DISTRICT AT A GLANCE

DINDORI DISTRICT

MADHYA PRADESH

Ministry of Water Resources

Central Ground Water Board

North Central Region

BHOPAL

2013

DINDORI DISTRICT AT A GLANCE

S.No.	Items	Statistics	
1.	**General Information**		
	i) Geographical area	5725 Sqkm^2	
	ii) Administrative Divisions Number Blocks Number of Villages	 7 926	
	iii) Population (Census 2011)	704,218	
	iv) Normal Annual Rainfall (mm)	1376.7	
2.	**Geomorphology**		
	1.Major Physiographic Units:	Maikal Range	
	2.Major Drainage: Narmada	Narmada	
3.	**Land Use ('000Ha)**		
	i) Forest area:	25.3	
	ii) Net area sown:	203.7	
	iii) Cultivable area:	268.9	
4.	**Major Soil Types**	Black cotton soil	
5.	**Principal Crops**	Wheat, Paddy, Jowar, Maize	
6.	**Irrigation By Different Sources**	No.	Area irrigated ('000Ha)
	Dugwells	397	0.2
	Canals	38	1.1
	Other Sources	697	0.4
	Net Irrigated Area	-	1.7
	Gross Irrigated Area	-	1.7
7.	**Number of Ground Water Monitoring Wells of CGWB (As on 31.3.2013)**		
	No. of Dug Wells No. of Piezometers	18 3	
8	**Predominant Geological Formations**	Deccan Trap basalts , Lameta formation and Archaeans	
9	**Hydrogeology** Major Water Bearing Formation Pre-monsoon depth to water level during 2012 Post-monsoon depth to water level during 2012 Long Term water level trend in 10 years (2003-2012) in cm/yr	Weathered/vesicular basalt, flow contacts and fractured basasalt, Lameta Sandstone Weathered & fractures Granites 3.15 to 12.35 m bgl 0.52 to 7.50 m bgl 1.47 to 13.25 (Fall)	

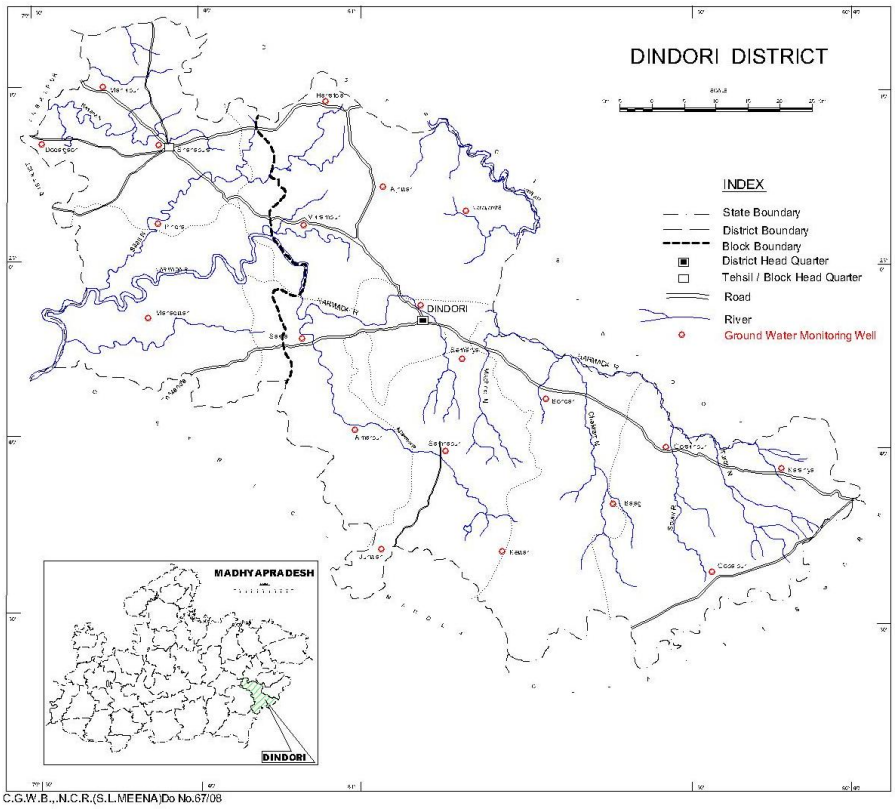
10.	**Ground Water Exploration By CGWB (As on 31.3.2013)**	
	No of wells drilled (EW, OW, PZ, SH, Total)	EW-35 OW -11 Pz-20
	Depth Range (m)	50-203.30
	Discharge (liters per second)	0.5-12
	Specific Capacity lpm/m	-
	Transmissivity (m^2 /day)	-
11.	Ground Water Quality	
	Presence of Chemical constituents more than permissible limit (e.g. EC, F, As, Fe)	EC-240-1202, Nitrate-5-41 Flouride-0.02-1.85
	Type of Water	Alkaline
12	**Dynamic Ground Water Resources (2009) in ham**	
	Net Annual Ground Water Availability	40555
	Existing Gross Ground Water Draft	3125
	Projected Demand for Domestic and Industrial Uses upto next 25 years	1678
	Stage of Ground Water Development	8%
13	**Awareness and Training Activity**	
	Mass Awareness Programmes Organi	Nil
	Water Management Training Programmes	Nil
14	**Efforts of Artificial Recharge & Rainwater Harvesting**	
	Projects completed by CGWB (No. & Amount Spent)	Nil
	Projects under technical guidance of CGWB (Numbers)	Nil
15	**Ground Water Control and Regulation**	
	Number of OE Blocks	Nil
	Number of Semi-Critical Blocks	Nil
	Number of Notified Blocks	Nil
16	**Major Groundwater Problems and Issues**	Deterioration of Groundwater quality

