GROUNDWATER BROCHURE

RAE BARELI DISTRICT, U.P.

By
A.K. Bhargava
Scientist 'C'

CONTENTS

PLATES:

RAE BARELI DISTRICT AT GLANCE

1.	**GENERAL INFORMATION**			
	(i)	Geographical Area (Sq km)	:	3232.36
	(ii)	Administrative Division	:	5/18 Block 18
	(iii)	Population (As on 2001 Census)	:	2872335
	(iv)	Average Annual Rainfall (mm)	:	1150
2.	**GEOMORPHOLOGY**			
		Major Physiographic Units	:	Older and Younger Alluvium
		Major Drainages	:	Ganga, Sai
3.	**LAND USE (Sq. Km.) (2010-11)**			
	(i)	Forest Area	:	53.44
	(ii)	Net Area Sown	:	1816.77
	(iii)	Cultivable Area	:	2541.66
4.	**MAJOR SOIL TYPES**		:	Sandy Loam
5.	**AREA UNDER PRINCIPAL CROPS Sq. Km. (2010-11)**		:	Wheat, Paddy
6.	**IRRIGATION BY DIFFERENT SOURCES**			
	(Areas and Numbers of Structures)			
	(i)	Dugwells	:	1.33
	(ii)	Tubewells / Borewells	:	959.43
	(iii)	Tanks / Ponds	:	0.68
	(iv)	Canals	:	630.43
	(v)	Other Sources	:	0.21
	(vi)	Net Irrigated Area	:	1592.08
	(vii)	Gross Irrigated Area	:	2398.60
7.	**NUMBERS OF GROUND WATER MONITORING WELLS OF C.G.W.B. (As on 31-3-2007)**			
	(i)	No. of Dug Wells	:	48
	(ii)	No. of Piezometers	:	1
8.	**PREDOMINANT GEOLOGICAL FORMATIONS**		**:**	Alluvium

9.	**HYDROGEOLOGY AND AQUIFER GROUP**		
	Major Water Bearing Formation	:	Sand Granular Material
	(Pre-monsoon Depth to Water Level During May' 2012)	:	1.6 to 23.25 m bgl
	(Post- monsoon Depth to Water Level During Nov' 2012)	:	1.55 to 22.05 m bgl
	Longterm Water Level Trend in 10 Years (2003-2012) in m/yr	:	Pre-monsoon Rise 0.03 to 0.22 Fall 0.003 to 0.70 Post-monsoon Rise 0.001 to 0.29 Fall 0.023 to 0.37
10	**GROUND WATER EXPLORATION BY C.G.W.B. (As on 31-3-2012)**		
	No. of Wells Drilled (EW, OW, PZ, SH, Total)	:	14
	Depth Range (m)	:	308.76 to 610 mbgl
	Discharge (litre per minute)	:	1752 to 2530 lpm
	Storativity (S)	:	$1.47\times10E^{-4}$ to $3.7\times10E^{-6}$
	Transmissivity (m^2/day)	:	1357 to 4340 m^2/day
11	GROUND WATER QUALITY		
	Presence of Chemical Constituents More Than Permissible Limit (e.g. EC, F, As, Fe)	:	Fluoride
	Type of Water	:	Good
12	**DYNAMIC GROUND WATER RESOURCES (2004) – in MCM**		
	Annual Replenishable Ground Water Resources	:	1295.56
	Gross Annual Ground Water Draft	:	903.58
	Projected Demand for Domestic Industrial Uses upto 2025	:	127.81
	Stage of Ground Water Development	:	76.85
13	**AWARENESS AND TRAINING ACTIVITY**		
	Mass Awareness Programmes Organized	:	-
	Date		-
	Place		-
	No. of Participants		-
	Water Management Training Programme Organized	:	1
	Date	:	30.6.2005
	Place	:	RDA Auditorium, Rae Bareli

	No. of Participants	:	
14	**EFFORTS OF ARTIFICIAL RECHARGE & RAINWATER HARVESTING**		
	Projects Completed by C.G.W.B. (No. & Amount Spent)	:	One
	Projects Under Technical Guidance of C.G.W.B. (Numbers)	:	Vikas Bhawan Govt. Polytechnic Firoz Gandhi College
15	**GROUND WATER CONTROL AND REGULATION**		
	Number of OE Blocks	:	-
	Number of Critical Blocks	:	01
	Number of Blocks Notified	:	-
16	**MAJOR GROUND WATER PROBLEMS AND ISSUES**	:	Declining Trend of Water Level

GROUND WATER BROCHURE

RAEBARELI DISTRICT, U.P.

By
A.K. Bhargava
Scientist 'C'

1.0. INTRODUCTION

1.1 Administrative Details:

Rae Bareli district is having 5 Tehsils and 18 Blocks.

Administrative Set-up of Rae Bareli District, U.P.

