Works, Kadalayur.**	**Match Units**	**Red/Small**
31	Ettayapuram Taluk **Kristal Chemicals, Ramanoothu.**	**Chemicals**	**Red/Small**
32	**Prabhat Match Factory, W/13-27, Villathikulam Road, Ettayapuram.**	**Match Unit**	**Red/Small**
33	**Kristal Chemical Industries, (Chrome Oxide Division) Ettayapuram .**	**Chemicals**	**Red/Small**
34	**Mathucon Projects ltd,(Hot mix plant), Ettaiyapuram.**	**Hot mix**	**Red/Small**
35	**Jeyam enterprises, Padarndapuli.**	**Match Unit**	**Red/Small**
36	**Bharathi Co.op Spinning Mills Ltd., Ettayapuram.**	**Spinning Mills**	**Orange/Large**
37	**SSD Spinning mills ltd, Muthulapuram.**	**Spinning Mills**	**Orange/Large**
38	**Sri Murugan Blue metal, Ettayapuram.**	**Stone Crusher**	**Orange/Small**
39	**Sri S.Subbiah & company, Ettayapuram.**	**Stone Crusher**	**Orange/Small**
40	**Sugi blue metal, Ettayapuram.**	**Stone Crusher**	**Orange/Small**
41	**Sri Murugan Industries, Muthulapuram,**	**Paper Board**	**Orange/Small**
42	**Kovilpatti co-op marketing society ltd, Ettaiayapuram**	**Market**	**Orange/Small**
43	**Masanamoorthy textile mills, Ettayapuram.**	**Spinning**	**Orange/Small**

44	**Sri Murugan industries, Muthulapuram.**	**Spinning**	**Orange/Small**
45	Vilathikulam Taluk **Prince Chemical Industry, Nagalapuram.**	**Chemicals**	**Red/Small**
46	**Jeyashree Hospital, Vilathikulam.**	**Private Hospital**	**Red/Small**
47	**RNS infrastructure ltd, Soorankudi.**	**Hot mix**	**Red/Small**
48	**Pearl Chlorides Pvt. Ltd., Ramanoothu.**	**Chemicals**	**Red/Small**
49	**Kristal chemical industries, Ramanoothu.**	**Chemicals**	**Red/Small**
50	**Global Match Makers Pvt Ltd., Chithavanayaukaenpatty.**	**Match Unit**	**Red/Small**
51	**Srinivasa Match Works, Nagalapuram.**	**Match Unit**	**Red/Small**
52	**Saraswathi Match Works, Vilathikulam.**	**Match Unit**	**Red/Small**
53	**Victory Match company, Vilathikulam.**	**Match Unit**	**Red/Small**
54	**V.V minerals, Vaippar-I**	**Minerals**	**Red/Small**
55	**V.V minerals, Vaippar-II**	**Minerals**	**Red/Small**
56	**G.dos & co ltd (Premier salt works), Melmandai.**	**Salt Pan**	**Orange/ Large**
57	**Aruppukkottai Shri Vijayalakshmi Textile, Sankaralingapuram,**	**Spinning**	**Orange/ Large**
58	**Jegathambigai Mills Pvt Ltd., Sankaralingapuram.**	**Spinning**	**Orange/Large**
59	**G.Doss & Co., (Premier Salt Works), Vaippar-I.**	**Salt Pan**	**Orange/Medium**
60	**TNSTC (Madurai Division-II) Ltd., Vilathikulam.**	**Engineering**	**Orange/Small**
61	**Sri Senthil Murugan Salt Works, Vaippar-I,**	**Salt Pan**	**Orange/Small**
62	**Masanamoorthy Spinning Mill, Vilathikulam.**	**Spinning**	**Orange/Small**
63	**Sri devi mills, Madhalapuram.**	**Spinning**	**Orange/Small**
64	**RNS infrastructure ltd(Wet mix), Soorankudi**	**Wet mix**	**Orange/Small**
65	**RNS infrastructure ltd, Soorankudi**	**Construction**	**Orange/Small**

Name of work :- Environmental Monitoring on Water and Soil quality and creating awareness & Updating of "Environmental and Social Assessment Report" for Vaippar Sub -Basin

Estimate Rs 7.00 Lakhs

ENVIRONMANTAL MANAGEMENT FRAME WORK

INRODUCTION

Under TNWRCP, with World Bank assistance, special emphasis was given for the first time in WRO, to assess the Environmental status and degradation caused for all River basins in Tamilnadu. An Environmental assessment study has been conducted by Environment Protection Training and Research Institute, Hyderabad and identifies the Environmental issues, social issues and remedial measures for Vaippar river basin as follows.

