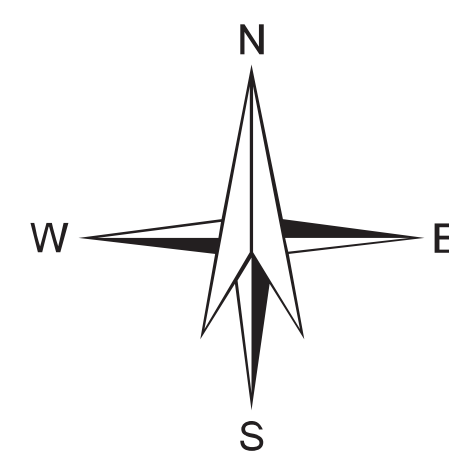


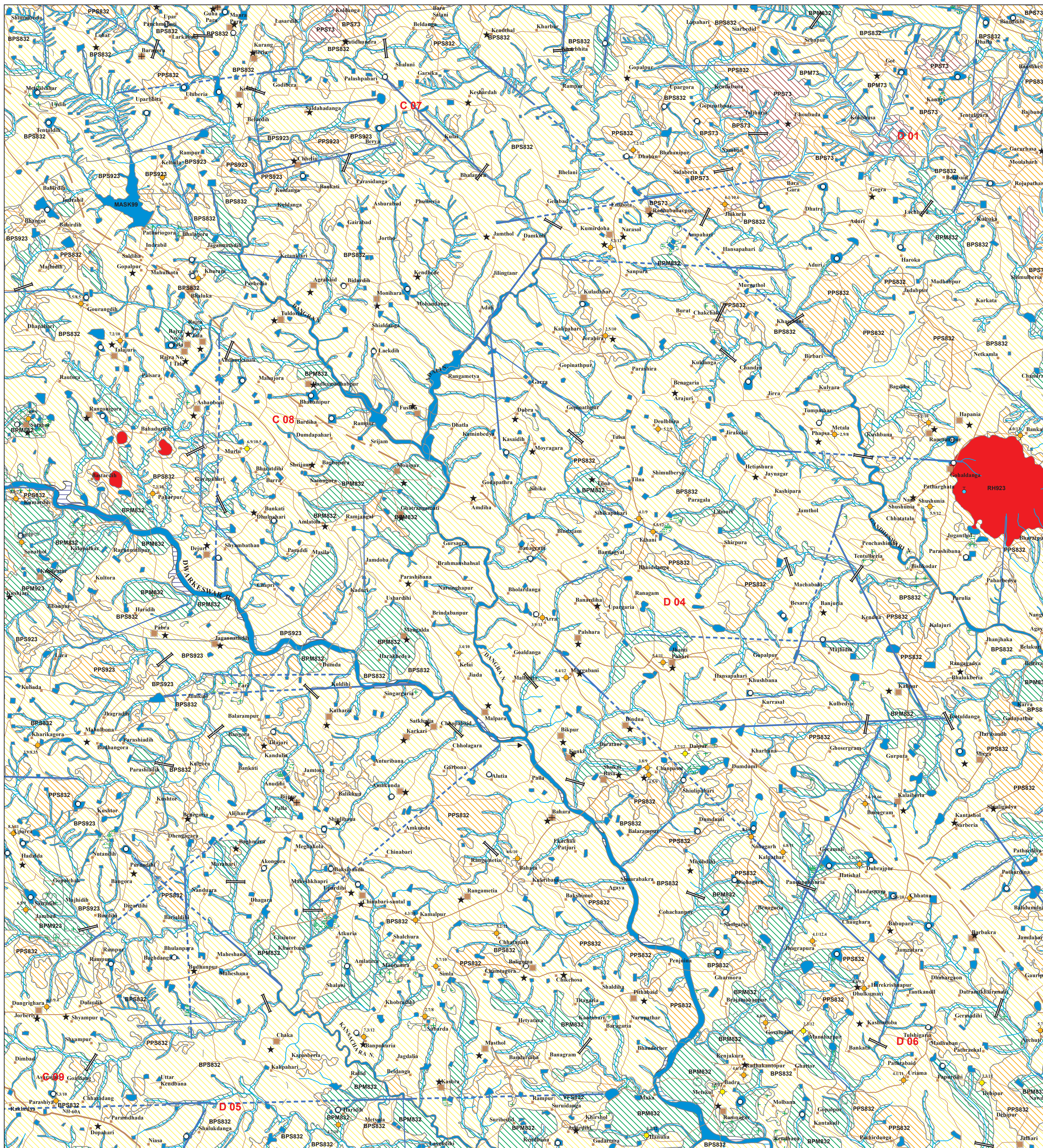
0 1 2 3 4 5 Kilometers

**SCALE - 1 : 50,000**



MAP SHEET NO. 73I/15

PURULIYA AND BANKURA DISTRICTS, WEST BENGAL



MAP UNIT (HYDROGEOMORPHIC UNIT) REPRESENTED IN THE MAP WITH ALPHANUMERIC CODE  (COLOUR INDICATES YIELD RANGE. WHITE HATCHING INDICATE DEPTH RANGE)	GEOLOGICAL SEQUENCE/ ROCK TYPE  (REPRESENTED IN THE MAP WITH NUMERIC CODE)	SEAWORPHIC UNIT / LANDFORM  (REPRESENTED IN THE MAP WITH ALPHABETIC CODE)	DEPTH TO WATER LEVEL  (NO. OF WELLS OBSERVED)	RECHARGE CONDITIONS  (BASED ON AVAILABILITY OF WATER (RAINFALL & OTHER SOURCES))	GROUNDWATER PROSPECTS							RECHARGE STRUCTURES SUITABLE & PRIORITY	REMARKS (PROBLEMS / LIMITATIONS)		
					AQUIFER MATERIAL  LS = LOOSE SEDIMENTS PS = PERMEABLE ROCK FR = FRACTURED ROCK WM = WEATHERED MATERIAL RM = RELICTED ROCK RW = IMPERVIOUS ROCK B = BEDROCK	TYPE OF WELLS SUITABLE  DW = DUG WELL RW = RIGOROUS WELL DW / RW = DUG CUM RIGOROUS WELL DTW = DUG CUM TUBE WELL	DEPTH RANGE OF WELLS (SUGGESTED)  MW: MAX (IN METERS)	YIELD RANGE OF WELLS (EXPECTED)  (IN LPM or m <sup>3</sup> /day)	HOMOGENEITY IN THE UNIT & SUCCESS RATE OF WELLS (PROBABILITY)	QUALITY OF WATER  (POTABLE (P), NON- POTABLE (NP))  (INDICATE REASONS IF NON- POTABLE)	GROUND WATER IRRIGATED AREA  (APPROX. RANGE IN PERCENTAGE)				
														PT = PERCOLATION TANK OD = OVERHEAD ND = NALA DOND RW = RECHARGE WELL DTW = DUG CUM TUBE WELL DT = DUG CUM TUBE DW = DUG CUM WELL B = BEDROCK BWM = BOLD CONSERVATION MEASURES	
	High (Marginal) to Moderate (Dry)	Alluvium (Sand Dominant) (111)	Channel Bar (CB)	5 - 6 2	Excellent	LS	RW TW	5-10	400-500 LPM	Very High	P	42%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.	
			Point Bar (PB)	6 1	Very Good	LS	RW TW	5-10	300-500 LPM	Very High	P	7%	Not Required	Groundwater prospects very high with high recharge potential. Recharge structures not required.	
		Anorthosite and Gabbric Anorthosite (73)	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	30 - 50	50 - 75 LPM	Moderate	P	5%	CD/DT Moderate	Prospect inferred as no wells observed. Recharge structure will improve groundwater prospects	
			Buried Pediplain Moderate (BPM)	No wells observed	Moderate	WM+FR	DW TW / BW	5 - 10 40 - 50	5 - 10 <sup>3</sup> m <sup>3</sup> /day 50 - 75 LPM	Moderate	P	Negligible	RP Moderate	Weathered material and underlying fracture rock form the aquifer. Sustainability of ground water yield can be increased with recharge structure	