Sl. No.	Tehsils	Blocks	Area (sq. km.)
1.	Rae Bareli	Rahi	291.93
		Harchandpur	204.93
		Satawan	232.95
		Amawan	199.93
2.	Dalmau	Dalmau (+ Dinshahgaura))	244.73
		Jagatpur	126.14
		Gaura	163.24
3.	Lalganj	Lalganj	222.84
		Kheron	210.04
		Sareni	257.61
4.	Salon	Salon	329.48
		Unchahar (+ Rohania)	213.21
		Chatton	174.73
		Deeh	202.17
		Rohania	119.67
5.	Maharajganj	Maharajganj	240.49
		Bachhrawan	275.24
		Shivgarh	195.63

1.2 Basin and Sub-Basin:

The district occupies the central part of Ganga-Ghaghra basin and Gomti-Sai sub-basins.

1.3 Drainage:

District is divided into two equal halves by river Sai which flows in a more or less south easterly direction, becoming east-west and north-south stream in small segments. The area of the district falls in the drainage basin of Ganga and Sai river, a tributary of river Ganga river itself. A small northern part falls in the drainage basin of river Gomti. The major part of the district is drained by river Sai and its tributaries, whereas southern and south-western part close to river Ganga is drained by river Ganga and its tributaries.

1.4 Irrigation Practices:

The land use pattern for the district is given below:

Total Area	-	3232.36 sq km.
Total Forest Area	-	53.44 sq km
Barron Land Suitable for Cultivation	-	125.06 sq km.
Total Follow Land	-	599.83 sq km.
Barren Land	-	98.63 sq km
Pasture	-	28.40 sq km.
Garden	-	124.39 sq km.
Net Cultivated Area	-	1816.77 sq km.
Area Sown More Than Once	-	1010.96 sq km.
Gross Cultivated Area	-	2827.73 sq km.

There are two main crop seasons in a year, Kharif (June to October) and Rabi (October to April). The Kharif main crops are Paddy, Maize, Jowar etc. while in Rabi main crops are Wheat, Barley, Pulses and Sugarcane.

Major irrigation from surface water is by Sarda canal system. Northern part of the district is irrigated by Rae-Bareli and Jaunpur Branch canals and their distributaries. The southern part falling between river Sai and Ganga is irrigated by Purwa branch canals and its

distributaries. Irrigation by ground water is about 52% of net area irrigated. The area irrigated by different sources is as follows:

Source of Irrigation		***Area Irrigated***
Canals	:	630.43 sq.km.
State Tubewells	:	19.58 sq.km.
Private Tubewells	:	939.85 sq.km.
Other Sources	:	2.22 sq.km.

1.5 Studies, Activities Carried Out by C.G.W.B.:

Systematic hydrogeological surveys were undertaken by G.S.I. in 1in the year 968-69. Re-appraisal hydrogelogical surveys were undertaken in the year 1988-89 and 1992-93. Few short term investigations comprising of hydrogeological and geophysical surveys have been conducted in order to delineate areas suitable for construction of tubewells.

Central Ground Water Board has drilled 13 exploratory wells and 2 slim holes in Rae Bareli district. The depth of wells ranges from 308 m to 610 m and yield varies from 1610 to 2530 liter per minute (lpm).

C.G.W.B. is monitoring the ground water regime for the changes in water level and water quality through 65 numbers of dug wells. The monitoring of water levels are carried out during May (Pre-monsoon), August, November (Post-monsoon) and January to study the impact of rainfall on ground water regime. Water samples are collected during may for determining the changes in chemical quality of ground water.

2.0 RAINFALL AND CLIMATE

The average annual rainfall is 1150 mm. The climate is sub humid and it is marked by a hot summer from March to early June with large variation of temperature and it is followed by rainy season starting from June and continued to September. About 80% of rainfall is received during rainy season. Surplus water during the monsoon period is available for deep percolation to ground water.

There is a nearest meteorological observatory at Sultanpur, so the records of it may be taken as representative for meteorological condition for Raebareli district also. The rise in

day temperature is rapid and maximum temperature exceeded 38^0C in early May and minimum temperature to10 ^{0}C. Both the day and night temperature rises till May when maximum temperature reaches to 48^0C. With the advance of the monsoon about middle of June there is appreciable drop in day temperature. While night temperature falls slightly. January is usually the coldest month with the mean daily maximum temperature at about 23^0C and mean daily minimum at about 8^0C. The mean monthly maximum temperature is 32.4^0C and mean monthly minimum temperature is 19^0C.

During monsoon season air is very humid and relative humidity is high. The mean monthly morning relative humidity is 65% and evening relative humidity is 51%.

The winds are generally light except in the summer. The mean wind velocity is 4.4 km/ hr. The potential evapotranspiration is 1424.5 mm.

3.0 GEOMORPHOLOGY & SOIL TYPES

3.1 Geomorphology:

The prominent geomorphic units identified in the district through interpretation of satellite images are

(i) Younger flood plain.
(ii) Older flood plain / Intermediate surface.
(iii) Composite flood plain or upland interfluve area.

Younger Flood Plain:

The area adjacent to active river channel, subjected to flooding during monsoon and forming terraces at different elevations, has been included in the younger flood plain.

Older Flood Plain / Intermediate Surface:

Characterised by a flat gently sloping surface with break in slope at places as well as with fluvial land forms such as oxbow lakes, cut off meanders, break in slopes and minor meander scrolls. A number of terraces can be identified.