Environmental issues	-Poor solid waste management
	-Dye industry effluent
Social issues	-Dry land agriculture
	-Reduction in livestock
	-Women empowerment-SHGs
	-Prevalence of child labour
Remedial measures	-Livestock services delivered and managed.
	-Solid Waste management

The Environmental Cell of WRO assessed Environmental impact on the quality of Surface water, Ground water and Soil by collecting water & soil samples and testing them. Micro level Environmental Status Report for Vaippar River basin was prepared with the assistance of World Bank.

Also awareness programs and Workshops were conducted to create awareness on the Environmental issues and remedies among the Public, Farmers, Government Officials and NGO's. Seminars were conducted to find out new techniques and methods developed recently to solve Environmental problems.

Now under IAMWARM project, focus is at each sub basin level to identify and prioritize the requirements for improvements to storage structures, rehabilitation, new schemes for water harvest and diversification of crops. Any new schemes or rehabilitation of existing one, consideration of the Environmental issues pertaining to that area and remedial action to overcome the problems is must.

DESCRIPTION OF SUB BASIN

The basin is named after the major river Vaippar. But it is known as Nicabanadhi in the upper reaches. Only after the confluence of Deviar with Nichabanadhi the river is called as Vaippar. The river has got a well defined course below Vembakottai reservoir. It traverses through Sivakasi and Sattur taluks of Virudhunagar District, Ettayapuram and Vilathikulam taluks of Thoothukudi district. Arjunanadhi and Sinkottaiyar join on the left flank of the Vaippar river, while Vallampatti odai and Uppathur join on the right flank of the river. The river Vaippar finally empties into Gulf of Mannar near Vaippar village of Thoothukudi District.

At the confluence of Kayalkudiyar with Vaippar, Vembakottai reservoir has been constructed. The storage capacity of Vembakottai reservoir is 11.29 mcm to benefit an extent of 3279 ha of dry lands in Sivakasi and Sattur taluks. At the confluence of Arjunanadhi with Vaippar, Irukkankudi reservoir has been constructed. The capacity of this reservoir is 14.14 mcm to benefit an extent of 3787 ha of irrigated dry crops in Virudhunagar and Thoothukudi districts.

There are three anicuts across vaippar river. Sankaranatham anicut is the first anicut across Vaippar river just below Vembakottai reservoirs at the confluence of Vallampatti odai with Vaippar. The second anicut called Nenmeni anicut across this river near Nenmeni village in Sattur taluk is situated just about 2 km down stream of the Irrukkankudi reservoir. Athankarai anicut is the third and last anicut across Vaippar constructed below the confluence of Sinkottaiyar with Vaippar.

Sattur and Vilathikulam towns are located in this sub basin. This sub basin is a flat terrain with plain catchment area of 797 sq.km. The total ayacut is 3767.16 ha. Vilathikulam is the influencing rainfall station of this sub basin though Sivakasi, Sattur and Kovilpatti are the other rainfall stations.

ENVIRONMENTAL PROBLEMS:

The following environmental issues were identified in the Vaippar sub basin.

WATER WEEDS

Prosopis Julie flora, Ipomoea cornea and Water hyacinth were invaded the water bodies ie.tanks, channels and rivers. These plants are needed to be eliminated totally for conserving precious water resources. The details of tanks affected by water weeds are given in the annexure-I. The aquatic weed growth affect the carrying capacity of channel and storage capacity of tanks, damage the lining of the channel, decrease the water quality and increases the evapotranspiration.

INDUSTRIAL POLLUTION

The total number of industries located in the Vaippar sub basin is more than 80,which includes the industries like Spinning, Chemical, Paper, Hospital, Stone mining, Quarry, Engineering, Lime kiln, Stone crusher, etc, There is no highly polluting Red category Industries. Other important industries are listed out in the annexure – III.

All the industries have their own treatment plant and the treated effluent is used to irrigate their own farm land. Trade Effluent from these industries is being monitored periodically by TNPCB. Any improvement to minimize the effect of pollution will be dealt by the TNPCB.

SOLID WASTE DIPOSAL

The problem of Garbage collection and its disposal has assumed importance, in the context of rapid growth of population, Urbanization, industrial growth and development. There is no organized scientific method of disposal in all the Panchayats of this sub basin.

In Sattur municipality, about 7.50 MT of solid waste is collected and stored in heaps for manure conversion.

In Vilathikulam town panchayat, about 4.00 MT of solid waste is collected and dumped in the nearby open area without proper treatment.

In Ettayapuram town panchayat, about 3.52 MT of solid waste is collected and dumped in the nearby open area without proper treatment.

Under the Rural welfare funds a new scheme for Solid waster Management plan is under implementation. Under that scheme, collection tank for disposable and un-disposable garbage have been constructed. But in most of the Panchayats, recycling the waste and converting the solid waste into manure and production of energy is yet to come up.

