CGWB, NORTH CENTRAL CHHATTISGARH REGION, RAIPUR

GROUNDWATER LEVEL BULLETIN
CHHATTISGARH

May 2024

ABSTRACT

Groundwater level Scenario during May-2024 highlighting the findings, status of ground water level in different aquifers and its seasonal, annual and decadal comparison.

1. INTRODUCTION

Groundwater bulletin is prepared by CGWB depicting changes in groundwater regime of the country through different seasons. It is an effort to obtain information on groundwater levels through representative monitoring wells. The important attributes of groundwater regime monitoring are groundwater level. The natural conditions affecting the groundwater regime involve climatic parameters like rainfall, evapotranspiration etc., whereas anthropogenic influences include pumpage from the aquifer, recharge due to irrigation systems and other practices like waste disposal etc. Groundwater levels are being measured by Central Ground Water Board four times a year during January, May, August and November. The regime monitoring started in the year 1969 by Central Groundwater Board.

2. STUDY AREA

Chhattisgarh, located between North Latitude 17°47’ to 24°06’ and East Longitude 80°14’ to 84°24’, is monitored for groundwater dynamics by the Central Ground Water Board's North Central Chhattisgarh Region in Raipur. Covering 1, 37, 360 sq. km, the state is predominantly tribal dominated, encompassing approximately 65.90% of its total area. Groundwater regime monitoring involves a network of observation wells and piezometers. Dug wells represent the shallow phreatic aquifer system, while piezometers gauge the shallow un-confined and deeper semi-confined aquifer systems.

This monitoring forms part of the All India Network Hydrograph Stations, overseen by various regional offices nationwide. As of March 2024, Chhattisgarh's network includes 1308 nos. observation wells (dug wells and purpose-built piezometers) monitored quarterly for groundwater levels and quality. The objective is to assess groundwater behaviour across diverse hydrogeological environments, periodically estimating groundwater resources and tracking water quality changes.

3. PHYSIOGRAPHY

Chhattisgarh is geographically categorized into three distinct regions. The Bastar Plateau in the southern part of the state includes districts such as Bastar, Kondagaon, and Dantewada. Covered mostly by dense evergreen forests and hilly terrain, it features high-level plateaus, structural hills, valleys, and pediplains, with altitudes ranging from 400 to 600 meters above mean sea level (amsl).

The Chhattisgarh Plain occupies the central part and spans districts like Raipur, Bilaspur, and Durg. This region, formed on Proterozoic rocks, is characterized by a gently undulating and flat terrain, interspersed with remnants of hills and ridges. Altitudes vary from 284 meters amsl in the southeast to 750 meters amsl in the northwest.

The Northern Hilly Region covers the northern and north-central parts, encompassing districts like Raigarh and Bilaspur. It forms part of the Maikal and Hazaribagh hill ranges, featuring structural plains, pediplains, denudational plateaus, and hills. This area supports various river systems, including tributaries of the Mahanadi and Son rivers. The state's highest point, Tulisi Dongri in Dantewada district, reaches 1197 meters amsl, while its lowest point is 50 meters amsl at Konta, also in Dantewada district.

4. DRAINAGE

Chhattisgarh is traversed by major rivers including the Mahanadi, and its tributaries Seonath, Hasdeo, Mand, and Arpa, impacting several districts. The Indravati River, a Godavari tributary, flows through Kanker, Bastar, and Dantewada districts.

5. HYDROGEOLOGICAL CONDITIONS

The occurrence and movement of ground water is related to the existing geology of the area. The State is underlained by various rock types belonging to different geological ages, from Azoic to Quaternary. Nearly 58 % of the State is covered by Crystalline and metamorphic rocks; around 27 % of the area is covered by Chhattisgarh Group of rocks. The semi-consolidated Gondwana Supergroup of rocks covers 13 % of the area and the remaining 2 % by Deccan trap, Lameta, Laterite and River Alluvium.