Composite Flood Plain or Upland Interfluve Area:

This unit is restricted between the major drainage systems and is almost 6-7 m higher than the adjoining younger flood plain. The natural levee is still higher and 1-2 m higher than this land surface.

3.2 Soils:

Soils in the district exhibits wide variance in composition and appearance. They can be classified into following categories.

3.2.1 Bhur or Silty Sand:

Occur on ridges, very close to river channels. Supports vegetation and is permeable.

3.2.2 Matial or Clay:

Occur in the topographic lows and depressions in upland interfluves areas and suitable for paddy cultivation.

3.2.3 Dumat or Loam:

It occurs in the interfluves and upland plains, close to old channels or river valleys. It is very fertile soil and often gets flooded, at places confined to old flood plain which gets flooded during high floods.

3.2.4 Usar / Alkaline Soils:

It is clay dominant soils; kankar pan is also present at depth very close to surface. The clay bed is overlain by a white salt efflorescence which is due to capillary action within close distance to surface, unsuitable for cultivations. At places where the problem is not acute, paddy is cultivated as soils are covered with water during paddy crop.

4.0. GROUND WATER

4.1 Hydrogeology:

Rae Bareli district is underlain by alluvial sediments of quaternary age. The upper layer of alluvium is composed of sandy loam, silty clays and clays in varying proportions. Minor sand beds are also seen. The thickness of this zone ranges from 5 to 16 m on an average. Kankar is interspersed in clay. Kankar beds at times forming thick layers are also

present at different depths. The kankar beds can be seen in the ravinous area of Ganga and Sai rivers.

Older alluvium occupies a large part of the district in topographic high which do not get flooded, whereas the younger alluvium occupies the area along the river courses forming their food plain and terraces.

The thickness of alluvium is more than 600 m in the northern part as per C.G.W.B. exploratory drilling data, whereas in southern part the thickness of alluvial sediment is about 487.00 mbgl, where bed rock (Buldelkhand Granite) was encountered at 487.80 mbgl at Sultanpur Janaul.

Based on ground water exploration by C.G.W.B. in the area, a four tier aquifer system has been established down to the depth of 600 m bgl.

First Aquifer Group:

This comprises clay sediments and sand beds in different proportions having kankar bed at different depth and occurs generally down to 100 m bgl sometimes occasionally down to 166.00 mbgl as found close to Unchahar village.

The average depth to bottom of this group can be taken as 100 mbgl. Two or three fine grained sand beds are prevalent and variable in their regional extension. They have been harnessed in shallow tubewells. The discharge of the wells ranges from 500 to 1500 lpm.

Second Aquifer Group:

This group exists between the depth of 100-250 m bgl. The formation encountered is isolated sand beds, dominantly fine grained, clays and kankar. The formation water is brackish to saline and not suitable for domestic and agriculture purposes. At places thickness of this zone become too thin and aquifer containing brackish water is not discernable down to drilled depth.

Third Aquifer Group:

This group exists below 140 / 250 mbgl and extends down to 410 / 420 mbgl. The sediments are intercalated sequence of sand and clay beds. Sand is medium to coarse grained with occasional gravel beds. The sand beds are regionally extensive and form the potential

aquifer. Piezometric head varies between 8-15 mbgl and yield varies between 1500-3000 lpm. Quality is good and suitable for drinking / irrigation purposes.

Fourth Aquifer Group:

This group exists below 410 / 420 m and continues down to 550 / 600 mbgl. In this group intercalated sequence of arenaceous to argillaceous sediment exists all over the area. Kankar is practically absent. The quality of water is comparatively poor as compared to IIIrd aquifer.

Ground Water Condition:

Ground water occurs in pore spaces and interstices of unconsolidated alluvial sediments under phreatic to semi confined to confined condition in shallow aquifers. The near surface aquifer is under unconfined / water table condition. The shallow phreatic aquifer is harnessed by dug wells. The depth to water levels ranges from 3.15 to 23.00 mbgl in premonsoon period whereas it ranges from 1.50 to 21 m bgl in post monsoon period. The water level fluctuation varies from 1.50 m to 5.62 m.

4.1.1 Long Term Fluctuation:

The long term water level fluctuation for the period 2003-2013 indicates both rise and fall in water level in the area. In pre monsoon the rise was of the order of 0.03 to 0.22 m/year, while the fall in water level ranges from 0.003 to 0.70 m/year. In post monsoon the rise was of the order of 0.001 to 0.29 m/year, while the fall in water level ranges from 0.023 to 0.23 m/ year.

4.1.2 Aquifer Parameters:

Discharge (litres per second)	=	29 to 42 lpm
Storativity (S)	=	1.47×10^{-4} to 3.7×10^{-6}
Transmissivity (m^2/day)	=	1357 to 4340 m^2/day

4.2 Ground Water Resources:

The ground water resources have been computed jointly by Central Ground Water Board and Ground Water Department, U.P. as n 31st March 2009. The salient features of the computations are furnished below.

Table-1

BLOCK WISE DYNAMIC GROUND WATER RESOURCES OF RAE BARELI DISTRICT, U.P.

