

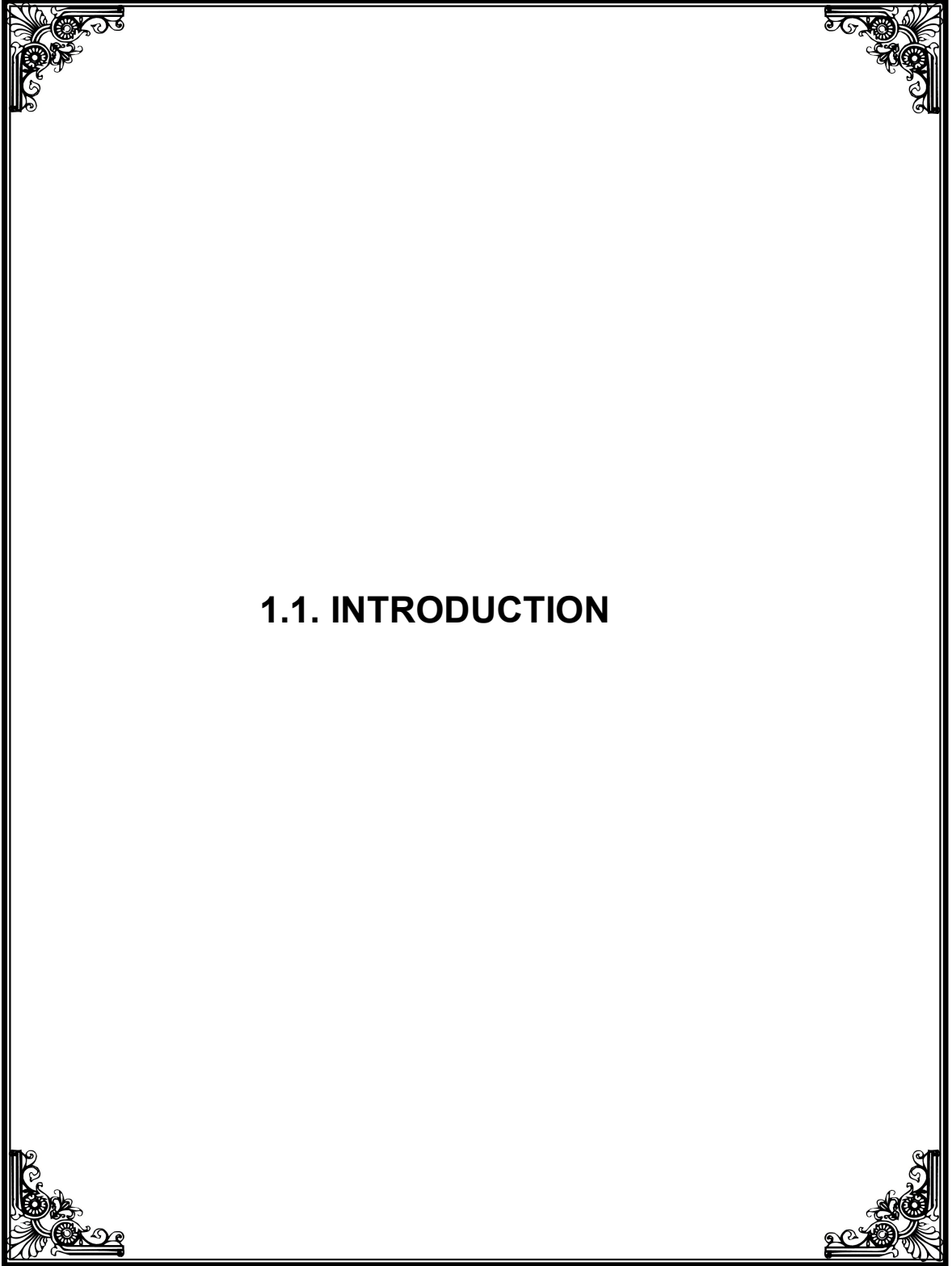


TN – IAMWARM PROJECT

DEVIAR SUB BASIN

**WATER RESOURCES DEPARTMENT
DETAILED PROJECT REPORT**





1.1. INTRODUCTION

1. INTRODUCTION

1.1 GENERAL :

Agriculture is the dominant sector in the Indian economy. TamilNadu which is supposed to be the next state to Rajasthan in Average Annual Rainfall depends largely on the surface water irrigation as well as ground water irrigation. The state has used the surface and ground water potentials to the maximum limit and hence the future development and expansion depends only on the efficient and economical use of water potentials and resources.

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 objective 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 and finally it debouches into the Gulf of Mannar

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

1. Nishabanadhi
2. Kalingalar
3. Deviar
4. Nagariyar
5. Sevalperiyar
6. Kayalkudiar
7. Vallampatti Odai/Uppodai
8. Sindapalli Uppodai
9. Arjunanadhi
10. Kousiganadhi
11. Uppathurar
12. Sinkottaiyar
13. Vaippar

1.3 DESCRIPTION OF DEVIYAR SUB BASIN :

Deviyar is one of the tributary of the river Vaippar. It receives drainage of Deviyar Including all its tributary as covers of 514 Sqkm of which the hilly drainage area is 145 Sqkm

There are 50 non system tanks and 5 No's of Anicut under this sub basin and the total command area of this basin is 6549.02 Ha. It runs for a distance of 48 km and finally joins with Nichabanadhi near Ramalinga puram village in Sattur taluk of Virudhunagar District.

The Deviyar Sub Basin is located between the latitude 9° 25'00'' to 9° 35'00'' and Longitude 77° 49'00'' to 77° 65'00''. The command area of this sub basin comes under Rajalapalayam Taluk of Virudhunagar District & Sankarnkovil Taluk and Sivakeri Taluk of Thrunelveli District . The block lying partially are Rajalapalayam Vasudavanalur and Sankarnkovil.

AYACUT DETAILS :

S.No	Name Of Tank	Ayacut
1	Pudukulam	73.04
2	Ekkanam	104.83
3	Koravankulam	60.5
4	Senthaneri kulam	81.03
5	Solaiserikulam	41.32
6	Mannarmudi	75.44
7	MenamikkiTank	127.39
8	Ariyaneri	83.43
9	Poovanerikulam	85.76
10	Pirakudikulam	140.03
11	Ganapathykulam	49.83
12	Kollan Kondan Periya kulam	365.13
13	Kummittikulam Senkulam	66.14
14	Periyasaliankulam	73.12
15	Puthur Nenmeni	109.19
16	Kanirainthan	49.44
17	Kalathur	68.9
18	Poovani	114.25
19	Vandayarkulam	149.7
20	Deivathikulam	90.04
21	Kulasekara periyakulam	50.03
22	Koonankulam	90.99
23	Thulakudi	125.96
24	Vadakarai	105.45
25	Thenkarai	142.91

26	Old melanarainadu	89.03
27	Periyau daperi	74.6
28	ChinnaAudaipperikulam	162.77.5
29	Vijayaranga peri	243.18
30	Vadakalkulam	54.58.0
31	Thenkal kulam	43.60.0
32	Pullantharai Tank	48.85.0
33	Uyar kudi kulam	105.05.5
34	Rasingaperi	846.63.5
35	Muthur	147.08.0
36	Uruvatti	48.29.0
37	Karunkulam	133.73.5
38	Kadamban kulam	50.32.0
39	Keelapannandhi	79.49.0
40	Konarkulam	67.43.0
41	Valivillikulam	183.84
42	Sengualam	55.56.5
43	Kattakulam	43.52.5
44	Rayam periyakulam	72.26.5
45	Viswanathaper Big	398.43
46	Shanmuganthi	82.81.5
47	Tenamalai kulam	546.04
48	Ettiserkulam	47.07
49	Mullithiruthi kulam	86.11.0
50	Mudivanankan Big Tank	226.99
	Total	6461.15

ANICUT:

S.No	Name Of Tank	Ayacut
51	Ekkanam Anicut	3.92
52	Ariyaneri Anicut	7.08
53	Lingan Odai Anicut	34.49
54	Pirakudiar Anicut	6.02
55	Karuppakudumpan Anicut	36.36
	Total	87.87

Total ayacut of Tanks and anicut 6549.02 ha

- a) Rajapalayam Taluk : 2664.39 Ha
b) Sivagiri Taluk : 3524.46 Ha
c) Sankaran Kovil : 360.17 Ha

LIST OF PANCHAYAT UNION TANKS UNDER DEVIYAR SUB BASIN

VIRUDHUNAGAR DISTRICT

SI.NO	Name of Tank	Ayacut in Ha
1.	North Venganallur Pudukulam	33.46
2.	Cinna salian kulam	20.36
3.	Periyamullikulam	23.18
4.	Odappankulam	35.06
5.	Kosavankulam	331.72
6.	Kunnakudi	36.19
7.	Kurukkalkulam	35.13
8.	Ilandaikulam	11.33
9.	Kammikulam	33.00
10.	Vandaiyarkulam	20.75
11.	Periyathaikulam	22.78
	TOTAL	302.96

TIRUNELVELI DISTRICT

12.	Sampodaikulam	19.94.5
13.	Moonkilkulam	23.42.0
14.	Achankulam	20.14.0
15.	Chinna Anaivettikulam	28.92.0
16.	Vannankulam	27.91.0
17.	Edaiyankulam	26.37.0
18.	Andarkulam	37.80.0
19.	Baranankulam	25.64.5
20.	Arunkulam	18.19.5
	TOTAL	226.34.5
	NET TOTAL	529.305



1.2. HYDROLOGY

2.1 GENERAL

Deviyar is one of the tributary of the river Vaippar. It receives drainage of Deviyar, including all its tributary as covers 514 Sqkm of which the hilly drainage area is 145 Sqkm

There are 50 non system tanks and 5 No's of Anicut under this sub basin and the total command area of this basin is 6549.02 Ha. It runs for a distance of 48 km and finally joins with Nichabanadhi near Ramalinga puram village in Sattur taluk of Virudhunagar District.

2.2 LOCATION

The Deviyar sub basin is located between the latitude 9° 25' 00" to 9° 35' 00" and Longitude 77° 49' 00" to 77° 65' 00". The command area of this sub basin comes under Rajalalayam Taluk of Virudhunagar District & Sankarkovil Taluk and Sivakeri Taluk of Thrunelveli District. The block lying partially are Rajalalayam Vasudavanalur and Sankarkovil

2.3 CATCHMENT AREA

The catchment area of this Sub Basins is 514 Sqkm. This Sub Basins receives rain fall North East- monsoon. During summer the rain fall received is more or less equal to that of South -West monsoon. There are 50 non system tanks and 5 No's of Anicuts under the control of WRO/PWD with a total register ayacut of 6549.02 Ha. But at present only 3944.21 Ha is being used during the 1st crop.

2.4 HYDRO METEOROLOGY

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

2.5 RAIN FALL

There is one influencing rain fall station in this Sub Basin namely Vembakottai.

S.No	Season	Sivagri	Sankarankovi I
1	South west Monsoon	107	72
2	North East Monsoon	441	379
3	Winter	69	49
4	Summer	185	153
5	Annual	805	656

2.6 CLIMATE

TEMPERATURE :

The annual temperature varies from 23.94° C TO 34.89° C. The average mean temperature is 29.33°C.

RELATIVE HUMIDITY :

The average relative humidity is 62.47%.

WIND SPEED :

The average Wind speed is 4.75 Km / Hr. Increase in wind speed occurs during the cyclone which occurs mostly in November.

SUN SHINE :

The average sun shine hour is 7.29 Hr per day.

2.7 SOIL CLASSIFICATION :

Soil classification maps have been prepared in 1996 by The National Bureau of Soil Survey and Land Use Planning, Bangalore (NBSS) in cooperation with the Department of Agriculture of Tamilnadu. Based on this, the predominant soil order founding this Sub Basin, are Inceptisol, Alfisol, and Vertisols.

2.8 LAND HOLDINGS :

More than 73% of the land holdings are below 1 Ha followed by 15 % of land holdings with 1 to 2 Ha size. Big farmers contribute to 2% only. The total Nos of land holdings is 25347.

Category	Size of holdings	Numbers	Percentage
Marginal	Below 1.00 Ha	18371	72.5 %
Small	1.00 – 2.00 Ha	3926	15.5 %
Medium	2.00 – 5.00 Ha	2577	10.2 %

Big	5.0 ha & above	473	1.8%
Total		25347	

2.9 DEMOGRAPHY :

There are three lying partially in this Sub Basin. They are Rajapalayam blocks of Virudhunagar District & Sankarankovil and Vasudevanallur blocks of Thirunelveli District. The population details were obtained from the Director of Statistics; Chennai and used for calculation of domestic water requirement.

Name Of Sub Basin	Total No. Of Blocks	Total No. Of Villages	Population		
			1991	2009	2019
Deviyar Sub basin	3	21	213000	262850	297050

2.10 WATER POTENTIAL :

Surface Water Potential	:	43.21 MCum.
Ground Water Potential	:	117.67 MCum.
Total	:	160.88 MCum.

CROPPING PATTERN

Name of the sub Basin	: Deviar	Fully Irrigated	4655.33	Ha
Nodal District	: Tirunelveli & Virudhunagar	Partially Irrigated	1357.14	Ha
Registered Ayacut Area	6549.02	Gap	536.55	Ha
		Total Ayacut Area	6549.02	Ha

S.No.	Crop	Without Project				With Project				Increasing
		FI	PI	RF/G	TOTAL	FI	PI	RF/G	TOTAL	
I	Perennial crop									
1	Coconut	50.00	147.74	0.00	197.74	210.00	0.00	0.00	210.00	12.26
2	Mango	5.00	0.00	0.00	5.00	5.00	0.00	0.00	5.00	0.00
3	Citrus	5.00	0.00	0.00	5.00	5.00	0.00	0.00	5.00	0.00
4	Guava	3.00	0.00	0.00	3.00	3.00	0.00	0.00	3.00	0.00
	Sub Total	63.00	147.74	0.00	210.74	223.00	0.00	0.00	223.00	12.26
II	Annual crop									
1	Sugar cane	1747.52	0.00	0.00	1747.52	1547.52	0.00	0.00	1547.52	-200.00
2	Banana	110.00	0.00	0.00	110.00	340.00	0.00	0.00	340.00	230.00
	Sub Total	1857.52	0.00	0.00	1857.52	1887.52	0.00	0.00	1887.52	30.00
III	1st crop									
1. a	Paddy	2670.81	566.23	0.00	3237.04	0.00	0.00	0.00	0.00	3237.04
b	Paddy - SRI	0.00	0.00	0.00	0.00	2680.87	0.00	0.00	2680.87	2680.87
2	Maize	0.00	83.17	0.00	83.17	200.00	0.00	0.00	200.00	116.83
3	Cotton	0.00	278.00	0.00	278.00	250.00	0.00	0.00	250.00	-28.00
4	Pulses	0.00	200.00	0.00	200.00	314.63	0.00	0.00	314.63	114.63
5	Chillies	64.00	15.00	0.00	79.00	313.00	0.00	0.00	313.00	234.00
6	Bhendi	0.00	25.00	0.00	25.00	193.00	0.00	0.00	193.00	168.00
7	Brinjal	0.00	10.00	0.00	10.00	200.00	0.00	0.00	200.00	190.00
8	Tomato	0.00	15.00	0.00	15.00	210.00	0.00	0.00	210.00	195.00
9	Tube rose	0.00	17.00	0.00	17.00	77.00	0.00	0.00	77.00	60.00
10	Fallow / Gap	0.00	0.00	536.55	536.55	0.00	0.00	0.00	0.00	-536.55
	Sub Total	2734.81	1209.40	536.55	4480.76	4438.50	0.00	0.00	4438.50	-42.26
	Grand Total (I+II+III)	4655.33	1357.14	536.55	6549.02	6549.02	0.00	0.00	6549.02	0.00
IV	2 nd Crop									
1. a	Paddy	641.67	0.00	0.00	641.67	0.00	0.00	0.00	0.00	-641.67
b	Paddy SRI	0.00	0.00	0.00	0.00	916.00	0.00	0.00	916.00	916.00
2	Maize	0.00	20.12	0.00	20.12	150.00	0.00	0.00	150.00	129.88
3	Pulses	0.00	0.00	0.00	0.00	350.00	0.00	0.00	350.00	350.00
4	Cotton	0.00	0.00	0.00	0.00	200.00	0.00	0.00	200.00	200.00
5	Bhendi	0.00	0.00	0.00	0.00	80.00	0.00	0.00	80.00	80.00
6	Tomato	0.00	0.00	0.00	0.00	40.00	0.00	0.00	40.00	40.00
7	Chillies	0.00	0.00	0.00	0.00	30.00	0.00	0.00	30.00	30.00
	Sub Total	641.67	20.12	0.00	661.79	1766.00	0.00	0.00	1766.00	1104.21
V	3 rd Crop									
		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Total	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Great Grand Total	5297.00	1377.26	536.55	7210.81	8315.02	0.00	0.00	8315.02	1104.21
	Cropping Intensity				101.91%				126.97%	

2.12 LIVE STOCK - POPULATION :-

Name of Sub basin	Cattle Buffalo	Sheep Goats	Pigs	Dogs	Others	Poultry
Deviyar Sub Basin	7450	30,300	650	60	5500	8500
Monthly requirement	1.61 M Cum					

2.13 INDUSTRIES & MONTHLY WATER DEMAND :

Name of Sub basin	Medium Industries	Small Industries	Water Requirement
	2010	2010	2010
Deviyar Sub Basin	1	66	3.45 M Cum

2.14 CROP WATER REQUIREMENT WITHOUT PROJECT

DEVIYAR SUB BASIN

S.No	Name of Crop	Extent in Ha	Crop water requirement		Irrigation Water at h*=0.53	Total water requirement in M cum
			mm	M cum		
1	Coconut	197.74	1300	2.57	4.85	4.85
2	Mango	5	560	0.03	0.06	0.06
3	Citrus	5	560	0.03	0.06	0.06
4	Guava	3	560	0.02	0.04	0.04
5	Sugarcane	1747.52	985	17.21	32.47	32.47
6	Banana	110	1050	1.16	2.19	2.19
7	Paddy	3237.04	950	30.75	58.02	58.02
8	Maize	83.17	327	0.28	0.53	0.53
9	Chillies	79	350	0.28	0.53	0.53
10	Brinjal	10	294	0.03	0.06	0.06

11	Tomato	15	294	0.04	0.08	0.08
12	Tuberose	17	294	0.05	0.09	0.09
13	Cotton	278	383	1.06	2.00	2.00
14	Blackgran	200	294	0.59	1.13	1.13
15	Bhendi	25	294	0.08	0.15	0.15
	Total	6549.02				102.26
	2nd crop					
	Paddy	641.67	950	6.10	11.51	11.51
	Maize	20.12	327	0.07	0.13	0.13
	Total	661.79				113.900

WATER POTENTIAL:

Surface Water Potential	:	43.21	M Cum
Ground Water Potential	:	117.67	M Cum
Total	:	160.88	M Cum

WATER DEMAND WITHOUT PROJECT :

Domestic (M cum)	:	3.40
Livestock (M cum)	:	1.61
Industrial (M cum)	:	3.45
Irrigation WRO	:	113.90 Mcum
P.U.Tanks	:	8.47 Mcum
Total Water Demand (M cum)	:	130.83 Mcum
Water Balance (M cum)	:	30.05 Mcum

CROP WATER REQUIREMENT WITH PROJECT :

S.No	Name of Crop	Extent in Ha	Crop water requirement		Irrigation Water Efficiency			Total M cum
			mm	M cum	Surface water 0.6	Drip 0.8	Sprinkler 0.7	
1	Coconut	210	1300	2.73	4.55			4.55
2	Mango	5	560	0.03	0.05			0.05
3	Citrus	5	560	0.03	0.05			0.05
4	Guava	3	560	0.02	0.03			0.03
1	Sugarcane	1547.52	985	15.24	25.4			25.4
2	Banana	280	1050	2.94	4.9			4.9
1	Paddy	2996.87	950	28.47	47.45			47.45
2	Maize	200	327	0.65	1.08			1.08
3	Chillies	177	350	0.62	1.03			1.03
4	Brinjal	200	294	0.59	0.98			0.98
5	Tomato	170	294	0.50	0.83			0.83
6	Tuberose	77	294	0.23	0.38			0.38
7	Cotton	250	383	0.96	1.6			1.6
8	Blackgran	314.63	294	0.93	1.55			1.55
9	Bhendi	113	294	0.33	0.55			0.55
	Total	6549.02						
	2nd Crop							
1.	Paddy	600	950	5.70	9.50			9.50
2.	Maize	150	327	0.49	0.82			0.82
3.	Tomato	40	294	0.12	0.2			0.2
4.	Chillies	30	350	0.11	0.18			0.18
5.	Pulses	350	300	1.05	1.75			1.75
6.	Bhendi	80	294	0.24	0.4			0.4
		1250			103.28			103.28
					M _{Cum}			M _{Cum}

WATER DEMAND WITH PROJECT :

Domestic	(M cum)	:	3.40
Livestock	(M cum)	:	1.61
Industrial	(M cum)	:	3.45
Irrigation	WRO	:	103.28
	P.U. Tanks	:	7.94
Total Water Demand	(M cum)	:	119.68 Mcum
Water Balance	(M cum)	:	41.20 Mcum



1.3 HYDRAULICS OF THE COMPONENTS

**HYDRAULIC PARTICULARS
ANICUTS**

Name of Anicut	Village	Length of Anicut (M)	Crest level of Anicut (M)	Front(m)	Free Sqkm	Combined Sqkm	Maximum flood discharge Cumeecs Cusecs	Head sluice Location	Vent (M)	Sill Level sluice (M)	discharge cumeecs	Length (m)	Bed width (M)	FSD (M)	Bed slope	Sluice	Remarks
Ekkanam	Sundarrapuram	18.7	181.8				520		0.9*1.15	181	10.95			0.9			
Lingan Odai	Solaicheri	18	163.2				501.39		1.15 * 1.8 * 2 No's	163				0.9			
Ariyanari	Solaicheri	27.4	167.5				761.72		1.4*3.4	165				0.6			
Pirakudiyar	Solaicheri	17	165				490		0.9*1.19	162				0.6			
Karuppakudumba	Viswanathaperi	20	170.5				480		0.9*1.2	169				0.6			

TANKS (Seperate statement for system & Non system Tanks)

S. No.	District	Taluk	Name of Tank	Ayacut in Haq	Capacity in Mcft.	Number of fillings	Free Catchment in Sq Km	Combined Catchment in SqKm	Water spread are (SqKm)	FTL in M	MWL in	No. of Sluices	No's and length of weir (m)	Discharge in cues	Length of bund (M)	Length of Supply Channel (M)	Upper Tank	Lower Tank
1	Virudhunagar	Rajapalayam	Pudukulam	73.04	0.363	1.08	3.25	3.25	0.2656	183.99	184.29	2	2 R=16.80m L=17.80m	11.756	1200	2000	Manarmudui	Ekkamkulam Manamaki Kollankondankulam
2			Ekkanam	104.8	0.586	1.52	1.904	3.17	0.4246	178.87	178.97	3	2 R=8.50m L=3.75m	12.75	1327	2500	Pudhakulam Manamukki Ar	Korankulam Manamukki Ar Kollan Kondan Periya kulam
3			Kooravankulam	60.5	0.381	0.882	3.847	3.909	0.303	170.86	171.36	4	2 R=15.35m L=9.25m	13.641	1600	4000	Ekkanam kulam	Santhamerikulam, Kuravan kulam
4			Senthaneri kulam	81.04	0.486	0.74	2.91	9.06	0.4157	162.97	163.51	3	1 L=22.60m	55.87	1770	3800	Elandakulam Vatrapperikulam Kuravankulam	Kollan Kondan Periya kulam
5			Solaiserikulam	41.32	0.523	0.87	1.05	1.05	0.3085	164.19	164.29	3	1 R=12.30m	16.543	1485	1300	Solaicheri Channel	Periyakulam
6			Mannarmudi	75.44	0.227	3	0.998	0.998	0.2489	163.65	164.05	3	3 L1=20.5m L2=20.5m R=3.67m	6.964	1540	2000	Manamakki Ar	Kondan Periya kulam
7			MenamikkiTank	127.4	0.578	1.64	1.45	2.95	0.3238	179.59	180.04	2	1 R=5.23m	16.02	1380	2600	Puvanarikulam Manamukki river	Pirukudikulam Tank
8			Ariyaneri	83.44	0.269	3	1.56	1.56	0.2423	169.53	170.03	3	1 L=12.40m	12.889	1560	2000	Manamukki Lingan Odai	Kollan Kondan Periya kulam
9			Poovanerikulam	85.77	0.31	2.5	1.499	1.499	0.3026	184.77	185.07	3	1 L=20m	11.405	1720	2000	Manamakki Ar	Manamakki Tank
10			Pirakudikulam	140	1.449	1.381	22.38	25.3	0.7488	177.5	178.1	2	3 L=11.80m	124.47	2325	5000	Poovanerikulam Murumuttikulam Pirakudi Ar	Kollan Kondan Periya kulam Lingan Odai Chidambanerikulam
11			Ganapathykulam	49.83	0.089	0.557	0.566	0.566	0.09	169.63	169.93	2	1 R=11.28m	2.028	630	1500	-	Kadappukudi Tank
12			Kollan Kondan Periya kulam	365.1	2.466	0.745	10.68	58.07	1.7057	156.91	157.5	6	3 L=7.68m R1=6.0m R2=112.45m	225.51	3660	3800	Kadappakudikulam,Aryan erikulam,Pudukulam,Pria kkudikulam,Mannarmudik ulam Ekkanamkulam,Santhaeri kulam	Kulasekarpperi Deviyar
13			Kummittikulam Senkulam	66.15	0.592	0.446	2.46	3.56	0.4599	143.47	143.77	4	1 R=18.10m	12.757	1500	2000	Theivathikulam	Panjamthanai river