			Buried Pediplain Shallow (BPS)	6.17 DW - 1	Limited	WM+FR	DW TW / BW	5-10 40 - 60	< 5m <sup>3</sup> /day 30 - 50 LPM	Low	P	Negligible	RP/DT High	Limited groundwater resources. Priority of recharge structures is high	
			Weathered Pediplain Shallow (PPS)	No wells observed	Poor	FR	DW TW / BW	5 - 10 40 - 60	< 5m <sup>3</sup> /day 30 - 50 LPM	Low	P	Nil	RP High	Essentially run-off zone. Recharge structures may help in limited groundwater development	
		Chotanagpur Gneissic Complex (Local Discontinuity - East India)	Granitoid Gneiss (832)	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	30 - 50	150 - 175 LPM	Moderate	P	Negligible	CD/DT Moderate	Prospects inferred as no wells observed. Recharge condition is moderate with moderate groundwater prospects
				Buried Pediplain Moderate (BPM)	3.35 - 6.07 DW - 6	Moderate	WM+FR	DW TW / BW	5 - 10 40 - 50	15 - 25 m <sup>3</sup> /day 150 - 175 LPM	Moderate	P	10%	RP Moderate	Recharge structure will improve ground water prospects
				Buried Pediplain Shallow (BPS)	2.34 - 8.32 DW - 46	Limited	WM+FR	DW TW / BW	5 - 10 40 - 60	10 - 15 m <sup>3</sup> /day 75 - 100 LPM	Low	P	5%	RP/DT High	Recharge structures will improve sustainability of groundwater sources
				Weathered Pediplain Shallow (PPS)	No wells observed	Poor	FR	DW TW / BW	5 - 10 40 - 60	5 - 10 m <sup>3</sup> /day 30 - 50 LPM	Low	P	Negligible	RP High	Due to high run-off and poor infiltration, recharge structures are required to maintain sustainability of groundwater sources
	Residual Hill (RH)			No wells observed	-	-	-	-	-	-	-	-	-	-	Run-off zone. Not suitable for groundwater development
	Unclassified Metamorphics (Older Metamorphics)			Mica Schist (923)	Valley Fill Shallow (VFS)	No wells observed	Moderate	LS Underlain by WM+FR	TW / BW	30 - 50	100 - 125 LPM	Moderate	P	5%	CD/DT Moderate
		Buried Pediplain Moderate (BPM)	6.51 DW - 1		Moderate	WM+FR	DW TW / BW	5 - 10 40 - 50	10 - 15 m <sup>3</sup> /day 100 - 125 LPM	Moderate	P	10%	RP Moderate	Weathered material and underlying fractured rock form the aquifer. Recharge structures will improve sustainability of groundwater resources	
		Buried Pediplain Shallow (BPS)	6.03 DW - 1		Limited	WM+FR	DW TW / BW	5 - 10 40 - 60	5 - 10 m <sup>3</sup> /day 50 - 75 LPM	Low	P	Negligible	RP High	Recharge structures will improve sustainability of groundwater sources	
		Weathered Pediplain Shallow (PPS)	No wells observed		Poor	FR	DW TW / BW	5 - 10 40 - 60	5 - 10 m <sup>3</sup> /day 30 - 50 LPM	Low	P	Nil	Not Required	Smaller units, sparse settlements, recharge structures not required	
		Residual Hill (RH)	No wells observed		-	-	-	-	-	-	-	-	-	-	Run-off zone, not suitable for groundwater development

