For official use

Technical Report Series

DISTRICT GROUNDWATER BROCHURE KARUR DISTRICT, TAMIL NADU

A SUBBURAJ
SCIENTIST-D

Government of India
Ministry of Water Resources

Central Ground Water Board

South Eastern Coastal Region
Chennai

April 2008

DISTRICT AT A GLANCE (KARUR DISTRICT)

S.NO	ITEMS	STATISTICS	
1.	GENERAL INFORMATION		
	i. Geographical area (Sq. Km)	2895.57	
	ii. Administrative Divisions AS on (31-3-2007) Number of Tehsils Number of Blocks Number of Villages	 04 08 203	
	iii. Population (As on 2001 Censes) Total Population Male Population Female Population	 935686 465538 470148	
	iv. Average Annual Rainfall (mm)	635.60	
2.	GEOMORPHOLOGY		
	i. Major physiographic Units	Upland plateau region with hills and undulating plain.	
	ii. Major Drainages	Cauvery, Amaravathy, Nanganji. Kodavanar, Pungar,	
3.	LAND USE (Sq. Km)		
	i. Forest area ii. Net area sown iii. Cultivable area	61.87 1117.19 67.83	
4.	MAJOR SOIL TYPES	Red soil, Thin red loam, Red loam and River alluvium.	
5.	AREA UNDER PRINCIPAL CROPS IN Ha. (AS ON 31.3.2007)	1.Paddy – 18395 (16.05%) 2.Ground nut- 8887 (7.76%) 3.Sugarcane - 7187 (6.30%) 4.Cholam- 21064 (18.39%)	
6.	IRRIGATION BY DIFFERENT SOURCES	Number	Area irrigated
	i. Dug wells	49529	32807
	ii. Tube wells/ Bore wells	1769	5187
	iii. Tanks/Ponds	266	601
	iv. Canals	23	16114
	v. Other Sources	NA	NA
	vi. Net irrigated area	54709	
	vii. Cross irrigated area	57393	

7.	NUMBERS OF GROUND WATER MONITORING STATIONWELLS OF CGWB (AS ON 2007)		
	i. No of dug wells	08	
	ii. No of piezometers	05	
8.	PREDOMINANT GEOLOGICAL FORMATIONS	River alluvium, Granites, Quartzite, Charnockites and Gneisses.	
9.	HYDROGEOLOGY		
	i. Major water bearing formations	Alluvium, weathered, fractured and fissured Crystalline rocks.	
	ii. Pre- monsoon depth to water level (2006)	1.97 – 7.80	
	iii. Pre- monsoon depth to water level (2006)	1.35 - 6.83	
	iv. Long term water level trend in 10 years (1997-2006) in m/yr	Rise (m/year)	Fall (m/year)
		Min.-0.0222 Max.-0.5556	Min.-0.2231 Max.-0.3657
10.	GROUND WATER EXPLORATION BY CGWB (As on 31-03-2007)		
	i. Number of Exploratory wells drilled ii. Number of Observation wells drilled iii. Number of Piezometers drilled	48 09 05	
	iv. Depth range (m)	115.00 – 200.00	
	v. Discharge (Litres per second)	0.50– 14.00	
	vi. Specific capacity (Lpm/m)	6.89 – 117.92	
	vii. Transmissivity (m2/day)	11.42 – 669.12	
11.	GROUND WATER QUALITY		
	i. Presence of chemical constituents more than permissible limit	TH as Ca Co3, No3 and F	
	ii. Type of water	Na Cl, Ca Cl, Mg Cl and NaHCo3	
12.	DYNAMIC GROUND WATER RESOURCES (2004) in mcm		
	i. Annual Replenishable Ground Water Resources	321.45	
	ii. Net Annul Ground Water Draft	220.15	
	iii. Projected demand for Domestic and Industrial Uses upto 2025	18.33	
	iv. Stage of Ground Water Development	68.5	

13.	AWARENESS AND TRAINING ACTIVITY		
	i. Mass Awareness Programmes Organized	Nil	Nil
	Date	--	--
	Place	--	--
	No of Participants		
	ii. Water Management Training Organized	Nil	Nil
	Date	--	--
	Place	--	--
	No of Participants	--	--
14.	EFFORTS OF ARTIFICIAL RECHARGE & RAINWATER HARVESTING		
	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	02	
	ii. Number of Critical Blocks	Nil	
	iii. Number of Blocks Notified	Nil	
16.	MAJOR GROUND WATER PROBLEMS AND ISSUS	1)High level of ground water development. 2) Declining of ground water level and drying of shallow wells. 3) Incidence of fluoride in ground water. 4) Local pollution of Surface and ground water by industrial units.	

1.0 INTRODUCTION

1.1 Administrative Details

Karur district is divided into 4 taluks. The taluks are further divided into 8 blocks, which further divided into 203 villages.

S.No.	Name of taluk	Area in ha.	No. of villages	Name of blocks	Area in ha.	No. of villages
1	Karur	60643	52	1. Karur	24335	26
				2. Thanthoni	36308	26
2	Aravakurichi	97616	58	1. Aravakurichi	43689	22
				2. K.Paramathi	53927	36
3	Kulithalai	49081	45	1.Kulithalai	18903	24
				2. Thogamalai	30178	21
4	Krishnarayapuram	82217	48	1. Krishnarayapuram	39503	28
				2. Kadavur	42714	20
	Total	289557	203		289557	203
Source: Department of Statistics, Karur						

1.2 Basin and sub-basin

Karur district is falling in Cauvery river basin as per the Irrigation Atlas of India. The district is divided in to three Minor basins, namely Kulithalai, Amaravathi and Thiruchi minor basin.