14		Periyasaliankulam	73.12	0.406	0.645	1.5196	8.925	0.3722	146.27	146.72	3	1	L=9.80m	60.691	1805	1200	Ariyanerikulam Kalathurkulam	Deviyar river
15		Puthur Nenmeni	109.2	0.75	1.86	0.773	0.773	0.389	144.28	144.58	2	1	L=19.60m	5.3508	1980	1000	Devivar river	Devivar river
16		kanirainthan	49.44	0.259	2.5	1.7813	1.9338	0.1851	156.16	157.21	3	1	R=16.20m	12.249	1320	1000	Kalparuvakulam	Kalathurkulam
17		Kalathur	68.91	0.438	0.427	0.987	6.776	0.2838	151.01	151.69	2	2	L=20m R=9.20m	26.58	920	1000	Pudhukulam, Kannirainthan Kalparuvakulam	Periyasaliankulam
18		Poovani	114.3	0.216	2	5.311	28.48	0.206	156.14	156.74	2	2	R=18.15m L=21.6m	64.66	1365	1000	Sinnavallipperikulam Konakulam, vijiyarangaperikulam Vadakalkulam	Thenmalai kulam Puthukulam
19		vandayarkulam	149.7	0.656	2.7	1.122	1.122	0.4814	165.05	165.25	5	1	R=9.2060.69 1m	10.45	1650	3000	Deviyar	Deviyar river
20		Deivathikulam	90.04	0.718		1.22	1.22	0.5532	143.76	144.06	2	2	L=6.45m R=11.40m	8.1362	2760	2000	Kondan Periya kulam	Kumittikulam
21		Kulasekara periyakulam	50.03	0.565	2.489	8.82	10.9	0.4486	143.4	143.7	2	3	L=27.4m R1=7.0m R2=51m	73081	1950	1000	Alappacherikulam,Krishn aperikulam, Kollan Kondan Periya kulam	Deviyar river
22		Koonankulam	90.99	0.954	1.077	3.1538	3.3738	0.8292	135.93	136.53	1	1	L=8.90m 1.65*1.90	14.213	2250	3800	Teliyan kulam	
23		Thulakudi	126	2.028	0.437	4.127	4.127	1.303	131.33	132.33	1	3	L1=11.0m L2=10.65m R=3.67m	83.83	2520	8000	Kullankondan surplus	Taparikulam,Mandaipillayarkulam,Kilavikulam
24		Vadakarai	105.5	1.719	1.327	4.44	18.75	1.218	116	116.6	2	1	L=53.00m	88.334	3530	4000	PeranallurTank Taparikulam, Mandaipillayarkulam Kurichiyarpatti Thulakudi Tank Muthuvadi Tank Kilavikulam	Puliyarkulam Tank
25		Thenkarai	142.9	2.72	2	8.78	17.48	4.05	114.6	115.2	4	1	L=30.80m	19.694	3488	6000	-	-
26		Old melanarainadu	89.03	1.709	2	-	-	-	100.6	101.5	2	1	L=30m	-	2050	2000	-	-

LIST OF SUPPLY CHANNEL :

S.No	Name of supply channel	Off tank point	Village	Block	Taluk	District	Direct ayacut Area in Ha	Capacity
			-NIL -					



**1.4. PARTICIPATYOY IRRIGATION MANAGAMENT
(PIM)**

Participatory Irrigation Management (PIM) Under IAM WARM
Project in
Deviyar Sub basin

1. The Sub-Basin : This is one of the Thirteen sub-basins of the Vaippar River Basin. Totally 50 irrigation tanks and 5 nos of Anicuts are under the control of Water Resources Organisation (WRO) of Public Works Department (PWD) in this sub-basin. The list of Tanks covered with more details are furnished in the Annexure-1. These 50 tanks and 5 nos of anicuts are located within the sub-basin's hydraulic boundary spread over 21 villages of Rajapalayam taluk in Virudhunagar District and Sivagiri Sankarankoil taluks in Thirunelveli district. The total Command area under these 50 tanks and 5 nos of Anicuts works out to 6549.02 Ha. (Annexure

2. Command Area :

i) Under system tanks : Nil

ii) Under Non-system tanks (50 tanks and five Nos of Anicuts
6549.02 Ha

Total = 6549.02 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 50 tanks and 5 anicuts	28 Nos. (6549.02 Ha)
iii)	The total command area covered	6549.02 Ha

4. An account of “Awareness creation” among the farming community:

Activities undertaken and “Walkthrough Surveys” carried out:

- i) There are 50 tanks and 5 anicuts in the sub-basin spread over 21 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 May 09)
- ii) Form – II : WUA document to be notified by District Collectors (End of June 09)
- iii) Completion of preparatory works for the conduct of Elections for WUAs (End of July 09)

6. Schedule for Conduct of Elections in the sub-basin for forming Management Committees (End of September 09)

7. Support Organisations (SOs) :

- i) Initiating and completing the process of publishing EOI to hire Support Organisation at Sub-basin level (End of April 09)
- ii) Short listing and providing Request for Proposals (RFPs) to all the short listed agencies and obtaining Technical and Cost Proposals (Middle of June2009)

- iii) Selection and deployment of Support Organisation to the sub-basin (End of July 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 carrying out all the tasks related to implementation of TNFMIS Act.
- ii) 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 Deviyar Sub basin

Er.A.Chelliah, B.E.
Assistant Executive Engineer, WRO., PWD.,
Special project Sub Division, Thiruvilliputhur

Er. A. Sankaranarayanan B.E
Assistant Executive Engineer WRO PWD
Special project sub division Rajapalayam.

List of Competent Authorities :

a.	Section Officer, WRO, Special project Section, Special project sub division I Thiruvilliputhur	WUAs 1 to 14
b.	Section Officer, WRO, Special project Section,	WUAs 15 to 28

	Special project sub division Rajapalayam	
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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 579 Nos of farmers from 21 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 06.01.2009.
- 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 21 villages) located within 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 Deviyar 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 – 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.	26.12.08	Pudhukulam	14	5	
2.	26.12.08	Ekkanamkulam	15	5	
3.	26.12.08	Koravankulam	12	5	
4.	27.12.08	Senthaneri	14	6	
5.	27.12.08	Solaicheri	7	4	
6.	26.12.08	Ekkanam Anicut	15	5	
7	27.12.08	Mannarmudi.	10	4	
8	27.12.08	Manamakki	14	7	
9	27.12.08	Ariyanneri	4	4	
10	27.12.08	Poovaneri	5	5	
11	26.12.08	LingaOdai Anicut	5	3	
12	29.12.08	Ariyanneri Anicut	9	4	
13	27.12.08	Pirakudiyar Anicut	10	5	
14	27.12.08	Pirakudi	10	5	
15	27.12.08	Ganapathykulam	8	3	
16	29.12.08	Kollan Kondan Priyakulam	11	4	
17	6.1.09	Kummittikulam	10	6	
18	29.12.08	Periyasaliyankulam	13	6	
19	29.12.08	Puthur Nenmeni	13	5	
20	29.12.08	Kannirainthan	11	6	
21	29.12.08	Kalathur	9	4	
22	29.12.08	Poovani	10	5	
23	6.1.09	Vandaiyarkulam	10	5	
24	6.1.09	Deivathikulam	10	5	
25	6.1.09	Kulasekaraperi	12	5	
26	6.1.09	Koonankulam	11	5	
27	6.1.09	Thulakudi	7	3	
28	6.1.09	Vadakarai	9	4	

29	6.1.09	Thenkarai	8	3	
30	6.1.09	Old Melanmaraiyan nadu	8	3	
31	30.12.08	Periyaavudaiperi	10	2	
32	30.12.08	Chinnaavudaiperi	12	2	
33	30.12.08	Vijarengaperi	10	3	
34	26.12.08	Vadakal	12	4	
35	26.12.08	Thenkal	10	3	
36	30.12.08	Pullanthurai	10	2	
37	30.12.08	Uyarkudi	8	3	
38	26.12.08	Rasingaperi	12	3	
39	26.12.08	Muthur	12	3	
40	30.12.08	Uruvatti	10	3	
41	30.12.08	Karuppakumban	12	3	
42	30.12.08	Karunkulam	10	3	
43	26.12.08	Kadabankulam	13	3	
44	26.12.08	Keelappanathi	8	2	
45	26.12.08	Konarkulam	14	4	
46	30.12.08	Valivalli kulam	10	3	
47	26.12.08	Senkulam	12	4	
48	30.12.08	Kattakulam	12	4	
49	30.12.08	Rayenperi	12	3	
50	26.12.08	Viswanathaperii Big	8	4	
51	26.12.08	Shanmuganathi Tank	13	3	
52	30.12.08	Thenmalai tank	13	3	
53	31.12.08	Mulluthuruthi tank	10	4	
54	31.12.08	Mudi vannankan tank	15	4	
55	31.12.08	Etti cheri tank	15	3	
		Total	579	199	

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	Outcome of walk through survey and discussions with farmers	
			Works suggested by Farmers	Works finalized by WRO Officials
1.	26.12.08	Pudhukulam	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel
2.	26.12.08	Ekkanamkulam	-do-	-do-
3.	26.12.08	Koravankulam	-do-	-do-
4.	27.12.08	Senthaneri	-do-	-do-
5.	27.12.08	Solaicheri	-do-	-do-
6.	26.12.08	Ekkanam Anicut	Rehabilitation of anicut	Rehabilitation of anicut
7	27.12.08	Mannarmudi.	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel
8	27.12.08	Manamakki	-do-	-do-
9	27.12.08	Ariyanneri	-do-	-do-
10	27.12.08	Poovaneri	-do-	-do-
11	26.12.08	LingaOdai Anicut	Rehabilitation of anicut	Rehabilitation of anicut
12	29.12.08	Ariyanneri Anicut	Rehabilitation of anicut	Rehabilitation of anicut
13	27.12.08	Pirakudiyar Anicut	Rehabilitation of anicut	Rehabilitation of anicut
14	27.12.08	Pirakudi	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel
15	27.12.08	Ganapathykulam	-do-	-do-
16	29.12.08	Kollan Kondan Priyakulam	-do-	-do-
17	6.1.09	Kummittikulam	-do-	-do-
18	29.12.08	Periyasaliyankulam	-do-	-do-
19	29.12.08	Puthur Nenmeni	-do-	-do-
20	29.12.08	Kannirainthan	-do-	-do-
21	29.12.08	Kalathur	-do-	-do-
22	29.12.08	Poovani	-do-	-do-
23	6.1.09	Vandaiyarkulam	-do-	-do-
24	6.1.09	Deivathikulam	-do-	-do-
25	6.1.09	Kulasekaraperi	-do-	-do-

26	6.1.09	Koonankulam	-do-	-do-
27	6.1.09	Thulakudi	-do-	-do-
28	6.1.09	Vadakarai	-do-	-do-
29	6.1.09	Thenkarai	-do-	-do-
30	6.1.09	Old Melanmaraiyan nadu	-do-	-do-
31	30.12.08	Periyaavudaiperi	-do-	-do-
32	30.12.08	Chinnaavudaiperi	-do-	-do-
33	30.12.08	Vijarengaperi	-do-	-do-
34	26.12.08	Vadakal	-do-	-do-
35	26.12.08	Thenkal	-do-	-do-
36	30.12.08	Pullanthurai	-do-	-do-
37	30.12.08	Uyarkudi	-do-	-do-
38	26.12.08	Rasingaperi	-do-	-do-
39	26.12.08	Muthur	-do-	-do-
40	30.12.08	Uruvatti	-do-	-do-
41	30.12.08	Karuppakuduban	-do-	-do-
42	30.12.08	Karunkulam	-do-	-do-
43	26.12.08	Kadabankulam	-do-	-do-
44	26.12.08	Keelappanathi	-do-	-do-
45	26.12.08	Konarkulam	-do-	-do-
46	30.12.08	Valivalli kulam	-do-	-do-
47	26.12.08	Senkulam	-do-	-do-
48	30.12.08	Kattakulam	-do-	-do-
49	30.12.08	Rayenperi	-do-	-do-
50	26.12.08	Viswanathaperii Big	-do-	-do-
51	26.12.08	Shanmuganathi Tank	-do-	-do-
52	30.12.08	Thenmalai tank	-do-	-do-
53	31.12.08	Mulluthuruthi tank	-do-	-do-
54	31.12.08	Mudi vannankan tank	-do-	-do-
55	31.12.08	Etti cheri tank	-do-	-do-

DEVIYAR SUBBASIN - PARTICULARS OF WALK THROUGH SURVEY						
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
1	26.12.08	Pudhukulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing Fisheries			
2	26.12.08	Ekkanamkulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing Fisheries			
3	26.12.08	Koravankulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel

			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
4	27.12.08	Senthaneri	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
5	27.12.08	Solaicheri	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			

SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
6	26.12.08	Ekkanam Anicut	WRO	Rehabilitation of anicut	Rehabilitation of anicut	Rehabilitation of anicut
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
7	27.12.08	Mannarmudi.	WRO	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
8	27.12.08	Manamakki	WRO	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering TNAU			

			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
9	27.12.08	Ariyanneri	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
10	27.12.08	Poovaneri	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
11	26.12.08	LingaOdai Anicut	WRO	Rehabilitation of anicut	Rehabilitation of anicut	Rehabilitation of anicut
			Agriculture			

			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
12	29.12.08	Ariyanneri Anicut	WRO	Rehabilitation of anicut	Rehabilitation of anicut	Rehabilitation of anicut
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
13	27.12.08	Pirakudiyar Anicut	WRO	Rehabilitation of anicut	Rehabilitation of anicut	Rehabilitation of anicut
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
14	27.12.08	Pirakudi	WRO	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel

			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
15	27.12.08	Ganapathykulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
16	29.12.08	Kollan Kondan Priyakulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			

SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
17	06.01.08	Kummittikulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
Fisheries						
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
18	29.12.08	Periyasaliyankulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
Fisheries						
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
19	29.12.08	Puthur Nenmeni	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
Agriculture						

			Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
20	29.12.08	Kannirainthan	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
21	29.12.08	Kalathur	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made

22	06.01.08	Poovani	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
23	06.01.08	Vandaiyar kulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
24	06.01.08	Deivathikulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			

			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
25	06.01.08	Kulasekaraperi	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
26	06.01.08	Koonankulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made

27	06.01.08	Thulakudi	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
28	06.01.08	Vadakarai	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
29	06.01.08	Thenkarai	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			

			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
30	06.01.08	Old Melanmaraiyan nadu	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
31	30.12.08	Periyaavudaiperi	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made

32	30.12.08	Chinnaavudaiperi	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
33	30.12.08	Vijarengaperi	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
34	26.12.08	Vadakal	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			

			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
35	26.12.08	Thenkal	WRO	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
36	30.12.08	Pullanthurai	WRO	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel	Rehabilitaton of tank bund, sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made

37	30.12.08	Uyarkudi	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
38	26.12.08	Rasingaperi	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
39	26.12.08	Muthur	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			

			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
40	30.12.08	Uruvatti	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
41	30.12.08	Karuppakudumbai	WRO	Rehabilitation of anicut	Rehabilitation of anicut	Rehabilitation of anicut
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
42	30.12.08	Karunkulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			

			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
43	30.12.08	Kadabankulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made
44	26.12.08	Keelappanathi	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Location	Name of the Department	Farmers Request	Technical Solution	Proposal made

45	26.12.08	Konarkulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
46	31.12.08	Valivalli kulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
47	26.12.08	Senkulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			

			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
48	30.12.08	Kattakulam	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
49	30.12.08	Rayenperi	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made

50	26.12.08	Viswanathaperii Big	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
51	26.12.08	Shanmuganathi Tank	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
52	30.12.08	Thenmalai tank	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			

			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
53	31.12.08	Mulluthuruthi tank	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made
54	31.12.08	Mudi vannankan tank	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketing			
			Fisheries			
SI No	Date of walk through survey	Locati on	Name of the Department	Farmers Request	Technical Solution	Proposal made

55	31.12.08	Etti cheri tank	WRO	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel	Rehabilitaton of tank bund,sluice wier, and supply channel
			Agriculture			
			Horticulture			
			Agriculture Engineering			
			TNAU			
			Agriculture marketting			
			Fisheries			



1.5 IRRIGATION INFRASTRUCTURE

LIST OF ANICUTS UNDER DEVIAR SUB BASIN

Sl.No.	Anicut	Village	Block	Taluk	District	District Ayacut Area in Ha	Capacity
1	Ekkanam	Sundarragapuram	Rajapalayam	Rajapalayam	Virudhunagar	3.92	Nil
2	Lingan Odai	Solaicheri	Rajapalayam	Rajapalayam	Virudhunagar	34.49	Nil
3	Ariyanari	Solaicheri	Rajapalayam	Rajapalayam	Virudhunagar	7.08	Nil
4	Priakudiyar	Solaicheri	Rajapalayam	Rajapalayam	Virudhunagar	6.02	Nil
5	Karuppakudumban	Viswanathaperi	Vasudevanallur	Sivagiri	Tirunelveli	36.36	Nil

LIST OF TANKS: (Separate statement for System and Non System Tanks Under Deviar Sub Basin

Sl.No.	Tank	Village	Block	Taluk	District	Ayacut Area in Ha	Capacity
1	Pudukulam	Sundarajapuram Village	Rajapalayam	Rajapalayam	Virudhunagar	73.04	0.3629
2	Ekkanam	Sundarajapuram Village	Rajapalayam	Rajapalayam	Virudhunagar	104.83	0.586
3	Koravankulam	Sundarajapuram Village	Rajapalayam	Rajapalayam	Virudhunagar	60.50	0.3807
4	Senthaneri Kulam	Sundarajapuram Village	Rajapalayam	Rajapalayam	Virudhunagar	81.03	0.4864
5	Solaicherikulam	Sundarajapuram Village	Rajapalayam	Rajapalayam	Virudhunagar	41.32	0.5231
6	Mannarmudi	Solaicheri Village	Rajapalayam	Rajapalayam	Virudhunagar	75.44	0.2265
7	Manamikki Tank	Solaicheri Village	Rajapalayam	Rajapalayam	Virudhunagar	127.39	0.5779
8	Ariyaneri	Solaicheri Village	Rajapalayam	Rajapalayam	Virudhunagar	83.43	0.2685
9	Poovanerikulam	Solaicheri Village	Rajapalayam	Rajapalayam	Virudhunagar	85.76	0.3102
10	Pirakudikulam	Mettupaatty Village	Rajapalayam	Rajapalayam	Virudhunagar	140.03	1.4492
11	Ganapathykulam	Mettupaatty Village	Rajapalayam	Rajapalayam	Virudhunagar	49.83	0.0885
12	Kollan Kondan Periyakulam	Kollan Kondan Village	Rajapalayam	Rajapalayam	Virudhunagar	365.13	2.4662
13	Kummittikulam Senkulam	Kollan Kondan Village	Rajapalayam	Rajapalayam	Virudhunagar	66.14	0.59236
14	Periyasaliankulam	Puthur Village	Rajapalayam	Rajapalayam	Virudhunagar	73.12	0.4055
15	Puthur Nenmeni	Puthur Village	Rajapalayam	Rajapalayam	Virudhunagar	109.19	0.74996
16	Kanirainthan	Chokkanathanputhur	Rajapalayam	Rajapalayam	Virudhunagar	49.44	0.2593

		Village						
17	Kalathur	Chokkanathanputhur Village	Rajapalayam	Rajapalayam	Virudhunagar	68.90	0.4384	
18	Poovani	Chokkanathanputhur Village	Rajapalayam	Rajapalayam	Virudhunagar	114.25	0.2155	
19	Vandayarkulam	Chokkanathanputhur Village	Rajapalayam	Rajapalayam	Virudhunagar	149.70	0.6562	
20	Teivathikulam	Therkkuvenganllur Village	Rajapalayam	Rajapalayam	Virudhunagar	90.04	0.71769	
21	Kulasekara periyakulam	Therkkuvenganllur Village	Rajapalayam	Rajapalayam	Virudhunagar	50.03	0.5648	
22	Koonankulam	Therkkuvenganllur Village	Rajapalayam	Rajapalayam	Virudhunagar	90.99	0.9541	
23	Thulakudi	Solapuram Village	Rajapalayam	Rajapalayam	Virudhunagar	125.96	2.028	
24	Vadakarai	Vadakarai Village	Rajapalayam	Rajapalayam	Virudhunagar	105.45	1.7186	
25	Thenkarai	Tenkarai Village	Rajapalayam	Rajapalayam	Virudhunagar	142.91	2.72	
26	Old Melanarainadu	Kottapatty Village	Rajapalayam	Rajapalayam	Virudhunagar	89.03	1.709	
27	Periyau daperi	Sivagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	74.60	0.4623	
28	Chinna Audaipperikulam	Sivagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	162.77.5	0.4835	
29	Vijayaranga peri	Sivagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	243.18	0.288	
30	Vadakalkulam	Sivagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	54.58.0	0.4324	
31	Thenkal kulam	Sivagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	43.60.0	0.2084	
32	Pullantharai Tank	Sivagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	48.85.0	0.1223	
33	Uyar Kudi kulam	Sivagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	105.05.5	0.447	
34	Uruvatti	Rayagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	48.29.0	0.1063	
35	Muthur	Sivagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	147.08.0	0.502	

36	Rasingaperi	Rayagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	846.63.5	3.5303	
37	Karunkulam	Rayagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	133.73.5	0.2786	
38	Kadamban kulam	Rayagiri Village	Vasudevanallur	Sivagiri	Thirunelveli	50.32.0	0.0705	
39	Keelapanandhi	Rayagiri Village	Sangarankoil	Sangarankoil	Thirunelveli	79.49.0	0.0596	
40	Konarkulam	Viswanathperi Village	Vasudevanallur	Sivagiri	Thirunelveli	67.43.0	0.1624	
41	Valivillikulam	Viswanathperi Village	Vasudevanallur	Sivagiri	Thirunelveli	183.84	0.5909	
42	Sengualam	Viswanathperi Village	Vasudevanallur	Sivagiri	Thirunelveli	55.56.5	0.1477	
43	Kattakulam	Viswanathperi Village	Vasudevanallur	Sivagiri	Thirunelveli	43.52.5	0.1292	
44	Rayam periyakulam	Viswanathperi Village	Vasudevanallur	Sivagiri	Thirunelveli	72.26.5	0.2562	
45	Shanmuganthi	Viswanathperi Village	Vasudevanallur	Sivagiri	Thirunelveli	82.81.5	0.1024	
46	Viswanathaper Big	Viswanathperi Village	Vasudevanallur	Sivagiri	Thirunelveli	398.43	10.940 mus	
47	Thenmalai Kulam	Thenmalai Village	Vasudevanallur	Sivagiri	Thirunelveli	546.04	5.2384	
48	Ettiserkulam	Paruvakudi Village	Sangarankoil	Sangarankoil	Thirunelveli	47.07	0.8563	
49	Mullithiruthi kulam	Panthapuli Village	Sangarankoil	Sangarankoil	Thirunelveli	86.11.0	0.703	
50	Mudivanandan Big Tank	Perumalperi Village	Sangarankoil	Sangarankoil	Thirunelveli	226.99	2.1592	

LIST OF SUPPLY CHANNEL :

S.No	Name of supply channel	Off tank point	Village	Block	Taluk	District	Direct ayacut Area in Ha	Capacity
			-NIL -					

**LIST OF TANK / ANICUTS EXECUTED UNDER VARIOUS SCHEMES
(PART II SCHEME, NABARD, WRCP ETC.,) SINCE 2000**

S.No	Name of Anicut / Tank	Ayacut	Scheme in which executed	Amount	Details of components executed	Remarks
			-NIL -			

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

Name of Sub Basin: Deviar

S. No	DETAILS	ANICUT			SYSTEM TANK			NON-SYSTEM TANK			ANY OTHER SUPPLY CHANNEL		REMARKS
		NOS	SUPPLY CHANNEL IN KM	DIRECT AYACUT Ha	NOS	SUPPLY CHANNEL IN KM	AYACUT	NOS	SUPPLY CHANNEL IN KM	AYACUT	LENGTH	DIRECT AYACUT	
1	Available Infrastructure in sub basin	5		87.87				50	90.25	6461.15			
2	Infrastructure excluded in iamwarm project since works carried out under various schemes from 2000	-	-	-	-	-	-	-	-	-			
3	Infrastructure that does not require any rehabilitation work.	-	-	-	-	-	-	-	-	-			
4	Work taken up in iamwarm proect	5		87.87				50	90.25	6461.15			

1. Certified that the Panchayat Union Tanks are not considered in this project.

2.Certified that the Tanks executed under various schemes (Viz, WRCP 1,NABARD,PART II Schemes ect....), since 2000 were not included in this project.