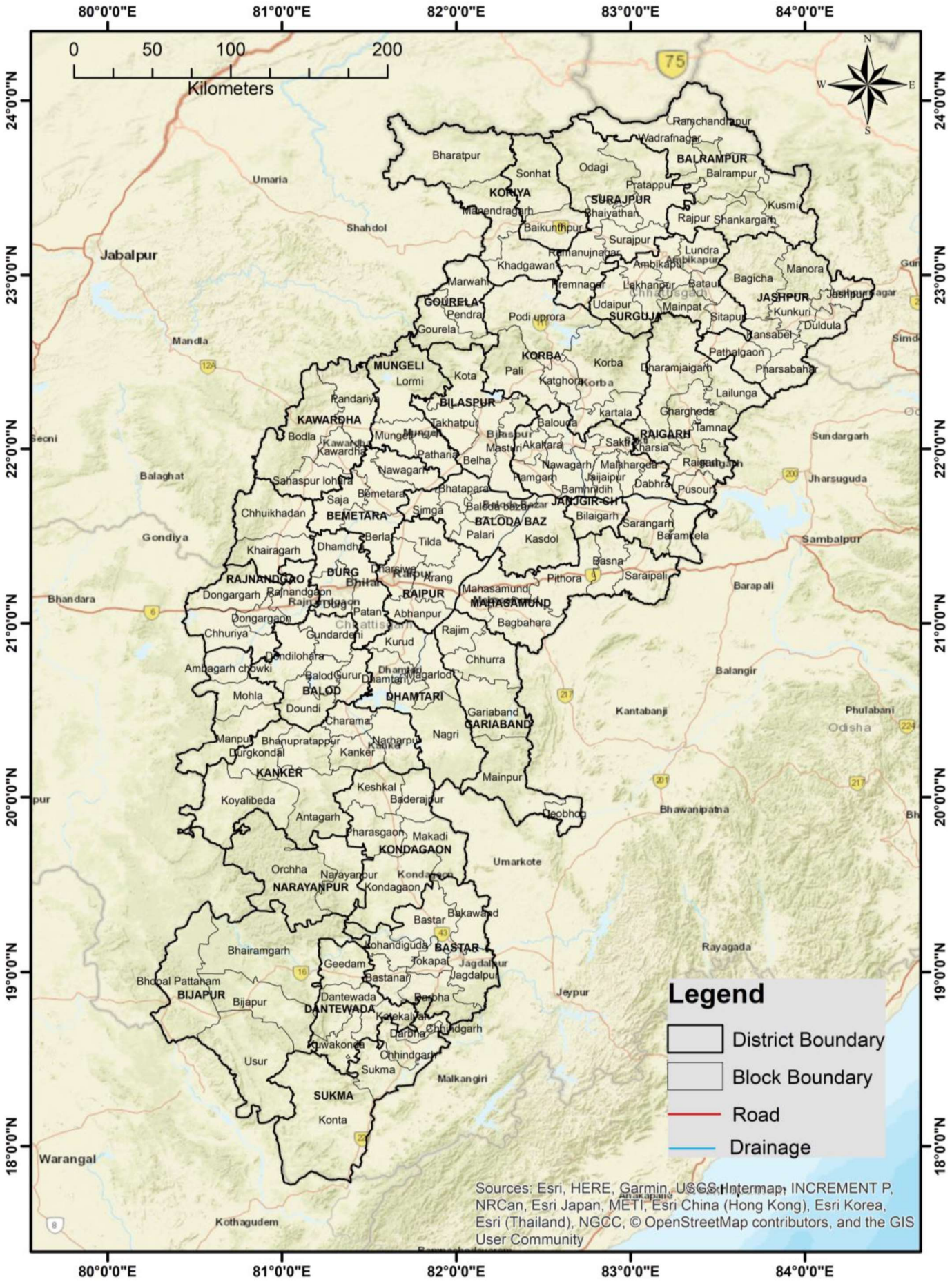


Figure-1: Map showing administrative divisions Chhattisgarh

6. GROUNDWATER LEVEL MONITORING

The Central Ground Water Board, North Central Chhattisgarh Region, conducts ongoing quarterly monitoring of groundwater regimes in Chhattisgarh state. This involves a network of monitoring stations situated across various hydrogeological and geomorphic units. **As of May 2024, there were 1308 operational wells, comprising 1062 dug wells and 246 piezometers.** The details of the wells are provided in Table 1.