1.3 Drainage

Major part of Karur district is drained by Cauvery River. Amaravathi, Kodavanar and Pungar are the important rivers draining the western part of the district and the river Pungar drains in eastern part of the district. The drainage pattern, in general, is dendritic. All the rivers are seasonal and carry substantial flows during monsoon period.

The river Cauvery is flowing on the northern and eastern boundaries. The river Amaravathi is flowing through Kparamathi, Aravakurichi, Thanthoni and Karur blocks and joins with Cauvery at Nerur.

Kodavanar**,** which is one of the important tributary of Amaravathi River, drains the western part of the district. Originating in Rangamalai hills located in the boarder of Karur and Dindigul district,. It flows from south to north and joins with the river Amaravathi at Karuvadampatti.

The Nanganji river, flowing in the western part of the district, has its origin from the Kottaivali hills in Dindigul district. It flows towards north through Aravakurichi and K.Paramathi blocks and joins with the river Amaravathi at Ariyur.

The Pungar river, flowing across the eastern part of the district, has its origin in the Kadavur hills located in the southern part of Karur district. It flows towards north through Kadavur and Krishnarayapuram blocks and joins with the river Cauvery at Timmachalapuram.

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	6187
2	Barren & Uncultivable Lands	2901
3	Land put to non agricultural uses	37264
4	Cultivable Waste	67831
5	Permanent Pastures & other grazing lands	10801
6	Groves not included in the area sown	1278
7	Current Fallows	4774
8	Other Fallow Lands	46802
9	Net Area sown	111719
Total		289557

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

The data available indicate that an area of about 54709 ha, which is about 18.89 percent of the total geographical area of the district is under irrigated agriculture. Dug wells are the major source of water for irrigation in the district, accounting for about 59.97 percent of the total area irrigated in the district. Tube wells accounting for about 9.48 percent of the total area irrigated in the district. Of the net are irrigated, the canal irrigated area is only 29.45 percent. The area irrigated under tank is 1.10 percent. It is observed that the well irrigation is the highest in Thogamalai block followed by Kadavur block. Canal irrigation is highest in Kulithalai block followed by Krishnarayapuram, Karur and K.Paramathy blocks.

Block wise and source wise net area irrigated (2005-2006)

Sl. No	Name Of Block	Net Area Irrigated by					Total Net Area Irrigated
		Canals	Tanks	Bore wells	Dug wells	Other Sources	
1	Aravakurichi	0	39	1032	2908	0	3979
2	K.Paramathy	1605	0	864	1801	0	4270
3	Kadavur	0	140	954	5716	0	6810
4	Karur	2825	0	480	3458	0	6763
5	Krishnarayapuram	3225	163	460	5845	0	9693
6	Kulithalai	7654	104	140	1331	0	9229
7	Thanthoni	207	45	847	3918	0	5017
8	Thogamalai	598	110	410	7830	0	8948
9	Total	16114	601	5187	32807	0	54709

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

1.5 Studies/Activities carried out by CGWB

Hydrogeological studies were taken up in composite Trichirapalli district during 1959 – 1960 as part of the regional systematic ground water surveys by the Geological Survey of India (GSI). The erstwhile Ground Wing of the Geological Survey of India in collaboration with erstwhile Exploratory Tube well Organisation had undertaken the ground water exploration by drilling.

Central Ground Water Board is also carrying out systematic Hydrogeological and Ground Water Management studies and ground water monitoring. Geophysical investigations for assessing the geo-electric characteristics of sub-surface litho-units have also been done by Central Ground Water Board for selection and pin-pointing of sites for exploratory drilling

Central Ground Water Board took up ground water exploration for delineation of aquifers and for assessing their yield characteristics by drilling of exploratory wells during 2002-2003, 2003-2004 and 2006-2007. 48 Exploratory wells and 9 observation wells, ranging in depth from 115.00 m. to 200 m.bgl. were drilled in the district. In additions, Central Ground Water Board has also carried out a number of short – term water supply investigations in the district for various government agencies.

2.0 RAINFALL AND CLIMATE

The district receives the rain under the influence of both southwest and northeast monsoons. The northeast monsoon chiefly contributes to the rainfall in the district. Most of the precipitation occurs in the form of cyclonic storms caused due to the depressions in Bay of Bengal. The southwest monsoon rainfall is highly erratic and summer rains are negligible. Rainfall data from three stations over the period 1901-2000 were utilised and a perusal of the analysis shows that the normal annual rainfall

over the district varies from about 620 mm to 745 mm.It is the minimum around Aravakurichi (622.7mm) in the western part of the district. It gradually increases towards eastwards and attains a maximum around Kulithalai (744.6mm).

The district enjoys a tropical climate. The period from March to may is generally hot and dry. The weather is pleasant during the period from November to January. Usually mornings are more humid than afternoons. The relative humidities are generally between 40 and 80%. But in the period from February to July the air is comparatively drier in the afternoon.

The mean maximum temperature ranges from 26.7 to 38.56 °C and the mean minimum temperature ranges from 18.7°C to 29.3 °C. The daytime heat is oppressive and the temperature is as high as 43.9°C. The lowest temperature recorded is of the order of 13.9°C.

3.0 GEOMORPHYLOGY AND SOIL TYPES

3.1 Geomorphology

The entire area of the district is a pediplain. The Rangamalai hills and Kadavur hills occurring in the southern side of the district constitutes the remnants of the much denuded Eastern Ghats and rise to heights of over 1031 m above mean sea level. From these hills the district slopes gently towards north east and forms a vast stretch of plain country till the eastern boarder of the district. There are numerous small residual hills represented by Ayyarmalai, Thanthonimalai and Velayuthampalayam hills. The general elevation of the area is ranging between 100 m and 200m above mean sea level

The prominent geomorphic units identified in the district through interpretation of Satellite imagery are 1) Structural hill, 2) Pediments, 3) Shallow Pediments, 4) Buried Pediments and 5) Alluvial plain.