SEWAGE DISPOSAL LET INTO WATER BODIES

During the field survey, it is found that in many locations, public sanitary complex have been constructed near riverbanks and banks of tanks. This leads to every possibility to contaminate the water sources. It is observed that the sewage is directly let into the Vaippar river at Sattur and Vilathikulam.

So creating awareness among the Presidents of the local bodies is must and to motivate them to adopt solid waste management and sewage management. Wherever required. Workshop including filed visits, exclusively for them is to be conducted under the IAM WARM project.

ACTIVITIES PROPOSED

To monitor the quality of water and soil and create database regarding the Environmental Status for this sub basin, this proposal has now been included with the following activities at sub basin level. The provisions and necessity are explained below.

I. MONITORING WATER AND SOIL QUALITY PROJECT WORKS

MONITORING

Water samples were collected at Vembakottai reservoir, Sattur, Irukkankudi, Athankarai anicut, Vilathikulam and Vaippar vilage and tested regularly from 2002.Continuance of collection and testing of water samples is essential as good and long range data will enable to understand the problem more precisely. Hence, now it is proposed to collect and test the water sample at the following points, for a period of three years so as to ascertain the Environmental impact on the quality of surface water of this sub basin. Water samples at the following five locations will be collected and tested once in 3 months for a period of three years so as to assess the environmental impact on the quality of surface water of this sub basin more precisely.

1. Sattur - U/S of bridge bye-pass road.
2. Sattur - D/S of Railway bridge.
3. Irukkankudi - D/S of Irukkankudi.
4. Vilathikulam - U/S of causeway in Vilathikulam-Thoothukudi road.
5. Vilathikulam - D/S of Vilathikulam.

In addition to the above identified locations, water samples will also be collected once in a year from tanks and nearby wells in three selected locations, where sewage is directly let into water bodies. These samples will be tested to asses the impact on the quality of surface and ground water.

Soil samples are also to be collected from one selected location to asses the impact on the quality of soil due various Environmental problems like use of chemical fertilizer and using the polluted water. Even from the same locations more number of samples at regular one-year interval has been collected and tested to determine precisely the impact on the degradation of the quality of the soil. Therefore testing of soil samples is essential. Soil samples thus collected will be tested in the Agricultural college.

Under this item following provisions have been made.

1. Testing charges for the water and soil samples.

2. Provision for Conveyance, Purchase of Cans, bottles, chemicals, Documentation of water quality data, Driver salary and Computer operator

II.ENVIRONMENTAL AND SOCIAL KNOWLEDGE

Micro level Environmental Status Reports for Vaippar river basin have been prepared. In these reports Environmental problems and remedial measures have been documented at the basin level. Moreover Environmental and social assessment on river basins of Tamilnadu have been done by Environmental protection Training & Research Institute, Hydrabad. Based on these report and the data now proposed to be collected, Environmental and social assessment for each

sub basins are to be updated and documented in order to program further activities.

Under this item following provisions have been made.

1. Salary for supporting staff i.e.Technical assistant, Mazdoors,
2. Expert analysis and development reporting.

III.TRANSFER OF TECHNICAL KNOW HOW FOR SOLID WASTE AND WEED MANAGEMENT

Now new scheme for solid waste management is under implementation in all the Municipalities and Panchayats. Under this scheme, collection tank for disposable and non disposable garbage have been constructed in most of the local bodies. But, recycling the waste and converting the solid waste in to manure and production of energy from them are yet to come up.

Hence Demonstration and action programs are planned with user agencies are planned to transfer of technical know how for solid waste management and weed management.

IV.ENVIRONMENTAL AND SOCIAL AWARENESS CREATION

Awareness programs are necessary to create awareness among the public about environmental problems and the action to be taken by them to remove or reduce the impacts due to the environmental problems.

Hence, to create and motivate the people, awareness programs are to conducted in the villages where sewage is directly let in to the water bodies. It is also proposed to conduct awareness meeting in schools /institutions to cover the

following subjects in addition to placing stickers, tin sheets, and pamphlets containing message related to the following.

- **Sanitation.**
- **Solid waste treatment.**
- **Sewage treatment and converting the same in to gas.**
- **Natural farming.**
- **Conversion of aquatic weeds in to manure etc.**

As per the instructions of the environmental specialist Mr. Anupham Joshi, the following alterations are made in the proposal,

In addition to the above, pesticides test for water quality is added and test will be carried out for one location for once in a year.

Moreover, it is proposed to conduct field visits for environmental monitoring of project activities with respect to environmental safe guards.

It is proposed to study the impact due to project investments and hence, provisions for data collection and development reports have now been added.

Provision for preparing environmental atlas is now inserted in the context of marking all environmental and social issues with consultations of stake holders, line departments and NGOS.

MODE OF EXECUTION

All the works proposed are to be carried out by outsourcing through an educational institution / NGO's.

