



For official use

Technical Report Series

**DISTRICT GROUNDWATER BROCHURE
PERAMBALUR DISTRICT, TAMIL NADU**

**V. DHINAGARAN,
SCIENTIST-D**

**Government of India
Ministry of Water Resources
Central Ground Water Board
South Eastern Coastal Region
Chennai
March 2009**

DISTRICT AT A GLANCE (PERAMBALUR DISTRICT)

S. No.	ITEMS	STATISTICS	
1.	GENERAL INFORMATION		
	i. Geographical area (Sq. km)	3691.37	
	ii. Administrative Divisions (As on 31-3-2007)		
	Number of Taluks	6	
	Number of Blocks	10	
	Number of Panchayats	322	
	Number of Villages	345	
	iii. Population (2001 Census)		
	Total Population	49,3646	
	Male	24,6141	
	Female	247505	
	iv. Average Annual Rainfall (mm)	876.6	
2.	GEOMORPHOLOGY		
	i. Major physiographic Units	The district has an undulating topography, characterized by low mounds and broad valleys. Hill ranges belonging to Pachaimalai hills occupy the northwest parts of the district, where the terrain is rugged.	
	ii. Major Drainages	Kollidam	
3.	LAND USE (Ha.) (2005-06)		
	i. Forest area	16999	
	ii. Net area sown	211186	
	iii. Cultivable waste	9299	
4.	MAJOR SOIL TYPES	1. Alluvial soil, 2. Red Loam soil, 3. Black soil	
5.	AREA UNDER PRINCIPAL CROPS (Ha.) (2005-2006)	1. Paddy - 45952 2. Sugarcane -15984 3. Vegetables- 12625 4. Others- 2020	
6.	IRRIGATION BY DIFFERENT SOURCES (2005-06)	Number	Area Irrigated (Ha.)
	i. Dug wells	44004	33574
	ii. Tube wells	14130	22879
	iii. Tanks	897	10131
	iv. Canals	695	9922
	v. Other Sources	-	75
	vi. Net irrigated area	66855	
	vii. Gross irrigated area	76581	

7.	NUMBERS OF GROUND WATER MONITORING WELLS OF CGWB (31.03.2007)		
	i. Dug wells	11	
	ii. Piezometers	8	
8.	PREDOMINANT GEOLOGICAL FORMATIONS	Recent Alluvium, Tertiary, Cretaceous, Gondwana and Crystalline formations.	
9.	HYDROGEOLOGY		
	i. Major water bearing formations	Weathered Gneiss, Cuddalore Sand stone, River Alluvium	
	ii. Pre- monsoon depth to water level (May 2006)	1.1 – 8.55 mbgl	
	iii. Post monsoon depth to water level (Jan'2007)	1.1 – 6.78 m bgl	
	iv. Long term water level trend in 10 years (1998-2007) (m/yr)	Annual	
		Rise	Fall
		Min: 0.0027 Max:0.16	Min: 0.05 Max: 0.07
10.	GROUND WATER EXPLORATION BY CGWB (As on 31-03-2007)		
	i. Number of Exploratory wells	12	
	ii. Number of Observation wells	2	
	iii. Number of Piezometers under Hydrology Project.	2	
	iv. Depth range (mbgl)	144-728.5	
	v. Discharge (lps)	2.5 to 30	
	vi. Storativity (S)	7.74×10^{-6} to 3.52×10^{-5}	
	vii. Transmissivity (m^2/day)	234 to 1455.6	
11.	GROUND WATER QUALITY (MAY 2006)		
	i. Presence of chemical constituents more than permissible limit	TH as $CaCO_3$, NO_3 and Fluoride	
	ii. Type of water	$NaCl$, $NaSO_4$, $MgHCO_3$ and $NaHCO_3$	
12.	DYNAMIC GROUND WATER RESOURCES (31.03.2004) in MCM		
	i. Annual Replenishable Ground Water Resources	685.02	
	ii. Total Annul Ground Water Draft for all purposes	547.46	
	iii. Projected demand for Domestic and Industrial Uses up to 2020	238.86	
	iv. Stage of Ground Water Development (%)	81 %	

13.	AWARENESS AND TRAINING ACTIVITY	
	i. Mass Awareness Program Organized	Nil
	Year	
	Place	
	No of Participants	
	ii. Water Management Training Organized	Nil
	Date	
	Place	
	No of Participants	
14.	EFFORTS OF ARTIFICIAL RECHARGE & RAINWATER HARVESTING	Technical guidance were provided as and when sought
	i. Projects completed by CGWB Number of structures Amount spent	Nil
	ii. Projects under technical guidance of CGWB Number of structures	Nil
15.	GROUND WATER CONTROL AND REGULATION	
	i. Number of OE Blocks	4
	ii. Number of Critical Blocks	Nil
	iii. Number of Blocks Notified	Nil
16.	MAJOR GROUND WATER PROBLEMS AND ISSUES.	The resource evaluation indicates that there are 4 Over Exploited Block exists which needs corrective action by Regulation and Conservation measures. Ground water in Cretaceous formation is mostly brackish to saline., Salinity hazard and Alkalinity hazard exists. Proper soil management strategies are to be adopted while using groundwater for irrigation purpose.

1. INTRODUCTION

1.1 Perambalur district having administrative divisions of 6 Taluks, 10 Blocks, 322 Panchayats and 345 Villages.

S. No.	Taluk	Village	Block	Village
1	Perambalur	27	Perambalur	27
2	Veppanthattai	39	Veppanthattai	39
3	Kunnam	86	Alathur	39
4	Ariyalur	68	Veppur	47
5	Sendurai	28	Ariyalur	31
6	Udayarpalayam	97	Thirumanur	37
			Sendurai	28
			Andimadam	30
			Jayankondan	35
			T.Palur	32
	Total	345		345

1.2 Basin and Sub-basin

The major river in the district is Kollidam. The sub-basins are Ellar, Kallar, Swedanadhi, Koneri, Elunur, Periyavari –Anaivari, Ilaiyur, Udaiyar Palayam and Mamdaiyar.