3.2 Soils

The soils of Karur district can be broadly classified into 4 major soils types viz., Red Soil, Thin Red Soil, Red Loam and River Alluvium Soil. Red soil is the predominant one covering major part of the district followed by Thin Red soil and Red loam. The red soils are predominantly seen in Kadavur, Kulithalai, Krishnarayapuram, Thanthoni and Thogamalai blocks. The thin red soils are seen in Aravakurichi and K.Paramathiy blocks. Major portion of the Karur block is covered by red loam.

4.0 GROUND WATER SCENARIO

4.1 Hydrogeology

Karur district is underlain entirely by Archaean Crystalline formations with Recent alluvial deposits occurring along the river and streams courses. Weathered, fissured and fractured crystalline rocks and the recent alluvial deposits constitute the important aquifer systems in the district.

The porous formations in the district are represented by river alluvium. These alluvial deposits are confined to the Major River and stream courses only. Ground water occurs under phreatic conditions. The maximum saturated thickness of these aquifers is upto 10 m depending upon the topographic conditions.

The hard consolidated crystalline rocks of Archaean age represent weathered, fissured and fractured formations of gneisses, granites, charnockites and other associated rocks. Ground water occurs under phreatic conditions in the weathered mantle and under semi-confined conditions in the fractured zones. The thickness of the weathered mantle of the hard rocks is varying from less than a meter to as much as 20.10 m. It is within the depth of 15m in major part of the district.

The Specific capacity of large diameter wells tested in crystalline rocks from 31 to 200 lpm / m. of drawdown. The yield characteristics of wells vary considerably depending on the topographic set-up, lithology and the degree of weathering.

The yield of bore wells drilled down to a depth of 70 to 100 m, by various state agencies mainly for domestic purposes ranged from 100 to 600 lpm. The yield of successful bore wells drilled down to a depth of 200 m bgl during the ground water exploration programme of Central Ground Water Board ranged from 0.50 to 14.00 lps. The aquifer and well parameters of the wells show wide variation.

The depth to water level in the district varied between 1.97 – 7.80 m bgl during pre-monsoon period (May 2006) and varied between 1.35 – 6.83 m bgl during post monsoon depth to water level (Jan 2007).

The seasonal fluctuation shows a rise in water level, which ranges from 0.46 to 1.98 m. The piezometric head varied between 3.53 to 5.34 m bgl (May 2006) during pre monsoon and 2.04 to 7.59 m bgl during post monsoon.

4.1.1 Long Term Fluctuation (1998-2007)

The long-term water level fluctuation for the period 1997-2007 indicates rise in water level in the area 0.00222 - 0.5556 m/year and the fall in water level ranging between 0.0202 - 0.2748 m.year.
Aquifer Parameters

The specific capacity in the weathered, partly weathered and jointed rocks varies from 31 to 240.5 lpm/m/dd and the Transmissivity values in weathered, partly weathered and jointed rocks vary from 15.5 to 154 m2/day. The optimum yield varied from 45.40 to 441.60 m3/day. The specific capacity in the fissured and fractured formation ranges from 6.89 to 117.92 lpm/m/dd and the Transmissivity values ranges from 11.42 to 669.12 m2/day.

In the porous formation the specific capacity values vary from 135 to 958 lpm/m.dd and the Transmissivity values ranged from 67.5 to 264.5 m2/day. The optimum yield varied from 232.8 to 549.6 m3/day.

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 31st March 2004. The salient features of the computations are furnished below. The computation of ground water resources available in the district has been done using GEC 1997 methodology.

Computation of Ground Water Resources of Namakkal District, Tamil Nadu (2004) (in ha.m) (As per GEC 1997 Methodology)								
Name of Block	Net Ground Water Availability	Existing Gross Draft for Irrigation	Existing Gross Draft for Domestic and Industrial Water Supply	Allocation for Domestic and Industrial Requirement supply upto next 25 years (2029)	Gross Ground Water Draft for all Uses	Net Ground Water Availability for future Irrigation Development	Stage of Development (%)	Category as on January -2004
Aravakurichi	2637.91	2014.62	183.44	190.59	2198.07	432.70	83	Semi Critical
K.Paramathy	5258.25	1001.01	197.63	205.32	1198.64	4051.92	23	Safe
Kadavur	3642.16	4345.52	158.08	164.23	4503.59	-867.59	124	Over Exploited
Karur	3598.31	1976.24	308.61	320.63	2284.85	1301.44	63	Safe
Krishnaraya-puram	4978.99	4024.42	263.07	273.32	4287.49	681.25	86	Semi Critical
Kulithalai	5062.39	1319.03	231.22	240.22	1550.25	3503.13	31	Safe
Thanthoni	3096.50	3629.81	256.17	266.15	3885.98	-799.46	125	Over Exploited
Thogamalai	3870.52	1939.74	166.34	172.82	2106.09	1757.96	54	Safe
	32145.03	20250.39	1764.56	1833.28	22014.96	10061.36		

4.3 Ground Water Quality

Ground water in phreatic aquifers in Karur district is in general colorless, odorless and predominantly alkaline in nature. The specific electrical conductance of ground water in phreatic zone (in Micro Seimens at 25 o C) during May 2006 was in the range of 1520 to 4670. Major part of the district electrical conductivity is between 1500 and 3000 µS cm.

It is observed that only in selected places of the district, the ground water is suitable for drinking and domestic uses in respect of all the constituents. The total Hardness as CaCo3 as well as nitrate is observed to be in excess of permissible limits in about 44 and 78 percent of samples analysed. Fluoride in excess of the drinking water limit of 1.5 mg/l is observed in 44 percent of the samples.