As on 31.03.2009

Sl. No.	Assessment Units Blocks/ District	Net annual ground water availability (in ham)	Existing gross ground water draft for all uses (5+7)	Provision for domestic and industrial requirement supply for 2025	Net ground water availability for future irrigation development (4-5-9)	Stage of ground water development (in %)	Category
1	*2*	*4*	*8*	*9*	*10*	*11*	*12*
1.	Amawan	4622.75	3287.99	415.75	1208.50	71.13	SAFE
2.	Bachharawan	5835.81	4952.40	506.23	724.02	84.16	SAFE
3.	Chhatoh	6181.15	3209.32	364.14	2858.86	51.92	SAFE
4.	Dalmau	6826.63	4035.57	545.70	2637.75	59.12	SAFE
5.	Deeh	5048.75	3033.87	410.09	1893.76	60.09	SAFE
6.	Dinshah Gaura	4375.49	3538.24	342.51	727.68	80.88	SAFE
7.	Harchandpur	6316.29	5249.84	445.25	932.37	83.12	SEMI-CRITICAL
8.	Jagatpur	3262.83	2703.66	287.33	470.77	82.86	SAFE
9.	Khiron	5046.33	4050.42	489..81	852.42	80.77	SEMI-CRITICAL
10.	Lalganj	5763.38	4469.28	481.62	1169.48	77.55	SEMI-CRITICAL
11.	Mahrajganj	5165.11	3681.04	443.73	1346.36	71.27	SEMI-CRITICAL

1	*2*	*4*	*8*	*9*	*10*	*11*	*12*
12.	Rahi	6459.71	5994.82	623.89	283.22	92.80	SEMI-CRITICAL
13.	Rohania	3021.19	2008.60	218.25	949.22	66.48	SAFE
14.	Salon	8297.48	5311.20	765.19	2717.61	64.01	SAFE
15.	Saraini	6965.82	6806.86	524.46	26.82	97.72	CRITICAL
16.	Satawan	4882.07	4758.84	494.63	0.00	97.48	SEMI-CRITICAL
17.	Sheogarh	4581.82	3374.25	356.38	1104.91	73.64	SAFE
18.	Unchahar	5651.02	4013.93	547.46	1435..70	71.03	SAFE
	Total	**98303.63**	**74480.13**	**7772.61**	**19903.75**	**74.07**	

4.3 Ground Water Quality:

Ground water quality is generally potable in phreatic aquifer except in certain areas where high fluoride content makes it unsuitable for drinking purposes. The electrical conductivity is in range of 1135 to 3100 μs/cm at 25^{0C} which is high. The total hardness as calcium carbonate is in range of 110 to 590 ppm. Fluoride is under permissible limit i.e. 0.15 to 1.30 except at few places while nitrate is high in some areas and is in range of 0.00 to 128.00. Phosphate is not present. The Arsenic content in the district has been found maximum to 30 micro g/ litre.

4.4 Status of Ground Water Development:

Sl. No.	Blocks	Net ground water availability for future irrigation (in ham)	Stage of ground water development (%)
1.	Amawan	1208.50	71.13
2.	Bachhrawan	724.02	84.16
3.	Chhaton	2858.86	51.92
4.	Dalmau	2637.75	59.12
5.	Deeh	1893.76	60.09
6.	Dinshah Gaura	727.68	80.88
7.	Harchandpur	932.37	83.12
8.	Jagatpur	470.77	82.86
9.	Kheron	852.42	80.77
10.	Maharajganj	1169.48	77.55
11.	Rahi	1346.36	71.27
12.	Rohnia	283.22	92.80
13.	Salon	949.22	66.48
14.	Sareni	2717.61	64.01
15.	Satawan	26.82	97.72
16.	Lalganj	0.00	97.48
17.	Sheogarh	1104.91	73.64
18.	Unchahar	1435..70	71.03
		19903.75	**74.07**

Out of 18 blocks only one block fall under critical category, six blocks falls under semi-critical category and rest 11 blocks falls under safe category and presented in Plate-IV. The percentage wise development is given in Table-1.

5.0 GROUND WATER MANAGEMENT STRATEGY

5.1 Ground Water Development:

Based upon the studies carried out it is observed that water level is declining very fast in some parts of the district and it is recommended that exploitation of ground water through private and state tubewells be restricted in the critical block of Sareni. The declining water level have caused adverse effect on the ecological balance as minor drainage ways which used to have water are now almost dry. This obviously is the result of massive ground water exploitation for irrigation as well as for industrial need in this block. Dug wells have become defunct due to lowering of water table. It is therefore suggested that piezometers should be constructed down to 60.00 m depth to monitor water levels where the dug wells are defunct/ dried up. Exploitation of deeper aquifers shall be done in systematic manner which are capable of yielding good water at moderate draw down.

5.2 Water Conservation and Artificial Recharge:

C.G.W.B. had prepared a master plan to augment ground water potential by saturating the shallow aquifer taking into consideration the available unsaturated space during post monsoon and available non-committed surplus run-off. Subsequently computations have been made for critical blocks in the district warranting immediate attention.

Subsequently state government agencies have constructed artificial recharge structures with their own funds or with fund from central government.