1.6 REHABILITATION OF IRRIGATION INFRASTRUCTURE



1.6 Rehabilitation of Irrigation Infrastructure

1.6.1 Structural Status & Deficiencies in the System

1.6 Rehabilitation of Irrigation Infrastructure

1.6.1 **Structural Status & Deficiencies in the Deviyar Sub Basin.**

The following are the present structural condition of the Deviyar sub-basin .

1. This system is a old system existing for more than 100 Years as such requires Rehabilitation.
2. Heavy accumulation of silt due to hilly region and nature Supply Channel.
3. Lack of adequate control of regulating structures like Anicuts, Head Sluices, Sand/ scour vents etc.,
4. The damaged (or) dilapidated condition of the existing anicuts, diversion head works etc. and supply channels causes to poor standard of the entire conveyance system.
5. The Non system tanks are to be rehabilitated.

Salient Features of Proposals:

In order to improve the conveyance and Operational Efficiency in Irrigation, it is now proposed to improve and modernize the Irrigation Infrastructures in Deviyar Sub basin.

1. Repairing, Restoring the traditional water bodies (i.e. tanks)
 - a. Strengthening the bunds of the tanks and channels wherever necessary for effectively storing the water and conveying it to the entire command area and also for conveying agriculture inputs to the field.
 - b. Repairs to the weirs
 - c. Re construction to the dilapidated weirs
 - d. Repairs to the Sluices
 - e. Re construction to the dilapidated Sluices
 - f. Providing revetments and Retaining walls in selective area of the tanks
 - g. Providing S.G. Shutter / Plug arrangements to Sluices, Head sluices, Scour vents etc.,
 - h. Removing, Repairing and re fixing in position of the existing S.G. shuttering arrangements and providing locking arrangements etc.,
2. Trimming the supply channels by earthwork excavation
3. Providing Retaining walls in selective area and Bed Bars at regular interval of the supply channels.
4. Bed Bars are provided @ zoom interval
5. Steps are provided @ every sluice point.
6. Repairs to anicuts such as repairs to damaged apron, abutment and wing wall.

1.6.2 Expected Outcome

1. Increase in conveyance efficiency by from 53% to 60%
2. The present Gap area of 536.55 ha. is to be converted as a fully irrigated area
3. The following irrigation infrastructure development works are proposed in the sub basin.
Rehabilitation works for 5 anicuts,
Rehabilitation works for 50 tanks
Rehabilitation of supply channel for 90.25 KM

DETAILS OF PROPOSALS IN EACH INFRASTRUCTURE OF THE SUB BASIN

S. No	Name of Tanks	Actual Length	Proposed Length	Amt in Lakhs	no of	to be	Amt in lakhs	shh	ce to be	Amt in Lakhs	Nos in Lakhs		Nos in Lakhs		No of	to be	rec	t in lak	r to be	t in lak	Nos in Lakhs		to be	des	t in lak	of	pro	pos	al	t in lak	Total Amt in lakhs
											N	os	ml	in							La	kh									
1	Ariyaneri Tank	1.56	1.56	12.72	3	1	2.6		2	1.63	3	0.9	3	0.45	-	-	-	-	-	-	-	-	2.00	2.52	-	-			20.95		
2	Ekkanam tank	1.33	1.33	10.45	3	1	2.5		2	3.05	3	0.9	3	0.45	-	-	-	-	-	-	3	1.10	2.50	5.72					24.17		
3	Ganapathy kulam Tank	0.63	0.63	5.37	2	-	-		2	2.99	2	0.9	2	0.3	-	-	-	-	-	-	2	1.00	1.50	1.89					12.15		
4	Koravan Kulam tank	1.6	1.6	9.15	3	-	-		3	1.38	3	0.9	3	0.45	-	-	-	-	-	-	2	0.60	4.00	3.14					15.62		
5	Manamakki tank	1.38	1.38	12.08	2	2	7.94	-	-	-	2	0.9	2	0.3	-	-	-	-	1	1.72	-	-	2.60	3.22					25.86		
6	Mannar Mudi tank	1.34	1.54	12.49	3	1	2.6		2	2.41	3	0.9	3	0.45	-	-	-	-	-	-	4	2.00	2.00	2.56					23.41		
7	Pirakudi kulam tank	2.33	2.33	20.62	2	2	5.79	-	-	-	2	0.9	2	0.3	-	-	-	-	-	-	4	2.00	3.00	3.79					33.1		
8	Poovaneri tank	1.72	1.72	12.94	3	2	7		1	1.65	3	0.9	3	0.45	-	-	-	-	-	-	-	-	2.00	2.53					25.47		
9	Senthaneri tank	1.77	1.77	10.08	3	-	-		3	3.2	3	0.9	3	0.45	-	-	-	-	1	0.79	4	1.20	2.00	1.22					17.84		
10	Solaiseri tank	1.49	1.49	8.19	3	-	-		3	1.18	3	0.9	3	0.45	-	-	-	-	-	-	3	0.90	1.00	0.79					12.41		
11	Deivathikulam Tank	2.76	2.76	16.47	2	1	2.1		1	0.64	2.00	0.60	2.00	0.30	-	-	-	-	-	-	6	3.00	2.00	2.54	-	-			25.65		
12	Kalathur tank	0.92	0.92	5.58	2	1	2.5		1	1.53	2.00	0.60	2.00	0.30	-	-	-	-	-	-	4	2.00	1.00	1.27	-	-			13.78		
13	Kannirainthan tank	1.32	1.32	7.35	3	2	4.7		1	0.62	3.00	0.90	3.00	0.45	-	-	-	-	-	-	-	-	1.00	1.26	-	-			15.28		
14	Kollankondan Periyakulam tank	3.66	3.66	51.10	6	-	-		6	5.50	6.00	1.80	6.00	0.90	-	-	-	-	-	-	8	4.00	3.00	13.52	-	-			76.83		
15	Konankulam tank	2.05	2.05	14.17	1	-	-		1	5.18	1.00	0.30	1.00	0.15	-	-	-	-	-	-	3	1.50	1.00	3.80	-	-			25.1		
16	Kulasekaran Peritank	1.95	1.95	11.39	2	-	-		2	3.13	2.00	0.60	2.00	0.30	-	-	-	-	-	-	2	1.00	1.00	1.27	-	-			17.69		
17	Old melan Marainadu tank	2.05	2.05	16.48	2	-	-		2	3.19	2.00	0.60	2.00	0.30	-	-	-	-	-	-	2	1.00	2.00	2.54	-	-			24.11		
18	Periyasaliyankulam tank	1.80	1.80	13.64	2	-	-		2	3.10	2.00	0.60	2.00	0.30	-	-	-	-	-	-	2	1.00	1.20	1.52	-	-			20.16		
19	Poovanikulam tank	1.36	1.36	8.90	2	-	-		2	3.02	2.00	0.60	2.00	0.30	-	-	-	-	-	-	-	-	1.00	1.26	-	-			14.08		
20	Pudukulam tank	1.17	1.17	7.06	4	-	-		4	2.12	4.00	1.20	4.00	0.60	-	-	-	-	-	-	2	1.00	2.00	5.23	-	-			17.21		
21	Puthur nenmeni tank	1.98	1.98	13.82	2	-	-		2	3.02	2.00	0.60	2.00	0.30	-	-	-	-	-	-	2	1.00	1.00	1.26	-	-			20.00		
22	Thenkarai tank	3.48	3.48	19.37	4	-	-		4	2.50	4.00	1.20	4.00	0.60	-	-	-	-	-	-	4	2.00	3.00	3.81	-	-			29.48		
23	Tulakudi tank	2.52	2.52	14.38	2	-	-		2	4.69	2.00	0.60	2.00	0.30	-	-	-	-	-	-	-	-	3.00	3.80	-	-			23.77		
24	Vadakarai tank	3.53	3.53	16.80	2	-	-		2	3.62	2.00	0.60	2.00	0.30	-	-	-	-	-	-	2	1.00	2.00	2.56	-	-			24.88		
25	Vandaiyarkulam tank	1.65	1.65	18.17	5	2	5.1		3	1.84	5.00	1.50	5.00	0.75	-	-	-	-	-	-	4	2.00	3.00	3.78	-	-			33.14		
26	Kumuttikulam senkulam tank	1.50	1.50	10.90	4	2	5.5		2	3.07	4.00	1.20	4.00	0.60	-	-	-	-	-	-	-	-	2.00	2.46	-	-			23.73		
	THIRUNELVELI DIST																														
27	Vadagal Tank	1677 m	1677 m	15.13	3	-	-		3	5.91	-	-	3	0.61	1	-	-	-	1	1.97	3	2.46	2750	4.60	50	7.91			38.59		
28	Periyaauvadai Peritank	1752 m	1752 m	16.37	2	-	-		2	4.98	2.00	0.60	2	0.41	1.00	-	-	-	1	2.31	1	1.43	-	-	-	-			26.1		
29	Chinna AuvadaiPeritank	2550 m	2550 m	21.76	3	1	15.47		2	4.29	2.00	0.60	3	0.61	1.00	-	-	-	-	2.75	3	1.5	-	-	-	-			46.98		
30	Thenkal Tank	951 m	951m	8.01	2	-	-		2	8.06	2.00	0.60	2	0.41	1.00	-	-	-	1	2.79	-	-	-	-	-	-			19.87		
31	Vijaya Rangaperitank	2200 m	2200 m	17.86	3	-	-		3	12.44	3.00	0.60	3	0.61	1.00	-	-	-	1	3.39	1	1.2	930	2.36	40	9.35			47.81		

32	Pullanthurai Tank	1245 m	1245 m	10.31	3	1	4.84	2	2.01	2.00	0.60	2	0.39	1.00	-	-	1	3.14	-	-	500	2.67	30	1.76	25.72	
33	Uyarkudi Tank	1920 m	1920 m	15.91	2	-	-	2	10.34	-	-	2	0.39	1.00	-	-	1	2.03	-	-	380	0.45	25	0.87	29.99	
34	Uruvatti Tank	1180 m	1180 m	15.52	3	1	5.18	2	2.01	2.00	0.60	2	0.39	1.00	-	-	-	1.71	-	-	1035	1.00	18	1.7	28.11	
35	Rasingapuri Tank	2100 m	2100 m	25.55	2	-	-	2	12.3	2	0.6	2	0.52	1	-	-	1	11.25	-	-	1000 m	3	80	16.76	69.98	
36	Muthur Tank	1980 m	1980 m	16.93	2	-	-	2	6.42	2	0.6	2	0.52	1	-	-	1	2.19	-	-	1000 m	2	40	7.76	36.42	
37	Karunkulam Tank	1650 m	1650 m	15.08	2	1	5	1	8.94	1	0.3	1	0.26	1	1	11.64	-	-	-	-	5500 m	6.6	30	2.55	50.37	
38	Kadambankulam Tank	960 m	960m	9.42	3	-	13.85	-	-	-	-	3	0.9	3	0.78	1	-	2.14	-	-	600	1	50	3.41	31.5	
39	Keelapannathi tank	1160 m	1160	10.57	3	-	8.701	3	-	-	-	3	0.9	3	0.78	1	1	-	-	2.02	2450	1.34	-	-	24.31	
40	Konarkulam Tank	1214 m	1214 m	4.06	1	1	14.47.	-	-	-	-	1	0.25	-	-	-	-	12.94	3	1.2	-	-	-	-	32.92	
41	Valivilli kulam tank	1875 m	1875 m	16.17	3	-	-	3	2.09	-	-	2	0.5	1	-	-	1	3	4	2.8	800	1.5	25m	2.63	28.69	
42	Sengulam tank	1182 m	1182 m	10.63	1	1	11.87	-	-	-	-	1	0.25	1	-	-	1	3.87	-	-	5000 m	20.21	-	-	46.83	
43	Kattakulam Tank	1230 m	1230 m	10.75	1	1	8.62	1	2	-	-	2	0.5	1	-	-	1	1.72	-	-	1300 m	1.50 m	25m	1.94	27.03	
44	Rayampuri Tank	1298 m	1298 m	11.18	2	1	11.35	1	4.5	-	-	2	0.5	1	-	-	1	6.76	-	-	1200 m	1.5	20m	1.31	37.10	
45	Viswanathaperi Tank	1692	1692	16.17	3	-	-	-	-	-	-	3	0.78	1	-	-	1	5.62	-	-	5400 m	12.81	25m	2	37.38	
46	Shanmuganathi Tank	1162	1162	9.98	1	1	17.41	1	2.25	-	-	1	0.25	1	-	-	1	2.13	-	-	500m	1	40m	3.06	36.08	
47	Thenmalai Tank	4767	4767	45.81	7	-	-	7	10.56	7	2.10	7	1.75	3	-	-	3	4.39	7	9	3200 m	7	50m	5.17	85.78	
48	Mulluthuruthi	2350	2350	19.65	2	-	-	2	-	-	-	-	0.63	-	-	-	-	-	-	-	1800 m	3	25m	2.48	25.76	
49	Mudivangan	2905	2905	26.08	2	-	-	2	-	2	0.6	-	0.56	-	-	-	-	-	-	-	1500 m	4.5	25m	2.77	34.51	
50	Ettiseri Tank	3010	3010	25.57	1	-	-	1	-	-	-	-	0.63	-	-	-	1	1.07	-	-	1600 m	2	25m	1.63	30.9	
	Total	93.06 Km		754.14		26 No	165.09	99 Nos	163.37	105 Nos	31.2	121	24.08			2 Nos	20.54	20 Nos	72.80		48.89	90.25 Km	159.30		75.06	1514.47

TANK DETAILS WITH FREE BOARD PROVIDED

S.No	Name of the Tanks	Maximum Height of Bund	Free Board		Length of Bund (M)
			Provided Previously	Provided Now	
1	Kalathur	6.285	1.00	1.50	920
2	Kanirainthan	5.58	1.25	1.50	1300
3	Old melanarainadu	4.35	1.00	1.50	2050
4	Periyasaliankulam	4.445	1.00	1.50	1805
5	Poovani	4.49	1.00	1.50	1365
6	Pudukulam	4.69	1.25	1.50	1200
7	Puthur Nenmeni	7.24	1.50	1.50	1980
8	Thenkarai	5.85	1.25	1.50	3488
9	Vadakarai	5.495	1.25	1.50	3530
10	Ekkanam	4.675	1.25	1.50	1327
11	Ganapathykulam	3.475	1.00	1.50	630
12	Koravankulam	5.285	1.25	1.50	1600
13	Solaicherikulam	5.475	1.25	1.50	1485
14	Senthaneri kulam	5.36	1.25	1.50	1770
15	Ariyaneri	5.08	1.25	1.50	1560
16	MenamikkiTank	7.305	1.50	1.50	1380
17	Pirakudikulam	7.91	1.50	1.50	2325
18	Kollan Kondan Periya kulam	5.545	1.50	1.50	3660
19	Kulasekara periyakulam	4.985	1.25	1.50	1950
20	Teivathikulam	5.09	1.25	1.50	2760
21	Koonankulam	4.675	1.25	1.50	2250
22	Kummittikulam Senkulam	5.175	1.25	1.50	1500
23	Thulakudi	5.315	1.25	1.50	2520
24	Mannarmudi	4.01	1.00	1.50	1540
25	Poovanerikulam	4.625	1.25	1.50	1720
26	Vandayarkulam	5.405	1.25	1.50	1650
27	Rasingaperi	7.81	2.00	2.00	2100
28	Sengualam	5.29	1.25	1.50	1182
29	Kattakulam	4.375	1.00	1.50	1230
30	Rayam periyakulam	5.515	1.25	1.50	1237
31	Shanmuganthi	4.5	1.25	1.50	1161
32	Vijayaranga peri	5.175	1.25	1.50	2200

33	Tenamalai kulam	7.215	1.50	1.50	4767
34	Karunkulam	4.12	1.00	1.50	1650
35	Kadamban kulam	3.17	1.00	1.50	960
36	Thenkal kulam	4.945	1.25	1.50	951
37	Muthur	5.16	1.25	1.50	1980
38	Periyau daperi	4.445	1.00	1.50	1805
39	Uyar kudi kulam	5.115	1.00	1.50	1752
40	Pullantharai Tank	3.965	0.99	1.50	1920
41	Uruvatti	4.775	1.25	1.50	1245
42	ChinnaAudaipperikulam	5.17	1.50	1.50	1180
43	Konarkulam	5.15	1.25	1.50	1214
44	Valivillikulam	6.09	1.25	1.50	1875
45	Vadakalkulam	5.86	1.25	1.50	1677
46	Viswanathaper Big	11.715	2.01	2.01	1692
47	Keelapannandhi	3.05	1.00	1.50	1160
48	Mudivanankan Big Tank	6.035	1.25	1.50	2905
49	Mullithiruthi kulam	3.875	1.00	1.50	2350
50	Ettiserkulam	4.655	1.00	1.50	3010
<u>Note:-</u>					
1)	For height of bund up to 3.0m --- Free board is 1.25m				
2)	For height of bund more than 3.0m --- Free board is 1.50m				

DEVIYAR
B. WRO COST TABLE

S.No	Description of Work	Qty	Amt in Lakhs	Remarks
	TANK COMPONENT			
1.	Standardization of Tank Bund	93.06 km	754.14	
2.	Sluice Repair	99 Nos.	218.65	
3.	Sluice Reconstruction	26 Nos.	165.09	
4.	Weir Repair	20 Nos.	121.69	
5.	Weir Reconstruction	2 Nos.	20.54	
6.	Standardization of Supply Channel	90.25 km	234.36	
	Total		1514.47	

	NON TANK COMPONENT			
1.	Anicut Repair	5 Nos.	32.43	
3.	Environmental Cell		12.00	
	TOTAL		44.43	
	GRAND TOTAL		1558.90	

Package No : 1

S.No.	Name of tanks / Anicut	Estimated Amount in lakhs	No's of measuring device	Amt	Total in Rs. lakhs.
1.	Ariyaneri Tank	20.37	3	0.45	20.82
2.	Ekkanam Tank	23.72	3	0.45	24.17
3.	Ganapathy Kulam Tank	11.85	2	0.30	12.15
4.	Koravankulam Tank	15.17	3	0.45	15.62
5.	Manamakki Tank	25.56	2	0.30	25.86
6.	Mannarmudi Tank	22.96	3	0.40	23.41
7.	Pirakudikulam Tank	32.80	2	0.30	33.10
8.	Poovaneri Tank	25.02	3	0.45	25.47
9.	Senthaneri Tank	17.39	3	0.45	17.84
10.	Solaiseri Tank	11.96	3	0.45	12.41
11.	Ariyaneri Anicut	4.05	-	-	4.05
12.	Ekkanam Anicut	4.55	-	-	4.55
13.	Lingan odai Anicut	4.55	-	-	4.55
14.	Pirakudi Anicut	4.55	-	-	4.55
	Sub Total	224.50	27	4.05	228.55

Package No : 2

S.No.	Name of tanks / Anicut	Estimated Amount in lakhs	No's of measuring device	Amt	Total in Rs. lakhs.
1.	Deivathi kulam tank	25.35	2	0.30	25.65
2.	Kalathur tank	13.48	2	0.30	13.78
3.	Kannirainthan tank	14.83	3	0.30	15.28
4.	Kollankondan periyakulam tank	75.93	6	0.90	76.83
5.	Konankulam tank	24.95	1	0.15	25.10
6.	Kulasekara peri tank	17.39	2	0.30	17.69
7.	Old melan marainadu tank	23.81	2	0.30	24.11
8.	Periyasaliyan kulam tank	19.86	2	0.30	20.16
9.	Poovanikulam tank	13.78	2	0.30	14.08
10.	Pudukulam tan k	16.61	4	0.60	17.21
11.	Puthur nenmeni tank	19.70	2	0.30	20.00
12.	Thenkarai tank	28.88	4	0.60	29.48
13.	Tulakudi tank	23.47	2	0.30	23.77
14.	Vadakarai tank	24.58	2	0.30	24.88
15.	Vandaiyar kulam tank	32.39	5	0.75	33.14
16.	Kumuttikulam senkulam tank	23.13	4	0.60	23.73
	Sub Total	398.14	45	6.75	404.89

Package No : 3

S.No.	Name of tanks / Anicut	Estimated Amount in lakhs	No's of measuring device	Amt	Total in Rs. lakhs.
1.	Vadakal tank	37.98	3	0.61	38.59
2.	Periya Avudaiperi tank	25.69	2	0.41	26.10
3.	Chinna Avudaiperi tank	46.37	2	0.61	46.98
4.	Thenkal Tank	19.46	2	0.41	19.87
5.	Vijaya rengaperi tank	47.20	3	0.61	47.81
6.	Pullanthurai tank	25.33	2	0.39	25.72
7.	Uyarkudi tank	29.60	2	0.39	29.99
8.	Uruvatti tank	27.72	2	0.39	28.11
	Sub Total	259...35	19	3.82	263.17

Package No. 4

S.No.	Name of tanks / Anicut	Estimated Amount in lakhs	No's of measuring device	Amt	Total in Rs. lakhs.
1.	Rasinga Peri Tank	69.46	2	0.52	69.98
2.	Muthur Tank	35.90	2	0.52	36.42
3.	Karunkulam Tank	50.11	1	0.26	50.37
4.	Kadamban Tank	30.72	3	0.78	31.50
5.	Keela Pannathi Tank	23.53	3	0.78	24.31
6.	Karuppa Kudumban Anicut	14.73	-	-	14.73
	Subtotal	224.45	11	2.86	227.31

Package No. 5

S.No.	Name of tanks / Anicut	Estimated Amount in lakhs	No's of measuring device	Amt	Total in Rs. lakhs.
1.	Konarkulam Tank	32.67	1	0.25	32.92
2.	Vallivilikulam Tank	28.19	2	0.50	28.69
3.	Sengulam Tank	46.58	1	0.25	46.83
4.	Kattakulam Tank	26.53	2	0.50	27.03
5.	Rayamperi Tank	36.60	2	0.50	37.10
6.	Viswanatha Peri Tank	36.60	3	0.78	37.38
7.	Shanmuga nathi Tank	35.83	1	0.25	36.08
	Subtotal	243.00	12	3.03	246.03

Package No. 6

S.No.	Name of tanks / Anicut	Estimated Amount in lakhs	No's of measuring device	Amt	Total in Rs. lakhs.
1.	Thenmalai Tank	84.03	7	1.75	85.78
2.	Mulluthuruthi Tank	25.13	2	0.68	25.76
3.	Mudivanagan Tank	33.95	2	0.56	34.51
4.	Ettiseri Tank	30.57	1	0.33	30.90
	Subtotal	173.68	11	3.27	176.95

ABSTRACT FOR PACKAGES

SI.No.	Package No.	Amount in Rs. Lakhs
1	Package 1	228.55
2	Package 2	404.89
3	Package 3	263.17
4	Package 4	227.31
5	Package 5	246.03
6	Package 6	176.95
	Sub total	1546.90
	Environmental cell	12.00
	Total	1558.90

**Package - 1
Construction Methodology**

Working Months

Sl.No.	Description of item	1	2	3	4	5	6	7	8	9	10	11	12	13-18	Total
	Earthwork Excavation														
1	Bund	25000	25000	25000	25000	25000	30410	-	-	-	20000	20000	20000	-	215400
2	Channel	-	15000	15000	15000	15000	18000	-	-	-	10000	10000	10000		108000
3	Foundatin	-	-	361	400	400	400	-	-	-	300	300	300		2461
	Concrete														
4	M.7.5 Grade	-	-	-	90	90	90	-	-	-	100	100	97.25		567.25
5	M.10 Grade	-	-	-	180	180	180	-	-	-	200	200	339		1079
6	M.5 Grade	-	-	-	-	-	70	-	-	-	90	90	81.4		331.4
7	M. 20 Grade	-	-	-	-	-	8.64	-	-	-	15	15	15		53.64
8	Random Rubble Masonry	-	-	-	-	-	65	-	-	-	200	200	200		665
9	Plastering	-	-	-	-	-	100	-	-	-	320	320	320		1060