The incidence of high total hardness and fluoride is attributed to the composition of litho units constituting the aquifers in the district, whereas the nitrate pollution is most likely due to the use of fertilizers and other improper waste disposal. Excess of

fluoride is observed in places such as Noyil, Chinna Dharapuram, Paramathi and Aravakirichi.

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

4.4 Status of Ground Water Development

The estimation of groundwater resources for the district has shown that 2 blocks are over exploited and 2 blocks are under "semi critical" category. Tamil Nadu Water Supply and Drainage (TWAD) Board is the Government agency responsible for providing drinking water supplies to the urban and rural populace in the district. The water requirements of the habitations are met with either through surface water sources or through various Mini Water Supply Schemes or Integrated water supply schemes utilising the available ground water resources. The status of urban and rural water supply in the district is furnished below

Total Number of Rural Habitants	: 1829
Not Covered	: 5 (0-9 Lpcd)
Partly Covered	: 621 (10-39 Lpcd)
Fully Covered	: 1203(40 Lpcd and above)

The habitants of 4 Municipalities and 11 Town Panchayats are provided with 90 and 70 Lpcd water respectively.

Dug wells and bore wells are the most common ground water abstraction structures used for irrigation in the district. The yield of dug wells range from 50 to 3 00 lpm for draw down varying from 0.5 to 3.5 m for a pumping period of 1 to 4 hours.

5.0 GROUNDWATER MANAGEMENT STRATEGY

5.1 Groundwater Development

In view of the comparatively high level of ground water development in the major part of the district and the quality problems due to lithogenic and anthropogenic factors, it is necessary to exercise caution while planning further development of available ground water resources in the district.

The development of ground water for irrigation in the district is mainly through dug wells tapping the weathered residuum. The yields of dug wells are improved at favorable locations by construction of extension bores, which are 50 to 100m. deep. Bore wells have also become popular as the source for irrigation in the district in recent years. Dug wells with extension bores wherever necessary is ideal for hard rock areas whereas large diameter dug wells with radial well is suitable for alluvial areas. The map showing the development prospects for the district is shown in Plate VI

5.2 Water Conservation and Artificial Recharge

On the basis of experimental studies, it has been found that desilting of existing tanks followed by percolation pond with recharge wells, recharge shafts are economical. Accordingly, computations have been made for Drought Prone Area Programme (DPAP). Over exploited and Critical blocks in the districts warranting immediate attention. A summary giving the availability of surface run off, number of structures feasible and cost estimates for the schemes is provided in the table.

Recharge pits / Shafts / trenches of suitable design are ideal structures for rain water harvesting in this district. Free technical guidance for implementation of rooftop rain water harvesting schemes is also being provided by Central Ground Water Board.

6.0 GROUNDWATER RELATED ISSUES & PROBLEMS

The development of ground water in the district, in general, is moderate when compared to many other districts in the state. As many as 2 out of 8 blocks in the district have been categorised as either 'OVEREXPLOITED' or 'DARK'. The trend analysis of historical ground water level data also indicates a long-term fall in a major part of the district. Based on the factors mentioned, it is inferred that a major part of the district could be considered vulnerable to various environmental impacts of water level depletion such as declining ground water levels, drying up of shallow wells, decrease in yield of bore wells.

Incidence of high TDS, Chloride and Nitrate has been reported from localised areas. Ground water in small packets of the district is likely to cause high to very high salinity hazard when used for irrigation. Higher concentration Chloride and Nitrate has been observed mainly from the water samples collected from phreatic aquifer.

Excessive use of fertilisers and pesticides in the areas with intensive irrigation practices has also reportedly resulted in localised enrichment of nitrate and other harmful chemicals in the ground water, especially in the phreatic zone.

Incidence of fluoride in ground water in excess of permissible limits for drinking has been reported from parts of the district, especially from the fracture zone. The source of fluoride in ground water is the fluoride-bearing minerals present in the granitic gneisses and granites, which underlie in the area.

7.0 AWARENESS & TRAINING ACTIVITY

7.0 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. 53 has banned groundwater development for irrigation in the over exploited blocks of Tamil Nadu. The over exploited blocks in this district are Kadavur and Thanthoni.

8.0 RECOMMENDATIONS

As the development of ground water has already reached an alarming stage in two blocks of this district, further development of ground water for creation of additional irrigation potential has to be carried out with extreme caution.

Necessary measures for regulation of ground water abstraction from over-exploited and critical blocks may be initiated without further delay.

Artificial recharge of ground water through cost-effective rainwater harvesting systems may be popularised in the district by providing incentives to individuals/communities embarking upon such initiatives. A concerted effort involving various Government agencies and NGOs can create the necessary awareness among the rural masses.

PLATE - I

CENTRAL GROUND WATER BOARD, SECR, CHENNAI

KARUR DISTRICT, TAMIL NADU

LOCATION

(NOT TO SCALE)

