



**For official use**

## **Technical Report Series**

**DISTRICT GROUNDWATER BROCHURE**

**THENI DISTRICT**

**TAMIL NADU**

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**Government of India**  
**Ministry of Water Resources**  
**Central Ground Water Board**  
**South Eastern Coastal Region**  
**Chennai**  
**February 2008**

## DISTRICT AT A GLANCE (THENI DISTRICT)

S.NO	ITEMS	STATISTICS	
1.	<b>GENERAL INFORMATION</b>		
	<b>i. Geographical area (Sq.km)</b>	<b>2889.23</b>	
	<b>ii. Administrative Divisions as on 31-3-2007</b>		
	Number of Tehsils	3	
	Number of Blocks	8	
	Number of Villages	94	
	<b>iii. Population (as on 2001 Censes)</b>		
	Total Population	1049323	
	Male	534191	
	Female	515132	
	<b>iv. Average Annual Rainfall (mm)</b>	709.5 to 880.8	
2.	<b>GEOMORPHOLOGY</b>		
	i. Major physiographic Units	.Western Ghat, Cumbum and Varushanad valleys	
	ii. Major Drainages	.Vaigai	
3.	<b>LAND USE (Sq. km) during 2005-06</b>		
	i. Forest area	1037.18	
	ii. Net area sown	1115.99	
	iii. Cultivable waste	39.84	
4.	<b>MAJOR SOIL TYPES</b>	Red soil, black soil and brown soil	
5.	<b>AREA UNDER PRINCIPAL CROPS (AS ON 2005-2006)</b>	1. Paddy - 15694Ha – 24% 2. Oil seeds – 18935Ha – 26% 3. Vegetable– 5743Ha – 11% 4. Sugarcane – 7510Ha – 11% 5. Non food - 32501 Ha – 31%	
6.	<b>IRIGATION BY DIFFERENT SOURCES (During 2005-06)</b>	<b>Number</b>	<b>Area irrigated (Ha)</b>
	<b>i. Dug wells</b>	24706	36570
	<b>ii. Tube wells</b>	Not available	4935
	<b>iii. Tanks</b>	212	1949
	<b>iv. Canals</b>	107	12264
	<b>v. Other Sources</b>	0	0
	<b>vi. Net irrigated area (Ha)</b>	55718	
	<b>vii. Gross irrigated area (Ha)</b>	63630	
7.	<b>NUMBERS OF GROUND WATER MONITORING WELLS OF CGWB (AS ON 31.03.2007)</b>		
	i. No of dug wells	6	
	ii. No of piezometers	4	
8.	<b>PREDOMINANT GEOLOGICAL FORMATIONS</b>	Granites, Granite gneiss, Charnockites and Pegmatites	

<b>9.</b>	<b>HYDROGEOLOGY</b>	
	i. Major water bearing formations	Alluvium, weathered and fracture crystallines
	ii. Pre- monsoon depth to water level (May 2006) (m bgl)	1.22 – 19.18
	iii. Pre- monsoon depth to water level (Jan'2007) (m bgl)	2.68 – 16.08
	iv. Long term water level trend in 10 years (1998-2007) in m/yr	<b>Annual</b>
		<b>Rise (m/year)</b>   <b>Fall (m/year)</b>
		Min : 0.202   Min :0.070 Max :1.130   Max :0.469
<b>10.</b>	<b>GROUND WATER EXPLORATION BY CGWB (As on 31-03-2007)</b>	
	i. Number of Exploratory wells	12
	ii. Number of Observation wells	7
	iii. Number of Piezometers under Hydrology Project.	4
	iv. Depth range(m)	56 – 202
	v. Discharge(lps)	Negligible to 6.8
	vi. Storativity (S)	$8.13 \times 10^{-6}$ to $1.69 \times 10^{-3}$
	vii. Transmissivity (m <sup>2</sup> /day)	< 1 to 750 m <sup>2</sup> /day
<b>11.</b>	<b>GROUND WATER QUALITY AS ON MAY 2006</b>	
	i. Presence of chemical constituents more than permissible limit	NO <sub>3</sub> , F
	ii. Type of water	NaCl & Mixed type
<b>12.</b>	<b>DYNAMIC GROUND WATER RESOURCES (as on 31.03.2004) in MCM</b>	
	i. Annual Replenishable Ground Water Resources	489.11
	ii. Total Annul Ground Water Draft for all purposes	459.77
	iii. Projected demand for Domestic and Industrial Uses up to 2025	15.43
	iv. Stage of Ground Water Development	104
<b>13.</b>	<b>AWARENESS AND TRAINING ACTIVITY</b>	
	<b>i. Mass Awareness Programmes Organized</b>	
	Date	2000-01
	Place	Marikundu
	No of Participants	200
	<b>ii. Water Management Training Organized</b>	
	Date	-
	Place	-
	No of Participants	-
<b>14.</b>	<b>EFFORTS OF ARTIFICIAL RECHARGE &amp; RAINWATER HARVESTING</b>	Technical Guidance were provided as when sought
	i. Projects completed by CGWB Number of structures Amount spent	Nil
	ii. Projects under technical guidance of CGWB Number of structures	Nil

<b>15.</b>	<b>GROUND WATER CONTROL AND REGULATION</b>	
	i. Number of OE Blocks	3
	ii. Number of Critical Blocks	3
	iii. Number of Blocks Notified	Nil
<b>16.</b>	<b>MAJOR GROUND WATER PROBLEMS AND ISSUES.</b>	<ol style="list-style-type: none"> <li>1) Deeper water levels in valley hill areas</li> <li>2) 75% of the blocks are categorized as over exploited and critical</li> <li>3) Select pockets have insitu salinity problem</li> </ol>