1.3 Drainage

All these rivers are ephemeral in nature. The area is studded with numerous tanks that serve as the source of drinking water and also their surplus feeds adjoining tanks. The drainage pattern is dentritic in sedimentary tract and dentritic to trellis in crystalline area.

The Institute of Remote Sensing, Anna University, Chennai has attempted to interpret the morphogentic features using landsat TM imageries of false colour composite (FCC) on 1: 2,50,000 scale for the old Tiruchchirappalli district and the data base generated was integrated with the salient data after a limited field check. The various geomorphic units revealed from the studies are structural hills buried pediments shallow pediments, dentritic plains, flood plains.

1.4 Irrigation practices

The nine fold lands use classification for the district (2005-06) is given below.

S. No.	Classification	Area (Ha.)
1	Forest	16999
2	Barren and uncultivable uses	11388
3	Land put to non-agricultural uses	59341
4	Cultivable waste	9299
5	Permanent pastures and other grazing land	1446
6	Land under miscellaneous trees, crops and grooves not indicated in net area sown	20855
7	Current fallow	19969
8	Other fallow lands	18654
9	Net area sown	211186
	Total Geographical area	369137

(Source: Dept. of Economics & Statistics, Tamil Nadu)

The chief irrigation sources in the area are; Tanks, Dug wells and Tube wells and canals. The tank irrigation is highest in Veppanthattai, Jeyankondan and T-Palur blocks. However, irrigation by Dug wells is highest in Veppanthattai block. The block wise and source wise gross area irrigated (2005-06) (Ha.) is given below.

S. No.	Blocks	Canals	Tanks	Tube wells	Ordinary wells	Other sources	Total area irrigated
1	Perambalur	-	798	-	8440	-	9238
2	Veppanthattai	-	1576	345	12185	75	14181
3	Ariyallur	-	668	2774	517	-	3959
4	Thirumanur	7756	1119	3103	1186	-	13164
5	Veppur	-	1236	3189	3145	-	7570
6	Alathur	-	1260	1875	5692	-	8827
7	Jeyankondan	66	1542	1492	510	-	3610
8	T.Palur	2100	1505	3997	95	-	7697
9	Andimadam	-	232	3138	1237	-	4607
10	Sendurai	-	195	2966	567	-	3728
	Total	9922	10131	22879	33574	75	76581

(Source: Dept. of Economics & Statistics, Tamil Nadu)

1.5 Studies Activities Carried out by CGWB

The erstwhile Exploratory Tube Well Organization had undertaken the ground water exploration by drilling in the Cauvery basin during 1956-57 for the study of sub-surface configuration of the basin and to assess the ground water resources for augmenting the

water supply. As part of 1st phase, 5 tube wells were drilled in the Perambalur district. The tube wells were drilled to a depth of 728.50 m bgl. From the results of exploration, potential areas were identified near Jayankondan and Aandimadam areas for development of ground water by tube wells. During 2nd phase tube wells were drilled in cretaceous sediments during 1984-85. The aquifers encountered are productive with moderate to high discharge.

Systematic surveys and ground water management studies were carried out under various Annual Action Plans. Special studies are taken up in the deepest water level areas of Jayankondan area.

2.0 RAINFALL AND CLIMATE

The district receives the rainfall under the influence of both southwest and northeast monsoon. There is a gradual decrease in precipitation from northeast to southwest over the district. The normal rainfall for the period (1901-70) ranges from 843.5 to 1123.3 mm. It is lowest in the Vembavur area and highest in the Jayankondan areas.

Perambalur district enjoys a typical semi arid climate with hot summers and moderately cool winters. The hottest season is from March to May. During the period the maximum temperature often exceeds 40°C. The winter season is spread over two months viz. January and February and the nights are cool and pleasant. The district generally has a high humidity.

The district experiences strong winds during the southwest monsoon season. The wind speed during June to August is more than 25 km/hr. Thereafter there is a gradual decrease in speed reaching the lowest value 7.7 km/hr.

3.0 GEOMORPHOLOGY AND SOIL TYPES

3.1 Geomorphology

In general, the district has an undulating topography, characterized by low mounds and broad valleys. Hill ranges belonging to Pachaimalai Hills occupy the northwestern part of the district, where the terrain is rugged. The ground elevation ranges from 100 to 1015 m amsl. The region slop is towards east.

Denudational, structural and fluvial processes mainly control the geomorphic evolution of the area. Mainly the varying resistance of geological formations to those processes has governed the evolution of various landforms. Various land forms occurring in the area such as structural hills, erosional plains, residual hills rolling uplands and pediments of different facies belonging to the denudational and structural land forms. Fluvial landforms caused by the activity of Cauvery, Marudayar and Vellar river systems, include younger flood plains, older flood plains and buried pediments.

3.2 Soil

Soil types of the area are more important since it is the main criteria in the agricultural production and in the recharge of ground water.

The taluk wise percentage of distribution of each soil type is as follows:

S. No.	Taluk	Black soil (%)	Alluvial Soil (%)	Red loam soil (%)
1	Perambalur	95	5	-
2	Veppanthattai	10	-	90
3	Kunnam	80	10	10
4	Ariyalur	30	70	-
5	Sendurai	42	48	10
6	Udayarpalayam	15	85	-

(Source: Soil testing Lab, Agricultural Dept., Perambalur)

4.0 GROUND WATER SCENARIO

4.1 Hydrogeology

The major aquifer systems in the district are constituted by (1) Basal crystalline rocks consisting mainly of Charnockites, Granites and Gneisses of Archean age and (2) Sedimentary formations ranges in age from Cretaceous to Recent (Plate-II).

Alluvial Formations

In the river alluvium ground water occurs under water table condition. The maximum thickness is 37 m and the average thickness of the aquifer is approximately 12 to 15 m. These formations are porous and permeable, which have good water bearing zones.