Table-1: District-wise distribution of water level monitoring stations as per May 2024

State	District	DW	PZ	Total
Chhattisgarh	Balod	22	2	24
Chhattisgarh	Balodabazar	37	11	48
Chhattisgarh	Balrampur	16	7	23
Chhattisgarh	Bastar	24	11	35
Chhattisgarh	Bemetara	31	5	36
Chhattisgarh	Bijapur	0	0	0
Chhattisgarh	Bilaspur	89	9	98
Chhattisgarh	Dantewada	0	0	0
Chhattisgarh	Dhamtari	30	8	38
Chhattisgarh	Durg	88	20	108
Chhattisgarh	Gariaband	27	2	29
Chhattisgarh	Janjgir	56	14	70
Chhattisgarh	Jashpur	83	10	93
Chhattisgarh	Kabirdham	14	8	22
Chhattisgarh	Kanker	11	2	13
Chhattisgarh	Kondagaon	4	2	6
Chhattisgarh	Korba	87	31	118
Chhattisgarh	Koriya	64	5	69
Chhattisgarh	Mahasamund	32	31	63
Chhattisgarh	Mungeli	26	7	33
Chhattisgarh	Narayanpur	0	0	0
Chhattisgarh	Raigarh	107	12	119
Chhattisgarh	Raipur	39	17	56
Chhattisgarh	Rajnandgaon	65	18	83
Chhattisgarh	Sukma	0	0	0
Chhattisgarh	Surajpur	63	7	70
Chhattisgarh	Surguja	47	7	54
	Total	**1062**	**246**	**1308**

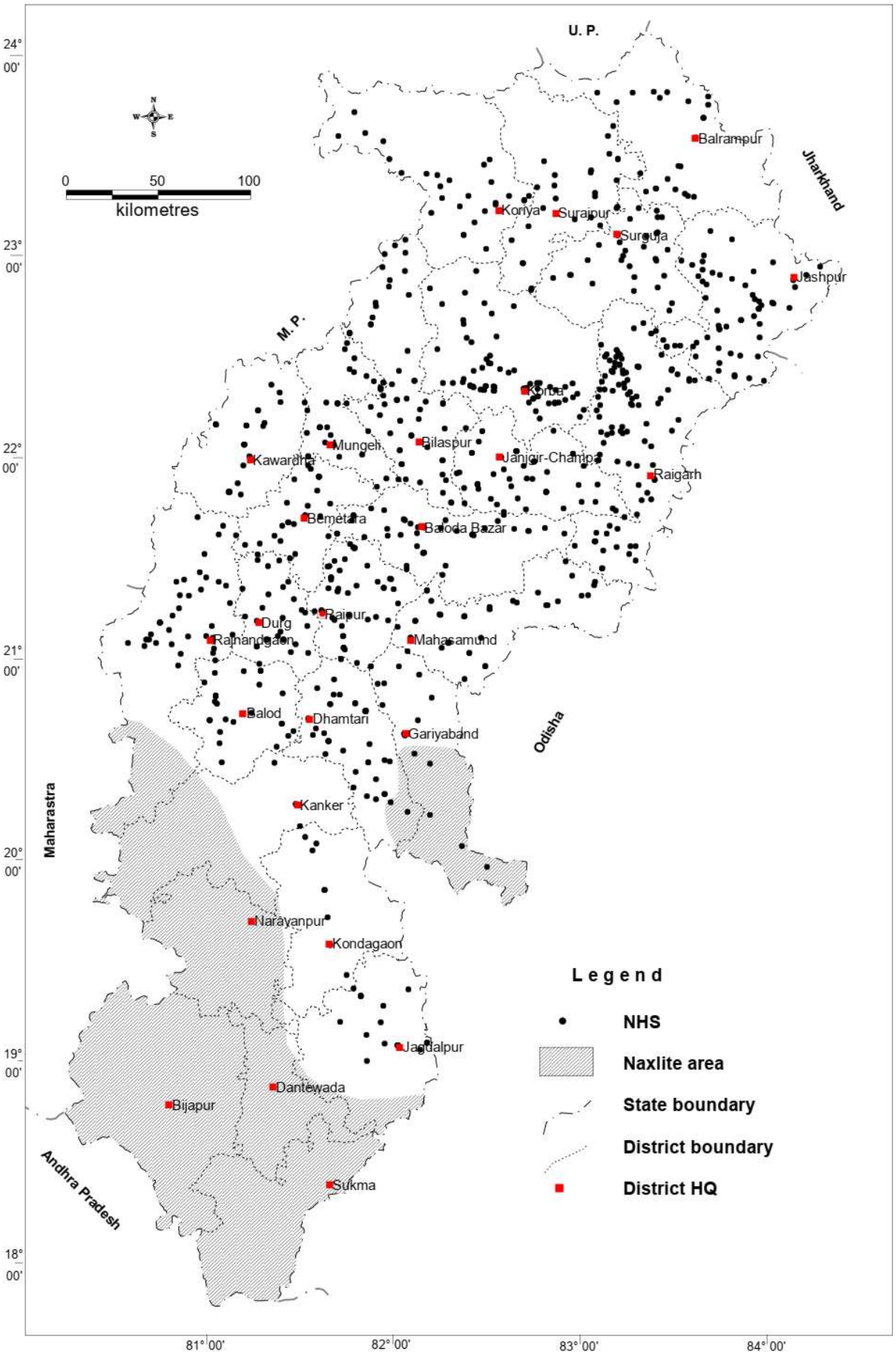


Figure-2: Map showing locations of monitoring Dug Wells (NHNS) in Chhattisgarh state