## 1.0 INTRODUCTION

### 1.1 Administrative Details

Theni district is having an administrative division of 3 taluks, 8 blocks and 94 villages as detailed below:

S.No.	Taluk	No. of villages	Blocks	No. of villages
1	Periyakulam	27	1. Theni	12
			2. Periyakulam	15
2	Andipatti	20	1. Andipatti	15
			2. K.Mailadumpurai	5
3	Uthamapalayam	47	1. Uthamapalayam	8
			2. Bodinayakanur	15
			3. Chinnamanur	16
			4. Cumbum	8

### 1.2 Basin and sub-basin

The district is part of composite cape comerin to Cauvery basin and a part of vaigai sub basin.

### 1.3 Drainage

Vaigai river has its origin in the eastern slope of Western Ghat at Gandamanayakanur. Suruliar, Theniar, Varahanadhi and Manjalar are its main tributaries.

The regional drainage pattern is dentritic and major direction of the flow of river is esterly (east, southeast and northeast) from this Western Ghat hills.

### 1.4 Irrigation Practices

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

S.No	Classification	Area (Ha)
1	Forests	103718
2	Barren & Uncultivable Lands	43322
3	Land put to non agricultural uses	23993
4	Cultivable Waste	3984
5	Permanent Pastures & other grazing lands	314
6	Groves not included in the area sown	2334
7	Current Fallows	1636
8	Other Fallow Lands	33330
9	Net Area sown	111599
	<b>Total</b>	<b>324230</b>

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

The chief irrigation sources in this district are wells followed by canal and tanks.

The block wise and source wise net area irrigated in Ha is given below (2005-06).

S.No	Block	Net area irrigated by					Total Net Area irrigated
		Canals	Tanks	Tube wells	Ordinary wells	Other Sources	
1	Periyakulam	2355	979	489	5741	-	9564
2	Theni	1003	433	466	5180	-	7082
3	Andipatti	126	310	120	5867	-	6423
4	K.Myladumparai	0	31	123	4387	-	4541
5	Uthamapalayam	1151	106	1121	3440	-	5818
6	Chinnamanur	1705	90	465	3889	-	6149
7	Cumbum	3177	0	1233	3474	-	7884
8	Bodinaikanur	2747	0	918	4592	-	8257
	<b>Total</b>	<b>12264</b>	<b>1949</b>	<b>4935</b>	<b>36570</b>	<b>-</b>	<b>55718</b>

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

### 1.5 Studies/Activities carried out by CGWB

Central Ground Water Board had completed systematic hydrogeological surveys of the district in 1990. Reappraisal hydrogeological surveys are being carried out with a view to evaluate the changing scenario of ground water conditions. Such surveys were carried out in 1992-93 and 1997-98 as a part of Annual Action Plan and similar studies have been undertaken during 2007-08 also.

Central Ground Water Board had undertaken exploratory programme to delineate the potential of deeper fracture down to a depth of 200 m and have drilled 12 exploratory wells and 7 observation wells.

In order to monitor the changes in ground water regime, regional monitoring of water levels and water quality and determine long term trend of water levels and water quality, CGWB is monitoring 6 dug wells and 4 piezometers in the district.

### 2.0 RAINFALL AND CLIMATE

The district receives rainfall under the influence of both southwest and northeast monsoon. The rainfall data from 3 stations viz. Periyakulam, Bodinaikanur and Uthanapalayam for the period 99 years (1901-1999) have been considered for the analysis.

Normal annual rainfall is of the order of 791.2 mm out of which 47% (375.5) received during NE Monsoon and 22% (172.7) is received during SW monsoon.

The mean daily minimum temperature varies from 20.9°C (January) to 26.3°C (May) and mean daily maximum temperature varies from 29.7°C (December) to 37.5°C (May).

The evaporation values vary from 80 mm to 325 mm.

The climatological data have been furnished by Dept. of Economics and Statistics, Govt. of Tamil Nadu.

### **3.0 GEOMORPHOLOGY AND SOIL TYPES**

#### **3.1 Geomorphology**

District is characterised predominantly by structural and denudational land forms viz., structural hills, residual hills, linear ridges and pediment. Bazada zone is found well developed at the foot hills on the western and northern part of the district. The valleys are characterised by colluvio-fluvial sediments.

The hilly terrain act as catchment area and runoff zones while the bazada zone bordering the hills form a good recharge zones.

#### **3.2 Soils**

The district is characterised by Red, Black and Brown soils. The major part of the area is characterised by red soil, which can be either transported or lateritic (insitu). These are medium to heavy textured soils with moderate to higher permeability. The black soils are limited to less than 1% of the area. They are fine textured with low permeability. The brown soils are limited to less than 1% of the area and they characterised by low permeability.

### **4.0 GROUND WATER SCENARIO**

#### **4.1 Hydrogeology**

The important aquifer system in the district can be grouped into two categories.

- i) Weathered and fissured crystallines comprising charnockites, granite gneiss and granites.
- ii) Valley fill deposits or colluvium comprising clay, sand, silt and kankar.

Ground water occurs under unconfined condition in weathered residium and in colluvium while it is under semi confined to confined condition in deeper fractures. The thickness of weathered residium varies from 5 to 45 m. It is very thick around Thevaram, Kombai, Odapatti and Gudalur. In general it varies from 5 to 15 m. the exploration has revealed that there are a maximum of 6 saturated fractures occurring down to a depth range of 140 m.