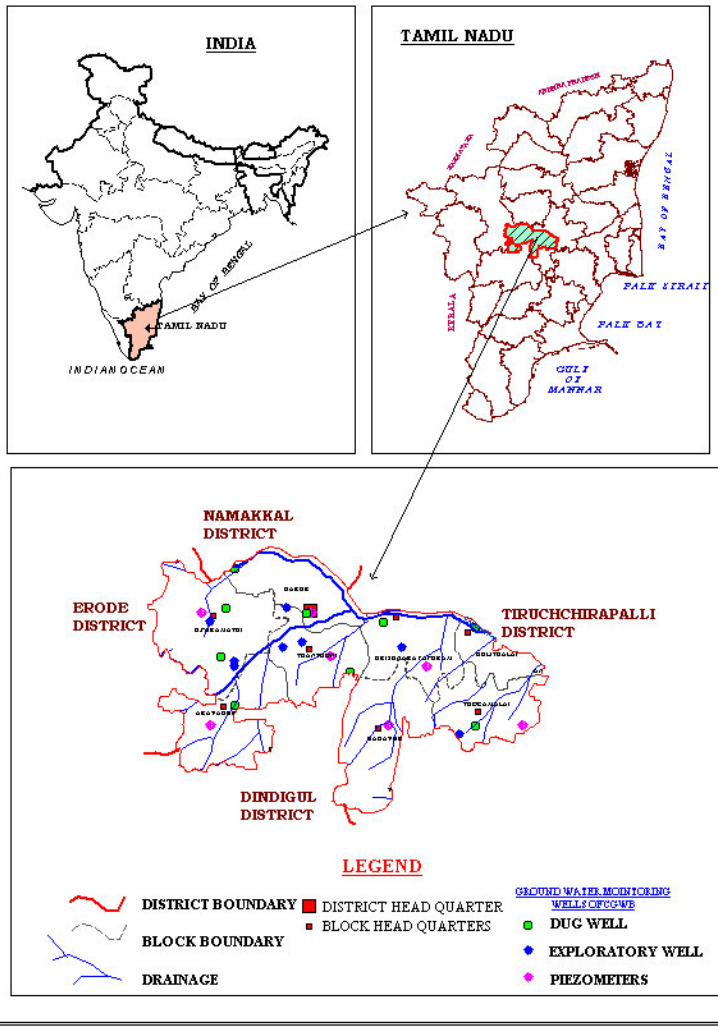
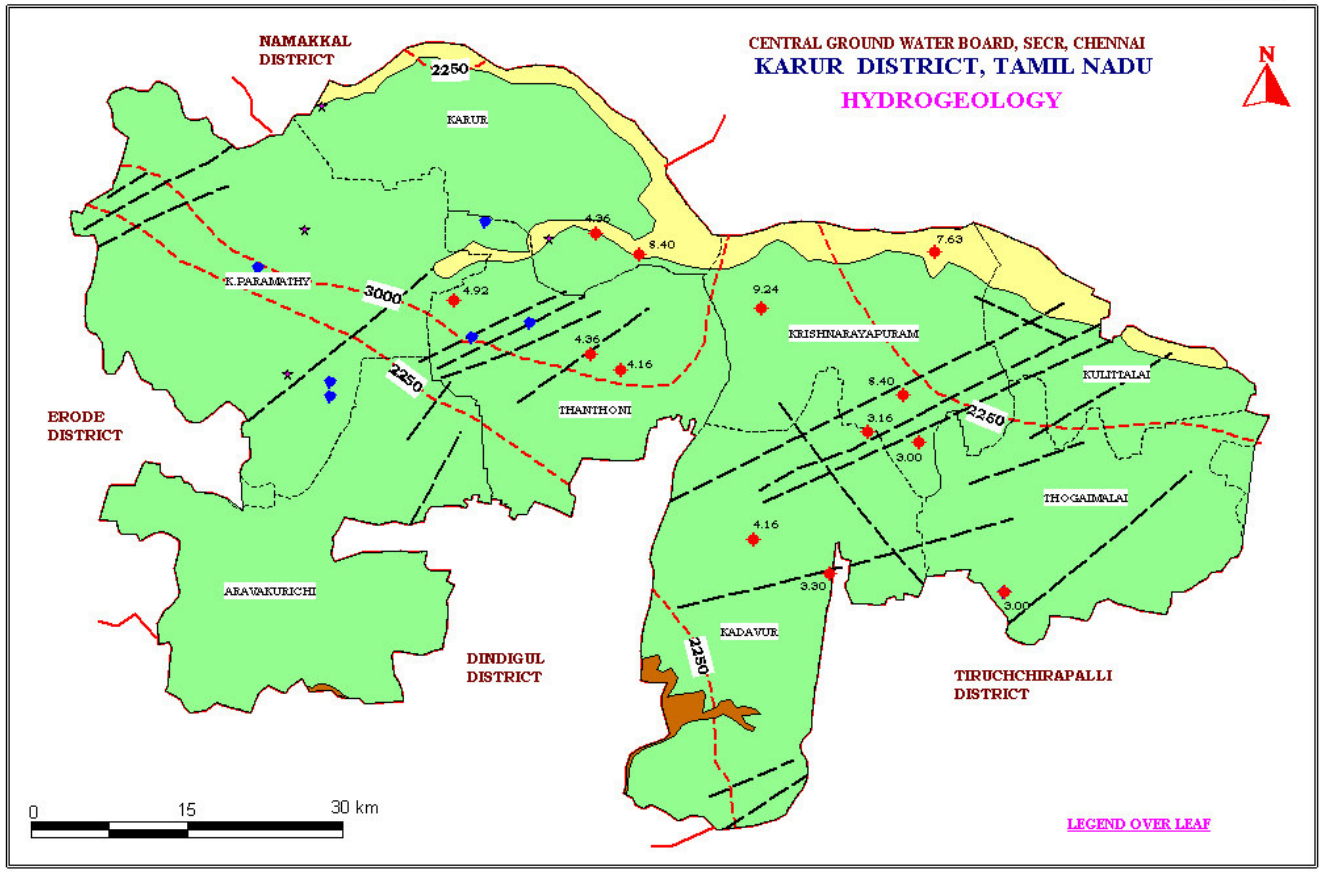


PLATE - II


CENTRAL GROUND WATER BOARD, SECR, CHENNAI
KARUR DISTRICT, TAMIL NADU
HYDROGEOLOGY
N
NAMAKKAL DISTRICT
KARUR
K.PARAMATHY
THANTHONI
KRISHNARAYAPURAM
KULITTALAI
THOGAIMALAI
KADAVUR
ARAVAKURICHI
ERODE DISTRICT
DINDIGUL DISTRICT
TIRUCHCHIRAPALLI DISTRICT
2250
3000
4.36
8.40
4.92
4.36
4.16
9.24
7.63
8.40
3.16
3.00
4.16
3.30
3.00
0
15
30 km
LEGEND OVER LEAF