TOTAL COST

The total proposal cost works out to Rs. **7.00 Lakhs (Rupees Seven Lakhs only)**

Name of Work : - Environmental Monitoring on Water and Soil Quality and Creating Awareness & Updating of "Environmental and Social Assessment Report" for VAIPPAR SUBBASIN

Detailed Estimate

Sl no	Description of work	No	Measurements			Contents
			L	B	D	
I	Monitoring Water and Soil Quality, Project Works Monitoring					
	Water samples from river basins 5x3x3 =45 Nos					
	Water samples from tanks and wells collected once in six months 5x2x3 =30 Nos					
	Testing charges for water samples	**75Nos**				**75 Nos**
2	**Testing charges for water samples (pesticides) 2x3 =6 Nos**	**6 Nos**				**6 Nos**
3	**Testing charges for Soil sample collected from polluted sites= 1 No / year x 3 years =3 Nos**	**3 Nos**				**3 Nos**
4	**Hiring Jeep driver on service contract basis for the Department vehicle =2Manmonths/yearx3years=6 Man months**	**6 Man months**				**6 Man months**
5	**Conveyance, Purchase of Cans, bottles, chemicals and Documentation of water quality data, engaging Labour etc.,**	**3 years**				**3 years**
6	**Provisions for field visits for environmental monitoring for project activities with respect to environmental safe guards**	**3 years**				**3years**
II	Environmental and Social knowledge base					
1	**Village level data collection on Environmental and Social state regarding other impacts**	**30 Man months**				**30 Man months**
2	**Expert analysis and Development reporting on other impacts**	**LS**				**LS**
3	**Impact studies due to project investments**	**15 Man Months**				**15 Man Months**
4	**Expert analysis and Development reporting due to project investments**	**LS**				**LS**
III	Transfer of technical know how for Solid waste and Weed management					
1	**Formation of Herbal gardens in Institutions**	**1 No**				**1 No**
2	**Demonstration and Consultative meeting for eradication of weed by making manure**	**1 No**				**1 No**

IV	Environmental and Social Awareness creation					
1	**Awareness propagation through Stickers, Tin sheets, Phamlets and Banners**	**3 years**				**3 years**
2	**Awarensss programe for public**	**2 Nos**				**2 Nos**
3	**Awareness meeting in Schools / Institutions**	**1 Nos**				**1Nos**
4	**Perparing and publishing Environmental atlas for the sub basin for the use of line departments\institutions for better management of sub basin.**	**L.S**				**L/S**
5	**Documentation of the entire activities, Up gradation of computer and accessories and purchase of Video films and stationeries**	**LS**				**LS**
V	Variation in Rates and unforeseen items	**LS**				**LS**

Name of Work : - Environmental Monitoring on Water and Soil Quality and Creating Awareness & Updating of "Environmental and Social Assessment Report" for VAIPPAR SUBBASIN