Tertiary formation

Tertiary formations are mainly Cuddalore Sand stone, mottled ferrugeneous clays and pebbles. The ground water occurs in semi-confined conditions and confined conditions with good ground water potentials in these aquifers. The Specific Capacity in the Tertiary formations ranges from 40 to 1627 lpm/m/dd.

Cretaceous formations

Cretaceous formations comprises white Sandy Lime stones and Sand stones with fossils, Calcareous mottled Sand stones with fossils, Shell Lime stones, Clays, Sand stones with fossils, Basal Lime stone, Clays and Sandy beds with fossils. Ground water in the sandy clay lenses and fine sands underlain by white and black clay beds constitutes phreatic

aquifers in the depth range 10.0 to 15.0 m below ground level. Phreatic aquifers in the limestone are more potential. The Specific Capacity in the cretaceous formation ranges from 18.77 to 90.66 lpm/m/dd.

Hard Rock formations

Hard rock formations include Charnockites, Granites and Gneisses traversed by Quartz and Pegmatite veins. Ground water occurs under water table conditions in weathered mantle and semi-confined conditions in fractured zones depend on the joints, fracture and its development.

4.1.1 Pre-monsoon water level: The Depth to Water Level during pre-monsoon (May-2006) ranges from 1.10 to 8.55 m bgl. In major part of the district the depth to water level during pre-monsoon is in the range of >2 – 5 m bgl. (Plate – III).

4.1.2 Post-monsoon water level: The Depth to Water Level during post-monsoon (Jan-2007) ranges from 1.10 to 6.78 m bgl. Almost in entire district, depth to water level during post-monsoon is in the range of >2 – 5 m bgl, except some isolated patches (Plate-IV).

4.1.3 Long term Fluctuation (1998-2007) indicates rise in water levels is in the range of 0.0027 to 0.16 m/year. The fall in water level ranges between 0.05 and 0.07 m/year.

4.1.3 Aquifer Parameters:

In the Cretaceous formation Transmissivity is 234 m²/day and storativity is in the order of 3.527x10⁻⁴.

Transmissivity ranges from 620 to 1455 m²/day and storativity ranges from 3.29 to 7.74 x 10⁻⁵ in Tertiary formation.

4.2 Status of Ground Water Development

Groundwater resources of the district has been estimated using GEC-97 methodology, jointly by Central Ground Water Board and State Ground and Surface Water Resources Data Center, Govt. of Tamil Nadu, which is given in Table – 1.

Out of 10 Blocks, Groundwater development has reached more than 100% in 4 Blocks and in the rest of 6 Blocks, the development is in the range of 36 to 55% (Plate-V). The six safe blocks are feasible for groundwater development. The Over Exploited blocks are to be attended with suitable regulation and conservation measures. Safe blocks may be developed for further along with conservation strategies for sustainable development of available potential. The over all district shows the level of groundwater development at 81 % as on 31st March 2004.

Table-1 Stage of Ground Water Development as on 31st March 2007 (Ha.m)

S. No.	Name of Ground Water Assessment Unit Block	Command/ Non-command Total	Net G.W availability	Existing gross draft for irrigation	Existing gross draft for domestic and industrial water supply	Existing gross draft for all uses	Allocation for domestic and industrial requirement for next 25 yrs.	G.W availability for future development	Storage of ground waer development	Remarks
1	2	3	4	5	6	7	8	9	10	11
1	Alathur	Total	4484.74	4532.13	205.82	4737.95	213.83	-261022	106	OE
2	Andimadam	Total	6014.55	2993.69	232.60	3226.29	241.66	2779.20	54	Safe
3	Ariyalur	Total	3539.60	1832.00	127.35	1959.35	132.31	1575.20	55	Safe
4	Jayankondan	Total	8268.83	3747.18	307.37	4054.56	319.34	4202.30	49	Safe
5	Perambalur	Total	5036.98	7460.97	220.04	7681.01	228.61	-2652.60	152	OE
6	Sendurai	Total	6749.98	2992.39	217.12	3209.52	225.58	3532.01	48	Safe
7	T.Pulur	Total	7423.89	2447.89	208.56	2656.46	216.69	4759.31	36	Safe
8	Thirumanur	Total	10583.82	4621.76	244.48	4866.24	254.00	5708.06	46	Safe
9	Veppanthattai	Total	10201.77	15159.33	256.68	15416.01	266.67	-5224.24	151	OE
10	Veppur	Total	6198.40	6660.42	279.13	6939.55	289.99	-7552.02	112	OE
	Total		68502.66	52447.78	2299.15	54746.94	2388.68	136666.10	80.9	

5.0 GROUND WATER MANAGEMENT STRATEGY

5.1 Ground Water Development

Groundwater development in 6 Blocks viz., Andimadam, Ariyalur, Jayankondan, Sendurai, T.Palur and Thirumanur are moderate and categorized as Safe blocks. Cuddalore Sand stone occurring in these blocks may be developed by deeper Tube wells down to a depth of more than 150 m. The expected yield range is 2.5 to 30 lps. The Alluvial tract bordering the north of River Kollidam, occurring in Tirumanur, T.Palur blocks may be developed by Dug Wells as well as by Filter Points down to a depth range of 12 to 37 m bgl. Cretaceous formations in and around Ariyalur block has to be developed with Tube wells avoiding the saline and brackish water patches. A map showing ground water development potential and artificial recharge prospects is given as Plate-VI.

6.0 GROUND WATER QUALITY

Ground water in phreatic aquifers in this district is, in general, colorless, odorless and predominantly alkaline in nature. The specific electrical conductance of ground water in the phreatic zone (in microsiemens at 25°C) during May 2006 was in the range of 1030 to 10,110 in the district. Conductance below $750 \mu\text{S cm}^{-1}$ has not been observed in any part of the district. Saline ground water (EC >10,000) is observed at select pockets of the district.