LEGEND FOR PLATE - II

ADMINISTRATIVE SETUP

DISTRICT BOUNDARY

BLOCK BOUNDARY

HILLY AREA

GROUND WATER HYDROLOGY

EXPLORATORY BORE WELL [CGWB]

HIGH YIELDING BORE WELL [CGWB]

FLORIDE > 1.5 (mgl)

HYDROCHEMISTRY

750 ISOCONS [Sp ELECTRICAL CONDUCTANCE [µS /Cm at 25° C]

STRUCTURE

TRACE OF LINEAMENT

	AQUIFER	AGE	LITHOLOGY	GROUND WATER CONDITIONS	YIELD PROSPECTS (lpm)	GROUND WATER DEVELOPMENT STRATEGIES
	UNCONSOLIDATED	RECENT	RIVER ALLUVIUM,	THIN, UNCONFINED AQUIFERS	500-1000	DEVELOPMENT THROUGH LARGE DIAMETER DUG WELLS
	CONSOLIDATED	ARCHAEAN	GRANITE, GNEISSES, CHARNOCKITE	DISCONTINUOUS, UNCONFINED TO SEMICONFINED AQUIFERS, RESTRICTED TO WEATHERED RESIDUUM AND FRACTURES	100-600	SUITABLE FOR DEVELOPMENT THROUGH DUG WELLS. BOREWELLS FEASIBLE IN FRACTURE ZONES, BEST LOCATIONS BEING INTERSECTION OF FRACTURES

PLATE - III

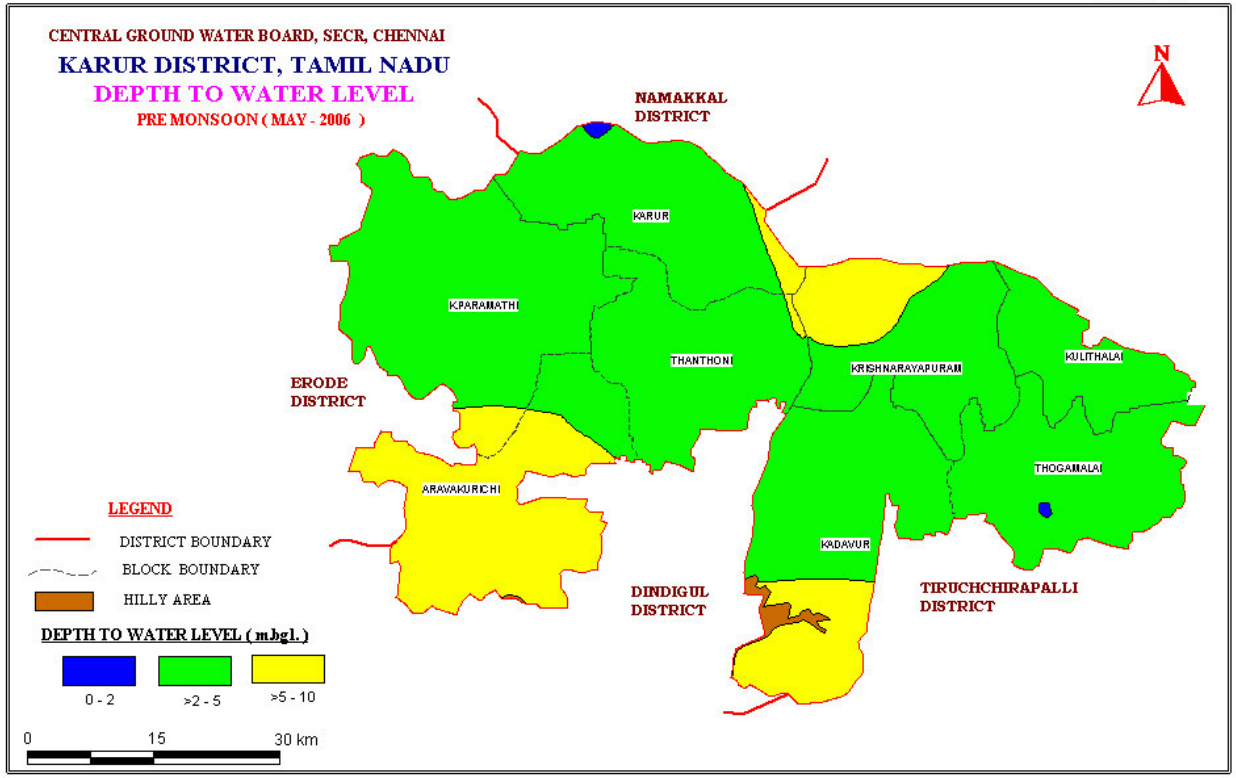

CENTRAL GROUND WATER BOARD, SECR, CHENNAI
KARUR DISTRICT, TAMIL NADU
DEPTH TO WATER LEVEL
PRE MONSOON (MAY - 2006)
N
NAMAKKAL DISTRICT
KARUR
KPARAMATHI
THANTHONI
KRISHNARAYAPURAM
KULITHALAI
THOGAMALAI
KADAVUR
ARAVAKURICHI
ERODE DISTRICT
DINDIGUL DISTRICT
TIRUCHCHIRAPALLI DISTRICT
LEGEND
DISTRICT BOUNDARY
BLOCK BOUNDARY
HILLY AREA
DEPTH TO WATER LEVEL (m.bgl.)
0 - 2
>2 - 5
>5 - 10
0
15
30 km