Introduction:

Dindori District is a district of Madhya Pradesh state of central India. The town of Dindori is the district headquarters. The district is part of Jabalpur Division. The district (area: 5725 sq. km) is located on the eastern part of Madhya Pradesh, bordering the state of Chhattisgarh. Dindori is located between Latitude 80.35 to 80.58 and Longitude 22.17 to 23.22. It has an average elevation of 640 metres (heighest evlevation at 1100 mamsl). It is surrounded by Shahdol in the east, Mandla in the west, Umaria in the north, and Bilaspur district of the state of Chhattisgarh in the south (fig 1). It is divided into seven blocks namely Dindori, Shahpura, Mehadwani, Amarpur, Bajag, Karanjiya and Samnapur.

According to the 2011 census, Dindori District has a population of 7,04,218. The district has a population density of 94 inhabitants per square kilometre. The Baiga are a predominant tribe.Around 64% of the total population belongs to the ST groups.

65 million old plant fossils are found in this district and attempts are made to protect the fossils at Ghughua Fossil Park.



Drianage:

The district is mainly drained by river Narmada and its tributaries.

Physiography:

District is hilly and forested (Maikal hill range) and highly undulating with narrow strip of cultivated plains in the valley portion of river and nala. The highest elevation 1100 m amsl in the district.

Climate and Rainfall:

Climate of the district is tropical with moderate winter and severe summers and well distributed rainfall received from southwest monsoon. However due to higher general elevation and abundance of forests, summer temperature do not rise as much as in other areas. The normal annual rainfall of Dindori district is 1376.7mm.

GEOLOGY

The area is underlain by various geological formations ranging in age from Archaean to recent. The general geological succession occurring in the Dindori region is given in table 1.

Table 1: Geological succession of Dindori region

Formation	Age	Litho- characteristic
Alluvium	Recent	Sand , gravels and clay
Laterite	Pleistocene	Compact, ferruginous and weathered product of Deccan trap
Deccan trap	Cretaceous to Eocene	Basaltic lava flows
Lameta bed	Lr.Cretaceous	Limestone & sandstone
Archean	Precambrian	Granite & Gneiness

HYDROGEOLOGY

There are 4 distinct water bearing formation in the area which are as follows :

(i) Alluvium

(ii) Basaltic lava flows (Deccan trap)

(iii) Inter trappean/infra trappean bed

(iv) Granite

The nature and extent of aquifer and its continuity shows wide variation as the formation exhibits four separate episode of tectonic activity with development of fairly persistent intertrapean bed.

Alluvium : Alluvium covers area along Narmada river. The ground water is alluvium generally occurs under unconfined condition at shallow depth (upto 22 mbgl). Alluvium comprises clay, silt and gravel/pebbles and fine to medium grain. Granular zone occurs at 16.0 to 18.0 m bmgl. The nature of gravel and fine sand exhibits its origin from grainitic terrain.