It is observed that the ground water is suitable for drinking and domestic uses in respect of all the constituents except total hardness and nitrate in about 64% of the samples. Total hardness as CaCO_3 is observed to be in excess of permissible limits in 54% of the samples analyzed whereas nitrate is found in excess of 45 mg l^{-1} in about 73% of samples. Excess fluoride more than the permissible limit of 1.5 mg l^{-1} is observed at Thirumanur area and found to be localized phenomena. The incidence of high total hardness is attributed to the composition of litho units constituting the aquifers in the district, whereas nitrate pollution is most likely due to the use of fertilizers and other improper waste disposal.

With regard to irrigation suitability based on specific electrical conductance and Sodium adsorption Ratio (SAR), it is observed that ground water in the phreatic zone may cause high to very high salinity hazard and medium to very high alkali hazard when used for irrigation. Proper soil management strategies are to be adopted in the major part of the district while using ground water for irrigation.

7.0 RECOMMENDATIONS

Central Ground Water Board had prepared a master plan to augment groundwater potential by saturating the shallow aquifer taking into consideration the available unsaturated space during post monsoon and available uncommitted surplus run off. Subsequently, computations have been made for Drought Prone Area Programme (DPAP) for over exploited and critical blocks in the districts warranting immediate attention. Details of computation of the number and cost estimates of artificial recharge structures proposed in the Perambalur district is given in Table – 2. It may be useful in formulating schemes for construction of Percolation Ponds in the district.

Institute of Remote Sensing, Anna University had prepared block wise maps demarcating potential zones for artificial recharge for the State of Tamil Nadu. Subsequently, State Government agencies have constructed artificial recharge structures with their own fund or with fund from Central Government, dovetailing various government programmes.

Ministry of Water Resources, Government of India has initiated Dug Well Recharge Scheme in the State. The scheme is being implemented by the Nodal Department (State Ground & Surface Water Resources Data Centre, PWD, WRO, Government of Tamil Nadu) with the technical guidance of Central Ground Water Board. The subsidy of Rs.4000/- for small and marginal farmers and Rs.2000/- for the other farmers is credited to the beneficiaries' bank account through NABARD. The scheme after implementation will prove to be beneficial to the irrigation sector. The available uncommitted surplus run off has to be recomputed, taking into consideration the quantum of recharge effected through existing irrigation dug wells also. The existing structures and uncommitted surplus flow should be considered for further planning of artificial recharge programme.

On the basis of experimental studies, it has been found that de-silting of existing tanks followed by percolation pond with recharge wells, recharge shafts are economical.

There is considerable scope for implementation of roof-top rainwater harvesting in the district. Recharge pits/shafts/trenches of suitable design are ideal structures for rainwater harvesting in such areas. Central Ground Water Board is also providing free technical guidance for implementation of rooftop rainwater harvesting schemes.

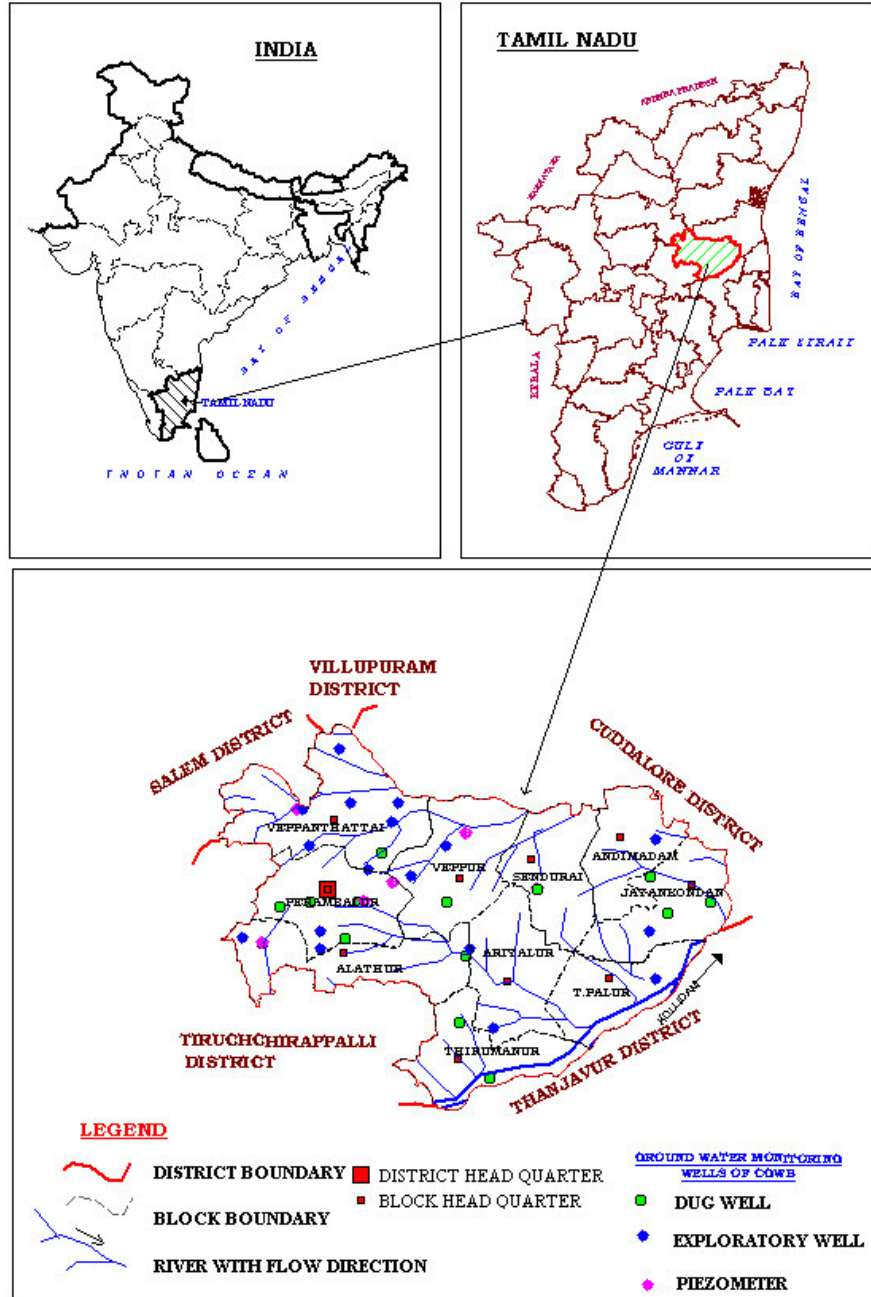
Table:2 Details of computation of the number and cost estimates of artificial recharge structures propos