PLATE - IV

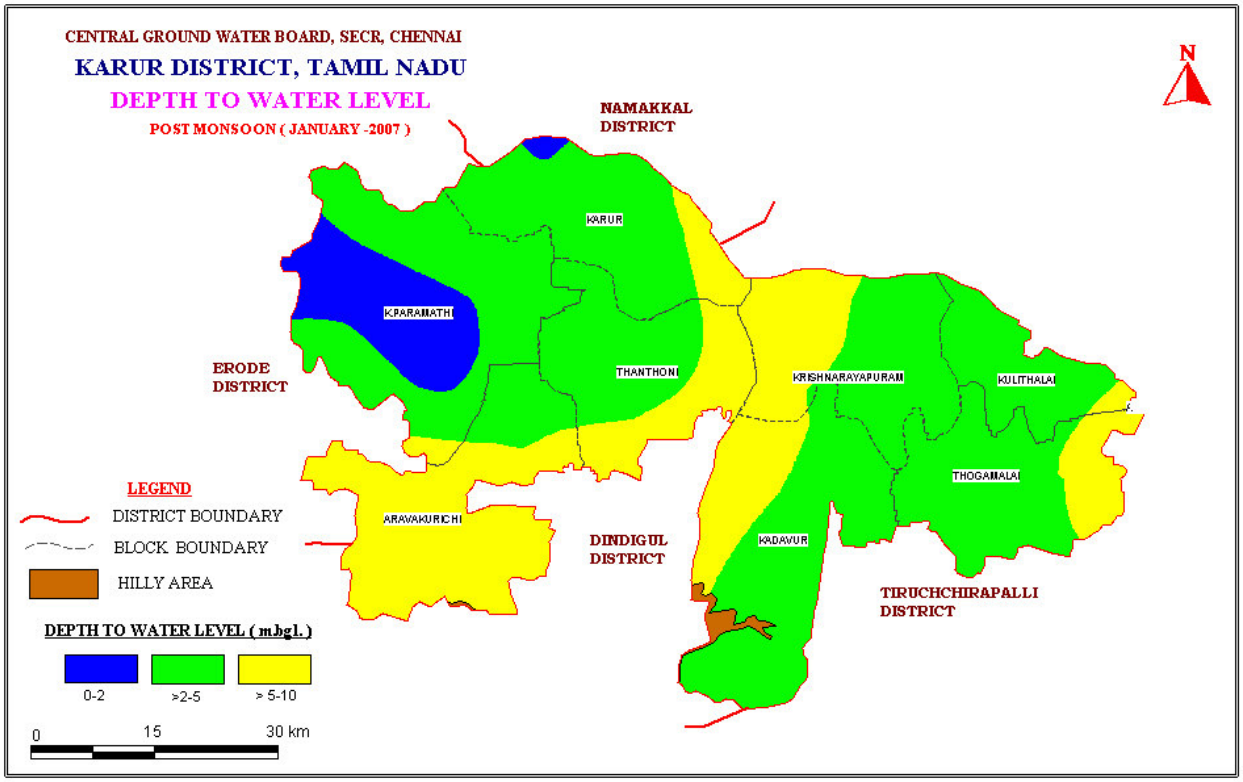

CENTRAL GROUND WATER BOARD, SECR, CHENNAI
KARUR DISTRICT, TAMIL NADU
DEPTH TO WATER LEVEL
POST MONSOON (JANUARY -2007)
N
NAMAKKAL DISTRICT
KARUR
KPARAMATHI
ERODE DISTRICT
THANTHONI
KRISHNARAYAPURAM
KULITHALAI
THOGAMALAI
ARAVAKURICHI
DINDIGUL DISTRICT
KADAVUR
TIRUCHCHIRAPALLI DISTRICT
LEGEND
DISTRICT BOUNDARY
BLOCK BOUNDARY
HILLY AREA
DEPTH TO WATER LEVEL (m.bgl.)
0-2
>2-5
> 5-10
0
15
30 km