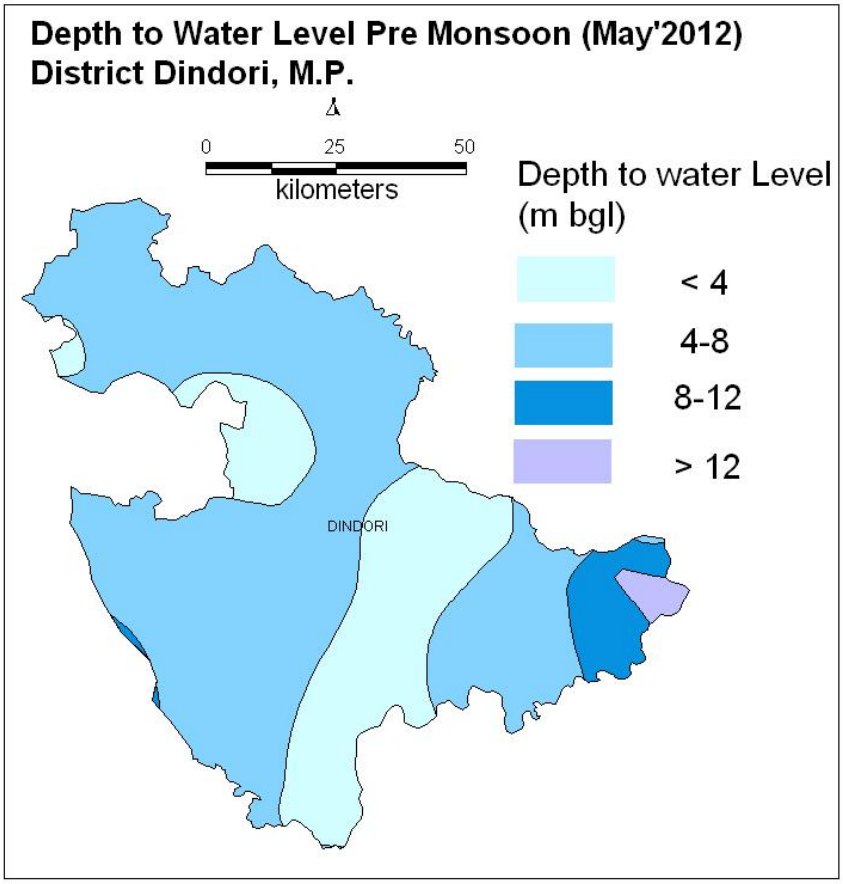
Deccan traps: Basaltic lava flows is the main water bearing formation of the area. Each individual basaltic flows shows lot of variation in lithological and structure features, which influence occurrence, movement and recharge of ground water in the area. These laterally and vertically variation in characteristic in basaltic flow give rise to varying degree of ground water productivity. Degree of weathering and topographic setting plays major role in respect of productivity of wells. In basaltic formation ground water occurs in weathered mantle, joints, fractured and other similar zone of weakness. The basaltic flow unit shows vertical variability in permeability. The inter flow zone between two basaltic flows at depth act as conduits for ground water flows. Ground water is basalt occurs under confined to semi confined and unconfined conditions.

Water Levels

Ground water levels form a very important parameter of the ground water system. The groundwater balance expresses itself in the change in water levels; hence a continuous record is important and useful. CGWB has 18 National Hydrograph Monitoring wells and 3 Peizometers in Dindori district.

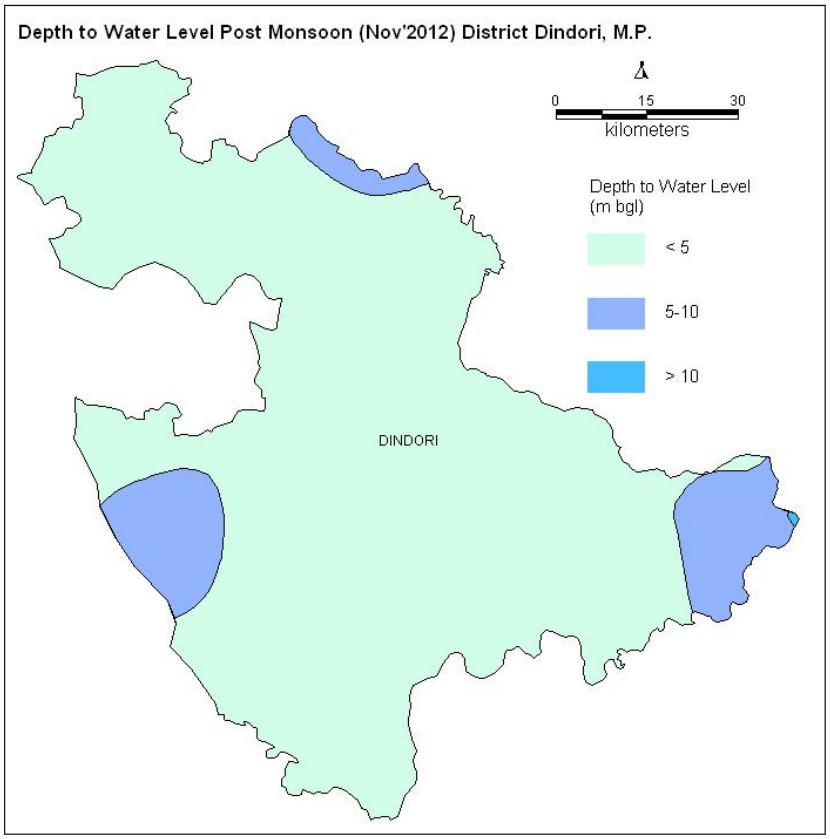
Pre Monsoon Depth to Water Level (May-2012)