**Package - 2
Construction Methodology**

Working Months

Sl.No.	Description of item	1	2	3	4	5	6	7	8	9	10	11	12	13-18	Total
	Earthwork Excavation														
															Rainy season
1	Bund	45000	45000	45000	45000	45000	47000	-	-	-	30000	30000	30000	5000	392000
2	Channel	-	25000	25000	25000	25000	26000	-	-	-	12000	12000	12000	1500	171000
3	Foundatin	-	-	700	700	700	717	-	-	-	540	540	540		4437
	Concrete													13-15	
4	M.7.5 Grade	-	-	-	100	100	100	-	-	-	200	200	200	80	1140
5	M.10 Grade	-	-	-	200	200	200	-	-	-	400	400	537	150	2387
6	M.5 Grade	-	-	-	-	-	150	-	-	-	200	20	253		803
7	M. 20 Grade	-	-	-	-	-	10	-	-	-	10	10	15		45
8	Random Rubble Masonry	-	-	-	-	56	200	-	-	-	200	200	200		856
9	Plastering	-	-	-	-	123	500	-	-	-	500	500	500		2123

**PACKAGE - III
CONSTRUCTION METHODOLOGY**

NAME OF THE SUB BASIN : DEVIYAR

Name of Work :

Rehabilitation of non system tanks under Deviyar sub basin in Rajapalayam Taluk of Virudhunagar District

S. No	Description of Item	Working Months																	Total	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	Earthwork Excavation						Rainy season													
1	Bund	0	0	20000	20000	20000	20000	0	0	0	20000	20000	20000	20000	20000	27273	0	0	0	207273
2	Channel	0	0	0	15000	15000	15000	0	0	0	15000	15000	15000	5950	0	0	0	0	0	95950
3	Foundation	0	0	0	200	200	200	0	0	0	200	200	200	200	229	0	0	0	0	1629
	Concrete																			
4	M 7.5 grade	0	0	0	65	65	65	0	0	0	65	65	65	65	70	0	0	0	0	525
5	M 10 grade	0	0	0	350	350	350	0	0	0	350	350	350	350	350	350	350	290	0	3790
6	M 15 grade	0	0	0	0	0	0	0	0	0	8	8	8	8	8	4	0	0	0	44
7	M 20 grade	0	0	0	0	0	0	0	0	0	6	6	6	6	0	0	0	0	0	24
8	Random rubble masonry	0	0	0	0	0	0	0	0	0	60	60	60	60	60	390	0	0	0	690
9	Plastering	0	0	0	0	0	0	0	0	0	120	120	120	120	120	80	0	0	0	680

PACKAGE - IV
CONSTRUCTION METHODOLOGY

NAME OF THE SUB BASIN : DEVIYAR

Name of Work :

Rehabilitation of non system tanks under Deviyar sub basin in Rajapalayam Taluk of Virudhunagar District

S. No	Description of Item	Working Months																		Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	Earthwork Excavation						Rainy season													
1	Bund	0	0	15000	15000	15000	15000	0	0	0	15000	15000	15000	14466	0	0	0	0	0	119466
2	Channel	0	0	15000	15000	15000	15000	0	0	0	15000	15000	15000	15000	10000	11000	0	0	0	141000
3	Foundation	0	0	250	250	250	250	0	0	0	250	250	250	118	0	0	0	0	0	1868
	Concrete																			
4	M 7.5 grade	0	0	115	115	115	120	0	0	0	130	100	140	103	0	0	0	0	0	938
5	M 10 grade	0	0	300	400	450	350	0	0	0	430	360	390	469	500	500	0	0	0	4149
6	M 15 grade	0	0	0	0	0	0	0	0	0	9	8	10	9	0	0	0	0	0	36
7	M 20 grade	0	0	0	0	0	0	0	0	0	9	10	10	0	0	0	0	0	0	29
8	Random rubble masonry	0	0	0	0	0	0	0	0	0	60	70	60	93	0	0	0	0	0	283
9	Plastering	0	0	0	0	0	0	0	0	0	100	115	85	105	110	0	0	0	0	515

CONSTRUCTION METHODOLOGY

NAME OF THE SUB BASIN : DEVIYAR

Name of Work :

Rehabilitation of non system tanks under Deviyar sub basin in Rajapalayam Taluk of Virudhunagar District

S. No	Description of Item	Working Months																		Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	Earthwork Excavation						Rainy season													
1	Bund	0	0	15000	16000	17000	15500	0	0	0	16500	17500	15000	15000	8732	0	0	0	0	136232
2	Channel	0	0	13000	15000	14000	16000	0	0	0	15500	14500	16500	7500	0	0	0	0	0	112000
3	Foundation	0	0	200	250	200	250	0	0	0	300	300	200	129	0	0	0	0	0	1829
	Concrete																			
4	M 7.5 grade	0	0	75	75	75	75	0	0	0	80	80	80	80	0	0	0	0	0	620
5	M 10 grade	0	0	400	400	400	500	0	0	0	500	450	550	643	0	0	0	0	0	3843
6	M 15 grade	0	0	0	0	0	0	0	0	0	10	10	10	10	15	0	0	0	0	55
7	M 20 grade	0	0	0	0	0	0	0	0	0	13	13	13	12	15	0	0	0	0	66
8	Random rubble masonry	0	0	0	0	0	0	0	0	0	90	77	75	65	95	0	0	0	0	402
9	Plastering	0	0	0	0	0	0	0	0	0	150	150	160	140	135	0	0	0	0	735

PACKAGE - VI
CONSTRUCTION METHODOLOGY

NAME OF THE SUB BASIN : DEVIYAR

Name of Work :

Rehabilitation of non system tanks under Deviyar sub basin in Rajapalayam Taluk of Virudhunagar District

S. No	Description of Item	Working Months																		Total
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	Earthwork Excavation						Rainy season													
1	Bund	0	0	15000	15000	15000	15000	15000	0	0	20000	20000	20000	20000	15000	10800	0	0	0	180800
2	Channel	0	0	0	15000	15000	15000	0	0	0	15000	18000	15000	10000	0	0	0	0	0	103000
3	Foundation	0	0	100	100	100	100	0	0	0	100	100	100	99	0	0	0	0	0	799
	Concrete																			
4	M 7.5 grade	0	0	25	25	25	25	0	0	0	25	25	25	29	0	0	0	0	0	204
5	M 10 grade	0	0	250	250	250	300	0	0	0	300	350	386	250	250	0	0	0	0	2586
6	M 15 grade	0	0	0	0	30	30	0	0	0	40	40	40	45	0	0	0	0	0	225
7	M 20 grade	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	Random rubble masonry	0	0	0	0	0	0	0	0	0	80	70	60	70	0	0	0	0	0	280
9	Plastering	0	0	0	0	0	0	0	0	0	150	115	100	100	100	0	0	0	0	565

**PACKAGE - 1
REQUIRED OF EQUIPMENTS AND MATERIALS**

Package Number	Equipments required in numbers							Material required						
	Hydraulic Excavator	Power roller	Vibrated compactor	Tipper	Water lorry	Concrete Mixer Machine	concrete Vibration	Cement in MT	Sand in M3	Steel in MT	Metal 40mm m3	Metal 20mm m3	R.R in m3	Fuel
Package 1	11	11	11	44	11	2	2	500	1006	5.4	1270	740	665	-

**PACKAGE - 2
REQUIRED OF EQUIPMENTS AND MATERIALS**

Package Number	Equipments required in numbers							Material required						
	Hydraulic Excavator	Power roller	Vibrated compactor	Tipper	Water lorry	Concrete Mixer Machine	concrete Vibration	Cement in MT	Sand in M3	Steel in MT	Metal 40mm m3	Metal 20mm m3	R.R in m3	Fuel
Package 2	19	19	19	76	19	4	4	981	1970	4.1	2444	1494	865	

PACKAGE NO. III

REQUIREMENT OF EQUIPMENTS AND MATERIALS

NAME OF THE SUB BASIN : DEVIYAR SUB BASIN

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 M.T.	Steel in M.T.	Metal 40mm in M3	Metal 20mm in M4	RR in m3	Fuel
Package VII	8	8	8	32	8	4	4	980	2120	1.8	473	3472	429	0

PACKAGE NO. IV

REQUIREMENT OF EQUIPMENTS AND MATERIALS

NAME OF THE SUB BASIN : DEVIYAR SUB BASIN

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 M.T.	Steel in M.T.	Metal 40mm in M3	Metal 20mm in M4	RR in m3	Fuel
Package VIII	6	6	6	24	6	5	5	1110	2425	1.8	844	3796	311	0

PACKAGE NO. V

REQUIREMENT OF EQUIPMENTS AND MATERIALS

NAME OF THE SUB BASIN : DEVIYAR SUB BASIN

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 M.T.	Steel in M.T.	Metal 40mm in M3	Metal 20mm in M4	RR in m3	Fuel
Package IX	6	6	6	24	6	4	4	1018	2198	1.8	558	3532	442	0

PACKAGE NO. VI

REQUIREMENT OF EQUIPMENTS AND MATERIALS

NAME OF THE SUB BASIN : DEVIYAR SUB BASIN

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 M.T.	Steel in M.T.	Metal 40mm in M3	Metal 20mm in M4	RR in m3	Fuel
Package X	6	6	6	24	6	3	3	703	1464	0	184	2531	308	0

PACKAGE - III
Calculation of machineries Requirement

NAME OF THE SUB BASIN : DEVIYAR SUB BASIN

Hydraulic excavator & 4 Tippers / Lorries		6 Hours / Day		
(4 No x 2 loads / hour x 6 Hr x 4m ³ / trip)				192m ³ / Day
For 1 month (20 Working days)		20 x 192m ³		3840m ³ / month
Total quantity of earth work		304852m ³		
Working period for earth work		6 Months + 3 Months rainy season		
Machineries required for earth work :				
1. Hydraulic excavator - 8 Nos				
2. Tippers / Lorries - 32 Nos				
3. Power roller - 8 Nos				
4. Vibrated compactor - 8 Nos				
5. Water lorries - 8 Nos				
Mixer machine	2m ³ / hour	For 6 hours / day		12m ³ / day
Total quantity of concrete		4383m ³		
Mixer machine required		4 Nos for 10 days / month -- 5 months		
Material conveyence		Tippers / Lorries		
Cement	10mt / Trip	1 trip / day		10mt / day

Sand	5.66m ³ / Trip	2 trips / day		11.32m ³ / day
Metal / stone	5.60m ³ / Trip	3 trips / day		16.80m ³ / day
Total quantity of cement		980 MT		
Lorry required for conveyence		980 / 10		98 Lorries
Total quantity of sand		2120m ³		
Lorry required for conveyence		2120 / 11.20		190 Lorries
Total quantity of metal		3950m ³		
Lorry required for conveyence		3950/16.8		235 Lorries
Total quantity of stone		429m ³		
Lorry required for conveyence		429 / 16.80		25 Lorries
Tipper / Lorries for conveyance of materials		6 Nos for 20 days for 5 months		

PACKAGE - IV**Calculation of machineries Requirement****NAME OF THE SUB BASIN : DEVIYAR SUB BASIN****Hydraulic excavator & 4 Tippers / Lorries**

6 Hours / Day

(4 No x 2 loads / hour x 6 Hr x 4m³ / trip)192m³ / Day

For 1 month (20 Working days)

20 x 192m³3840m³ / month

Total quantity of earth work

262334m³

Working period for earth work

6 Months + 3 Months rainy season

Machineries 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 machine2m³ / hour

For 6 hours / day

12m³ / day

Total quantity of concrete

5152m³**Mixer machine required**

5 Nos for 10 days / month -- 5 months

Material conveyence**Tippers / Lorries**

Cement

10mt / Trip

1 trip / day

10mt / day

Sand	5.66m ³ / Trip	2 trips / day	11.32m ³ / day
Metal / stone	5.60m ³ / Trip	3 trips / day	16.80m ³ / day
Total quantity of cement		1110 MT	
Lorry required for conveyence		1110 / 10	111 Lorries
Total quantity of sand		2425m ³	
Lorry required for conveyence		2425 / 11.20	220 Lorries
Total quantity of metal		4640m ³	
Lorry required for conveyence		4640/16.8	280 Lorries
Total quantity of stone		311m ³	
Lorry required for conveyence		311 / 16.80	20 Lorries
Tipper / Lorries for conveyance of materials		6 Nos for 20 days for 5 months	

PACKAGE - V			
Calculation of machineries Requirement			
NAME OF THE SUB BASIN : DEVIYAR SUB BASIN			
Hydraulic excavator & 4 Tippers / Lorries		6 Hours / Day	
(4 No x 2 loads / hour x 6 Hr x 4m ³ / trip			192m ³ / Day
For 1 month (20 Working days)		20 x 192m ³	3840m ³ / month
Total quantity of earth work		250061m ³	
Working period for earth work		6 Months + 3 Months rainy season	
Machineries 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	2m ³ / hour	For 6 hours / day	12m ³ / day
Total quantity of concrete		4584m ³	
Mixer machine required		4 Nos for 10 days / month -- 5 months	
Material conveyence		Tippers / Lorries	
Cement	10mt / Trip	1 trip / day	10mt / day

Sand	5.66m ³ / Trip	2 trips / day	11.32m ³ / day
Metal / stone	5.60m ³ / Trip	3 trips / day	16.80m ³ / day
Total quantity of cement		1018 MT	
Lorry required for conveyence		1018 / 10	105 Lorries
Total quantity of sand		2198m ³	
Lorry required for conveyence		2198 / 11.20	196 Lorries
Total quantity of metal		4090m ³	
Lorry required for conveyence		4090/16.8	245 Lorries
Total quantity of stone		442m ³	
Lorry required for conveyence		442 / 16.80	26 Lorries
Tipper / Lorries for conveyance of materials		6 Nos for 20 days for 5 months	

PACKAGE - VI			
Calculation of machineries Requirement			
NAME OF THE SUB BASIN : DEVIYAR SUB BASIN			
Hydraulic excavator & 4 Tippers / Lorries		6 Hours / Day	
(4 No x 2 loads / hour x 6 Hr x 4m ³ / trip)			192m ³ / Day
For 1 month (20 Working days)		20 x 192m ³	3840m ³ / month
Total quantity of earth work		284599m ³	
Working period for earth work		6 Months + 3 Months rainy season	
Machineries 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	2m ³ / hour	For 6 hours / day	12m ³ / day
Total quantity of concrete		3015m ³	
Mixer machine required		4 Nos for 10 days / month -- 5 months	
Material conveyence		Tippers / Lorries	
Cement	10mt / Trip	1 trip / day	10mt / day

Sand	5.66m ³ / Trip	2 trips / day	11.32m ³ / day
Metal / stone	5.60m ³ / Trip	3 trips / day	16.80m ³ / day
Total quantity of cement		703 MT	
Lorry required for conveyence		703 / 10	70 Lorries
Total quantity of sand		1464m ³	
Lorry required for conveyence		1464 / 11.20	130 Lorries
Total quantity of metal		2715m ³	
Lorry required for conveyence		2715/16.8	165 Lorries
Total quantity of stone		308m ³	
Lorry required for conveyence		308 / 16.80	20 Lorries
Tipper / Lorries for conveyance of materials		4 Nos for 20 days for 5 months	



1.7 ENVIRONMENTAL CELL

Environmental Monitoring on water and soil quality and creating awareness & updating of “Environmental and Social Assessment report” for DEVIAR SUB BASIN

Sl NO	DETAILS	Sheet No
1	Environmental Details Proforma	
2	Tanks Severely Affected by Weeds (Annexure-I)	
3	Sewage discharged into water bodies (Annexure-II)	
4	Solid Waste into Water bodies (Annexure- III)	
5	List of Industries in the Sub basin (Annexure –IV)	
6	Details of Surface water quality (Annexure –V)	
7	List of Ground water sampling point (Annexure –VI)	
8	Result of Ground water quality (ANNEXURE - VI)	LIST OF
	WATER USER ASSOCIATION	
10	Estimate Report	
11	Detailed Estimate	
12	Abstract Estimate	
13	Baseline data collection proforma	
14	DEVIAR Sub Basin Map	

ANNEXURE-I							
DEVIAR SUB-BASIN --WEED DETAILS							
SI.No	District	Taluk	Block	Name of Village	System Tank		Type of Water Weeds
					Name of Tank	Ayacut(ha)	
1	Virudhunagar	Rajapalayam	Rajapalayam	Chokkanathapuram	Kalathur Tank	68.906	Prosopis Juliflora/Ipomea
2				Chokkanathapuram	Kanirainthan Tank	49.44	Prosopis Juliflora/Ipomea
3				Pandapuli	Old Melanmarainadu Tank	59.03	Prosopis Juliflora/Ipomea
4				Puthur	Periyasaliyankulam Tank	73.12	Prosopis Juliflora/Ipomea
5				Duraisamipuram	poovani Tank	114.25	Prosopis Juliflora/Ipomea
6				Sundararajapuram	Pudukulam Tank	73.04	Prosopis Juliflora/Ipomea
7				Puthur	Puthur Nenmeni Tank	109.195	Prosopis Juliflora/Ipomea
8				Puthur	Thenkarai Tank	142.91	Prosopis Juliflora/Ipomea
9				Vadakarai	Vadakarai Tank	105.45	Prosopis Juliflora/Ipomea
10				Sundararajapuram	Ekkanam Kanmoi	104.83	Prosopis Juliflora/Ipomea
11				Mettupatti	Ganapathykulam Tank	49.83	Prosopis Juliflora/Ipomea
12				Sundararajapuram	Kuravankulam Kanmoi	60.5	Prosopis Juliflora/Ipomea
13				Ayyan kollankondan	Watrapeeri Tank	74.945	Prosopis Juliflora/Ipomea
14				Sundararajapuram	Solaseri tank	41.325	Prosopis Juliflora/Ipomea
15				Sundararajapuram	Senthaneri Tank	81.035	Prosopis Juliflora/Ipomea
16				Solaseri	Ariyaneri Tank	83.435	Prosopis Juliflora/Ipomea
17				Solaseri	Mananakki tank	127.395	Prosopis Juliflora/Ipomea
18				Mettupatti	Pirakudi tank	140	Prosopis Juliflora/Ipomea
19				Rajapalayam	Alapacheri Tank	82.815	Prosopis Juliflora/Ipomea
20				Ayyan kollankondan	Kollankondan Tank	365.135	Prosopis Juliflora/Ipomea

21			Therkkuvenganallur	kulasekarapeikulam	50.93	Prosopis Juliflora/Ipomea				
22			Therkkuvenganallur	Delvathikulam Tank	90.04	Prosopis Juliflora/Ipomea				
23			Kollankondan	Kummttikulam senkulam Tank	56.145	Prosopis Juliflora/Ipomea				
24			Chollapuram	Thulakudi Tank	23.08	Prosopis Juliflora/Ipomea				
25	Tirunelveli	Sivagiri	Rajapalayam	Solaseri	Mannarmudi Tank	140.03	Prosopis Juliflora/Ipomea			
26				Solaseri	Poovaneri Tank	85.765	Prosopis Juliflora/Ipomea			
27				Kovilur	Vadalyarkulam Tank	149.7	Prosopis Juliflora/Ipomea			
28				Inamkovilpatti	Moongilkulam	20.31	Prosopis Juliflora/Ipomea			
29				Sivagiri	Periya avudaiperi Tank	74.49	Prosopis Juliflora/Ipomea			
30				Sivagiri	Rasinaperi Tank	846.635	Prosopis Juliflora/Ipomea			
31				Sivagiri	Vijayarengaperi Tank	243.18	Prosopis Juliflora/Ipomea			
32				Sivagiri	Vadakarai Tank	54.58	Prosopis Juliflora/Ipomea			
33				Sivagiri	Thenkal Tank	43.6	Prosopis Juliflora/Ipomea			
34				Sivagiri	Muthoor Tank	147.08	Prosopis Juliflora/Ipomea			
35				Sivagiri	Uruvatti Tank	48.29	Prosopis Juliflora/Ipomea			
36				Sivagiri	Pullanthurai Tank	48.85	Prosopis Juliflora/Ipomea			
37				Sivagiri	Uyarkudi Tank	105.065	Prosopis Juliflora/Ipomea			
38				Rayagiri	Karunkulam Tank	133.735	Prosopis Juliflora/Ipomea			
39				Tirunelveli	Sivagiri	Vasudevanallur	Rayagiri	Kadambankulam Tank	50.32	Prosopis Juliflora/Ipomea
40							Sivagiri	ChinnaAviudaiperi Tank	162.775	Prosopis Juliflora/Ipomea
41							Sivagiri	Konarkulam Tank	67.42	Prosopis Juliflora/Ipomea
42							Devipattinam	Valivali	183.84	Prosopis Juliflora/Ipomea
43	Devipattinam	Sankulam Tank	55.665				Prosopis Juliflora/Ipomea			
44	Viswanathaperi	Kattakulam Tank	43.625				Prosopis Juliflora/Ipomea			
45	Viswanathaperi	Rayamperi Tank	72.266				Prosopis Juliflora/Ipomea			
46	Viswanathaperi	Viswanathaperi Big Tank	398.43				Prosopis Juliflora/Ipomea			
47	Devipattinam	Shanmuganathi Tank	82.815				Prosopis Juliflora/Ipomea			
48	Thenmalai	Thenmalai Tank	546.04				Prosopis Juliflora/Ipomea			
49	Paruvakudi	Ettiseri Tank	47.07				Prosopis Juliflora/Ipomea			

50			Paruvakudi	Mullithuruthi Tank	86,11	Prosopis Juliflora/Ipomea
51			Perrumalpatti	Mudivanangan Tank	226.99	Prosopis Juliflora/Ipomea
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79	Tirunelveli	Virudhunagar				
80	Sankaran kovil	Rajapalayam				

ANNEXURE - II

DEVIAR SUB BASIN

DOMESTIC SEWAGE

Sl. No.	Name of Town	Water body into which Sewage is discharged
1	Rajapalayam	Alappaseri Tank(Industrial Waste)
2	Rayagiri	Karungulam Tank
3	Seithur	Ganapathykulam Tank
4	Sivagiri	Vadakal Tank

ANNEXURE- III

DEVIAR SUB BASIN

MUNICIPAL SOLID WASTE

Sl No.	Location of Solid waste disposal	Disposal of solid waste in Land	Qty.in M.T.	Disposal of solid waste into water body		
				River	Tank	Odai
1	Seithur	Compost yard	5.5	—	—	—
2	Rajapalayam	Compost yard	45.75	—	—	—
3	Vasudevanallur	Compost yard	6.4	—	—	—
4	Rayagiri	Compost yard	3.1	—	—	—
5	Kuruvikulam	Compost yard		—	—	—
6	Sivagiri	Compost yard	6.40	—	—	—
7	Devadhanam	Compost yard		—	—	—