PLATE - V

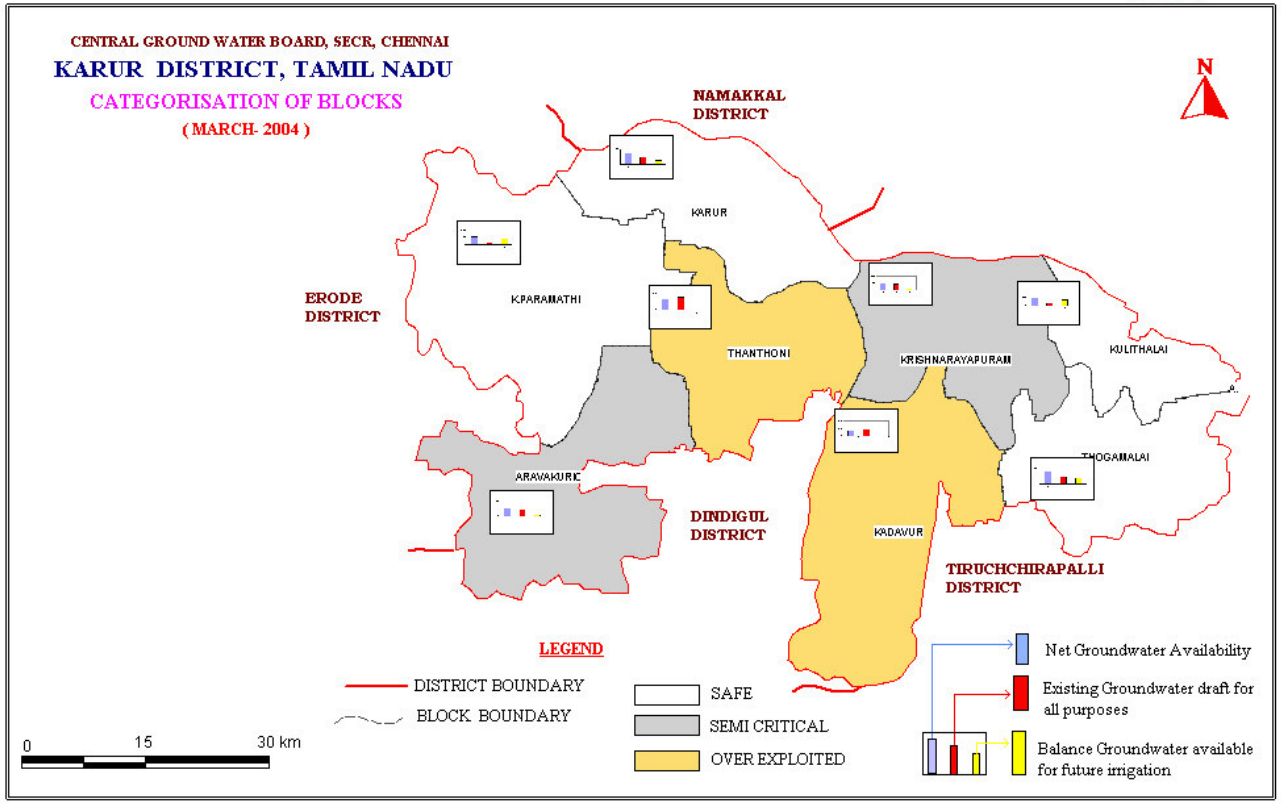
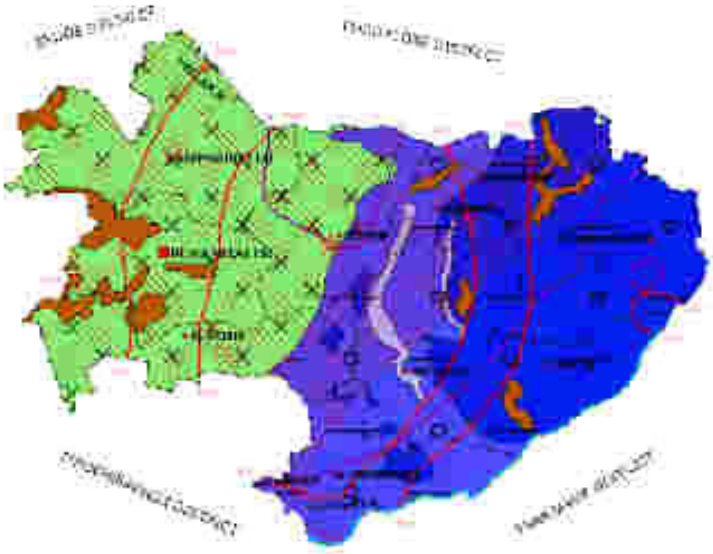

CENTRAL GROUND WATER BOARD, SECR, CHENNAI
KARUR DISTRICT, TAMIL NADU
CATEGORISATION OF BLOCKS
(MARCH- 2004)
N
NAMAKKAL DISTRICT
KARUR
KPARAMATHI
ERODE DISTRICT
THANTHONI
KRISHNARAYAPURAM
KULITHALAI
THOGAMALAI
ARAVAKURIC
DINDIGUL DISTRICT
KADAVUR
TIRUCHCHIRAPALLI DISTRICT
LEGEND
DISTRICT BOUNDARY
BLOCK BOUNDARY
SAFE
SEMI CRITICAL
OVER EXPLOITED
Net Groundwater Availability
Existing Groundwater draft for all purposes
Balance Groundwater available for future irrigation
0
15
30 km

PLATE - V

CENTRAL GROUND WATER BOARD, SOUTHERN REGION

GROUND WATER DEVELOPMENT POTENTIAL AND ARTIFICIAL RECHARGE PROSPECTS KURNOOL DISTRICT, TAMIL NADU



LEGEND OVERLEAF

LEGEND PLATE FOR VI

DISTRICT – KARUR

	Wells Feasible	Rigs Suitable	Depth Of Well (M)	Discharge (LPM)	Suitable Artificial Recharge Structures
Soft Rock Aquifer	Filter Point Tube Well	Manual Hand Drive Set	10-30	180 -300	Recharge Tube Well
Hard Rock Aquifer	Dug Well Dug Cum Bore Well Bore Well	Manual Manual + DTH DTH	10-20 20 - 75 75-200	60 - 100	Check Dams/ Percolation Ponds/Farm Ponds
Hard Rock Aquifer	Dug Well Dug Cum Bore Well Bore Well	Manual Manual + DTH DTH	10-20 20 - 75 75-200	60 - 180	Check Dams/ Percolation Ponds
	District Boundary			Block Boundary	
	District Headquarters			Block Headquarters	
5	Water Level-Pre-Monsoon (Decadal Mean 1993-2002) Mbgl		1250	EC In Microsiemens / Cm At 25°C	
	River			Lineament	
	Fluoride Greater Than Maximum Permissible Limit (1.5mg/L)			Nitrate Greater Than Maximum Permissible Limit (45mg/L)	
	Hilly Area				

OTHER INFORMATION

Geographical Area	3647 Sq.Km.
No. Of Blocks	11
Major Drainage	Cauvery
Population (2001)	11,78,209
Average Annual Rainfall	741 Mm
Annual Range Of Temperature	26 – 40°C
Regional Geology	**Hard Rocks:** Granites, Gneisses and Basic Rocks
Net Ground Water Availability For Future Irrigation	104 MCM/Yr
Stage Of Ground Water Development As On January 2003	66 %
Name Of Blocks Showing Intensive Ground Water Development	☆ **Over Exploited**: Kadavur & Thanthoni

SAVE WATER

AND

CONSERVE WATER

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