In general depth to water level in the area ranges from 3.15 to 12.35 m below ground level. However, in major part the depth to water level is less than 8 mbgl. Shallow DTW of less than 4 mbgl are observed in considerable area in central part. Deeper DTW of more than 12 mbgl are observed in small area in north eastern part.



Post Monsoon Depth to water level (November-2012)

In general, during post-monsoon period, depth of water levels in the district ranges between 0.52 and 7.50 m below ground level. However, in major part the depth to water level is less than 5 mbgl.



GROUND WATER RESOURCES (2009)

Dindori district is underlain by Deccan trap basalts. Dynamic ground water resources of the district have been estimated for base year -2008/09 on block-wise basis. There are seven assessment units (block) in the district which fall under non-command sub units. All blocks of the district are categorized as safe blocks, and highest stage of ground water development is computed as 9.7 % for Shahpura Block. The net ground water availability in the district is 40,555 ham and Ground Water Draft for all uses is 3,125 ham, making stage of ground water development 8 % as a whole for district . After making allocation for future domestic and industrial supply for next 25 years, balance available ground water for future irrigation would be 37,107 ham, at 50 % stage of ground water development's safe limits in the district.

DYNAMIC GROUND WATER RESOURCES (As on March, 2009)										
S. No.	Assessment Unit	Sub-unit Command/ Non-Command/	Net Annual Ground water Availability (ham)	Existing Gross Ground water Draft for Irrigation (ham)	Existing Gross Ground water Draft for Domestic & Industrial water Supply (ham)	Existing Gross Ground water Draft for All uses (ham)	Provision for domestic, and industrial requirement supply to next 25 year (2033) (ham)	Net Ground water Availability for future irrigation development (ham	Stage of Ground water Development (%)	Category
	Amerpur	Command								
		Non-Command	3399	122	139	261	164	3114	8	Safe
		Block Total	**3399**	**122**	**139**	**261**	**164**	**3114**	**8**	Safe
	Bajag	Command								
		Non-Command	3611	97	178	275	234	3280	8	Safe
		Block Total	**3611**	**97**	**178**	**275**	**234**	**3280**	**8**	Safe
	Dindori	Command								
		Non-Command	7824	263	302	565	384	7176	7	Safe
		Block Total	**7824**	**263**	**302**	**565**	**384**	7176	7	Safe
	Karanjia	Command								
		Non-Command	5764	182	171	353	196	5385	6	Safe
		Block Total	**5764**	**182**	**171**	**353**	**196**	**5385**	**6**	Safe
	Mahdwani	Command								
		Non-Command	5306	166	154	320	183	4957	6	Safe
		Block Total	**5306**	**166**	**154**	**320**	**183**	**4957**	**6**	Safe
	Samnapur	Command								
		Non-Command	4687	235	163	398	205	4247	8	Safe

		Block Total	**4687**	**235**	**163**	**398**	**205**	**4247**	**8**	Safe
	Shahpura	Command								
		Non-Command	9964	705	249	953	312	8948	10	Safe
		Block Total	**9964**	**705**	**249**	**953**	**312**	**8948**	**10**	Safe
		District Total	**40555**	**1770**	**1355**	**3125**	**1678**	**37107**	**8**	

Hydrochemistry:

The Electrical conductance ranges from 240 to 1202 micro mhos per cm at 25°C. The nitrate ranges from 5 mg/l to 41 mg/l. The concentration of Fluoride is high in parts of the district it ranges from 0.02 mg/l to 1.85 mg/l.