There is considerable scope for implementation of roof top rain water harvesting in the urban areas of the district. Check dams, cement plugs, renovation and construction of ponds with recharge shafts are ideal structures for rain water harvesting in rural areas. Central Ground Water Board is also providing free technical guidance for implementation of roof top rain water harvesting schemes.

6.0 GROUND WATER RELATED ISSUES AND PROBLEMS

The development of ground water in the district, in general is not high. As many as 6 blocks out of 18 blocks in the district have been categorised as critical and semi critical. The trend analysis of historical ground water level data also indicates a long term fall in some part of the district. Based on the factors mentioned, it is inferred that some 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, and decrease in yield of borewells and increased expenditure and power consumption for drawing water from progressively greater depth.

Excessive use of fertilizers and pesticides in agriculture has also reportedly resulted in localized enrichment of Nitrate in the phreatic zone. In certain areas high Fluoride content makes it unsuitable for drinking use.

7.0 AWARENESS AND TRAINING ACTIVITYS

7.1 Mass Awareness Programme (MAP) and Water Management Training Programme (WMTP) by C.G.W.B.

(i)	Mass Awareness Programme	-	Nil
(ii)	Water Management Training Programme	-	One

7.2 Participation in Mela, Exhibition, Fair etc. - Nil

7.3 Presentation and lectures delivered in public from Radio / T.V. / Institution of reputed / Grassroots Associations / NGO / Academic Institution – Delivered one lecture through NGO (Exnora)

8.0 AREA NOTIFIED BY CGWA/SGWA

List of the areas - Nil

9.0 RECOMMENDATIONS

The whole of Rae Bareli district underlain the thick pile of sediments and occupies central part of Ganga-Ghagra doab. Based on the sub-surface information it has been established that a four tier aquifer system, down to the depth of 600 mbgl exist in the district.

The first aquifer with unconfined to semi-confined conditions extends down to a depth of 100 mbgl and occasionally down to 166.00 mbgl as seen closed to Unchahar. The second group of aquifer with varying thickness is encountered between 100/150 – 140/250 mbgl.

The formation water is brackish to saline and not suitable for domestic and agriculture purposes. The third aquifer group exist below 140/250 m and extends down to 410/420 mbgl. Sand in medium to coarse grained with occasional gravel beds. The sand beds are regionally extensive and form the potential aquifer. The fourth group is encountered between 410/420 m to 550/600 mbgl. Quality is comparatively poor as compared to third aquifer group on the basis of electrical log results.

The private tubewells and state tubewells generally tap the first aquifer.

The chemical quality of ground water is generally assessed overall as potable and fit for irrigation.

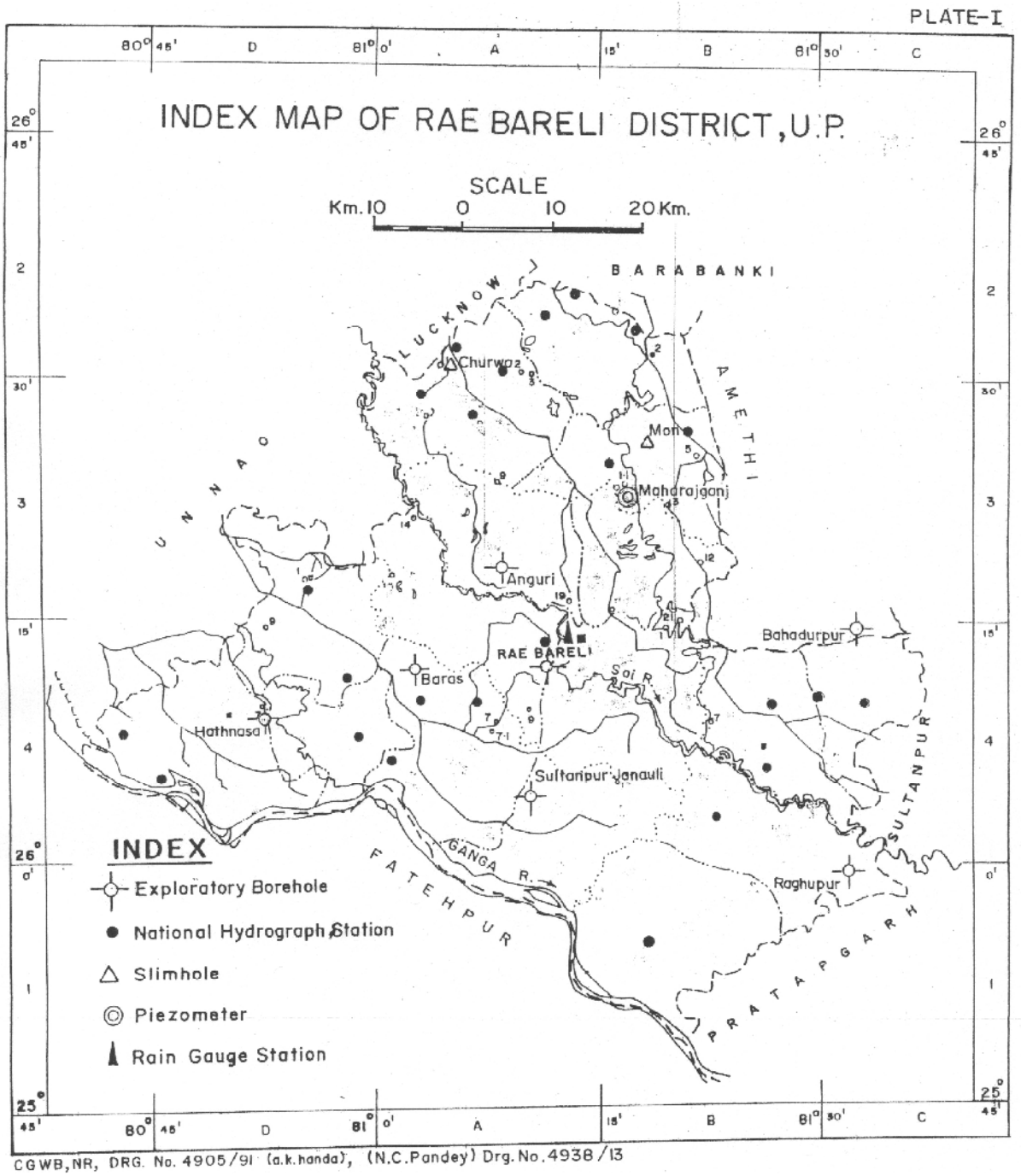
The district is having small land holdings. The fragmented nature of land holdings creates a hardship to an individual former to develop the ground water resources economically. Therefore to bring more area under irrigation to increase the ground water augmentation and increase agricultural productivity following strategy may be adopted.