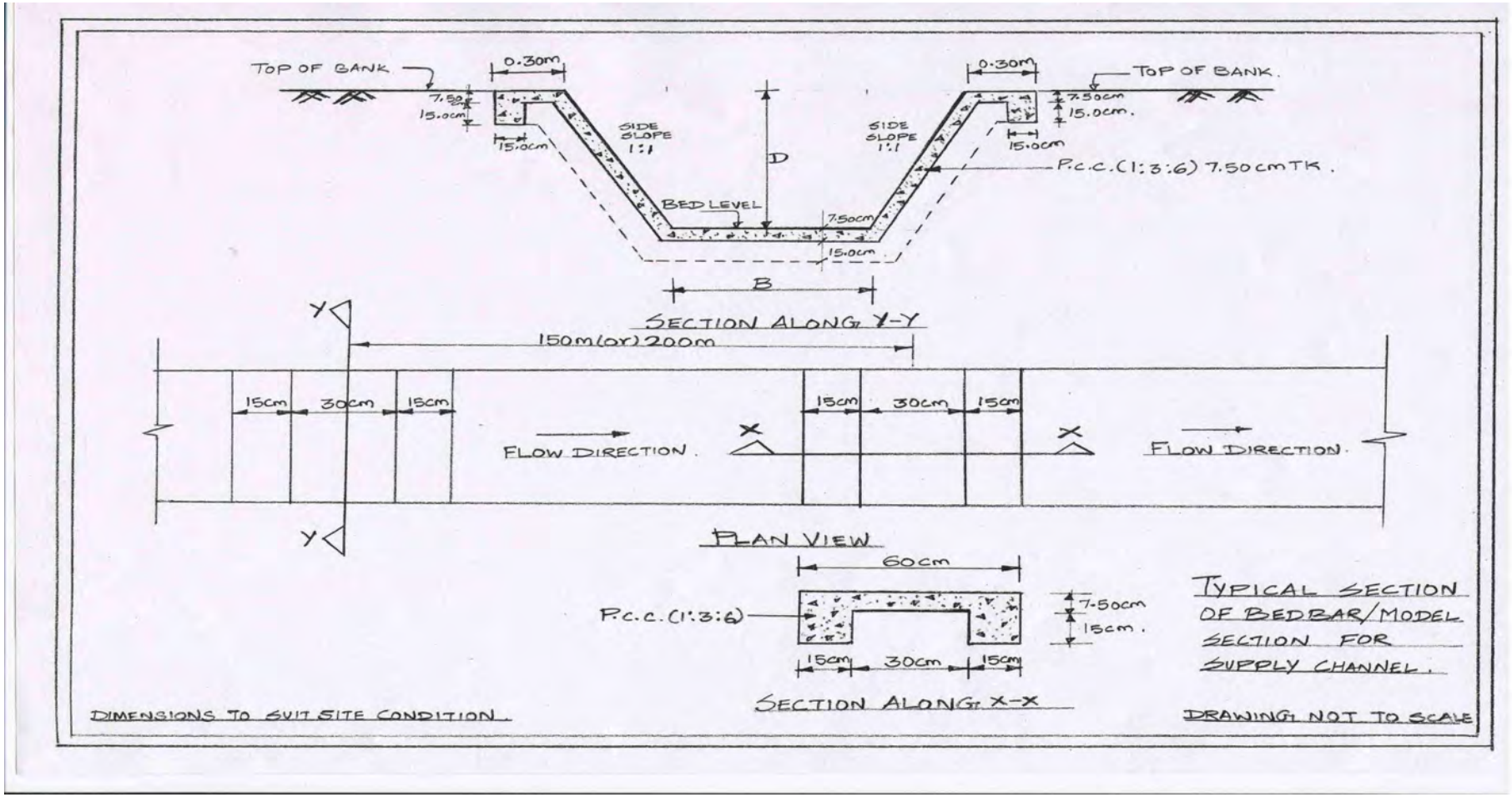
Abstract Estimate

Sl no	Qty.	Description of work	Rate (Rs)	Per	Amount
I	Monitoring Water and Soil Quality Project Works Monitoring				
1	**75 Nos**	**Testing charges for Water samples**	**1400**	**Each**	**105000**
2	**6 Nos**	**Testing charges for Water samples (Pesticides)**	**12000**	**Each**	**72000**
3	**3 Nos**	**Testing charges for Soil sample**	**7350**	**LS**	**22,050**
4	**6 Man months**	**Hiring Jeep driver on service contract basis**	**3500**	**1Man month**	**21,000**
5	**3 Years**	**Conveyance, Purchase of Cans, bottles, chemicals and Documentation of water quality data**	**5000**	**Per year**	**15000**
6	**3 Year**	**Provisions for field visits for environmental monitoring for project activities with respect to environmental safe guards**	**5000**	**Per Year**	**15000**
II	Environmental and Social knowledge base				
1	**30 Man months**	**Village level data collection on Environmental and Social state regarding other impacts**	**5000**	**1Man months**	**150000**
2	**LS**	**Expert analysis and Development reporting on other impacts**	**LS**	**LS**	**25,000**
3	**15 Man months**	**Impact studies due to project investments**	**5000**	**1Man months**	**75000**
4	**LS**	**Expert analysis and Development reporting due to project investments**	**LS**	**LS**	**15000**
III	Transfer of technical know how for Solid waste and Weed management				
1		**Formation of Herbal gardens in Institutions**	**25000**	**1 Nos**	**25000**
2		**Demonstration and Consultative meeting for eradication of weed by making manure**	**15000**	**1 Nos**	**15000**

Sl no	Qty.	Description of work	Rate (Rs)	Per	Amount
IV	Environmental and Social Awareness creation				
1	**3 years**	**Awareness propagation through Stickers, Tin sheets, Phamlets and Banners**	**1500**	**Per year**	**4500**
2	**2 Nos**	**Awarensss programe for public**	**15000**	**Each**	**30,000**
3	**1 No**	**Awareness meeting in Schools / Institutions**	**15000**	**Each**	**15000**
3	**LS**	**Perparing and publishing Environmental atlas for the sub basin for the use of line departments\institutions for better management of sub basin**	**LS**	**LS**	**75000**
4	**LS**	**Documentation of the entire activities, Up gradation of computer and accessories and purchase of Video films and stationeries**	**LS**	**LS**	**20,000**
V	**LS**	Variation in Rates and unforeseen items	**LS**	**LS**	**450**
				Total	7,00,000