The weathered residium is tapped by dug wells which even as deep as 40 m when tapping colluvium. The yield of dug wells are of the order of 150 – 350 lpm which can sustain the continuous pumping for 4 – 6 hours a day. The bore wells tapping deeper fractures have the yield of 150 – 420 lpm.

The depth to water level in the district varied from 1.22 to 19.18 m bgl during premonsoon (May 2006) while it varied from 2.68 to 16.08 m bgl during post

monsoon (Jan 2007).

The depth to piezometric surface in the deeper fractures varied from 3.87 to 39.67 m bgl during premonsoon (May 2006) while it varied from 3.57 to 4.55 m bgl during post monsoon (January 2007).

#### **4.1.1 Long Term Fluctuation (1998-2007)**

The long term water level fluctuation for the period 1998-2007 indicates that both rise and fall in the water level has been observed in different areas in the district. The rise in water level is of the order of 0.202 to 1.130 m while the fall in the water level is in the range of 0.010 to 0.469 m.

#### **4.1.2 Aquifer Parameters**

The pumping tests conducted in the dug wells tapping weathered crystallines indicate that permeability varies from < 1 to 19 m/day. The specific yield of the phreatic aquifer is of the order of 1.5%. The transmissivity of the deeper fractures computed from the pumping tests in the exploratory wells were found to vary from 3 to 770 m<sup>2</sup>/day, while the storativity range from  $8.13 \times 10^{-6}$  to  $1.69 \times 10^{-3}$ .

### **4.2 Ground Water Resources**

The ground water resources have been computed jointly by Central Ground Water Board and State Ground & Surface Water Resources and Development Centre (PWD, WRO, Government of Tamil Nadu) as on 31<sup>st</sup> March 2004. The salient features of the computations are furnished in Table-1. The computation of ground water resources available in the district has been done using GEC 1997 methodology.

### **4.3 Ground Water Quality**

Ground water quality of phreatic aquifers in Theni district is in general, colourless, odourless and slightly alkaline nature. The electrical conductivity of groundwater in phreatic zone during May 2006 was in the range of 414  $\mu$ S/cm to 3180  $\mu$ S/cm and major parts are having the electrical conductivity below 1000  $\mu$ S/cm.

It is observed that in general, the ground water is suitable for drinking and domestic uses in respect of all constituents except Gandamanur. Sample from Gandamanur is having EC value of 3180  $\mu$ S/cm and also found that concentration of Nitrate (143 mg/l) and Fluoride (1.53 mg/l) more than BIS permissible limit. Higher concentration of Nitrate may be attributed from wide application of Notrogenious fertilizers.



**Table-1 : Stage of Groundwater Development of Theni District, Tamil Nadu as on 31st March 2004**

(in Ham)									
S.No	Name of Groundwater Assessment Unit (Block)	Net Groundwater 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 supply upto next 25 years (2029)	Net groundwater Availability for future Irriation Development	Stage of Groundwater Development	Categorization for Future groundwater development (Safe/Semi Critical/ Critical/ Over Exploited)
1	2	4	5	6	7= 5+6	8	9 = 4-(6+8)	10 = (7/4)*100	10
1	Andipatti	5649.04	5629.60	262.67	5892.26	273.59	-254.15	104	Over Exploited
2	Bodinaikkanur	4743.99	4380.41	83.66	4464.07	87.14	276.44	94	Critical
3	Chinnamanur	4255.24	4784.50	146.15	4930.65	152.23	-681.49	116	Over Exploited
4	Cumbum	5262.80	4772.34	181.57	4953.91	189.13	301.33	94	Critical
5	Myladumparai	4609.23	5419.95	76.11	5496.06	79.28	-890.00	119	Over Exploited
6	Periyakulam	8942.36	9364.95	326.71	9691.66	340.30	-762.90	108	Over Exploited
7	Theni	6593.58	6292.74	195.01	6487.75	203.12	97.72	98	Critical
8	Uthamapalayam	3963.65	3851.03	209.46	4060.49	218.18	-105.56	102	Over Exploited

#### **4.4 Status of Ground Water Development**

The estimation of dynamic ground water resources (as on 31.3.2004) have shown that out of 8 blocks, 5 blocks have been categorised as over exploited and 3 blocks have been categorised as critical.

The dug wells tapping the entire weathered residium are the common structure for irrigation purposes. The depth of the wells are maximum down to a depth of 35 m. The dug wells can yield between 150 – 350 lpm and can sustain pumping for maximum of 2 – 4 hours in a day.

The presence of potential fracture down to 150 m makes it possible for the farmers to drill wells to a depth of 150 m. The bore wells are yielding about 120 – 300 lpm and can sustain pumping for 4 – 6 hrs in a day.

#### **5.0 GROUNDWATER MANAGEMENT STRATEGY**

The ground water development is to be envisaged with utmost caution in the blocks categorised as “critical”. The presence of thick weathered residium and sustainability of dug well in pockets makes dug wells as one of the suitable abstraction structures, wherever the depth to water level is less than 15 m bgl during premonsoon period.

The exploration had revealed presence of saturated fractures in the district down to 150 m bgl. The specific thickness may be used for locating the borewells as the crystallines are highly heterogeneous and anisotropic.

#### **5.1 Groundwater Development**

The map showing the development prospects for the district is shown in Plate VI.

#### **5.2 Water Conservation and Artificial Recharge**

The topography of Theni district, in general, is suited for construction of various artificial recharge structures such as percolation ponds, check dams and sub-surface dykes.