i. Mass awareness programmes be taken up to educated the user regarding declining of water level in many areas of the district and adopt appropriate cropping pattern accordingly.
ii. Many of the ponds and water bodies are in disuse because of poor maintenance. The formers in the vicinity of such water bodies can be organized on a group basis with a right to maintain and use the water.
iii. Anticipating water scarcity in the future, each villager/ cultivator/ former should be encouraged to take off recharging pits and trenches in their fields.
iv. Adoption of rain water harvesting and artificial recharge in critical and semi critical blocks of the district to arrest surface runoff and augment ground water through check

dams, cement plugs, renovation and construction of ponds with recharge shafts, recharge through dug well in rural area and in urban areas through roof top rain water harvesting

v. In areas where rise in water level is observed especially in canal command areas, the conjunctive use of ground water and surface water should be encouraged.

PLATE-I



CGWB, NR, DRG. No. 4905/91 (a.k.handa), (N.C.Pandey) Drg. No. 4938/13

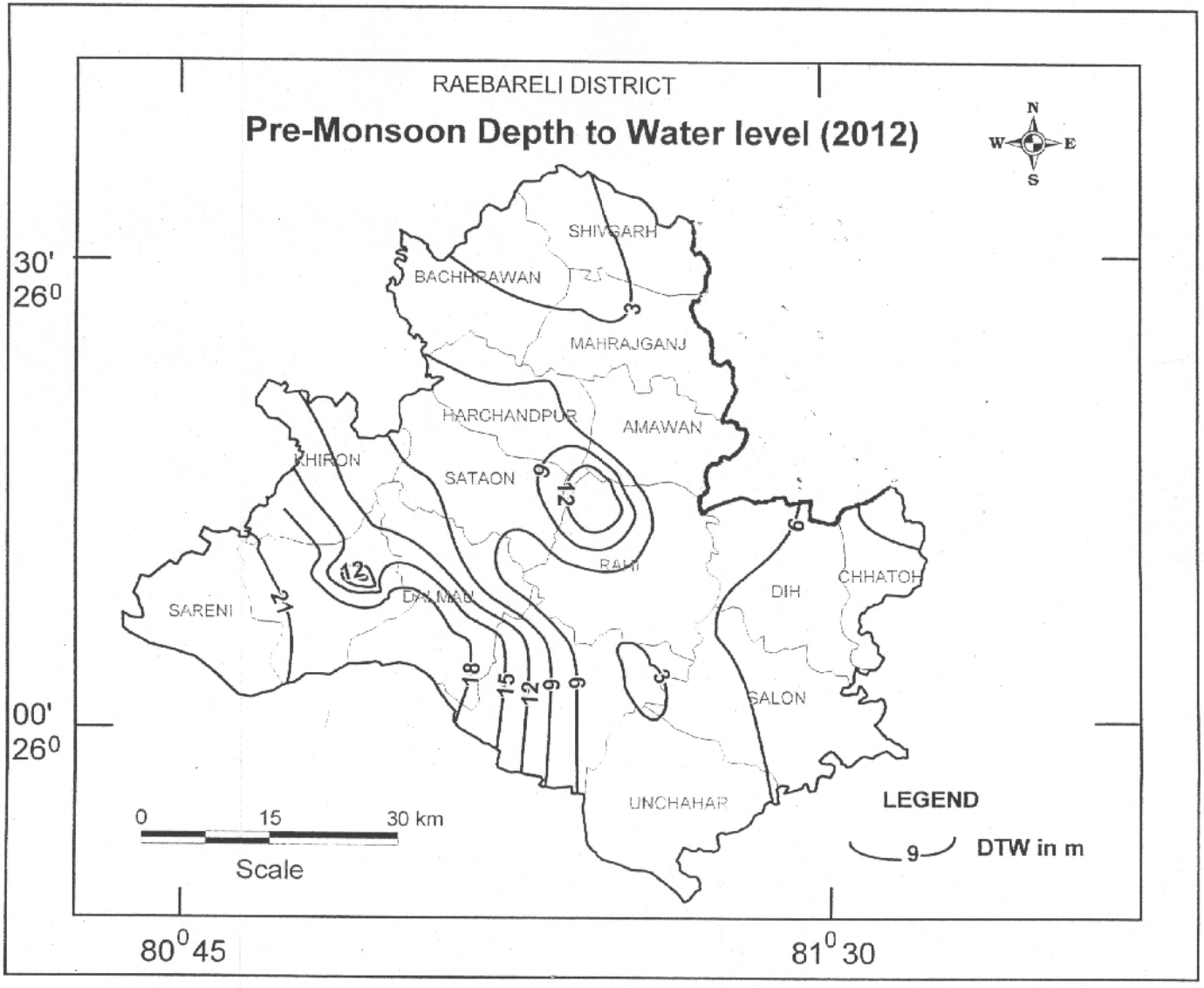

RAEBARELI DISTRICT
Pre-Monsoon Depth to Water level (2012)
N
W
E
S
SHIVGARH
BACHHRAWAN
MAHRAJGANJ
HARCHANDPUR
AMAWAN
KHIRON
SATAON
SARENI
DIH
CHHATOH
SALON
UNCHAHAR
30'
26⁰
00'
26⁰
80⁰45
81⁰30
0
15
30 km
Scale
LEGEND
9
DTW in m