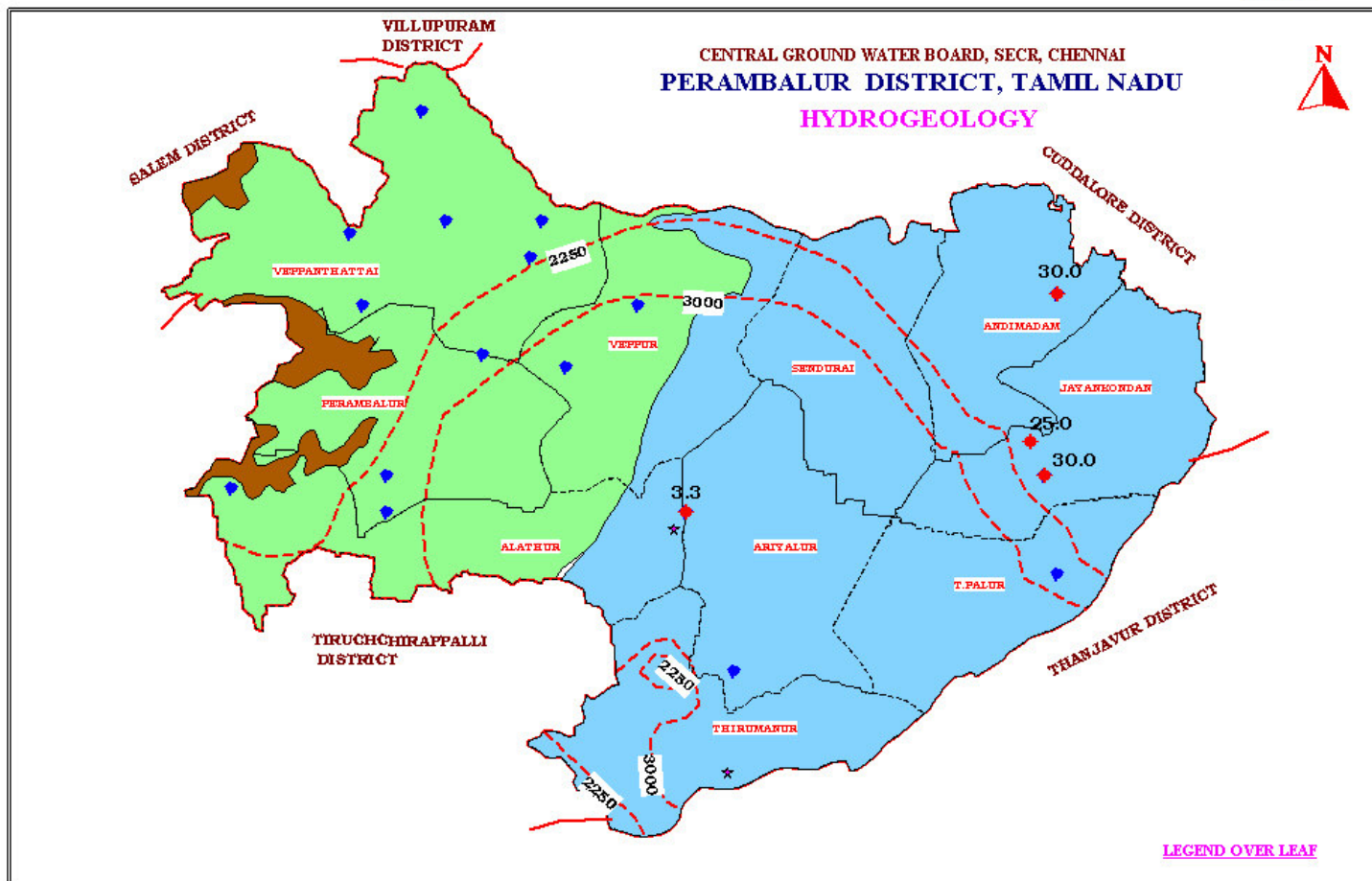
S. No.	Block	Area Suitable For Groundwater Development (Sq. km)	Categorization Of Block as On March 2004	Harness-able Surface water (M.Cu.m)	Capacity Of existing Tanks (MCM)	Committed Supply for Existing Tanks (MCM 2 fillings)	Surplus Available For AR (MCM)	Available Subsurface Storage (MCM)	Number of Structures PP (1 in 15 Sq. km) Capacity 0.1 M.Cu.m	Cost of Structures (Lakhs) PP (Unit Cost – Rs.20 Lakhs)
1	2	3	4	5	6	7	8	9	10	
1	Alathur	410.51	OE	39.85	4.93	9.860	29.99	5.87	27	540
2	Andimadam	289	Safe	433.6	1.33	2.660	430.94	180.70	19	380
3	Ariyalur	327	Safe	354.11	10.53	21.060	333.05	39.52	22	440
4	Jayankondan	344	Safe	386.26	8.51	17.020	369.24	5.62	23	460
5	Perambalur	303.02	OE	23.05	7.19	14.380	8.67	39.50	20	400
6	Sendurai	315	Safe	417.62	8.25	16.500	401.12	38.07	21	420
7	Veppanthattai	502.58	OE	40.23	2.84	5.680	34.55	98.38	34	680
8	Veppur	417.44	OE	52.95	7.26	14.520	38.43	16.78	28	560