ANNEXURE - I V					
LIST OF INDUSTRIES IN DEVIAR SUB BASIN					
Sl. No	Name of Industry & Address	Taluk	Category	Type	
INDUSTRIES IN VIRUDHUNAGAR DISTRICT					
RAJAPALAYAM TALUK					
1	Sri Vigneshwara Fire Works,Selvalpatti,Sivakasi.	Rajapalayam	Fire Works	R/S	
2	T.R. Thirumeni Dyeing Factory,South Venganallur Village,E.S.I Colony,Rajapalayam.	Rajapalayam	Deying	R/S	
3	Karpagambal Mills Ltd.,Cholapuram,Rajapalayam.	Rajapalayam	Spinning	O/L	
4	Polyspin (P) Ltd.,6,Railway Feeders Road,Rajapalayam,Virudhunagar Dist.	Rajapalayam	Poly Sacks	O/M	
5	Polyspin (P) Ltd.,Cholapuram,Rajapalayam	Rajapalayam	Poly Sacks	O/M	
6	Savitha Spinning mills Pvt.Ltd.,Cholapuram,Rajapalayam	Rajapalayam	Spinning	O/M	
7	Karpagambal Spinning Mills(Weaving), Cholapuram Village,Rajapalayam.	Rajapalayam	Spinning	O/M	
8	Indian product,119,Cholapuram,Rajapalayam Town and Taluk	Rajapalayam	Clay	O/S	
9	Bright Chemicals,Cholapuram,Rajapalayam.	Rajapalayam	Lime kiln	O/S	
10	Sri Balaji Enterprises,111-B/1, Cholapuram Village,Rajapalayam.	Rajapalayam	Lime kiln	O/S	
11	Chola Packages Pvt.Ltd., 491/1,South Venganallur,Rajapalayam.	Rajapalayam	Poly Sacks	O/S	
12	Ganesh Agro Pack Pvt.Ltd., 6-A,Railway Feeder Road,Cholapuram,Rajapalayam.	Rajapalayam	Poly Sacks	O/S	
13	Sri Shanthi Spinners,South Venganallur,Rajapalayam.	Rajapalayam	Spinning	O/S	
14	Sri Venkatram Spinners(p)ltd.,Cholapuram,Rajapalayam.	Rajapalayam	Spinning	O/S	
15	Sri lakshmi Blue metals R.S.No.244,South Veganallur,Rajapalayam.	Rajapalayam	Stone Crusher	O/S	O/S
16	Madras Chip Board Ltd., ,South Venganallur,Rajapalayam.	Rajapalayam	Wood Doors	O/S	
17	Lime Naph Chemicals (P)ltd.,B-Unit,291-C,,South Venganallur,Rajapalayam.	Rajapalayam	Lime Powder	O/S	
18	Sun Coap(P)Ltd., Muttanathi,Rajapalayam.	Rajapalayam	Clay	O/S	
19	Sri Durga Blue Metal,Nallamanaickenpatti, Rajapalayam.	Rajapalayam	Stone Crusher	O/S	
20	Energy Spin Ltd.,South Venganallur village,Rajapalayam.	Rajapalayam	Tarpalin	G/S	
21	Rajapalayam Cements and Chemicals Ltd.,	Rajapalayam	Cements	R/L	

Annexure- iv

SI.No	Name and address of the Factory		Major Cronic activity	Type	SSI/NON SSI
1	Coolmax Radiators (P) Ltd.,	Kappalur	Automobile	OS	SSI
2	Tamilnadu State Transport Corporation Ltd.,	Usilampatti Road	Automobile	OS	NON SSI
3	Tnstc – Tirumangalam Usilai Road, Tirumangalam.	Kappalur	Automobile	OS	NON SSI
4	Assian Bags (P) Ltd.,	Kappalur	Bags	GM	SSI
5	Delite Print Bags (P) Ltd.,	Kappalur	Bags	GM	SSI
6	Poly Bags (P) Ltd.,	Kappalur	Bags	GM	SSI
7	Kalidoss Brush Company]	Maravankulam	Brushes	OS	NON SSI
8	Muthu Brush Company	Kappalur	Brushes	OS	NON SSI
9	Fine Cable Industries	Kappalur	Cables	OS	SSI
10	Paramount Canvas Processors (P) Ltd.,	Kappalur	Canvas	OS	SSI
11	Balaji Chemical 165, Sidco , Kappalur.	Kappalur	Chemical	RS	
12	Balaraman Tafe Sidco Industriala Estate, Kappalur.	Kappalur	Chemical	RS	
13	Carbose India Melakottai, Tirumangalam.	Thirumangalam	Chemical	RS	
14	Century Chemical & Oil Mills Vehappatti, Tirumangalam Taluk.	Thirumangalam	Chemical	RS	
15	Chear chlorites Private Limited Melakottai, Tirumangalam Taluk.	Thirumangalam	Chemical	RS	
16	Dhanasekara Pandian & Sons Dharmattupatti Village, Tirumangalam.	Thirumangalam	Chemical	RS	
17	Jeya Ambika Metals K. Vellankulam Villagae Tirumangalam.	Thirumangalam	Chemical	RS	
18	Jeyanthi Chemical Sidco Indl.Estate, Kappalur.	Kappalur	Chemical	RS	
19	Kapsons Industries Sidco Industrial Estate, Kappalur.	Kappalur	Chemical	RS	
20	KPS Textile Gum 170/1A, Kilavanari Village Tirumangalam, Taluk.	Thirumangalam	Chemical	RS	
21	Lakshmi Industries Sidco Industrial Estate, Kappalur.	Kappalur	Chemical	RS	
22	Madurai Latex Products Sidco Industrial Estate, Kappalur.	Kappalur	Chemical	RS	
23	Marine Bye Products Sidco Industrial Estate, Kappalur.	Kappalur	Chemical	RS	
24	Om Sakthi Chemicals, Indl. Estate, Kappalur, Madurai.	Kappalur	Chemical	RS	

25	Rajaganapathy Chemicals Sidco Indl. Estate, Kappalur.	Kappalur	Chemical	RS	
26	Rajaganapathy Industries Melakkottai.	Thirumangalam	Chemical	RS	
27	RVS & Company Uchapatti, Tirumangalam Taluk.	Thirumangalam	Chemical	RS	
28	Sri Meenakshi Chem Industries D-37, Sidco, Kappalur.	Kappalur	Chemical	RS	
29	Sri Ram Calcium Carbonate Sidco Industrial Estate, Kappalur.	Kappalur	Chemical	RS	
30	Srinivasa Marine & Chemicals Melakkottai, Tirumangalam Taluk.	Thirumangalam	Chemical	RS	
31	Thai – Hi Tech Chemical D – 30 Sidco, Kappalur.	Kappalur	Chemical	RS	
32	Meenakshi Match Industries	Aavalsuranpatti Panchayat	Fire works	RS	NON SSI
33	Meenu Chemicals Sidco, Kappalur.	Kappalur	Chemicals	RS	
34	Priyanga Chemicals]	Kappalur	Chemicals	RS	NON SSI
35	Suiya Chemicals	Kappalur	Chemicals	RS	SSI
36	Surya Chemicals Sidco Indl. Estate, Kappalur.	Kappalur	Chemicals	RS	
37	Royal Seema Concrete Sleeper (P) Ltd.,	Railway Yard	Concrete	RS	NON SSI
38	Assefa Milk 55 – 56, Vehapatti, Tirumangalam.	Thirumangalam	Dairy	OS	
39	ASSAFA Dairy Development Fedaration	Kappalur	Diary	OS	SSI
40	Madurai District Central Co-Operative Milk	Kappalur	Diary	OS	SSI
41	Raja Ayurvedha Marunthagam	Kappalur	Drugs	OS	SSI
42	Raja Sidha Marunthagam	Kappalur	Drugs	OS	SSI
43	Kalyani Yarn Processors	Kappalur	Dying	RS	NON SSI
44	Sri Sakthi Processors	Kappalur	Dying	RS	SSI
45	Monold Electricl Equipments Ltd.,	Kappalur	Electrical equipts	OS	SSI
46	Excel Containers P Ltd Sidco, Kappalur.	Kappalur	Engineering	OS	
47	SM Industries Sidco, Kappalur.	Kappalur	Engineering	OS	
48	Amman Match Works	Puliankualm Village	Fire works	RS	NON SSI
49	Ayyanar Match Unit	Thadagam Road	Fire works	RS	NON SSI
50	Balaji Match Works	Lalapuram	Fire works	RS	NON SSI
51	Balan Match Works	Kallikudi(Post)	Fire works	RS	NON SSI
52	Chettiar Match Works	P.T.Rajan Road	Fire works	RS	NON SSI
53	Chidambaram Match Industries	Thirumangalam	Fire works	RS	
54	Dhanalakshmi Match Industries	M. Puliangulam	Fire works	RS	NON SSI
55	Krishna Match Works	Kallikudi Village	Fire works	RS	NON SSI
56	Lakshmi Match Works	M.Sengulam	Fire works	RS	NON SSI

57	Murugan Maatch Works	Railway Feeder Road	Fire works	RS	NON SSI
58	Murugan Maatch Works A Unit	Vilathikulam Road	Fire works	RS	NON SSI
59	Pretham Match Company	Villur Village	Fire works	RS	NON SSI
60	Ram Match Works	Melatheru	Fire works	RS	NON SSI
61	Sakthi Match Works	Thadagam Road	Fire works	RS	NON SSI
62	Sekar Match Industries	East Pallivsal Street	Fire works	RS	NON SSI
63	Sivakumar Match Works	Mahimshapuram II Street	Fire works	RS	NON SSI
64	Suganya Match Industries	Virudhunagar Road	Fire works	RS	NON SSI
65	Surya Match Industries	Sivarakkottai	Fire works	RS	NON SSI
66	The Vanithamani Match Works	Rajan Street	Fire works	RS	NON SSI
67	The Ventahmarai Match works	Sengulam East Street	Fire works	RS	NON SSI
68	Kayathiri Matches	Kallikude	Fireworks	RS	NON SSI
69	Avamariya Fish Nets	Kappalur	Fish nets	OS	NON SSI
70	Fajaram Flour Mills	Kappalur	Flour mill	OM	NON SSI
71	Jeyakrishna Flour Mills	Kappalur	Flour mill	OM	NON SSI
72	Aavin Cattle Feed Unit II Sidco Estate, Kappalur, Madurai – 8.	Kappalur	Food – Beverages	OM	
73	Indian Food Products 24, Sidco Indl. Estate, Kappalur, Madurai – 8.	Kappalur	Food – Beverages	OM	
74	Jayakrishna Flour Mill Unit II A 2 /3 , Sidco , Kappalur, Madurai.	Kappalur	Food – Beverages	OM	
75	Rajaram Flour Mill Melakottai, Thirumangalam.	Thirumangalam	Food – Beverages	OM	
76	Bargava Products Sidco, Kappalur.	Kappalur	Food & Beverages	OS	
77	Cellulose Products of India Limited Sidco , Kappalur.	Kappalur	Food & Beverages	OS	
78	Guru Flour Mill Mamsapuram, Tirumangalam.	Thirumangalam	Food & Beverages	OS	
79	Madras Flour Mill Kappalur, Tirumangalam.	Thirumangalam	Food & Beverages	OS	
80	Bharani Foot Wear	Karisalpatti	Foot wears	OS	SSI
81	The Metal Powder Company Limited Maravankulam, Thirumangalam.	Thirumangalam	Foundary	RI	
82	TV Plastics	Kappalur	Foundary	RI	
83	Tansi Furniture	Kappalur	Furniture	OS	NON SSI
84	Peacock Garments (P) Ltd Sidco Indl. Estate, Kappalur, Madurai.	Kappalur	Garments (Dry)	GM	
85	Penguin Apparels p Ltd Sidco Indl. Estate, Kappalur, Madurai.	Kappalur	Garments (Dry)	GM	
86	Penguin Garments(P) Ltd Sidco Indl. Estate, Kappalur, Madurai.	Kappalur	Garments (Dry)	GM	

87	K Ragupathiammal Ginning Factory	Melakkottai	Ginning	OS	SSI
88	Kananan Siva Industries 2 / 2 , Palakkkapudupatti Village, Kappalur.	Kappalur	Ginning	OS	
89	M.M Ginning Factory Kallikudi, Tirumangalam Taluk.	Thirumangalam	Ginning	OS	
90	Ragupathi Ammal Ginning Factory Melakkottai, Tirumangalam.	Thirumangalam	Ginning	OS	
91	Sri Thiurpathi Ginning Factory	Melakkottai	Ginning	OS	SSI
92	SriLaxmi Diamond Works	Kappalur	Ginning	OS	NON SSI
93	Thiruppathi Ginning Factory Melakkottai, Tirumangalam.	Thirumangalam	Ginning	OS	
94	Valaguru Ginning Factory Kallikudi, Tirumangalam.	Kappalur	Ginning	OS	sSI
95	Vanithamani Mathch Works P.T. Rajan Street, Tirumangalam.	Thirumangalam	Ginning	OS	
96	Govt. Hospital Tirumangalam.	Thirumangalam	Hospital-Govt	RS	
97	Manickammal Rice Mill 20, Thiruvalluvar Street, Tirumangalam.	Thirumangalam	Hulling	OS	
98	PP Natarajan & Sons 142, Virudhunagar Road, Thi;rumangalam.	Thirumangalam	Hulling	OS	
99	Sathyas Modern Rice Mill	Maruthangaudi	Hulling	OS	SSI
100	Sivananda Rice & Oil Mill	Virudhunagar Road	Hulling	OS	SSI
101	Sri Chithanathan Rice & Oil Mill	Arumugam Road	Hulling	OS	SSI
102	A.B.M. Corporation	Kappalur		OS	SSI
103	Dhanalakshmi Industries	Kappalur		RS	SSI
104	Ganesh Saravana Industries	Vilathikulam Road		RS	SSI
105	M/s Pearl Mineral Products	Kappalur		OS	NON SSI
106	Madurai West Sarvodaya Sangam	Sasthripuram		OS	NON SSI
107	Ramu Incorporated	Kappalur		OS	SSI
108	Saraswathi Crown Cark Industries	Kappalur		OS	NON SSI
109	Southern Rhims (P) Ltd.,	Kappalur		OS	SSI
110	Swarna Agencies	Kappalur		OS	SSI
111	Thirumangalam Co-Op Marketing Society	Vilathikulam Road		OS	SSI
112	Vinayaga Industries BS-18 Sidco Indl. Estate Kappalur, Madurai - 8	Kappalur		RS	NON SSI
113	Yagappa Industries 79 / 3, Chetti Pillayarnatham, Tirumangalam.	Kappalur		RS	NON SSI
114	Balaji Mineral Enterprises	Kappalur		OS	SSI
115	Standard Enterprises	Kappalur		OS	SSI
116	Ganapathi Industries	Koothiyarkundu Post		RS	SSI

117	Lakshmi Industries	Kappalur		RS	SSI
118	Super Run Products (P) Ltd.,	Kappalur		OS	SSI
119	Balaji Mineral Enterprises Dharmathupatti, Tirumangalam.	Thirumangalam	Limestone	OS	
120	Baskar Lime Industries D-40 Sidco, Kappalur.	Kappalur	Limestone	OS	
121	Nandhini Enterprises 42, Alampatti-- Sedapatti Road, Tirumangalam.	Thirumangalam	Limestone	OS	
122	Nylon Industries D-45, Sidco, Kappalur.	Kappalur	Limestone	OS	
123	Pearl Minerals 66, Sidco, Kappalur.	Kappalur	Limestone	OS	
124	Sreethi Enterprises D-2, Sidco, Kappalur.	Kappalur	Limestone	OS	
125	Hpcl – Lpg 171 - -172, Sidco Industrial Esdate, Kappalur, Madurai.	Kappalur	Lpg Bott	RI	
126	Amman Match Works M..Puliankulam Village, Tirumangalam.	Thirumangalam	Match Works	RS	
127	Vasu Crushers 9. Ulagani, Tirumangalam Taluk.	Thirumangalam	Match Works	RS	
128	Aluminum Powder Company Ltd	Melakkottai	Metal powder	RS	NON SSI
129	The Aluminium Powder Company Limited Melakottai, Thirumangalam.	Thirumangalam	Non – Ferr Metal	RI	
130	Ravi Industries 180, Sidco, Kapplur.	Kappalur	Oil Reclamation	RS	
131	Sun Reclaimery 25,Mdu Automobile Co-Op, Industries Estate,Kappalur.	Kappalur	Oil Reclamation	RS	
132	Team Organics Ltd Kallikudi Village, Tirumangalam Taluk.	Thirumangalam	Oil Reclamation	RS	
133	Hcl Oil Storage Sidco Industrial Esdate Kappalur, Madurai .	Kappalur	Oil Storage	RI	
134	Hpcl Oil Storage Sidco Industrial Esdate Kappalur, Madurai.	Kappalur	Oil Storage	RI	
135	P.S.N. Spinners	Kappalur	Spinning Mill	OS	SSI
136	T.M.S. Ginning & Oil Mills	Madurai Road	Ginning	OS	SSI
137	Gunamalai Packaging Industries (P) Ltd.,	Kappalur	Packaging	OL	SSI
138	Meena Packaging	Kappalur	Packaging	OL	NON SSI
139	Naga Packaging	Kappalur	Packaging	OL	
140	Pioneer Packaging Products	Kappalur	Packaging	OL	SSI
141	Sara Packaging	Kappalur	Packaging	OL	NON SSI
142	Shree Packs Industries	Kappalur	Packaging	OL	SSI
143	Muthu Paint Industries D-9 Sidco, Kappalur.	Kappalur	Paint	RS	
144	Chandra Paper Products	Kappalur	Paper products	OS	SSI
145	Jaycee Paper Boards	Melakkottai	Paper products	OS	SSI
146	Micro Chemical Sidco Indusatrial Estatem, Kappalur.	Kappalur	Pesticide	RS	

147	Hindustan Petroleum Corporation Ltd.,	Kappalur	Petroleum products	RS	NON SSI
148	A.D.R. Plastics	Kappalur	Plastics	OS	SSI
149	Anantha Ploy Products (P) Ltd.,	Kappalur	Plastics	OS	NON SSI
150	Standard Poly Plastics (P) Ltd.,	Kappalur	Plastics	OS	NON SSI
151	Pandian Print Packs Sidco Indl .Estate, Kappalur, Madurai.	Kappalur	Poly Bags	GS	
152	ATR Ploymers	Kappalur	Polymers	OS	NON SSI
153	Ratna Press	Virudhunagar Road	Printing	OS	SSI
154	Jayee Paper Board 3 /81 A, Melakkottai, Thirumangalam.	Thirumangalam	Pulp & Paper	OS	
155	Pioneer Paper Board 6 /1 ,Thenkasi Road, Karisalpatti, Tirumangalam.	Thirumangalam	Pulp & Paper	OS	
156	Srinivasa Paper & Board 26 /1 A, Thenkasi Road, Karisal patti, .	Thirumangalam	Pulp & Paper	OS	
157	Pecock Apparels (P) Ltd.,	Kappalur	Readymade garments	GM	NON SSI
158	Penquin Apparels (P) Ltd.,	Kappalur	Readymade garments	GM	SSI
159	Penquin Apparels (P) Ltd., UnitII	Kappalur	Readymade garments	GM	NON SSI
160	Penquin Apparels (P) Ltd., UnitIII	Kappalur	Readymade garments	GM	NON SSI
161	Penquin Garments (P) Ltd.,	Kappalur	Readymade garments	GM	SSI
162	Aravind Products 63, Sidco, Kappalur.	Kappalur	Rubber	RS	
163	Christwin Industries 52, Sidco, Kappalur.	Kappalur	Rubber	RS	
164	Hi-Tech Aray Ltd 30, Sidco , Kappalur.	Kappalur	Rubber	RS	
165	Hi-Tech Aray Ltd Shed No.60, Sidco, Kappalur.	Kappalur	Rubber	RS	
166	Kamala Rubber Company 60,Sidco, Kappalur.	Kappalur	Rubber	RS	
167	Madurai Rubber Company B5,14(P) Sidco, Kappalur.	Kappalur	Rubber	RS	
168	Sahay Rubber Products 7, Sidco Kappalur.	Kappalur	Rubber	RS	
169	Sri Meenakshi Rubber Co. 43, Sidco, Kappalur.	Kappalur	Rubber	RS	
170	Super Run Products 78, Sidco, Kappalur.	Kappalur	Rubber	RS	
171	Vikash Threads	Kappalur	Rubber	RS	
172	Vinoth Rubber Factory	Kappalur	Rubber	RS	
173	Chitra Cones & Tubes	Kappalur	Rubber products	RS	SSI
174	Efgy Rubberr Kap	Kappalur	Rubber products	RS	NON SSI

175	Padmalakshni Rubber Products(P) Ltd.,	Kappalur	Rubber products	RS	SSI
176	Saghay Rubber Products	Kappalur	Rubber products	RS	SSI
177	Sri Vishnu Rubber Products (P) Ltd.,	Kappalur	Rubber products	RS	NON SSI
178	Vijay Rubber Industries	Arumugam Road	Rubber products	RS	NON SSI
179	Vijay Rubber Industries Sidco, Kappalur.	Kappalur	Rubber products	RS	SSI
180	National Seeds Corporation	Kappalur	Seeds	OS	NON SSI
181	PVM Selva Jothi Saw Mill .Vellkulam, Kallikudi, Tirumangalam.	Thirumangalam	Service Staion	OS	
182	Ottakam soap Company	Kappalur	Soap	RS	NON SSI
183	Chakra Circular Socks Sidco Indl.Estate, Kappalur, Madurai.	Kappalur	Socks	GS	
184	Ayyanar Spinning Mills	Kallikudi Via	Spinning Mill	OS	NON SSI
185	Babu Spinning Mills Kappalur Indl. Estate, Madurai – 8	Kappalur	Spinning Mill	OM	
186	Colour Yarns Ltd.,	Alampatti	Spinning Mill	OS	NON SSI
187	Dhanalakshmi Mills	Kappalur	Spinning Mill	OS	SSI
188	Kanagadurga Clothes Sidco Indl. Estate, Kappalur, Madurai-8.	Kappalur	Spinning Mill	OM	
189	Madrura Spinners	Kappalur	Spinning Mill	OS	SSI
190	Malaiyarasi Threads	Kappalur	Spinning Mill	OS	SSI
191	Menaka cotton Mill D-32,38 Sidco, Kappalur.	Kappalur	Spinning Mill	OS	
192	N.S.K. Ginning & Oil Mills	Vilathikulam Road	Spinning Mill	OS	NON SSI
193	Padmavathy Spinners Plot No.42 Part, Sidco Kappalur, Madurai – 8.	Kappalur	Spinning Mill	OM	
194	Paramount Mills (P) Ltd.,	Katrapatti Village	Spinning Mill	OS	NON SSI
195	Ply Yarns	Kappalur	Spinning Mill	OS	SSI
196	PSN Spinners 31,Sidco, Kappalur, Madurai.	Kappalur	Spinning Mill	OS	
197	Seetharam Mills	Kappalur	Spinning Mill	OS	SSI
198	Seetharaman Mills BS-15, Sidco Indl. Estate, Kappalur, Madurai – 8	Kappalur	Spinning Mill	OM	
199	Sir Padmalakshmi Mills	Kappalur	Spinning Mill	OS	SSI
200	Sree Thanigai Spinning Mills	Kappalur	Spinning Mill	OS	NON SSI
201	Sri Arumuga Vilas Ginning Factory	Arumugam Road	Spinning Mill	OM	SSI
202	Sri Ayyanar Spinning & Weaving Mill Unit II Illupakulam, Thirumangalam Tk	Thirumangalam	Spinning Mill	OS	
203	Sri Elumalayan Spinners (P) Ltd.,	Kappalur	Spinning Mill	OS	NON SSI
204	Sri Kalyani Threads	Kappalur	Spinning Mill	OS	NON SSI

205	Sri Kannika Parameswari Mills (P) Ltd Sidco, Kappalur.	Kappalur	Spinning Mill	OS	
206	Sri Pandiyan Print Packs And Textiles Mills Ltd T. Pudupatti 625 704.	Thirumangalam	Spinning Mill	OM	
207	Sri Reghupathi Spinners	Melakkottai	Spinning Mill	OS	NON SSI
208	Sri Senchadai Nathar Karunakadakshi Spinners (P) Ltd.,	Kappalur	Spinning Mill	OS	SSI
209	Sumangala Spinning Mills Shed No.23 & 24 ,Sidco Kappalur, Madurai – 8.	Kappalur	Spinning Mill	OM	
210	Surabi Spinners	Kappalur	Spinning Mill	OS	NON SSI
211	Thiagarajar Mills Ltd.,	Kappalur	Spinning Mill	OS	NON SSI
212	Thiruvethi Ayyanar Spinning Mill Sidco Indl.Estate, Kappalur, Madurai.	Kappalur	Spinning Mill	OS	NON SSI
213	Thiyagarajar Mills Kappalur, Madurai – 8.	Kappalur	Spinning Mill	OM	
214	Thiyagrajar Knitters	Kappalur	Spinning Mill	OM	
215	Vikesh Threads Sidco ,Kappalur.	Kappalur	Spinning Mill	OS	NON SSI
216	Tower Steels Limited Sidco Industrial Limited, Kappalur, Madurai	Kappalur	Steels	RS	NON SSI
217	Agam Blue Metal Tirumangalam.	Thirumangalam	Stone Crusher	OS	
218	Amman Blue Metal Nedungulam Village, Tirumangalam.	Thirumangalam	Stone Crusher	OS	
219	Annai Blue Metal Sengapadai, Tirumangalam.	Thirumangalam	Stone Crusher	OS	
220	CK Devi Blue Metal Vadakarai, Melakottai, Tirumangalam.	Thirumangalam	Stone Crusher	OS	
221	Dhanalakshmi Blue Metal 70 1E, Karpaga Nagar, Tirumangalam.	Thirumangalam	Stone Crusher	OS	
222	JE PS Granite Products T. Pudupatti Village, Thirumangalam.	Thirumangalam	Stone Crusher	OS	
223	Kandasamy Blue Metal 23, Main Street, T. Pudupatti Post, Madurai.	Thirumangalam	Stone Crusher	OS	
224	KP Blue Metals Karisalapatti, Tirumangalam.	Thirumangalam	Stone Crusher	OS	
225	Lord Venkateswara Blue Metal Tirumangalam.	Thirumangalam	Stone Crusher	OS	
226	Mohana Blue Metal Tirumangalam.	Thirumangalam	Stone Crusher	OS	
227	Palanikumaresan Blue Metal Chekkanurani, Madurai.	Thirumangalam	Stone Crusher	OS	
228	RG Blue Metal Vadakarai, Tirumangalam.	Thirumangalam	Stone Crusher	OS	
229	Royalaseema crusher & Concrete Sleepers P Ltd, Thiumangalam.	Thirumangalam	Stone Crusher	OS	
230	Sairam Stone Metal 57 / 11, Chinna Ulagani, Thirumangalam.	Thirumangalam	Stone Crusher	OS	
231	Sriram Metal Works Kunnanam patti, Thirumangalam.	Thirumangalam	Stone Crusher	OS	
232	V. Nathan Soap Sidco Indl. Estate, Kappalur.	Thirumangalam	Stone Crusher	OS	