The number and type of artificial recharge structures recommended for all the Over Exploited/Dark blocks in Theni district are furnished in Table-2. The exact locations of these structures, however, are to be decided on the basis of detailed field investigations. The implementation of the schemes may be taken up in phases, giving priority to blocks where the development of ground water resources is comparatively high.

Free technical guidance for implementation of roof-top rain water harvesting schemes is also being provided by Central Ground Water Board.

**Table-2 : Details of computation of the number and cost estimates of artificial recharge structures proposed**

S.No	District	Block	Area Suitable for Groundwater Development (sq.km)	Categorization of Block as on March 2004	*Harnessable 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	Cost of Structures (Lakhs)	Whether Number of Structures are Feasible as per SW Availability
										PP ( 1 in 15 sq.km). Capacity - 0.1 M.Cu.m	PP (Unit Cost - Rs 20 Lakhs)	
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Theni	Andipatti	261.35	OE/DPAP	14.68	29.694	59.388	0.00	5.51	0	0	No
2	Theni	Bodinaikkanur	324.69	Critical/DPAP	37.52	4.69	9.380	28.14	1.72	22	440	Yes
3	Theni	Chinnamanur	201.62	OE/DPAP	12.34	4.228	8.456	3.88	10.22	13	260	Yes
4	Theni	Cumbum	401.41	Critical/DPAP	35.40	0	0.000	35.40	66.57	27	540	Yes
5	Theni	Myladumparai	246.61	OE/DPAP	37.87	1.36	2.720	35.15	37.36	16	320	Yes
6	Theni	Periyakulam	338.72	OE/DPAP	18.06	23.52	47.040	0.00	17.17	0	0	No
7	Theni	Theni	183.8	Critical/DPAP	11.37	10.696	21.392	0.00	24.26	0	0	No
8	Theni	Uthamapalayam	201.49	OE/DPAP	8.50	1.904	3.808	4.69	14.03	13	260	Yes
	<b>Theni</b>	<b>Total</b>	<b>2159.69</b>		<b>175.74</b>	<b>76.092</b>	<b>152.184</b>	<b>107.266</b>	<b>176.851</b>	<b>91</b>	<b>1820</b>	
* Data Source : Institute of Remote Sensing, Anna University, Chennai												
** Capacity of existing surface water structures computed from data available with SG&SWRDC, Govt. of Tamil Nadu on waterspread area, assuming average depth of 1.0 m.												
# Considering 4mm/day recharge for 120 days filling up of tank in a year.												
\$ Weighted average crop water requirement (Delta) for each district is taken from the Report on Dynamic GW Resources of Tamil Nadu as on January 2003.												
* It is learned from the earlier executed projects that 50% of Percolation Ponds in Tamil Nadu should be provided with Recharge Shaft/Bore Well/Tube Well as per the local terrain condition for effective recharge.												

## **6.0 GROUNDWATER RELATED ISSUES & PROBLEMS**

The district is underlain by crystalline formation and ground water potential is not uniform and is limited to areas having fractures. Out of 8 blocks, 5 blocks have been categorised as over exploited and 3 blocks as critical. Thus, there is a need for caution in formulating development strategies. The chemical constituents in ground in phreatic aquifer is in general within permissible limit except  $\text{NO}_3^-$  and  $\text{F}^-$ . the former might be due to anthropogenic activity while the latter is geogenic.

## **7.0 AWARENESS & TRAINING ACTIVITY**

### **7.1 Mass Awareness Campaign (MAP) & Water Management Training Programme (WMTP) by CGWB**

One Mass Awareness Campaign was conducted at Marikundu, Theni district during 2000-01 on the theme of "Ground Water Management, Regulation and Conservation" The findings of exploration and Surveys carried out by CGWB in the district were explained to the gatherings of about 200 people. The technique of ground water management and need for regulation and conservation was also explained in local vernacular language.

## **8.0 AREA NOTIFIED BY CGWA/SGWA**

Central Ground Water Authority has not notified any area in the district. Government of Tamil Nadu vide G.O.No. 51 has banned groundwater development for irrigation in the over exploited blocks of Tamil Nadu. The over exploited blocks in this district are as follows.

- 1) Andipatti
- 2) Chinnamanur
- 3) Myladumparai
- 4) Periyakulam
- 5) Uthgamapalayam