CENTRAL GROUND WATER BOARD, SECR, CHENNAI
PERAMBALUR DISTRICT, TAMIL NADU

LOCATION



(NOT TO SCALE)







LEGEND FOR PLATE - II

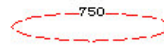

ADMINISTRATIVE SETUP


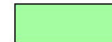
-  DISTRICT BOUNDARY
-  BLOCK BOUNDARY
-  HILLY AREA

GROUND WATER HYDROLOGY

-  EXPLORATORY BORE WELL [CGWB]
-  HIGH YIELDING BORE WELL [CGWB]

HYDROCHEMISTRY

-  ISOCONS [Sp ELECTRICAL CONDUCTANCE]
[$\mu\text{S}/\text{Cm}$ at 25° C]
-  FLORIDE ≥ 1.5 (mg/l)

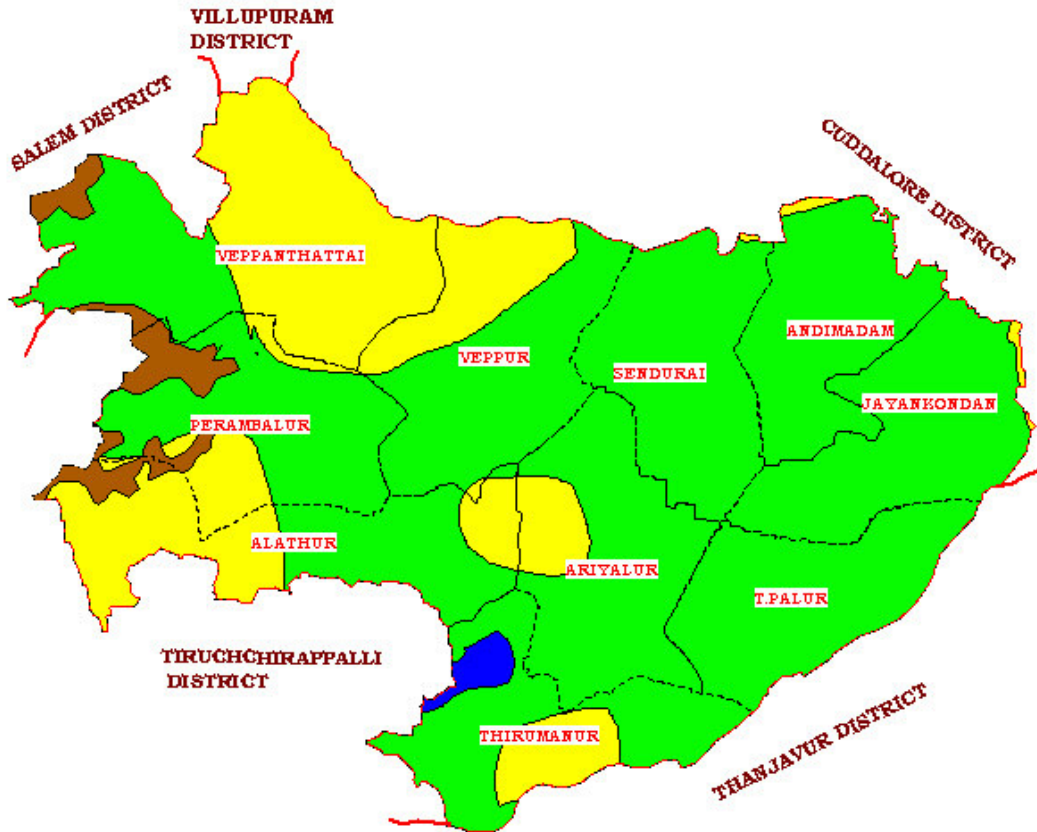
	AQUIFER	AGE	LITHOLOGY	GROUND WATER CONDITIONS	YIELD PROSPECTS (CU.M/D)	GROUND WATER DEVELOPMENT STRATEGIES
	SEMI-CONSOLIDATED	RECENT TERTIARY CRETACEOUS	RIVER ALLUVIUM, FLOOD PLAIN- DEPOSITS SAND STONE LIME STONE, SHALE WITH SAND AND CLAY	DISCONTINUOUS, UNCONFINED TO SEMI-CONFINED AQUIFERS, AND THICK UN CONFINED TO CONFINED SUITABLE FOR DUG WELLS, FILTER POINT WELLS AND MEDIUM TO DEEP TUBE WELLS	50 - 200	DEVELOPMENT THROUGH LARGE DIAMETER DUG WELLS AND SHALLOW TUBE WELLS AND MEDIUM TO DEEP TUBE WELLS
	CONSOLIDATED	ARCHEAN	GRANITES, GNEISSES, CHARNOCKITE.	DISCONTINUOUS, UNCONFINED TO SEMI-CONFINED AQUIFERS, RESTRICTED TO WEATHERED RESIDUM AND FRACTURES	< 50 NEAR WATERSHED DIVIDES & HIGH GROUNDS. 50 - 200	SUITABLE FOR DEVELOPMENT THROUGH DUG WELLS. BOREWELLS FEASIBLE IN FRACTURE ZONES, BEST LOCATIONS BEING INTERSECTION OF FRACTURES

CENTRAL GROUND WATER BOARD, SECR, CHENNAI
PERAMBALUR DISTRICT, TAMIL NADU






DEPTH TO WATER LEVEL

PRE MONSOON (MAY -2006)



LEGEND

-  DISTRICT BOUNDARY
-  BLOCK BOUNDARY
-  HILLY AREA

DEPTH TO WATER LEVEL (m.bgl.)