233	Vedial Textiles	Thirumangalam	Stone Crusher	OS	
234	Velpandy Blue Metals Thengai Patti, Tirumangalam.	Thirumangalam	Stone Crusher	OS	
235	Venkateswara Textiles Mills	Thirumangalam	Stone Crusher	OS	
236	Vijay Match Industries	Thirumangalam	Stone Crusher	OS	
237	Vinayaga Body Building Industries Unit I	Thirumangalam	Stone Crusher	OS	
238	Vinoth Rubber 124, Sidco, Kappalur.	Thirumangalam	Stone Crusher	OS	
239	Yegam Threads Sidco, Kappalur.	Thirumangalam	Stone Crusher	OS	
240	Annai Blue Metal Industries	Melakkottai	Stone Crusher	OS	SSI
241	Saravnan Blue Metals	k.Puliankulam	Stone Crusher	OS	SSI
242	Uppukamatchi Blue Metal Tirumangalam , Madurai.	Kappalur	Stone Crusher	OS	SSI
243	Vignesh Blue Metals Karadikkal, Tirumangalam.	Kappalur	Stone Crusher	OS	NON SSI
244	Hari Granites Sidco, Kappalur.	Kappalur	Stone Polishing	OS	
245	G.D. Textiles (Mdu) P.Ltd 82. Sidco Indl. Estate, Kappalur, Madurai.	Kappalur	Tex.Proc	OM	
246	Lilly Cotton Products Alampatti, Tirumangalam.	Thirumangalam	Text Processing	OS	
247	Sundarraja Spinning Mill Sidco , Kappalur, Madurai.	Kappalur	Text Processing	OS	
248	Super Quality Mills Sidco, Kappalur.	Kappalur	Text Processing	OS	
249	Alagammai Mercerising D-33, Sidco , Kappalur, Madurai – 8	Kappalur	Textile Processing	RS	
250	Mona Textiles Melakottai, Tirumangalam.	Thirumangalam	Textile Processing	RM	
251	Vinod Blue Metal K. Puliankulam, Tirumangalam.	Kappalur	Textile Processing	OM	
252	Selvaraj Fabrics (P) Ltd.,	Kappalur	Textiles	OS	NON SSI
253	A.T. Weaving	Sidco	Textiles	OS	NON SSI
254	Aanjaneya Weavings (P) Ltd.,	Kappalur	Textiles	OS	NON SSI
255	Abirami Textiles (P) Ltd.,	Kappalur	Textiles	OS	NON SSI
256	B.L. Textiles	Kappalur	Textiles	OS	NON SSI
257	Balaji Textile Mills	Kappalur	Textiles	OS	SSI
258	Cappteev Textiles (P) Ltd.,	Kappalur	Textiles	OS	SSI
259	Clasic Weaving	Kappalur	Textiles	OS	NON SSI
260	Gowri Yarn Fabrics	Kappalur	Textiles	OS	SSI
261	Hanuman Weaving Co (P) Ltd.,	Kappalur	Textiles	OS	NON SSI
262	J.K. Textiles Mills	Kappalur	Textiles	OS	NON SSI
263	Jagrit Polymers (P) Ltd.,	Kappalur	Textiles	OS	SSI
264	Keerthana Weaving	Kappalur	Textiles	OS	NON SSI

265	Kumaran Textiles	Kappalur	Textiles	OS	NON SSI
266	Lakshmi Durga Super Fabrics	Kappalur	Textiles	OS	NON SSI
267	Lakshmi Weaves	Kappalur	Textiles	OS	NON SSI
268	M.A.C.S. Textiles (P) Ltd.,	Kappalur	Textiles	OS	NON SSI
269	M/s Sathaiya Fabrics	Kappalur	Textiles	OS	NON SSI
270	Meenakshi Textile Mills	Kappalur	Textiles	OS	NON SSI
271	Niranchana Weaving	Kappalur	Textiles	OS	SSI
272	Oxforo Textiles	Kappalur	Textiles	OS	SSI
273	Priya Weavers	Kappalur	Textiles	OS	NON SSI
274	Punnagai Textiles	Kappalur	Textiles	OS	NON SSI
275	Rajkumar Textiles	Kappalur	Textiles	OS	SSI
276	Santhosh Weaves	Kappalur	Textiles	OS	NON SSI
277	Sathyas Fabrics	Kappalur	Textiles	OS	NON SSI
278	Senthil Fabrics	Kappalur	Textiles	OS	NON SSI
279	Shiny Textiles (P) Ltd.,	Kappalur	Textiles	OS	NON SSI
280	Sivakami Textiles	Kappalur	Textiles	OS	NON SSI
281	Sri Ahilandeswari Textiles	Kappalur	Textiles	OS	NON SSI
282	Sri Karpaga Vinayagar Textiles	Kappalur	Textiles	OS	NON SSI
283	Sri Maruthi Textiles	Kappalur	Textiles	OS	NON SSI
284	Sri Nagalakshmi Textile Mills (Madurai)Ltd.,	T.Kallupatti	Textiles	OS	NON SSI
285	Sri Neelambika Textiles (P) Ltd.,	Kappalur	Textiles	OS	NON SSI
286	Sri Padamavathy Srinivasa	Kappalur	Textiles	OS	NON SSI
287	Sri Vairam Textiles	Kappalur	Textiles	OS	SSI
288	Sri Venkatalakshmi Textiles	Kappalur	Textiles	OS	NON SSI
289	Subalakshmi Weaving	Kappalur	Textiles	OS	SSI
290	Sundaraja Sizing Mills	Kappalur	Textiles	OS	SSI
291	Suruthi Fabrics	Kappalur	Textiles	OS	NON SSI
292	Swathi Textiles	Kappalur	Textiles	OS	SSI
293	The Mona Textiles Ltd.,	Melakkottai	Textiles	OS	NON SSI
294	Thirumalai Textiles & Company	Kappalur	Textiles	OS	NON SSI
295	Visalakshi Power Looma (P) Ltd.,	Kappalur	Textiles	OS	SSI
296	ARC Retreading Company Thirumangalam, Sidco, Kappalur.	Kappalur	Tyre Retreading.	OS	

297	Chakra Retreads, Kappalur 94 -4 , Madurai Road, Thirumangalam.	Thirumangalam	Tyre Retreading.	OS	
298	Velankanni Waste Cotton Mill Alampatti Tirumangalam.	Kappalur	Waste cotton	OS	NON SSI
299	Chamundi Weavers Sidco, Kappalur.	Kappalur	Weaving	OS	
300	Vinayaga Blue Metal K. Vellakulam, Tirumangalam.	Kappalur	Weaving	OS	
301	Kuriya Brothers Thirumangalam.	Thirumangalam	Willow	OS	
302	Seethalakshmi Traders Sidco, Kappalur.	Kappalur	Willow	OS	
303	Velmurugan Blue Metals Thengai Patti, Tirumangalam.	Thirumangalam	Willow	OS	
304	Happy Wood (P) Ltd.,	Alampatti (Post)	Woods	OS	NON SSI
305	Jeyam Threads Sidco, Kappalur	Kappalur	Yarn Doubling	OS	
306	Teddy Exports Alampatti, Tirumangalam.	Thirumangalam	Yarn Doubling	OS	
307	Akmi Farms (P) Ltd.,	T.Kunnathur		OS	SSI
308	Cone Agencies	Kappalur		OS	NON SSI
309	EgamTraders	Kappalur		OS	NON SSI
310	Elim Exports (P) Ltd.,	Pudipatti		OS	NON SSI
311	Instilite (Machinery Divison) S.No.9/1A, Ramnad Road, Manalur.	Thirumangalam		RS	
312	Jebro Industries	Kappalur		RS	NON SSI
313	Karthic Enterprises	Kappalur		OS	NON SSI
314	Kumar Rice Mill	Chekkanoorani	Hulling	OS	SSI
315	KVP Exports (P) Ltd.,	Kappalur		OS	NON SSI
316	M.G. Industries	Kappalur		OS	NON SSI
317	Mrubi Productrs	Kappalur		RS	NON SSI
318	N.S.Farms (P) Ltd.,	Kappalur		RS	NON SSI
319	Nav amani Flexo	Kappalur		RS	NON SSI
320	Neyon Industries	Kappalur		RS	NON SSI
321	Punitha Industries	Kappalur		RS	SSI
322	S.K.S Industries	Kappalur		RS	SSI
323	SAR Company	Kappalur		OS	SSI
324	Seethakadai Teasing Factory Sidco, Kappalur.	Kappalur		OS	
325	Sri Lakshmi Diamond Die Works	Kappalur		RS	NON SSI
326	Sri Skthi engineering	Kappalur		RS	SSI
327	Sri Thee Enterprises	Kappalur		OS	NON SSI
328	Sri Venkateshwara Industries Thiumangalam.	Thirumangalam		OS	

329	Sun Shine Industries	Kappalur		RS	
330	Tekno Pack Inida Industries	Kappalur	Packing	OS	NON SSI
331	Vinayaga Industries	Kappalur		RS	NON SSI
	NOTE:				
	DO - DANGROUS OPERATIONS				
	G - GREEN	S - SMALL			
	O - ORANGE	M - MEDIUM			
	R - RED	L - LARGE			

Annexure- iv

MADURAI DISTRICT (USILAMPATTI TALUK)						
SL.No	Name and Address of the Factory			Major Cronomic Activity	Type	SSI/NON SSI
1	Tamilnadu State Transport Corporation Ltd.,	Sakkampatti	Usilampatti TK	Automobile	OS	NON SSI
3	Tamilnadu Chamber Bricks	Chettiapatti	Usilampatti TK	Brick manufacturing	OS	SSI
4	Jeyarani Curling & Coir Mills	Peraiyur Road	Usilampatti TK	Coir products	OS	NON SSI
5	Athilakshmi Oil Mill Thummakkundu, Usilampatti Taluk,	Usilampatti		Food Products	OM	
7	Deivam Bisuits Confectionery	Theni Road	Usilampatti TK	Food products	OM	SSI
8	Jeyabarathy Foods (P) Ltd.,	Periyar Road	Usilampatti TK	Food products	OM	SSI
9	Kan Mark Pickels Company	Theni Road	Usilampatti TK	Food products	OM	SSI
10	Leo Biscuits Confectionery	Periyar Road	Usilampatti TK	Food products	OM	SSI
12	Sri Pandian Bakes	Vinayagar Koil Street	Usilampatti	Food products	OM	SSI

13	V.K. Samy Confectionery & Biscuits Manufacturers	Periyar Road	TK Usilampatti	Food products	OM	SSI
14	Virco Food Products	Aavudaithaga Nadar Street	TK Usilampatti	Food products	OM	NON SSI
15	A T Duraisamy Nadar- Krishna Rice Mill	11 Street	TK Usilampatti	Hulling	OS	SSI
16	Arumuga rice & Oil Mill 4 / 356, Karukkattan Pattim , Usilampatti Taluk.	Usilampatti	TK Usilampatti	Hulling	OS	
17	K.P.M. Kuppan Chettiar Rice mill	Melapudur	TK Usilampatti	Hulling	OS	SSI
18	K.P.Meenakshi Rice Mill	Madurai Road	TK Usilampatti	Hulling	OS	SSI
19	Nallathambi Modern Rice Mill	Periyar Road	TK Usilampatti	Hulling	OS	SSI
20	Seenithever sons Modern Rice Mill	Kavundanpatti	TK Usilampatti	Hulling	OS	SSI
21	Selvi Modern Rice Mill	Madurai Road	TK Usilampatti	Hulling	OS	SSI
22	Sree Sivasakthi Rice Mill	Periyar Road	TK Usilampatti	Hulling	OS	SSI
23	Sri Arumuga Rice mill	Karukkattampatti Road	TK Usilampatti	Hulling	OS	SSI
24	.,	Usilampatti	TK Usilampatti	Hulling	OS	
25	T.R.M.S. Rice Mill	Periyar Road	TK Usilampatti	Hulling	OS	SSI
26	Veerammal Flour Mill Karukkattanpatti Road, Usilampatti.	Usilampatti	TK Usilampatti	Hulling	OS	
27	Selvi Ice Company Post Office Street, Usilampatti.	Usilampatti	TK Usilampatti	Ice	OS	
28	T.R Swaminathaiya nadar & Co	Periyar Road	TK Usilampatti	III	OS	SSI
29	Balagi Minerals Nadupatti village, Usilampatti Taluk.	Usilampatti	TK Usilampatti	Mines	RS	
30	Rajasuganya Oils (P) Ltd., Goodwill Team Paper Team Garden Uthappannaickanur Usilampatti	Kavanadanpatti Road	TK Usilampatti	Oil mill	OS	SSI
31	Taluk,	Usilampatti	TK Usilampatti	Pulp & Paper	OM	
32	Sri Mappillai Vinayagar Spinning Mills Ltd., Thottapannayakanoor Power Lomm Co-op Production &Sales Society	Perumalpatti	TK Usilampatti	Spinning	OM	NON SSI
33	Ltd.,	Thottapanayakanoor	TK Usilampatti	Spinning	OM	NON SSI

34	Usiali Thiru Karpaga Vinayagar Cotton Spinning Mills (P) Ltd., Mappillai Vinayagar Spinning Mill, Perumalpatti Village, Usilampatti	Thottapanayakanoor	Usilampatti TK	Spinning	OM	SSI
35	Taluk,	Usilampatti		Spinning Mill	OM	
36	Baskara Pandian Blue Metal Chellampatti Post, Usilampatti Taluk.	Usilampatti		Stone Crusher	OS	
37	Sahaya Blue Metal Unit II Karumathur, Usilampatti.	Usilampatti		Stone Crusher	OS	
39	Sathish Sasi Blue Metal 21 / 16, Sivan Kalai Street, Kilaputhur, Usilampatti.	Usilampatti		Stone Crusher	OS	
40	Senthilmurugan Enterprises Chokkanathapuram, Chekkanoorani, Usilampatti.	Usilampatti		Stone Crusher	OS	
41	Sakthi Bricks And Tile Works E. Nedupatti, Usilampatti.	Usilampatti		Tiles	OS	
42	Asian Bricks & Tiles Company	Vadunganpatti Post	Usilampatti TK	Tiles manufacturing	OS	SSI

ANNEXURE- VI
GROUND WATER TEST RESULTS IN DEVIAR SUB BASIN

Station code	General			Nutrients No3+No2 as N,mg/L	Alkalinity		Hardness		Major Ions								Other In-Organics			Biol SAR
	PH	EC, Umho/cm	TDS ,MG/L		Phen, mg CaCo3	Total mg CaCo3	Total,mg CaCo3 mg/L	Ca++mg CaCo3	Ca++mg/L	Mg++ mg/L	Na++mg/L	K++ mg/L	HCO3mg/L	CO3 MG/l	SO4 mg/L	Cl mg/L	Sl.mg/L	F.mg/L	B.mg/L	
3475	8.1	890	4300	10	0	280	260	20	8.0	58	90.0	10	342	0	19	89		0.21		3.4
3492	8.2	1330	726	4	0	285	605	240	96	89	39	3	348	0	432	624		0.87		9.3
3486	8.2	1020	556	4	0	160	350	150	60	49	81	3	195	0	29	220		0.46		2.6
3525	8.2	1350	807	4	0	345	30	15	6	4	276	31	421	0	134	128		1.2		3.1
3529	8.0	2080	1134	4	0	250	730	250	100	116.0	145	2	503	0	96	503		0.44		3.3
3539	7.0	710	398	3	0	290	215	140	56.0	18	71	5	354	0	31	28		0.45		3
3499	7.4	2120	1188	22	0	350	710	330	132	92	136	37	390	0	91	390		0.51		3.1
3496	8	1890	1190	22	0	145	570	250	100	78	191	9	177	0	307	319		1.1		4.9

Name of Work: Environmental Monitoring on water and soil quality and creating awareness & updating of “Environmental and Social Assessment report” for DEVIAR sub-basin.

Estimate Cost Rs 12.00Lakhs

INTRODUCTION

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. Environmental and Social Assessment study has been conducted by Environment Protection and Training Institute (EPTRI), Hyderabad for all river basins. The Institute has identified the Environmental issues, social issues; mitigate measures for Deviar and given the recommendations as below:

- i) Environmental Issues:
 - a) Prosopis Juliflora Growth
 - b) Sand mining and soil erosion
 - c) Dumping of solid waste in water Bodies
 - d) Sewage pollution

- ii) Social Issues:
 - a) Reduction in live stock
 - b) Dry Land Agriculture
 - c) Encroachments
 - d) No storing facilities
 - e) Poor marketing and transportation Facilities

- iii) Mitigate measures:
 - a) Aquatic weed management
 - b) Solid waste management
 - c) Common Storage facilities may be Provided

- iv) Agency:
 - a) The above measures can be improved By the combined working of Environmental cell and Water Resources Organisation.

The Environmental cell of WRO assessed Soil and Water samples in this River basin. The assessment includes Environmental impact on the quality of surface, ground water and soil by collecting water & soil samples and testing them. Moreover, "preparation of Micro Level Environmental Status Reports" for the entire River Basins also carried by these Environmental Cell Divisions. All these works were done with the World Bank Assistance upto March 2004.

Also few Awareness programs & Workshops were conducted to create awareness on the Environmental issues & remedies among the public, farmers, Govt. officials and NGOs. 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 environment issues pertaining to that area and remedial action to overcome the problems is must.

DESCRIPTION OF SUB BASIN

Deviar originates in the eastern slope of western Ghats from **kalimalai**, **karangumalai** and **sangumalai** Estates, at an altitude of 775 m above MSL, in Sivagiri Taluk of Tirunelveli district. It traverses a distance of 48 km along the boundary of Rajapalayam taluk of virudhunagar district and sivagiri taluk of Tirunelveli district before joining with Nichabanathi near **Ramalingapuram** village in Sivakasi taluk of Virudhunagar district.

There are many streams joining Deviar, one such in the upper reach is called **Kombayar** which originates in the eastern slopes of western ghats from sivagiri forest at an altitude of about 1000m above MSL. After traversing 19 km the streams joins Deviar near perumalpatti village just about 2 km of **Sankarankoil-Srivilliputhur** main Road. After this confluence, the river Deviar is also called as **Solaseri** river.

There is a tributary called Ullar or Rasingaperiyar joining Vadamalayar. This streams originates in the eastern slope of western ghats in between the origin of kalingalar and kobaiyar in the head reach just below the reserve forest area; the river branches into Two. One is called **Rasingaperiar** feeding

Rasingaperiperiyakulam and series of tanks and another known as palaiyar feeding **Kulasekaraperiyakulam** and series of tanks. The river **Ullar** traverses just north of **Rayagiri** town before it empties into Thenmalaiperiyakulam.

Another Tributary called Solapuram river joins Deviar in its left bank just about 1 km north east of Sendettiyapuram village. Solapuram river originates on the eastern slope of western ghats. Out of many jungle streams two predominant streams are Manamakiar in the north and Piravadiyar in the south which originates at an altitude of about 1450 m above MSL. These streams feed number of small and big tanks before entering Solapuram village. There are four Tank groups under this minor sub basin viz. Kollenkondanperiyakulam group, kunnamangalam, kulasekaraperiyakulam group and Narikulam group.

Sivagiri, Rayagiri, Devipattinam and Chokkanathanputtur are the important towns in this sub basin. The total drainage area of Deviar including all its tributaries are mentioned above upto the Confluence of Nichapanadhi is **514 sq.Km** of which the hilly area is **145 sq.Km**.

ENVIRONMENTAL PROBLEMS IN THIS SUB BASIN

INDUSTRIAL POLLUTION

There are 20 nos small scale industries and 1 no of major industries situated in this sub basin. The effluent discharge is minimum and meager. The large scale industries having their own effluent treatment plant. The details of Industries and their effluent discharge are given in Annexure-IV.

CATCHMENT DEGRADATION

Forest cover in the basin is only 8.8 % of the basin area which is quite inadequate. Most of forest is dry deciduous. The areas of ganapathysundarapuram, Solapuram, Thenkarai and Viswanathaperi are the Villages affected by soil erosion in Deviar.

SOLID WASTE DISPOSAL

There is no organised scientific method of disposal in all the Municipalities, town and Village Panchayats. The garbage is dumped in the basin area and hence the harmful chemical substances of the landfill seep through and reach the ground water reservoirs and contaminate these sources

Scheme for Solid waste Management plan is under implementation by Rural Development Department. Under this scheme, collection tank for disposable and undisputable 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. Hence motivating the local bodies for proper implementation of solid waste management project is must.

Rajapalayam, (45.75 M.T.) Seithur (5.5 M.T.) Rayagiri (3.1 M.T.), Sivagiri (6.4 M.T.) and Vasudevanallur (6.4 M.T.) of solid waste were produced every day. These solid waste are dumped in composting yard.

SEWAGE DISPOSAL LET INTO WATER BODIES

Treatment of sewage and arrangements for safe disposal arrangements has not been provided in most of the Villages. Under ground drainage arrangements have not been provided even in municipalities and town panchayats. This sewage is washed away and got pounded in the backwaters and unhealthy conditions exit.

In Alappeseri tank industrial effluent from Arumuga Textiles Exporters, Rajapalayam is directly mixed with Tank. Due to this effluent the quality of tank water goes on decreasing. Rayagiri, Sivagiri and seithur sewage is directly discharged in the tank. The locations of disposal of sewage directly let into water bodies in this sub basin are furnished in Annexure II.

So, creating awareness among the presidents of the local bodies is must and to motivate them to adapt Solid waste management and Sewage management, wherever required, workshop including field visits, exclusively for them is to be conducted under the IAMWARM project.

WATER WEEDS

In the recent decades, on account of the rapid industrial development, numerous obnoxious and deleterious chemical compounds are released into the water bodies. Agricultural drainage, discharge of domestic sewage and industrial effluents trigger the growth of water weeds. Indiscriminate uses of fertilizers have led to the increase in nutrients into natural water system causing nitrification and eutrophiction. Aquatic weeds may be emergent, submerged or free floating. Submerged weeds can survive only if there is optimum sunlight. Floating debris favours the development of aquatic weeds.

Prosopis Juliflora and Ipomea have invaded the cultivable lands in lower reaches and water bodies' ie.tanks, channels and rivers. In most of the Deviar sub basin tanks are severely affected by Prosopis Juliflora and Ipomea, in some places water Hyacinth, Eichornia. Hence, these plants need to be eliminated totally for the conserving precious water resources. But on the contrary, in some villages local people desire to grow this plant in the water spread area of the tanks. Once in 4 or 5 years they get cutting order from the revenue authorities, sale the Prosopis Juliflora or coal produced from it and keep the money for the common expenses like court case for the litigation with the nearby villages, temple repair and Local festivals etc. This is on account of lack of guidance and ignorance of its ill effects. Hence, this problem has to be addressed in all forms, wherever possible Bio gas plant has to be promoted.

GROUND WATER QUALITY

From the chemical composition data for the observation wells, the ground water in the lower reaches of sedimentary formation is of moderate quality.

ACTIVITIES PROPOSED

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

I. WATER AND SOIL QUALITY MONITORING AND PROJECT WORKS MONITORING

Water samples were collected and testing of water samples is essential as good and long - range data will enable to understand the problems more precisely. This has now proposed to continue for a period of three years at the following places in the Deviar sub basin to Asses the Environmental impact on the quality of surface water in the above sub-basin.

- 1. D 1 – D/S Road Bridge at Devathanam-Sivagiri Road ,**
- 2. D 2- D/S Road Bridge at Rajapalayam-Sankarankoil Road**
- 3. D 3- At Appayanaickanpatti**

In addition to the above identified locations, water samples will also be collected once in 6 months from tanks and near by wells to estimate the level of pollution in five locations , where sewage is directly let into tanks and channels .