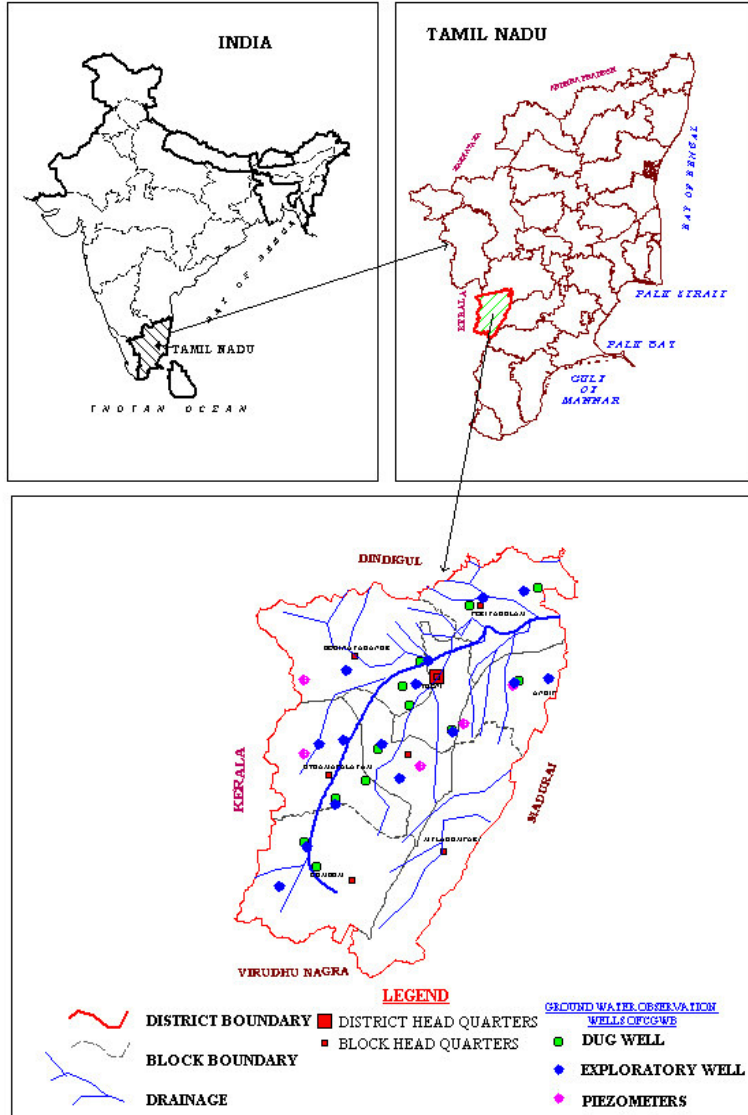
## **9.0 RECOMMENDATIONS**

Artificial Recharge to be taken on priority in over exploited and critical blocks. It is necessary to recharge the deeper fractures to augment the drinking water resources.

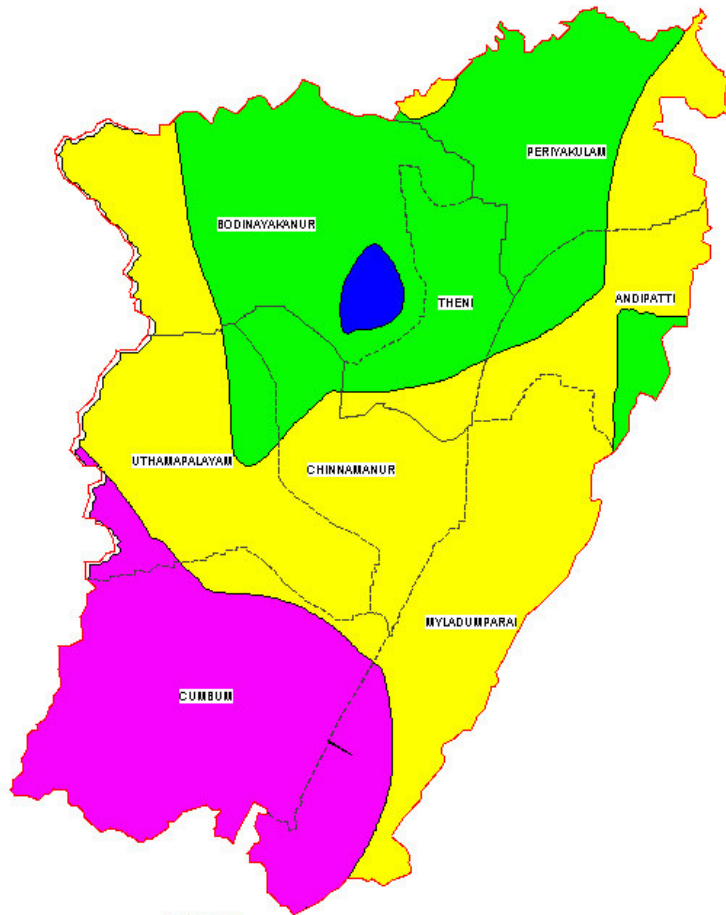
On the basis of experimental studies, it has been found that Check Dam or Percolation Ponds can be made cost effective by combining the structure with recharge wells.

Desilting of supply channel and existing tank would not only increase the surface water potential but also indirectly augment the ground water potential.

CENTRAL GROUND WATER BOARD, SECR, CHENNAI  
**THENI DISTRICT, TAMIL NADU**  
**LOCATION**



CENTRAL GROUND WATER BOARD, SECR, CHENNAI  
THENI DISTRICT, TAMIL NADU  
DEPTH TO WATER LEVEL  
PREMONSOON (MAY - 2006 )