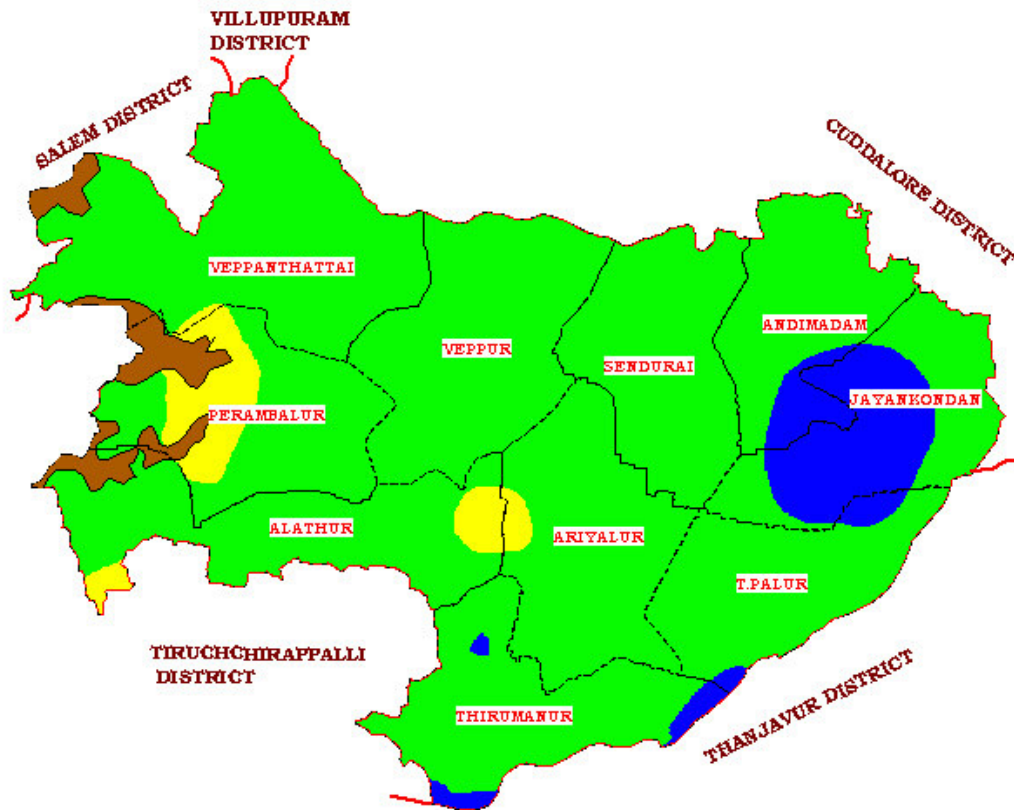
-  0-2
-  >2-5
-  >5-10

0 7.5 15 KM




CENTRAL GROUND WATER BOARD, SECR, CHENNAI
PERAMBALUR DISTRICT, TAMIL NADU
DEPTH TO WATER LEVEL



POST MONSOON (JANUARY - 2007)