These samples test results will be useful in assessing the surface and ground water quality of that area.

Soil samples are to be collected from selected locations to Assess the impact on the quality of soil due to various Environmental problems like use of chemical fertilizer and using the polluted water. From these locations samples at regular one-year interval has to be collected and tested to determine precisely the impact on the degradation of the quality of the soil. Therefore testing soil samples are essential. Soil samples will be collected and tested once in a year.

II. ENVIRONMENTAL AND SOCIAL KNOWLEDGE BASE:

Micro Level Environmental Status Report has been prepared for the entire Vaippar River Basin. To prepare an Environmental Action Plan of a River basin data regarding environmental issues in sub basin wise is necessary. Hence, provision for collecting the environmental and social issues in village wise and analysing them and preparing development report has also made in this proposal.

III. TRANSFER OF TECHNICAL KNOWS HOW FOR SOLID WASTE MANAGEMENT SYSTEM (INCLUDING SOURCE)

SEGREGATION, RECYCLES OF DRY WASTE AND LINKAGE WITH USER AGENCIES:

Now, a new scheme for Solid Waste Management plan is under implementation in all Municipalities and major panchayats. Under this scheme, collection tank for disposable and non-disposable garbage have been constructed in most of the Panchayats. But, recycling the waste and converting the solid waste into manure and production of energy from them are yet to come up.

Hence Demonstration and action programs are planned with user agencies and necessary field visits exclusively for officials of local body and Panchayat presidents & members are programmed to transfer of Technical Know How for Solid Waste Management.

III. CONDUCTING AWARENESS PROGRAMS

Awareness Programs are necessary to create awareness among the public about Environmental aspects 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, 9 nos. of awareness programmes are to be conducted in the villages where sewage is directly let into water bodies. It is proposed to conduct 2 Awareness Meeting in School/ Institutions and 5 Nos. of

awareness programs during the study period of three years covering the following subjects in addition to Placing Stickers, Tin sheets, Pham lets and Placing banner containing messages about, the following Environmental problems.

- Sanitation.
- Solid waste treatment.
- Sewage treatment and converting the same into gas
- Organic farming.
- Conversion of aquatic weeds into manure etc

As per the instructions of the environmental specialist 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 two locations 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 Institute.

TOTAL COST.

The total cost works out to Rs: 12.00 Lakhs (Rupees Twelve Lakhs only)

NAME OF WORK: ENVIRONMENTAL MONITORING ON WATER AND SOIL QUALITY AND CREATING AWARENESS , UPDATING OF " ENVIRONMENTAL & SOCIAL ASSESSMENT REPORT" FOR DEVIAR SUB BASIN

DETAILED ESTIMATE

SL NO	DESCRIPTION OF WORK	No	MEASUREMENT			CONTENTS
			L	B	D	
I.WATER, SOIL QUALITY AND PROJECT WORKS MONITORING						
i)	Water samples from rivers in 3 locations collected once in three months in a year for a period of Three years 3X4X3 = 36 Nos.					
	Water samples from Tanks and Wells collected once in Six Months 5x2x3=30					
a)	Testing charges for Water samples		36+30 Nos.			66 Nos
b)	Testing charges for Water samples(PESTICIDES) 2X3=6					6 Nos
c)	Testing charges for soil samples collected from polluted site		5 X 3			15 Nos
d)	Hiring Jeep driver	1No	6 Months per year X 3 year			18 Man months
e)	Conveyance, Purchases of Cans, Bottles, Chemicals hire Purchase of Still camera etc and Documentation of Water quality data, engaging labour etc.,	LS	-	-	-	LS
f)	Provisions for field visits for environmental monitoring of project activities with respect to environmental safeguards					3 years
II ENVIRONMENTAL, SOCIAL KNOWLEDGE BASE						
a)	Village Level Data Collection on Environmental and Social State regarding other Impacts		40 Man months			40 Man months
b)	Expert Analysis and Development Reporting on other impacts		LS			LS

c)	Impact Studies due to project Investements	25 Man months	25 Man months
d)	Expert Analysis and Development Reporting due to project investments(After Project)	LS	LS
III. ENVIRONMENTAL SOCIAL AWARENESS CREATION			
a)	Propagation through Stickers, Tin Sheets, pamphlets,Banners	LS	LS
a)	Awareness Programs for Public	2 Nos.	2 Nos.
b)	Awareness Meeting for Officials	1 No	1 no
c)	Awareness Meeting in school/Institutions	2 Nos	2 Nos
d)	Formation of Herbal Garden in Institutions	6nos	6 Nos
e)	Preparing and Publishing Environmental Atlas for the Sub Basin for the use of Line departments /Institutions for better Management of Sub basin	LS	LS
f)	Documentation of the entire activities, and HirePurchase of LCD , Up gradation of Computer and Accessories, Video films and Web site development, computer operator etc.,	LS	LS
IV.	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 DEVIAR SUB-BASIN.

ABSTRACT ESTIMATE

SL.No.	QTY.	DESCRIPTION OF WORK	RATE	PER	AMOUNT
I.WATER, SOIL QUALITY AND PROJECT WORKS MONITORING					
a)	66 Nos.	Water Sample Testing	1400	each	92,400
b)	6 nos	Water Sample Testing (pesticides)	12000	each	72,000
c)	15 Nos	Soil Sample Testing	7350	L.S	110,250
d)	18 Man months	Hiring Jeep Driver	3500	1 Man month	63,000
e)	3 years	Conveyance, Purchases like Cans,Bottles,Chemicals hire Purchase of camera etc and Documentation of Water and Soil quality data, engaging labour etc.,	15 000	year	45,000
f)	3 years	Provisions for field visits for environmental monitoring of project activities with respect to environmental safeguards	5000	year	15,000
II.ENVIRONMENTAL, SOCIAL KNOWLEDGE BASE, ANALYSIS AND DEVELOPMENT BASE					
a)	40 Man months	Village Level Data Collection on Environmental and Social State regarding other Impacts	6000	month	240,000
b)	L.S	Expert Analysis and Development Reporting on other impacts	L.S	L.S	30,000
c)	25 Man months	Impact Studies due to project Investements	6000	month	150,000
d)	L.S	Expert Analysis and Development Reporting on project investments(After Project)	L.S	L.S	25,000
III. ENVIRONMENTAL SOCIAL AWARENESS CREATION					
a)	LS	Propagation through stickers, Tin Sheets, pamphlets, banners.	L.S	L.S	21000

a)	2 Nos.	Awareness Program for Public	20000	each	40000
b)	1 Nos	Awareness Meetings for Official	20000	each	20000
c)	2 Nos	Awareness Meetings in School/ Institution	20000	each	40,000
d)	6 Nos	Herbal Gardens in Institutions	25000	each	150000
e)	LS	Preparing and Publishing Environmental Atlas for the Sub Basin for the use of Line departments /Institutions for better Management of Sub basin		LS	50,000
f)	LS	Documentation of the entire activities, hire purchase of LCD and Up gradation of Computer and Accessories, Video films and Web site development, engaging computer operator etc.,		L.S	30,000
IV.VARIATION IN RATES AND UNFORESEEN ITEMS.					6,350
			Total		1,200,000
RUPEES TWELVE LAKHS ONLY					



1.8 GROUND WATER

1.8 Ground Water

1.8.1 Ground Water Scenario

In present scenario of water crises, artificial recharge of Ground Water becomes an essential phenomenon to meet out the water scarcity due to ever increasing demand on water.

Artificial recharge is a method to augment the natural infiltration of precipitation or surface water into under ground formation by some method of construction, spreading of water and injecting surface water into ground formation through dug well / bore well.

When the amount of average annual ground water extraction is more than the annual ground water recharges artificial recharge is required to balance the overdraft. Deviyar Sub basin is one of the drought prone districts in Tamil Nadu. Deviyar Sub Basin area in Virudhunagar district and Thirunelveli district annual rainfall is 730 mm. Due to frequent failure of monsoon or delay in monsoon setting agricultural activity has to depend on ground water to major extent. Hence we have to recharge the replenishable ground water resources whenever and wherever possible.

1.8.2 Geology:

Area is covered by Granitoid Gneiss Hornblende Biotite Gneiss Magmatite and Granite. In this, major area is covered by Granitoid Gneiss rocks of Achaean age. Top soil is followed by kankar, weathered rock, fractured rock and fresh rock of variegated gneissic rocks and Charnockite. Middle portion of the project area is covered by black cotton soil, red soil and kankar soil.

1.8.3 Quality:

In the upper and middle part of the Deviyar Sub Basin upto Krishnagiri sub basin quality of ground water is moderate to good. In lower Pennaiyar basin upto Krishnagiri Sub basin area it is moderate to poor.

1.8.4 Conclusion

This Pennaiyar upto Krishnagiri Reservoir sub basin comes under semi critical region. This sub basin is located in hilly terrain and also having two reservoirs. Hence no proposal is made under "IAMWARM" Project.



DESIGN AND DRAWING

DESIGN OF KARUNGULAM TANK

As per memoir,

Free catchment of the tank = 3.793 Sq.km (or) 1.464 Sq.miles

Intercepted catchment = 3.026 Sq.km (or) 1.168 Sq.miles

Combined catchment = 6.819 Sq.km (or) 2.633 Sq.miles

Nearest rainfall station = Sivagiri

Dependable yield of the rain fall station

Available yield from catchment = 24.050 cumecs /seconds

From supply channel source of yield = 2.466 cumecs / sec

Total discharge provided for= 6.7987 cumecs / seconds

Capacity and Ayacut

Capacity of tank = 0.2562 M.cumecs

No. of fillings = 2.478 Nos.

Annual storage = 0.6349 M.cumecs

Wet crop = 6 acre / mcft

Ultimate Ayacut = 72.26.5 Ha (or) 178.49 acres

Calculation of MFD

$$\begin{aligned} Q &= cm^{2/3} - cm^{2/3} \\ &= (450) \times (0.320)^{2/3} - (0)^{2/3} \times 90 \\ &= 210.529 - 0 \\ &= 210.529 \text{ c/s} \times 0.0283 \\ &= 5.957 \text{ cumecs / sec} \end{aligned}$$

∴ The max discharge is taken for deisn is 6.7987 cumecs / sec.

Design of the weir

Lacey's Regine width $L = 4.83 Q^{1/2}$

$$Q = C \times L \times (H)^{3/2}$$

Where H = Head over crest

C = Constant (2.43)

Where Q=discharge = 26.516

$$\begin{aligned} \text{For } L &= 25\text{m} \\ \text{Head over crest } H &= \left[\frac{Q}{C \times L} \right]^{2/3} \\ &= \left[\frac{26.516}{2.43 \times 25} \right]^{2/3} \\ &= 0.575\text{m (or) Say } 0.60\text{m} \end{aligned}$$

$$\text{Existing width} = 16.35$$

As per design hand book, Lacey's width may be proposed in between 0.75 L and 1.5L for effective functioning according to bite condition.

Discharge through scour sluice should be 10 to 20% of Total discharge.

$$\text{(i.e.) } 26.516 \times 0.10 = 2.6516 \text{ cumecs to } 26.516 \times 0.20 = 5.3032 \text{ cumecs}$$

$$\begin{aligned} \text{Discharge through weir} &= 26.516 - 5.3032 \\ &= 21.2128 \text{ cumecs} \end{aligned}$$

$$\begin{aligned} H &= (21.2128 / 2.43 \times 25)^{2/3} \\ &= 0.4959 \text{ say } 0.50\text{m} \end{aligned}$$

$$\begin{aligned} \text{Front MFL} &= 169.205 + 1.20 + 0.50\text{m} \\ &= 170.905\text{m} \end{aligned}$$

$$\text{Assume rear water depth} = 1.20\text{m}$$

$$\text{Area} = 25 \times 1.20 = 30\text{m}^2$$

$$\begin{aligned} \text{Wetted perimeter } P &= 25 + 2 \times 1.20 \\ &= 27.40\text{m} \end{aligned}$$

$$\text{Hydraulic means radius} = R = 30/27.40 = 1.095$$

$$R = A/P$$

$$\text{Velocity } V = 1/0.025 \times R^{2/3} \times S^{1/2}$$

$$S = \text{Fall in ground}$$

$$\begin{aligned} &= 1/0.025 \times (1.095)^{2/3} \times (0.0009)^{1/2} \\ &= 1.274 \text{ m/sec} \end{aligned}$$

$$Q = \text{Area} \times \text{Velocity}$$

$$= 30 \times 1.274$$

$$= 38.232 > 21.2128 \text{ cumecs}$$

Hence Safe

$$\begin{aligned} \text{Rear MFL} &= 169.205 + 1.20 \\ &= 170.405 \end{aligned}$$

Design of Scour vent

Assuming two vents of size 1.50 x 1.00m

$$\begin{aligned} \text{Discharge (Q) through scour vent} &= (d \times A \times (2 \times g \times h))^{1/2} \\ &= 2N_o \times 0.62 \times 1.50 \times 1.00 \times [2 \times 9.81 \times 0.50]^{1/2} \\ &= 5.826 \text{ cumecs} \end{aligned}$$

$$\begin{aligned} \text{Discharge through weir} &= 26.515 - 5.826 \\ &= 20.689 \text{ cumecs} \\ H &= (20.689 / 2.43 \times 25)^{2/3} \\ &= 0.4876 \text{ (or) say } 0.50\text{m} \end{aligned}$$

Where

$$\begin{aligned} C_d &= \text{constant } 0.62\text{m} \\ g &= \text{acceleration due gravity} \\ &= 9.81\text{t/m}^2 \\ h &= \text{FMFL} - \text{RMML} \\ &= 170.905 - 170.405 \\ &= 0.50\text{m} \end{aligned}$$

Scour depth calculation

$$\begin{aligned} \text{Looseness factor} &= \text{Existing water way} / \text{Lacey's regime width} \\ &= 25 / 24.87 \\ &= 1.005271 \\ \text{Normal scour depth } R &= 0.475 \times (Q/f)^{1/3} \\ &= 0.475 \times (26.516/1)^{1/3} \\ &= 1.416\text{m} \\ \text{Front scour level} &= \text{FMFL} - 1.25R \end{aligned}$$

Where

$$\begin{aligned} Q &= 26516 \text{ cumecs} \\ f &= \text{Silt factor} \\ &= 1 \text{ cpmstant} \end{aligned}$$

$$\begin{aligned}
 &= 170.905 - 1.25 \times 1.416 \\
 &= 169.135 \\
 \text{u/s cut off depth} &= 169.205 - 169.135 \\
 &= 0.070\text{m}
 \end{aligned}$$

Provide a minimum of 1.50m

$$\begin{aligned}
 \text{Rear scour level} &= \text{RMFL} - 1.50R \\
 &= 170.405 - 1.50 \times 1.416 \\
 &= 168.281 \text{ say } 168.280\text{m}
 \end{aligned}$$

$$\begin{aligned}
 \text{D/s cutt off depth} &= 169.205 - 168.280 \\
 &= 0.925\text{m}
 \end{aligned}$$

Provide a minimum of 3.00m

Base width of Body wall

$$\begin{aligned}
 \text{Base width} &= (H + d) / (P^{1/2}) \\
 \therefore B &= (1.20 + 0.58 / 2.25^{1/2}) \\
 &= 1.187 = 1.20\text{m}
 \end{aligned}$$

Where
 H = Ht bodywall 1.20m
 d = head over crest
 = (0.58m)
 = Specific gravity of
 masonry
 = 2.25

Since the height of body wall is 1.20m, base width may be adopted as 2.60m for safer conditions of stability.

Length of apron & talus

$$\begin{aligned}
 L_2 &= 4 \times C \times (46/33)^{1/2} \\
 L_2 &= 4 \times 10 \times (1.20/33)^{1/2} \\
 &= 7.62 \text{ say } 8.00\text{m}
 \end{aligned}$$

Where
 L2 = Length of
 imperious apron on D/s
 Hb = Ht of body wall
 = 1.20

$$\begin{aligned}
 q &= \text{discharge / in length} \\
 &= 26.516 / 25 = .1.060 \text{ cumecs}
 \end{aligned}$$

Where
 L1 = Total length of Apron

$$\begin{aligned}
 L &= 10 \times C \times [Hb/33 \text{ s } (q/7)]^{1/2} \\
 &= 10 \times 10 \times [1.20/33 \times 1.060/7]^{1/2} \\
 &= 7.344 \text{ (or) say } 9.00\text{m}
 \end{aligned}$$

Hb = 1.20
 q = 1.60

Length of loose apron (Talus) on D/s side

$$L = L_1 - L_2$$

$$= 9 - 8 = 1.00\text{m}$$

$$\begin{aligned} \text{Imperious apron on u/s} &= 1.50 \times H_b \\ &= 1.50 \times 1.20 \\ &= 1.80\text{m Say} \\ &= 2.00 \end{aligned}$$

Check for exit gradient

$$Y = (2 + 2.60 + 8.00/3) = 4.20$$

$$Z = (1 + (1 + 4.20)^2)^{1/2} / 2 = 2.658$$

$$\begin{aligned} \text{Exit gradient} &= 1.20 / 3 \times 3.14 \times 2.65^{1/2} \\ &= 0.078 < 0.25 \end{aligned}$$

∴ Safe

Check for creep length

$$\begin{aligned} \text{Creep length required} &= C \times H_b \\ &= 10 \times 1.20 = 12\text{m} \\ \text{Creep length provided} &= 1.50 + 2.00 + 2.60 + 8.00 + 3 \\ &= 17.10 \\ &= 12 < 17.10 \end{aligned}$$

∴ Hence Safe

Check for Uplift

$$\begin{aligned} \text{Creep length upto toe} &= 1.50 + 2.00 + 2.60 = 6.10\text{m} \\ \text{Resided head} &= 1.20 - 1.20 (6.10 / 17.10) = 0.77 \\ \text{Thickness of apron required} &= \frac{0.77/1.25}{1.25} = 0.61\text{m (or) Say } 0.60\text{m} \\ \text{Creep length upto 5m fro toe} &= 6.10 + 5.00 = 11.10\text{m} \\ \text{Residential head} &= 1.20 - 1.20 \times (11.10 / 17.10) \\ &= 0.42 \text{ say } 0.50\text{m} \end{aligned}$$

$$\begin{aligned} \text{Thickness of apron required} &= 0.50 / 1.25 \\ &= 0.40 \text{ Say } = 0.45\text{m} \end{aligned}$$

$$\text{Creep length upto 10m from toe} = 6.10 + 10 = 16.10$$

$$\text{Residential head} = 1.20 - 1.20 (16.10 / 17.10) = 0.070$$

$$\text{Thickness of Apron required} = 0.070 / 1.25 = 0.056 \text{ say } 0.30\text{m}$$

this includes 0.15m thick wearing coat.

Check for Stability

Condition – 1

When front water level is upto crest level and no rear water

Sl. No	Area	Specific Gravity	Weight	Lever arm	Moment
1.	$0.90 \times 0.40 = 0.36$	2.25	0.81	$0.40/2 = 0.20$	0.162
2.	$\frac{1}{2} \times 1.20 \times 2.20 = 1.32$	2.25	2.97	$0.40 + (220/3) = 1.13$	3.356
3.	$\frac{1}{2} \times 0.30 \times 0.40 = 0.06$	2.5	0.135	$2/3 \times 0.40 = 0.267$	0.0360
4.	$\frac{1}{2} \times 0.30 \times 0.40 = 0.06$	1.00	0.06	$0.40/3 = 0.133$	0.008
	Total		3.975		3.562

$$\text{Moment due to water pressure} = 4^3 / 6 = 1.20^3 / 6 = 0.288$$

$$\text{Total moment} = 0.288 + 3.562 = 3.85$$

$$\text{Lever arm of the resultant} = 3.85 / 3.975 = 0.969$$

$$2.60 / 3 = 0.867 ; 2/3 \times 2.60 = 1.733$$

$$0.867 < 0.969 < 1.733$$

∴ Safe

Condition – 2

When the rear water level is at the crest level when the water is discharging full

Sl. No	Area	Specific Gravity	Weight	Lever arm	Moment
1.	$0.90 \times 0.40 = 0.36$	$2.25 - 1 = 1.25$	0.45	$0.40/2 = 0.20$	0.09
2.	$\frac{1}{2} \times 1.20 \times 2.20 = 1.32$	$2.25 - 1 = 1.25$	1.65	$0.40 + (1.20/3) = 0.80$	1.32
3.	$\frac{1}{2} \times 0.30 \times 0.40 = 0.06$	$2.25 - 1 = 1.25$	0.075	$2/3 \times 0.40 = 0.267$	0.020
4.	$\frac{1}{2} \times 0.30 \times 0.40 = 0.06$	1	0.06	$0.40/3 = 0.133$	0.008
5.	$0.50 \times 0.40 = 0.20$	1	0.20	$0.40/2 = 0.20$	0.04
	Total		2.435		1.478

Horizontal moment due to water pressure

$$\begin{aligned} &= \frac{1}{2} \times H^2 \times h \\ &= \frac{1}{2} \times (1.20)^2 \times 0.90 = 0.648 \end{aligned}$$

$$\text{Total moment} = 0.648 + 1.478 = 2.126$$

$$\text{Lever arm of the resultant} = 2.126 / 2.435 = 0.755$$

$$2.6 / 3 = 0.867$$

$$0.867 < 0.873 < 1.733$$

Hence Safe

Condition III

When the tail water is at critical condition. Since this is a tank weir, this condition will not occur. So this check is not necessary.

Design of abudment

$$\text{Top level of abutment} = \text{FMFL} + 1.00\text{m}$$

$$= 170.905 + 1.00 = 171.905$$

$$\text{Height of abutment} = 171.905 - 169.205 = 2.70\text{m}$$

$$\text{Base width} = 0.60 \times 2.70 = 1.62 \text{ Say } 2.00\text{m}$$

$$\text{Top width} = 0.45\text{m}$$

Design of Front return

Top level	=	MWL + 0.30
	=	171.005 + 0.30 = 171.305m
Height	=	171.305 – 169.205 = 2.10
Base width	=	0.60 x 2.10 = 1.26 Say 1.30m
Top width	=	0.45m

Design of rear return

Top level	=	RMC + 0.30
	=	170.405 + 0.30 = 170.705m
Height	=	170.705 – 169.205 = 1.50m
Base width	=	0.60 x 1.50 = 0.90m
Top width	=	0.45m

DESIGN OF RAYAPPERIKULAM TANK

As Per Memoir,

Free catchment of the tank = 0.8289 Sq.km (or) 0.320 Sq.miles

Intercepted catchment = Nil

Combined catchment = 0.8289 Sq.km (or) 0.320 Sq.miles

Nearest rainfall station = Sivagiri

Dependable yield of the rain fall station= Sivagiri is

Available yield from catchment = 2.9235 cumecs /seconds

From supply channel source of yield = 1.1284 cumecs / sec

Total discharge = 26.516 cumecs / seconds

Capacity and Ayacut

Capacity of tank = 0.2786 M.cumecs

No. of fillings = 1.375 Nos.

Annual storage = 0.3830 M.cumecs

Wet crop = 6 acre / mcft

Ultimate Ayacut = 133.73.5 Ha (or) 330.33 acres

Calculation of MFD

$$\begin{aligned} Q &= cm^{2/3} - cm^{2/3} \\ &= (450) \times (2.633)^{2/3} - (1.168)^{2/3} \times 90 \\ &= 758.23 \text{ c/s} \times 0.0283 \\ &= 21.45 \text{ cumecs / sec} \end{aligned}$$

∴ max discharge of 26.516 cumecs / sec. is taken

Design of the weir

Lacey's Regime width $L = 4.83 Q^{1/2}$

$$= 4.83 \times (6.7987)^{1/2}$$

$$= 12.59 \text{ Say } 13.00\text{m}$$

Where Q=discharge

$$= 6.7987 \text{ cumecs}$$

$$Q = C \times L \times (H)^{3/2}$$

Where H = Head over crest

$$C = \text{Constant (2.43)}$$

$$\text{For } L = 13.00\text{m}$$

$$\text{Head over crest } H = \left[\frac{Q}{C \times L} \right]^{2/3}$$

$$H = \left[\frac{6.7987}{2.43 \times 13.00} \right]^{2/3}$$

$$= 0.359\text{m (or) Say } 0.45\text{m}$$

As per design hand book, Lacey's width may be proposed in between 0.75 L and 1.50L for effective functioning according to bite condition.

Discharge through scour sluice should be 10 to 20% of Total discharge.