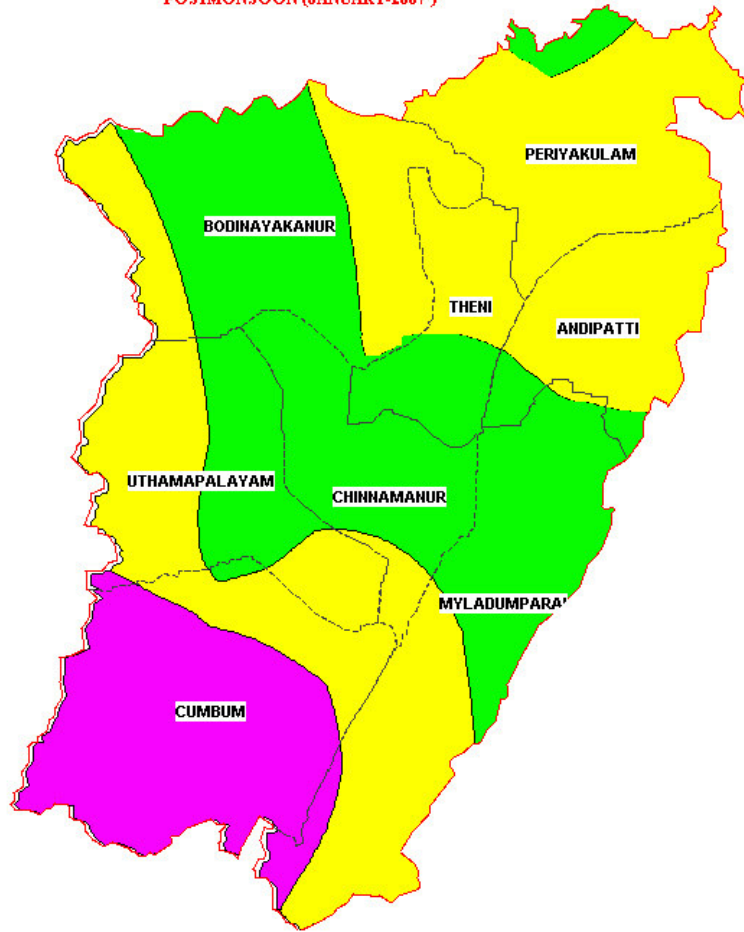
**LEGEND**

- DISTRICT BOUNDARY
- BLOCK BOUNDARY



**DEPTH TO WATER LEVEL (mbgl.)**



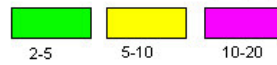
CENTRAL GROUND WATER BOARD, SECR, CHENNAI  
THENI DISTRICT, TAMIL NADU  
DEPTH TO WATER LEVEL  
POSTMONSOON (JANUARY-2007)