F = Fault / Fracture zones, which generally act as conduits for movement of ground water in hard rocks. Along these zones, the yields are significantly higher and wells are likely to be sustainable for longer duration. However, the inferred fractures need to be confirmed by detailed ground surveys.

Schist (92)

D = Dike / Quartz reefs and pegmatite veins, which generally act as barriers for ground water movement.

N.B. The depth range and yield range of wells may vary within the unit because of certain inhomogeneities. Fractures/lineaments which are clearly observed / inferred from the satellite image are indicated on the map. There could be some obscured fractures which also influence the ground water prospects. Locations of the recharge structures shown in the map are tentative. This map is useful for narrowing down the target zones, and exact location on the ground for wells and recharge structures should be identified based on follow-up ground hydrogeological/geophysical surveys.

GROUND WATER PROSPECTS INFORMATION

YIELD RANGE OF WELLS	COLOR CODE	DEPTH RANGE OF WELLS
SHALLOW (0-10 METERS)	MODERATE (10-50 METERS)	DEEP (50-100 METERS)
> 800 LPM	VIOLET	
400-800 LPM	INDIGO	
200-400 LPM	BLUE	
100-200 LPM	GREEN	
50-100 LPM	YELLOW	
30-50 LPM	ORANGE	
20-30 LPM	BROWN	
10-20 LPM	PINK	
Prospects only partially covered (grey color, Pattern etc.)	RED	
Not of interest for W assessment		