PLATE III

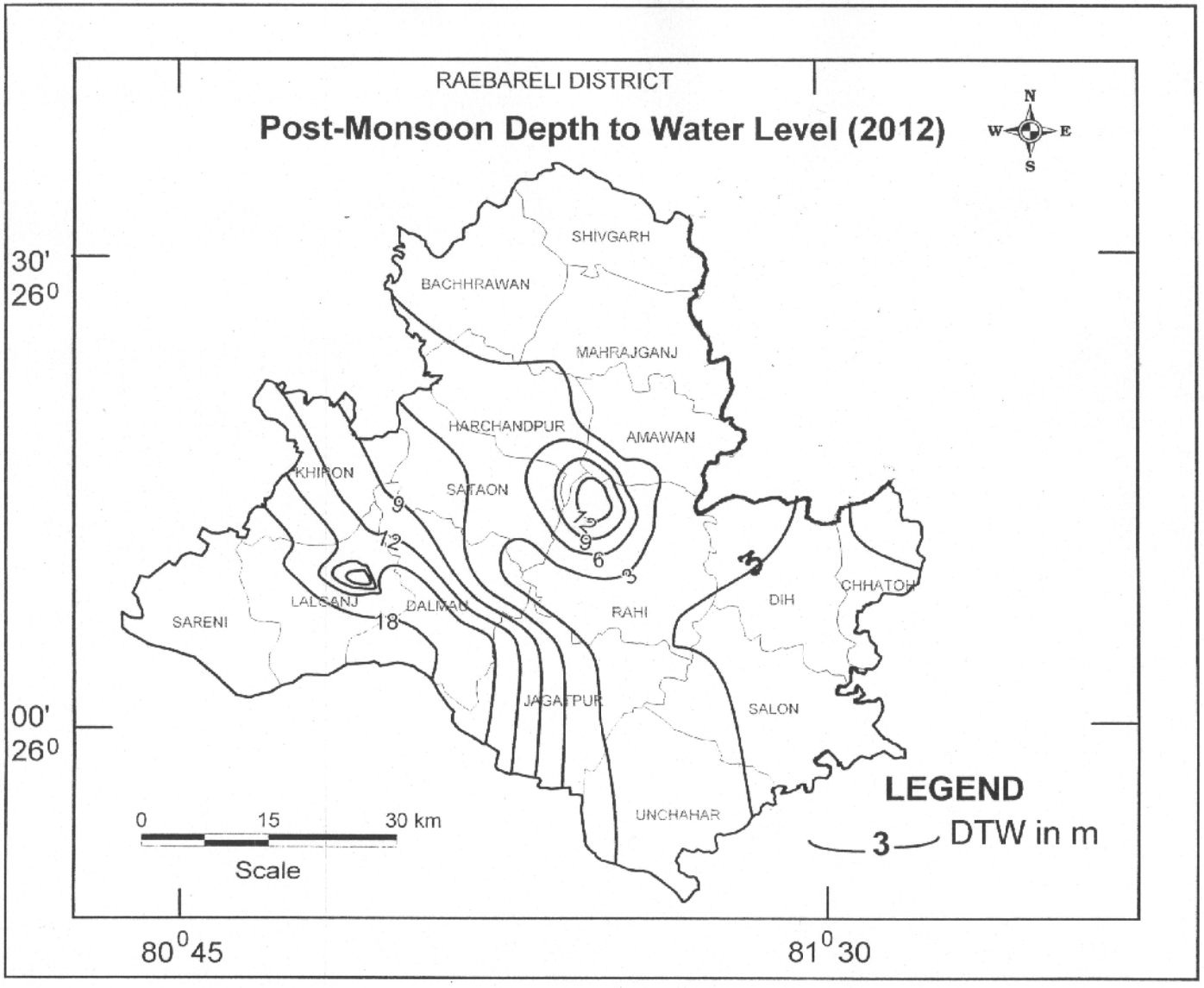
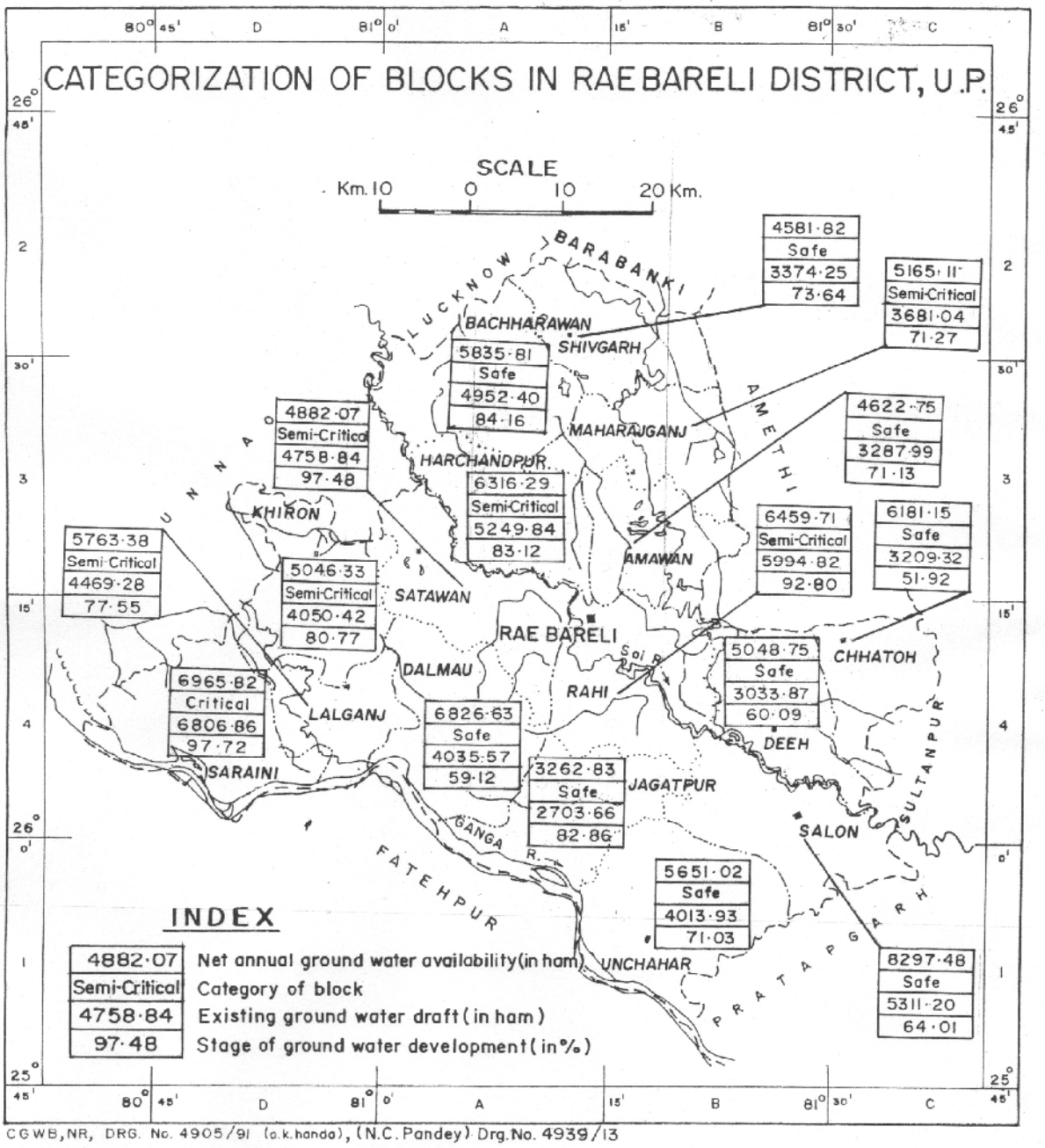

RAEBARELI DISTRICT
Post-Monsoon Depth to Water Level (2012)
N
W
E
S
SHIVGARH
BACHHRAWAN
MAHRAJGANJ
HARCHANDPUR
AMAWAN
KHIRON
SATAON
SARENI
LALGANJ
DALMAU
RAHI
DIH
CHHATOH
JAGATPUR
SALON
UNCHAHAR
9
12
12
9
6
3
3
18
30' 26⁰
00' 26⁰
0 15 30 km
Scale
LEGEND
3 DTW in m
80⁰45
81⁰30

PLATE-IV



CGWB, NR, DRG. No. 4905/91 (a.k.handa), (N.C. Pandey) Drg.No. 4939/13