(i.e.) $6.7987 \times 0.10 = 0.6799$ cumecs to $6.7987 \times 0.20 = 1.3597$ cumecs

$$\text{Discharge through weir} = 6.7987 - 1.3597$$

$$= 5.439 \text{ cumecs}$$

$$H = (5.439 / 2.43 \times 13.00)^{2/3}$$

$$= 0.3094 \text{ say } 0.45^{\text{m}}$$

$$\text{Front MFL} = 169.120 + 0.80 + 0.45\text{m}$$

$$= 170.370\text{m}$$

$$\text{Assume rear water depth} = 1.00\text{m}$$

$$\text{Area} = 13.00 \times 1.00 = 13.00\text{m}^2$$

$$\text{Wetted perimeter } P = 13.00 + 2 \times 1.00$$

$$= 15.00\text{m}$$

$$\text{Hydraulic means radius } R = 13.00/15.00 = 0.867$$

$$R = A/P$$

$$\text{Velocity } V = 1/0.025 \times R^{2/3} \times S^{1/2}$$

$$S = \text{Fall in ground}$$

$$= 1/0.025 \times (0.867)^{2/3} \times (0.00095)^{1/2}$$

$$= 0.996 \text{ m/sec}$$

$$Q = \text{Area} \times \text{Velocity}$$

$$= 13.00 \times 0.996$$

$$= 12.948 > 5.439 \text{ cumecs}$$

Hence Safe

$$\begin{aligned} \text{Rear MFL} &= 169.120 + 0.50 \\ &= 160.620\text{m} \end{aligned}$$

Design of Scour vent

Assuming two vents of size 1.050 x 0.60m

$$\begin{aligned} \text{Discharge (Q) through scour vent} &= cd \times A \times (2 \times g \times h)^{1/2} \\ &= 0.62 \times 1 \text{ No} \times 1.00 \times 0.60 \times [2 \times 9.81 \times 0.75]^{1/2} \\ &= 1.427 \text{ cumecs} \end{aligned}$$

$$\begin{aligned} \text{Discharge through weir} &= 6.7987 - 1.427 \\ &= 5.371 \text{ cumecs} \\ H &= (5.371 / 2.43 \times 13.00)^{2/3} \\ &= 0.307 \text{ (or) say } 0.45\text{m} \end{aligned}$$

Scour depth calculation

$$\begin{aligned} \text{Looseness factor} &= \text{Existing water way} / \text{Lacey's regime width} \\ &= 13.00 / 12.59 \\ &= 1.0325 > 1 \end{aligned}$$

$$\begin{aligned} \text{Normal scour depth } R &= 0.475 \times (Q/f)^{1/3} \\ &= 0.475 \times (6.7987/1)^{1/3} \\ &= 0.8998\text{m} \end{aligned}$$

$$\begin{aligned} \text{Front scour level} &= \text{FMFL} - 1.25R \\ &= 170.370 - (1.25 \times 0.8998) \\ &= 169.245 \end{aligned}$$

$$\begin{aligned} \text{u/s cut off depth} &= 169.245 - 169.120 \\ &= 0.125\text{m} \end{aligned}$$

Provide a minimum of 1.50m

$$\text{Rear scour level} = \text{RMFL} - 1.50R$$

$$\begin{aligned}
 &= 169.620 - (1.50 \times 0.8998) \\
 &= 168.270 \\
 \text{D/s cutt off depth} &= 169.125 - 168.270 \\
 &= 0.85\text{m}
 \end{aligned}$$

Provide a minimum of 3.00m

Base width of Body wall

$$\begin{aligned}
 \text{Base width} &= (H + d) / (P^{1/2}) \\
 \therefore B &= (0.80 + 0.75 / 2.25^{1/2}) \\
 &= 1.033\text{m}
 \end{aligned}$$

Since the height of body wall is 1.20m, base width may be adopted as 2.60m for safer conditions of stability.

Length of apron & talus

$$\begin{aligned}
 L_2 &= 4 \times C \times (H_b/32)^{1/2} \\
 L_2 &= 4 \times 10 \times (0.80/33)^{1/2} \\
 &= 6.22 \text{ say } 7.00\text{m} \\
 q &= \text{discharge / in length} \\
 &= 6.7987 / 13.00 = .0.523 \text{ cumecs} \\
 L_1 &= 10 \times C \times [H_b/33 \text{ s } (q/7)]^{1/2} \\
 &= 10 \times 10 \times [0.80/33 \times 0.523/7]^{1/2} \\
 &= 4.255 \text{ (or) say } 6.00\text{m}
 \end{aligned}$$

Length of loose apron (Talus) on D/s side

$$\begin{aligned}
 L &= L_1 - L_2 \\
 &= 6.00 - 4.00 = 2.00\text{m}
 \end{aligned}$$

$$\begin{aligned}
 \text{Imperious apron on u/s} &= 1.50 \times H_b \\
 &= 1.50 \times 0.80 \\
 &= 1.20\text{m Say} \\
 &= 2.00
 \end{aligned}$$

Check for exit gradient

$$\begin{aligned} Y &= (2.00+2.00+6.00/3) = 3.333 \\ Z &= (1 + (1+3.333)2^{1/2}/2) = 1.810 \\ \text{Exit gradient} &= 0.80 / 3 \times 3.14 \times (1.810)^{1/2} \\ &= 0.0631 \\ \text{i.e.} & 0.0631 < 0.25 \\ & \therefore \text{ Safe} \end{aligned}$$

Check for creep length

$$\begin{aligned} \text{Creep length required} &= C \times H_b \\ &= 10 \times 0.80 = 8.00\text{m} \\ \text{Creep length provided} &= 1.50 + 2.00 + 2.00 + 6.00 + 3.00 \\ &= 14.50\text{m} \\ &= 8.00 < 14.50 \\ & \therefore \text{ Hence Safe} \end{aligned}$$

Check for Uplift

$$\begin{aligned} \text{Creep length upto toe} &= 1.50 + 2.00 + 2.00 = 5.50\text{m} \\ \text{Resided head} &= 0.80 - 0.80 (5.50 / 14.50) = 0.497 \\ &= 0.497 \text{ (or) say} \\ &= 0.50\text{m} \\ \text{Thickness of apron required} &= \frac{\text{Residential head}}{1.25} \\ &= 0.60/1.25 = 0.48\text{m (or) Say } 0.50\text{m} \\ \text{Creep length upto 4.5m fro toe} &= 5.50 + 4.50 = 10.00\text{m} \\ \text{Residential head} &= 0.80 - 0.80 \times (10.00 / 14.50) \\ &= 0.248 \text{ say } 0.30\text{m} \\ \text{Thickness of apron required} &= 0.30 / 1.25 \\ &= 0.24 \text{ Say } = 0.30\text{m} \\ \text{Thickness of Apron required} &= 0.30\text{m} \end{aligned}$$

This includes 0.15m thick wearing coat.

Check for Stability

Condition – 1

When front water level is upto crest level and no rear water

Sl. No	Area	Specific Gravity	Weight	Lever arm	Moment
1.	$0.60 \times 0.40 = 0.24$	2.25	0.54	$0.40/2 = 0.20$	0.108
2.	$\frac{1}{2} \times 0.80 \times 1.60 = 0.64$	2.25	1.44	$0.40 + (1.60/3) = 0.933$	1.344
3.	$\frac{1}{2} \times 0.20 \times 0.40 = 0.04$	2.25	0.09	$2/3 \times 0.40 = 0.267$	0.024
4.	$\frac{1}{2} \times 0.20 \times 0.40 = 0.04$	1.00	0.04	$0.40/3 = 0.133$	0.005
	Total		2.11		1.481

Moment due to water pressure = $4^3 / 6 = 0.80/6 = 0.133$

Total moment = $0.133 + 1.481 = 1.614$

Lever arm of the resultant = $1.614 / 2.11 = 0.765$

$2.60 / 3 = 0.667$; $2/3 \times 2.00 = 1.333$

$0.667 < 0.765 < 1.333$

∴ Safe

Condition – 2

When the rear water level is at the crest level when the water is discharging full

Sl. No	Area	Specific Gravity	Weight	Lever arm	Moment
1.	$0.60 \times 0.40 = 0.24$	$2.25 - 1 = 1.25$	0.30	$0.40/2 = 0.20$	0.06
2.	$\frac{1}{2} \times 0.80 \times 1.60 = 0.64$	$2.25 - 1 = 1.25$	0.80	$0.40 + (0.80/3) = 0.667$	0.534
3.	$\frac{1}{2} \times 0.20 \times 0.40 = 0.04$	$2.25 - 1 = 1.25$	0.05	$2/3 \times 0.40 = 0.267$	0.013
4.	$\frac{1}{2} \times 0.20 \times 0.40 = 0.04$	1	0.04	$0.40/3 = 0.133$	0.005
5.	$0.75 \times 0.40 = 0.30$	1	0.30	$0.40/2 = 0.20$	0.06
	Total		1.490		0.672

Horizontal moment due to water pressure

$$= \frac{1}{2} \times H^2 \times h$$
$$= \frac{1}{2} \times (0.80)^2 = 0.368$$

$$\text{Total moment} = 0.368 + 0.672 = 1.04$$

$$\text{Lever arm of the resultant} = 1.040 / 1.490 = 0.698$$

$$2.00 / 3 = 0.667 < 0.698 < 1.333$$

∴ Safe

Abutment

$$\text{Top level of abutment} = \text{FMFL} + 1.00\text{m}$$

$$= 170.370 + 1.00 = 171.370$$

$$H_b = 171.370 - 169.120 = 2.25\text{m}$$

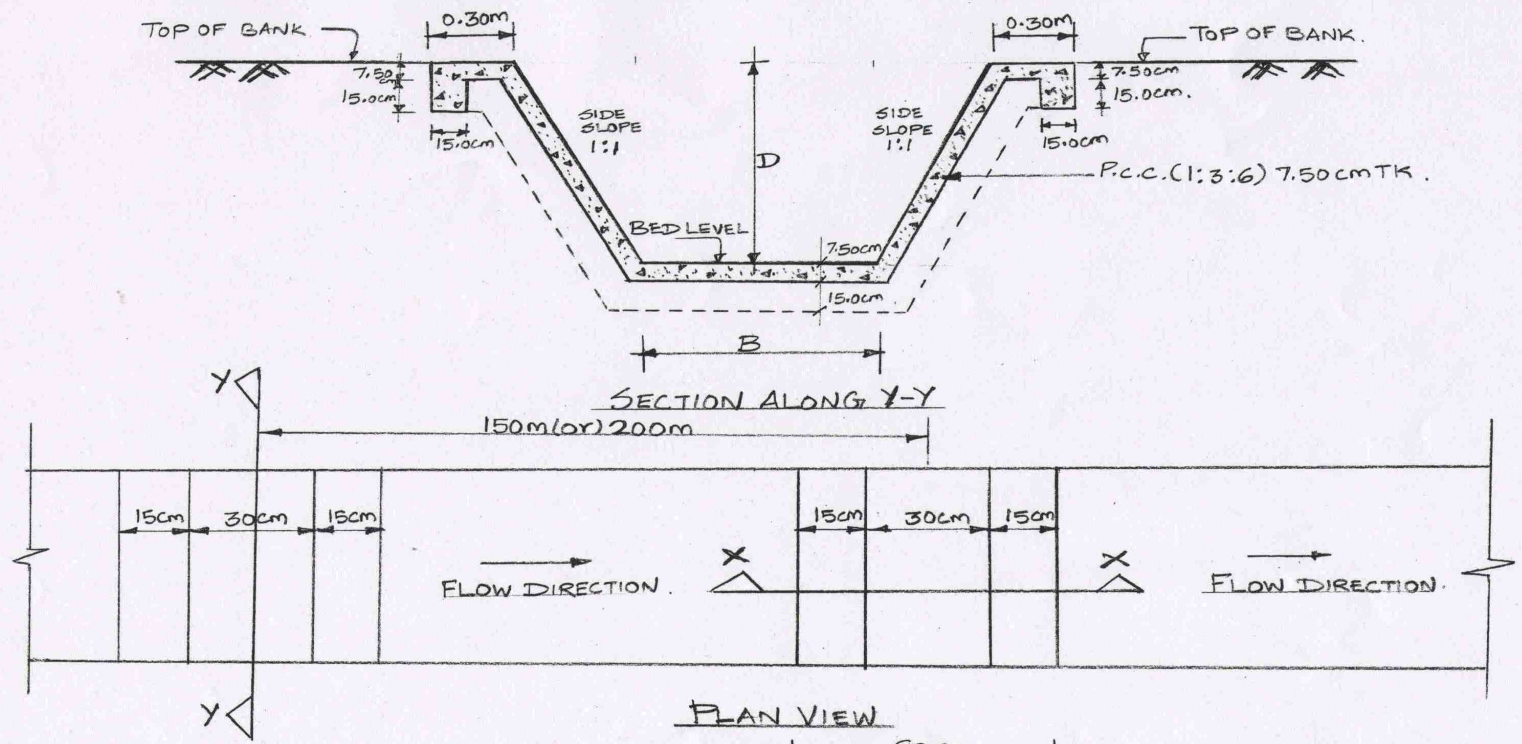
$$\text{Base width} = 2.25 \times 0.60 = 1.35 \text{ (or) } 1.40\text{m}$$

Design of Front return

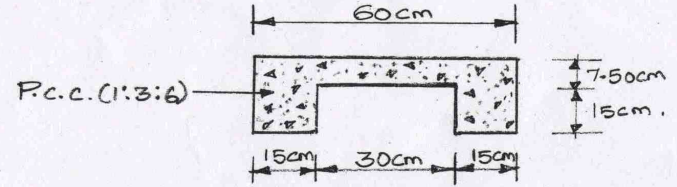
Top level	=	MWL + 0.30
	=	170.370 + 0.30 = 170.670m
Height	=	170.670 – 169.120 = 1.55 (or)1.60
Base width	=	1.60 x 0.60
	=	0.96 (or) 1.00m

Design of rear return

Top level	=	RMC + 0.30
	=	169.620 + 0.30 = 169.720m
Height	=	169.920 – 169.120 = 0.80m
Base width	=	0.80 x 0.60
	=	0.48m (or) 0.60m



PLAN VIEW



TYPICAL SECTION
OF BEDBAR/MODEL
SECTION FOR
SUPPLY CHANNEL.

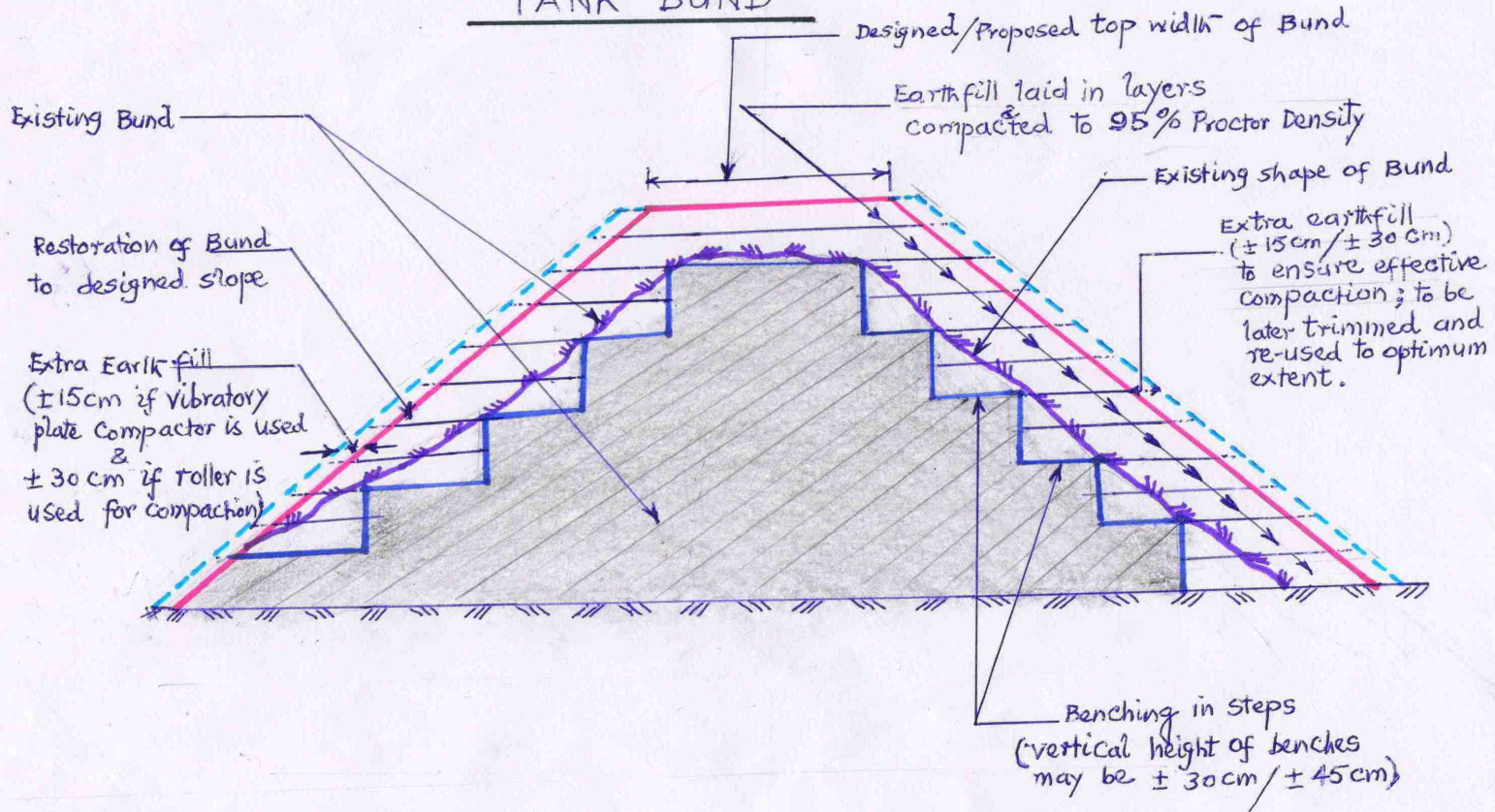
SECTION ALONG X-X

DIMENSIONS TO SUIT SITE CONDITION.

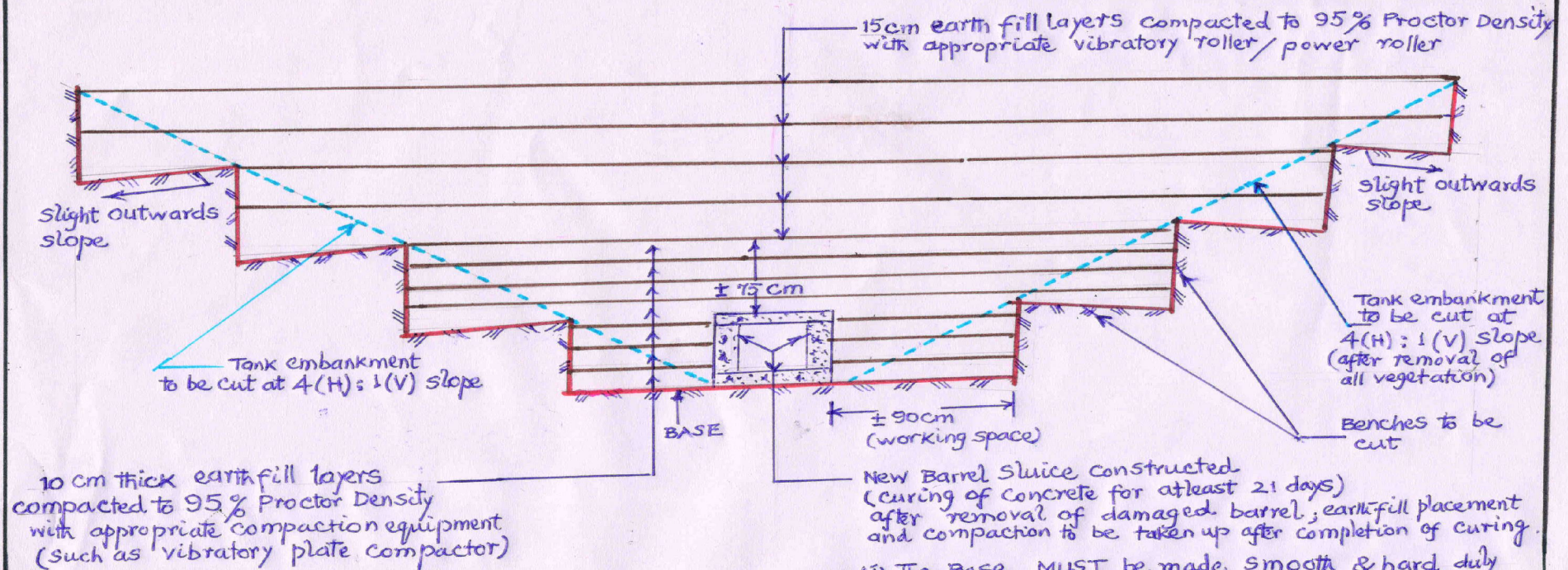
DRAWING NOT TO SCALE

TYPICAL SKETCH

RAISING & STRENGTHENING OF TANK BUND



TYPICAL SKETCH

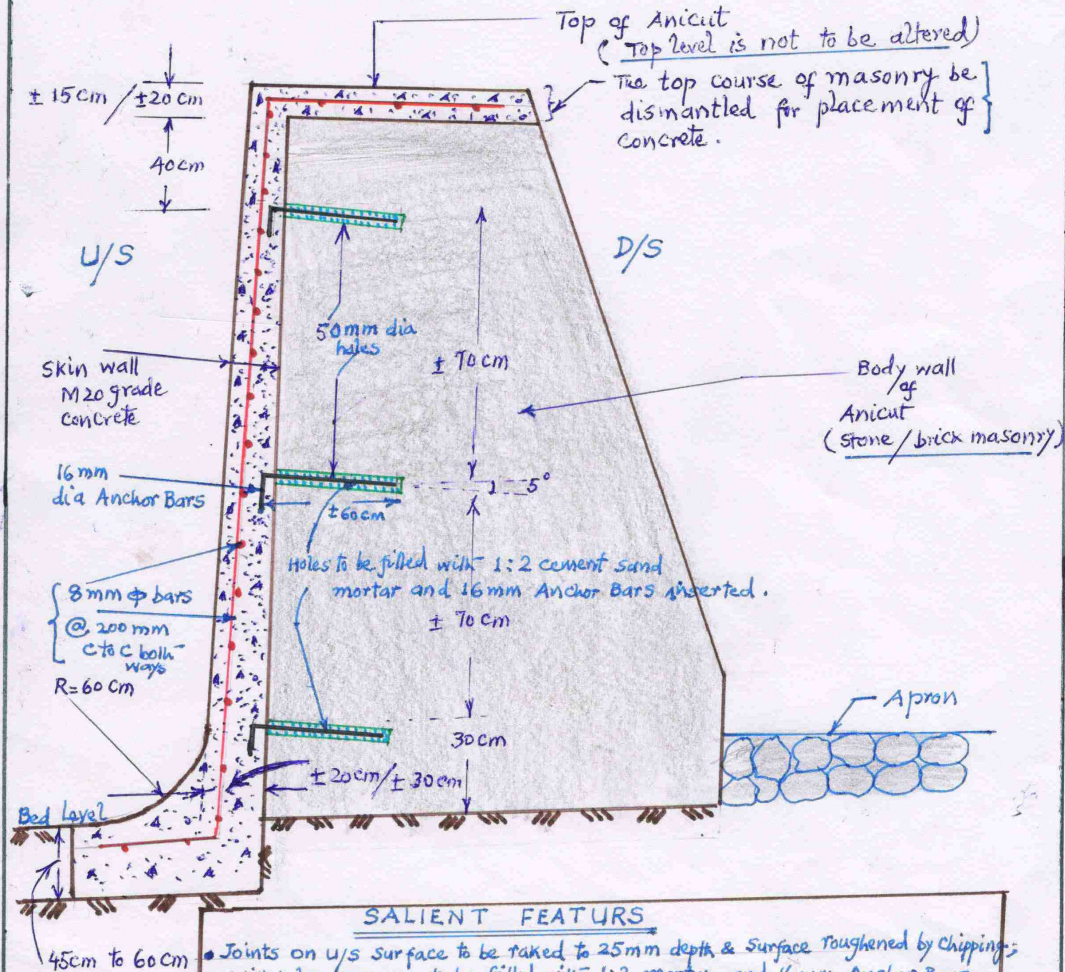


RECONSTRUCTION OF SLUICES

- 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 earth fill layers.

TYPICAL SKETCH

Rehabilitation of Anicut through SKIN WALL Concrete



SALIENT FEATURES

- Joints on U/S surface to be raked to 25mm depth & surface roughened by chipping;
- Drill holes of 50mm 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: 15cm at top & 20cm 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.