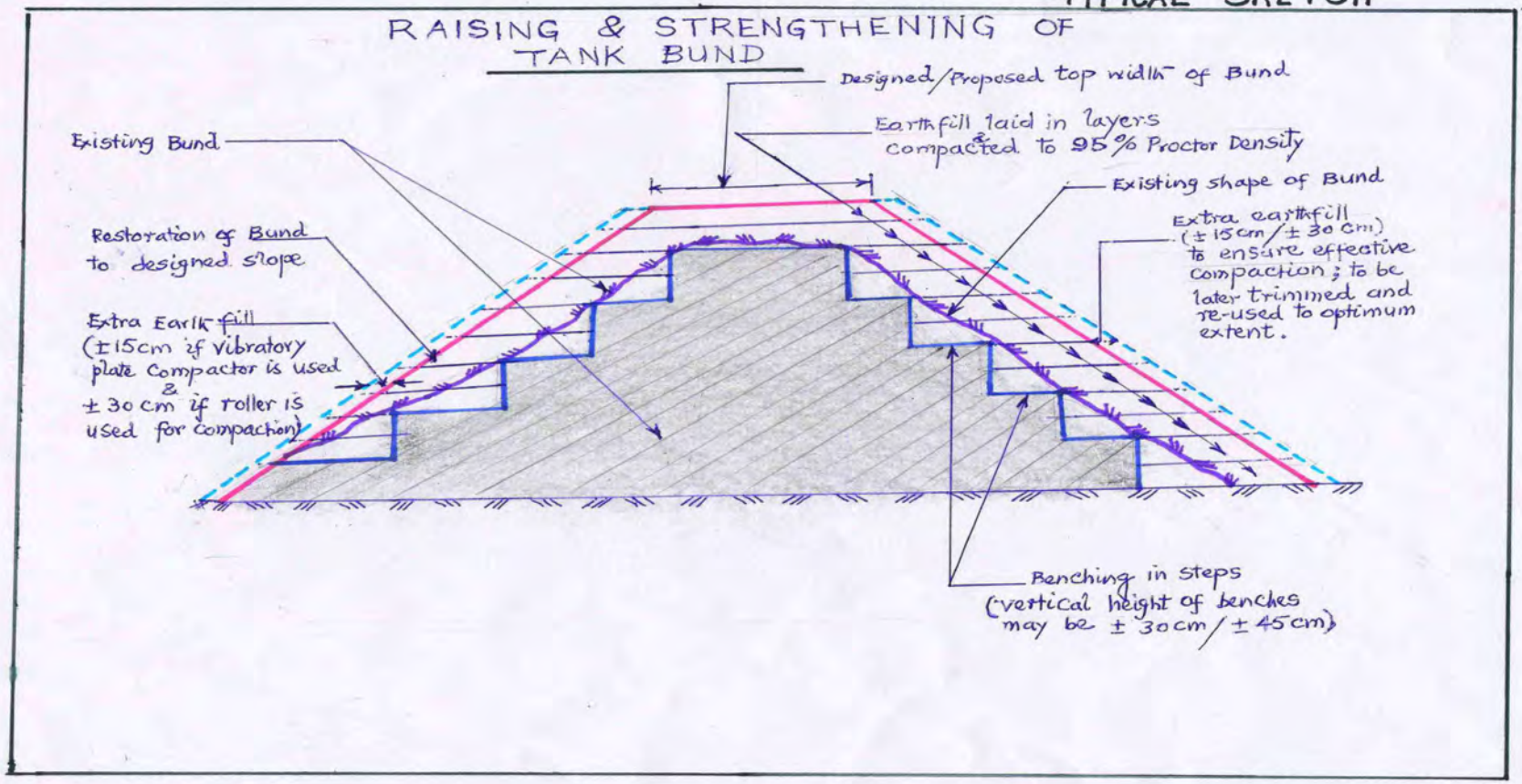
(Rupees Seven Lakhs only)