**LEGEND**

-  DISTRICT BOUNDARY
-  BLOCK BOUNDARY

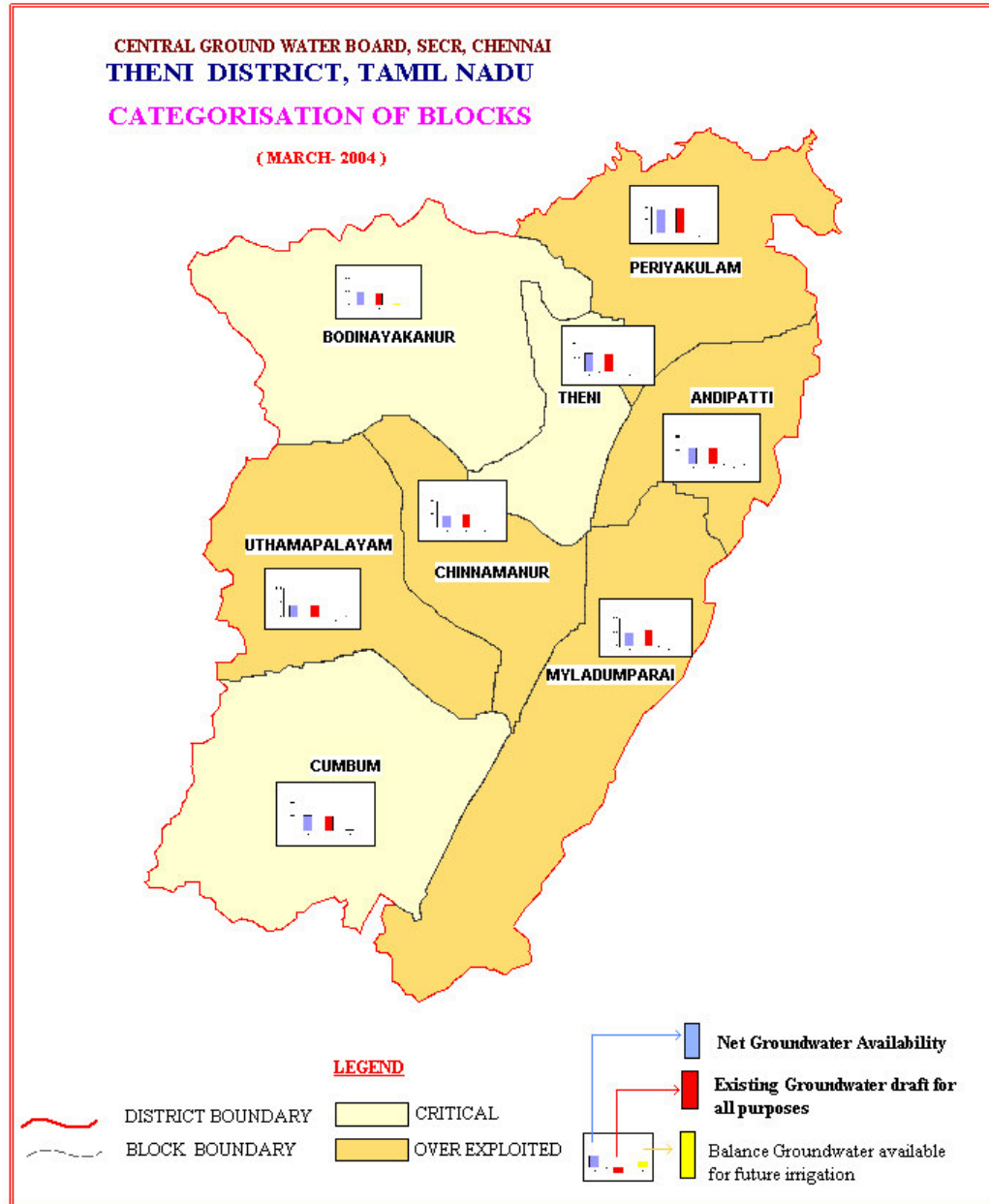
**DEPTH TO WATER LEVEL (m bgl.)**



CENTRAL GROUND WATER BOARD, SECR, CHENNAI  
**THENI DISTRICT, TAMIL NADU**

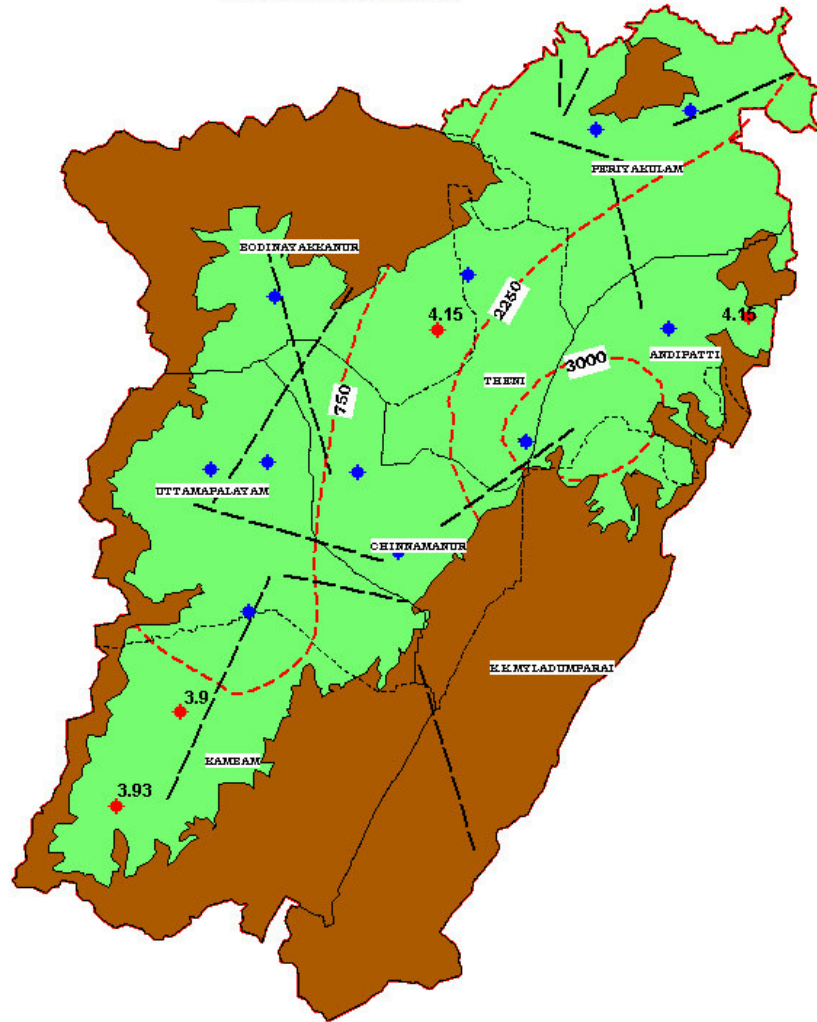
**CATEGORISATION OF BLOCKS**

(MARCH-2004)









CENTRAL GROUND WATER BOARD, SECR, CHENNAI  
THENI DISTRICT, TAMIL NADU  
HYDROGEOLOGY





LEGEND OVER LEAF

**LEGEND FOR PLATE V**

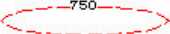

**ADMINISTRATIVE SETUP**

-  DISTRICT BOUNDARY
-  BLOCK BOUNDARY
-  HILLY AREA
-  TRIANGULATION HEIGHT  
[ elevation in m. amsl ]