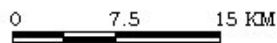


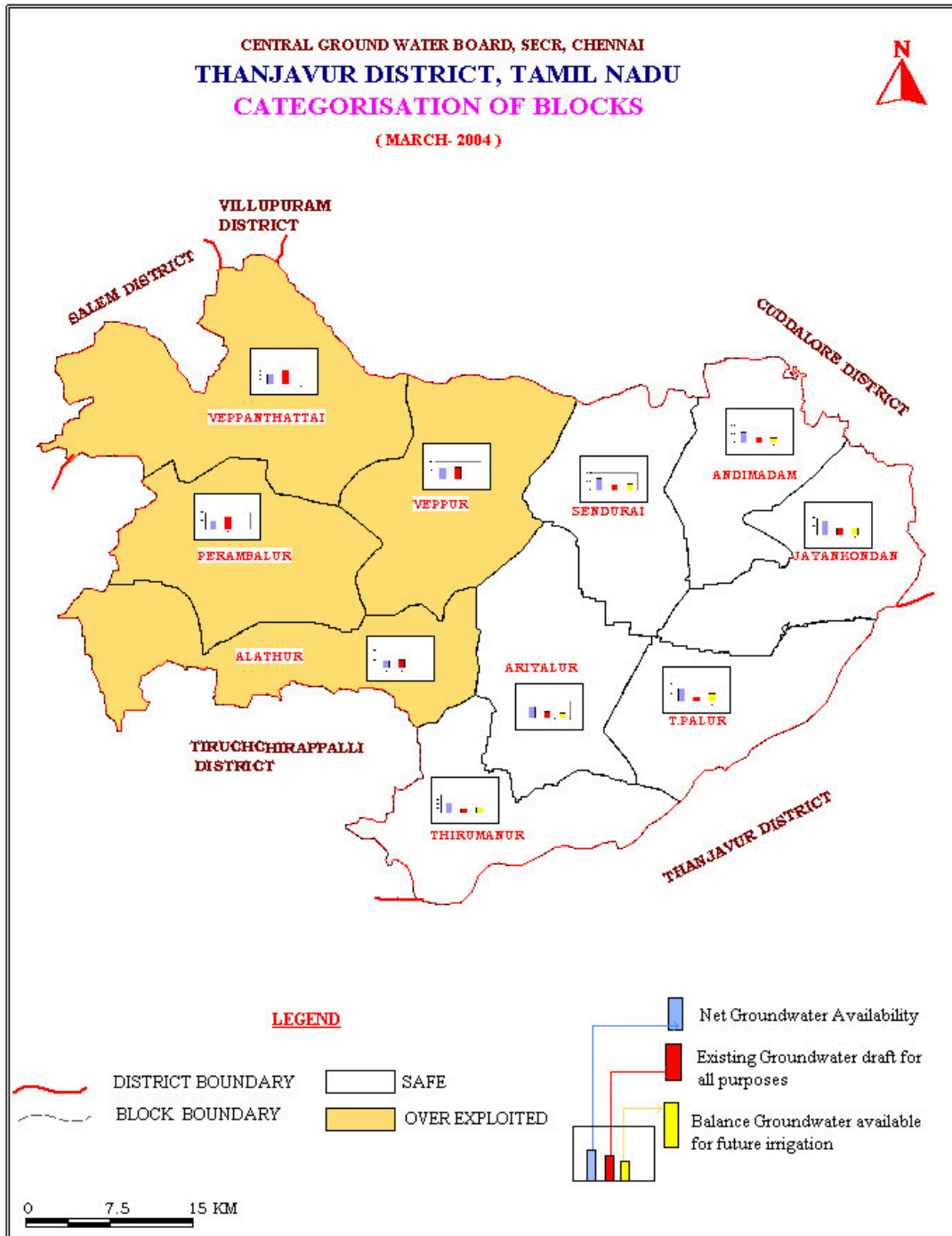
LEGEND

-  DISTRICT BOUNDARY
-  BLOCK BOUNDARY
-  HILLY AREA

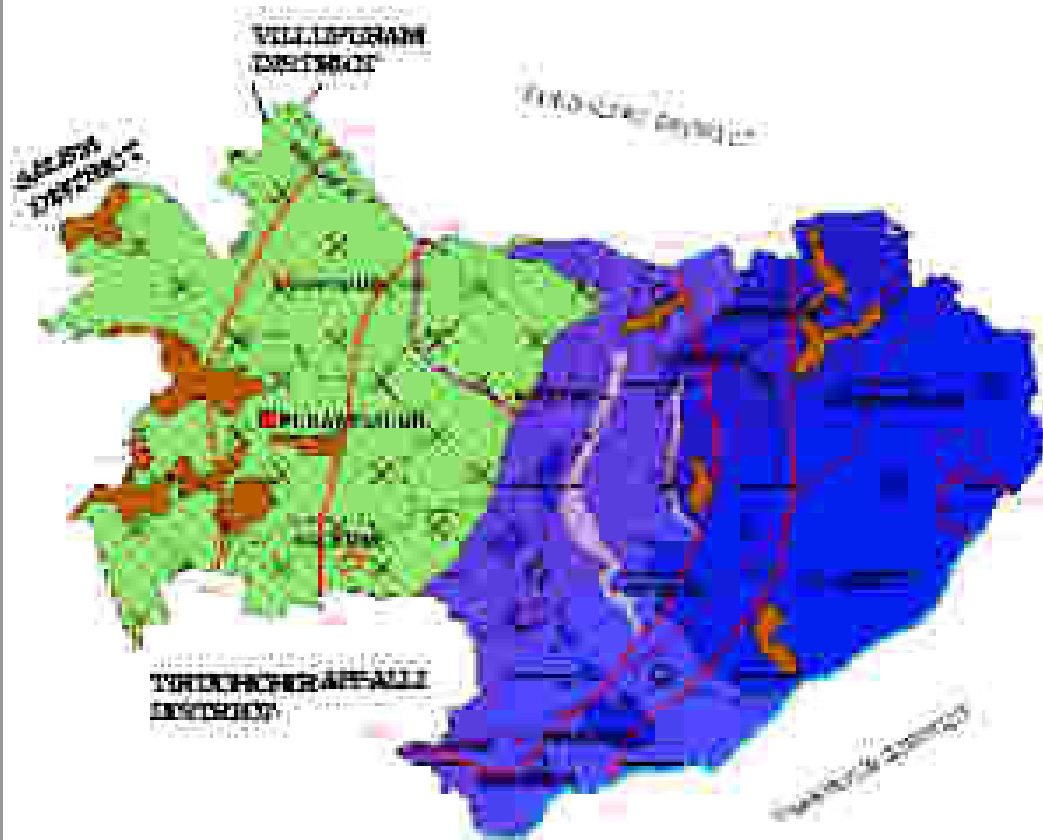
DEPTH TO WATER LEVEL (m.bgl.)

-  0-2
-  >2-5
-  >5-10








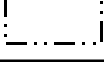










CENTRAL GROUND WATER BOARD, HYDRALOGICAL
GROUND WATER DEVELOPMENT POTENTIAL AND
ARTIFICIAL RECHARGE PROSPECTS
PERAMBALUR DISTRICT, TAMIL NADU



LEGEND FOR PLATE -VI

DISTRICT – PERAMBALUR

	Wells Feasible	Rigs Suitable	Depth Of Well (M)	Discharge (LPM)	Suitable Artificial Recharge Structures
 Soft Rock Aquifer	Dug Well Tube Well	Manual Direct Rotary	5 - 15 50 – 100	10 - 100	Percolation Ponds
 Soft Rock Aquifer	Dug Well Tube Well	Manual Direct Rotary	5 - 15 50 – 150	100 - 150	Percolation Ponds / Nalla Bandhs / Check Dams
 Soft Rock Aquifer	Tube Well	Direct Rotary	150 – 200	150 - 300	Percolation Ponds / Nalla Bandhs / Check Dams
 Hard Rock Aquifer	Dug Cum Bore Well Bore Well	Manual + DTH DTH	10 - 20 30 - 70	100 - 200	Check Dams/Recharge Wells/ Gully Plugs
	District Boundary			Block Boundary	
	District Headquarters			Block Headquarters	
	Water Level-Pre-Monsoon (Decadal Mean 1993-2002) Mbgl			EC (Microsiemens / Cm At 25°C)	
	River			Lineament	
	Hilly Area			Nitrate Greater Than Maximum Permissible Limit (45 mg/l)	

OTHER INFORMATION

Geographical Area	3,69137.Ha
Number Of Blocks	10
Major Drainage	Kollidam
Population (2001)	4,93646
Normale Annual Rainfall	876.6 mm
Annual Range Of Temperature	26 – 44°C
Regional Geology	Hard Rocks: Gneisses And Granites Soft Rocks: Limestone, Shale And Sandstone
Net Ground Water Availability For Future Irrigation	547.46 mcm
Stage Of Ground Water Development (As On March 2004)	80.9 %
Names Of Blocks Showing Intensive Ground Water Development	★ Over-Exploited: Alathur, Perambalur, Veppanathattai & Veppur

SAVE WATER
AND
CONSERVE WATER