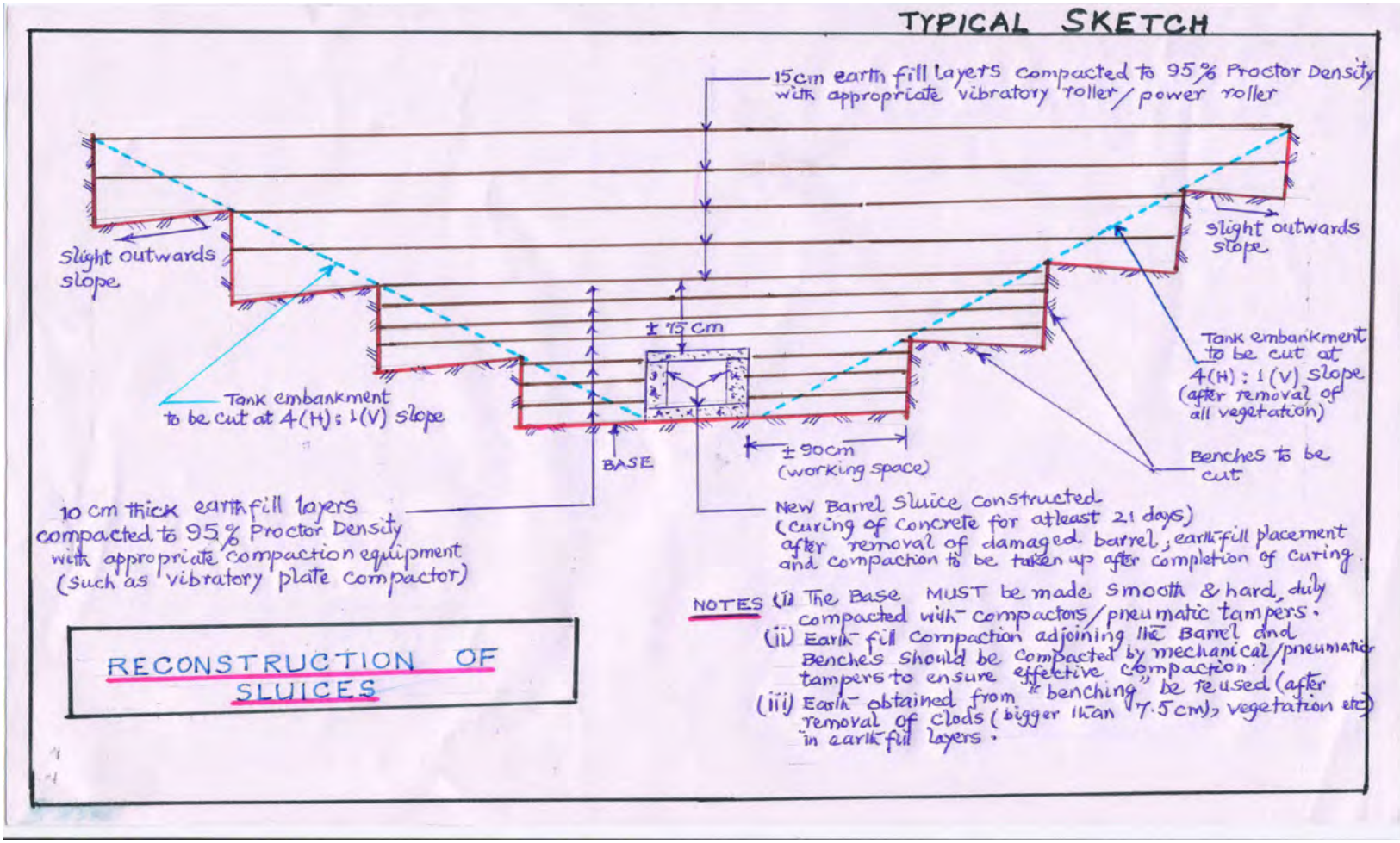
DESIGN AND DRAWING


TOP OF BANK
0.30m
7.50cm
15.0cm
15.0cm
SIDE SLOPE 1:1
D
BED LEVEL
7.50cm
15.0cm
B
SIDE SLOPE 1:1
0.30m
TOP OF BANK.
7.50cm
15.0cm.
15.0cm
P.C.C.(1:3:6) 7.50cm TK.
SECTION ALONG Y-Y
150m(or) 200m
15cm
30cm
15cm
FLOW DIRECTION.
X
X
FLOW DIRECTION.
PLAN VIEW
60cm
P.C.C.(1:3:6)
7.50cm
15cm.
15cm
30cm
15cm
SECTION ALONG X-X
TYPICAL SECTION OF BEDBAR/MODEL SECTION FOR SUPPLY CHANNEL.
DIMENSIONS TO SUIT SITE CONDITION.
DRAWING NOT TO SCALE