Prepared By

GEOINFORMATICS & REMOTE SENSING CELL

W.B. STATE COUNCIL OF SCIENCE AND TECHNOLOGY

DEPARTMENT OF SCIENCE AND TECHNOLOGY

GOVERNMENT OF WEST BENGAL

11TH FLOOR, BIKASH BHAVAN

SALT LAKE, KOLKATA 700 091

HYDROLOGICAL INFORMATION

DESCRIPTION	SYMBOL
CANAL/TANK/IRRIGATED AREA	DEEP GROUND WATER IRRIGATED AREA
RIVER / STREAM (with sand)	
WATER BODY / SPRING	
CANAL	
RAIN GAUGE STATION (With average annual rainfall in mm)	800
RECHARGE STRUCTURES SUGGESTED	
PERCOLATION TANK WALA BUNI DESULTING OF CANAL	CHECK DAM RECHARGE WELL RECHARGE PIT SUBSURFACE DYKE SOIL CONSERVATION MEASURES
WATER WEIRAGE (DRAINAGE CANAL)	
YIELD RANGE OF WELLS	YIELD RANGE OF WELLS
> 800 LPM	200-400 m <sup>3</sup> / day
400-800 LPM	200-400 m <sup>3</sup> / day
200-400 LPM	100-200 m <sup>3</sup> / day
100-200 LPM	50-100 m <sup>3</sup> / day
50-100 LPM	25-50 m <sup>3</sup> / day
30-50 LPM	15-25 m <sup>3</sup> / day
20-30 LPM	10-15 m <sup>3</sup> / day
10-20 LPM	5-10 m <sup>3</sup> / day
< 10 LPM	
Colour inside well symbol indicates yield range. The figure on the top right hand side of well indicates the depth to water level and depth of meters in meters	
DWG - CUM BORE WELL	OBSERVATION WELL OF W DEPT. / C.G.W.B.
ARTESIAN WELL	

Technical Guidance & Quality Check

NATIONAL REMOTE SENSING CENTRE

INDIAN SPACE RESEARCH ORGANISATION (ISRO)

DEPT. OF SPACE, GOVT. OF INDIA

BALAKANGAR, HYDERABAD 500 025

STRUCTURAL INFORMATION

DIPS	BEDDING	SCHISTOSITY/FOLIATION
ANGENT ( < 15 )	✓	✓
MODERATE (15-45)	✓	✓
STEEP (45-60)	✓	✓
SUB-VERTICAL TO VERTICAL ( > 60 )	✓	✓
ANTICLINE (ANTIFORM)	↔	
SYNCLINE (ANTIFORM)	↔	
TRENDLINE		
ESCARPMENT		
LITHOLOGY		
GEOMORPHIC UNIT BOUNDARY		
FAULT		
THRUST		
FRACATURE (LINEAMENT Inferred)		
SHEAR ZONE (Continued / Inferred)		
DYKE		
QUARTZ REEF (Continued / Inferred)		
PGMATITE VEN (Continued / Inferred)		
Lithologic contacts are inferred at places & Geomorphologic boundaries are gradational		

Participating Organizations

SURVEY OF INDIA

GEOLOGICAL SURVEY OF INDIA

PHED, GOVT. OF WEST BENGAL

STATE WATER INVESTIGATION DIRECTORATE, GOWB

S.P.MATS (LAND RECORD), GOVT OF WEST BENGAL

BASE MAP INFORMATION

SYMBOL	DESCRIPTION
NH-2	NATIONAL HIGHWAY
SH-9	STATE HIGHWAY
	METALLIC ROAD
	OTHER ROAD
	RAILWAY
	CITY / VILLAGE
HABITATIONS : NON - COVERED (NC) PARTIALLY COVERED (PC)	
BOUNDARY : STATE DISTRICT BLOCK	
OTHER INFORMATION	
Rainfall : 1386 mm (Source IMD)	

Methodology & Project Execution

NATIONAL REMOTE SENSING CENTRE

INDIAN SPACE RESEARCH ORGANISATION (ISRO)

DEPT. OF SPACE, GOVT. OF INDIA

BALAKANGAR, HYDERABAD 500 025

LOCATION INFORMATION

STATE INDEX

DISTRICT INDEX

BLOCK INDEX

MAPSHEET INDEX

Rajiv Gandhi National Drinking Water Mission (Phase III B)

Department of Drinking Water Supply (DDWS)

Ministry of Rural Development

Government of India

New Delhi