**GROUND WATER HYDROLOGY**


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

**HYDROCHEMISTRY**

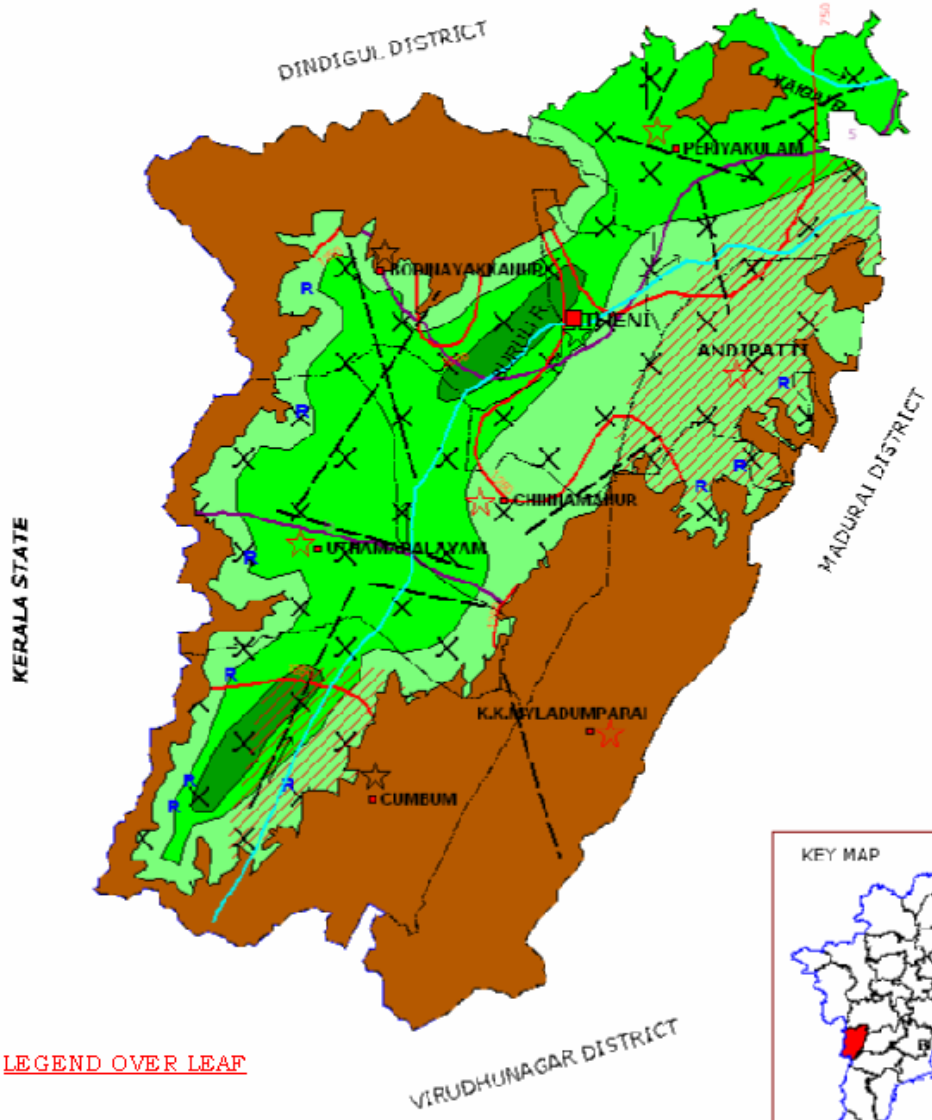
-  ISOCONS [ Sp ELECTRICAL CONDUCTANCE [  $\mu\text{s / Cm}$  at 25° C ]
-  FLORIDE > 1.5 [ mg/l ]

**STRUCTURE**

-  TRACE OF LINEAMENT















<b><u>AQUIFER</u></b>	<b><u>AGE</u></b>	<b><u>LITHOLOGY</u></b>	<b><u>GROUND WATER CONDITIONS</u></b>	<b><u>YIELD PROSPECTS (CU.M/D)</u></b>	<b><u>GROUND WATER DEVELOPMENT STRATEGIES</u></b>
	CONSOLIDATED	ARCHAEAN GRANITES, GNEISSES, CHARNOCKITE.	DISCONTINUOUS, UNCONFINED TO SEMICONFINED AQUIFERS, RESTRICTED TO WEATHERED RESIDIUM AND FRACTURES	< 50 NEAR WATERSHED DIVIDES & HIGH GROUNDS. 50 - 200 NEAR THIRD ORDER STREAMS AND LOW GROUNDS.	SUITABLE FOR DEVELOPMENT THROUGH DUG WELLS. BOREWELLS FEASIBLE IN FRACTURE ZONES, BEST LOCATIONS BEING INTERSECTION OF FRACTURES

CENTRAL GROUND WATER BOARD, SECR, CHENNAI.  
**GROUND WATER DEVELOPMENT POTENTIAL AND  
ARTIFICIAL RECHARGE PROSPECTS**  
**THENI DISTRICT, TAMIL NADU**



**LEGEND PLATE VI**

**DISTRICT – THENI**

	<b>Wells Feasible</b>	<b>Rigs Suitable</b>	<b>Depth Of Well (M)</b>	<b>Discharge (LPM)</b>	<b>Suitable Artificial Recharge Structures</b>
 Hard Rock Aquifer	Dug Well Dug Cum Bore Well Bore Well	Manual Manual + DTH DTH	10 – 20 20 + 80 75-150	10 - 60	Check Dams Across River & At Foothills Percolation Ponds
 Hard Rock Aquifer	Dug Well Dug Cum Bore Well Bore Well	Manual Manual + DTH DTH	15 - 20 20 – 75 75 - 150	60 - 120	Check Dams Across River & At Foothills Percolation Ponds
 Hard Rock Aquifer	Dug Well Dug Cum Bore Well Bore Well	Manual Manual + DTH DTH	10 – 20 15 – 20 +50 – 60 100 - 150	More than 180	Percolation Ponds
	State Boundary			District Boundary	
	Block Boundary		<b>R</b>	Recommended Site For Artificial Recharge Structure	
	District Headquarter			Block Headquarters	
	Water Level-Pre-Monsoon (Decadal Mean 1993-2002) Mbgl			EC In Microsiemens / Cm At 25°C	
	River			Hilly Area	
	Fluoride Greater Than Maximum Permissible Limit (1.5mg/L)			Lineament	

**OTHER INFORMATION**

Geographical Area	2889.23 Sq.Km.
No. Of Blocks	8
Major Drainage	Vaigai
Population (2001)	10,49,323
Average annual Rainfall	709.5-880.8 mm
Annual Range of Temperature	20 - 44°C
Regional Geology	<b>Hard Rocks:</b> Charnockites, Granite and Gneisses
Net Ground Water Availability For Future Irrigation	Nil
Stage of Ground Water Development as on 31 <sup>st</sup> March 2004	104 %
Name Of Blocks Showing Intensive Ground Water Development	<p>★ 4) <b>Over-Exploited:</b> Andipatti, Chinnamanur, 5) Myladumparai, 6) Periyakulam, Uthamapalayam 7)</p> <p>★ <b>Critical:</b> Bodinaikkanur, Cumbum, Theni</p>

**SAVE WATER**

**AND**

**CONSERVE WATER**

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