TYPICAL SKETCH

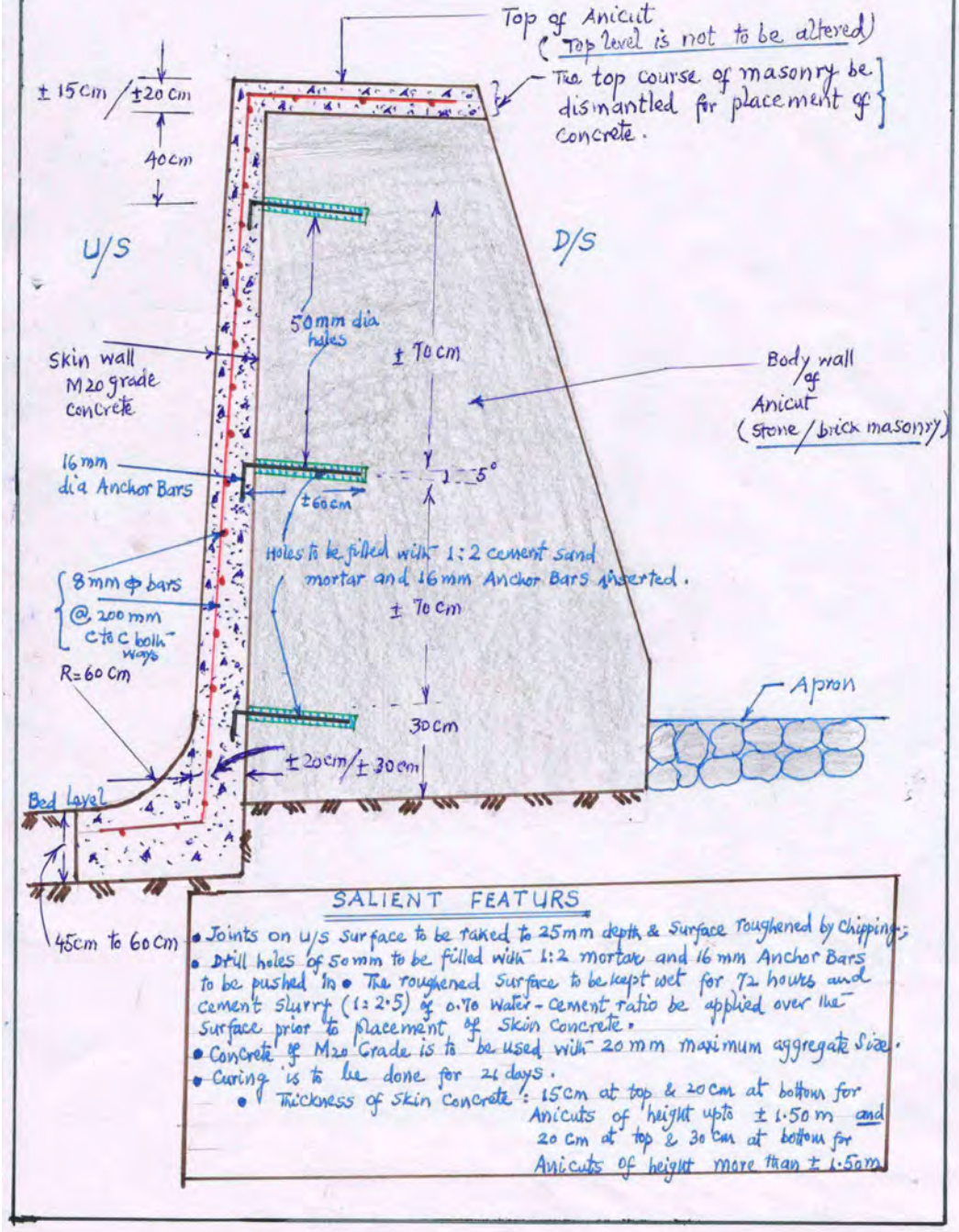
RAISING & STRENGTHENING OF TANK BUND




TYPICAL SKETCH
15cm earth fill layers compacted to 95% Proctor Density with appropriate vibratory roller / power roller
Slight outwards slope
Slight outwards slope
± 15 cm
Tank embankment to be cut at 4(H) : 1(V) slope
Tank embankment to be cut at 4(H) : 1(V) slope (after removal of all vegetation)
BASE
± 90cm (working space)
Benches to be cut
10 cm thick earthfill layers compacted to 95% Proctor Density with appropriate compaction equipment (such as vibratory plate compactor)
New Barrel Sluice constructed (Curing of Concrete for atleast 21 days) after removal of damaged barrel; earthfill placement and compaction to be taken up after completion of curing.
NOTES (i) The Base MUST be made smooth & hard, duly compacted with compactors / pneumatic tampers.
(ii) Earth fill compaction adjoining the Barrel and Benches should be compacted by mechanical / pneumatic tampers to ensure effective compaction.
(iii) Earth obtained from "benching" be reused (after removal of clods (bigger than 7.5 cm), vegetation etc) in earthfill layers.
RECONSTRUCTION OF SLUICES

TYPICAL SKETCH

Rehabilitation of Anicut through SKIN WALL Concrete



SALIENT FEATURS

- Joints on u/s surface to be raked to 25 mm depth & Surface roughened by chipping.
- Drill holes of 50 mm to be filled with 1:2 mortar and 16 mm Anchor Bars to be pushed in.
- The roughened surface to be kept wet for 72 hours and cement slurry (1:2·5) of 0.70 water-cement ratio be applied over the surface prior to placement of Skin Concrete.
- Concrete of M20 Grade is to be used with 20 mm maximum aggregate size.
- Curing is to be done for 21 days.
- Thickness of Skin Concrete : 15 cm at top & 20 cm at bottom for Anicuts of height upto ± 1.50 m and 20 cm at top & 30 cm at bottom for Anicuts of height more than ± 1.50 m.