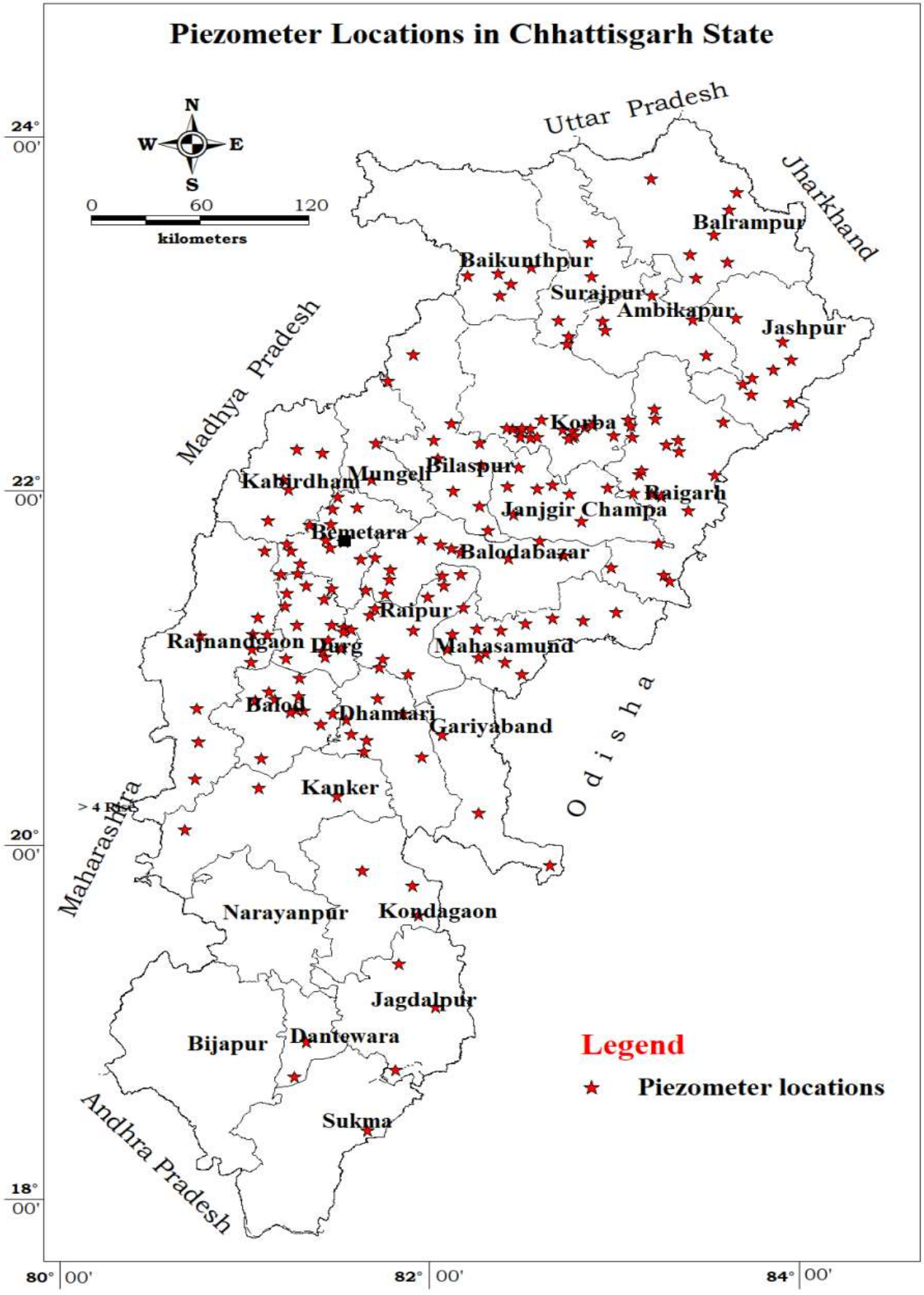


Figure-3: Map showing locations of Piezometers (NHNS) in Chhattisgarh state

7.0 RAINFALL

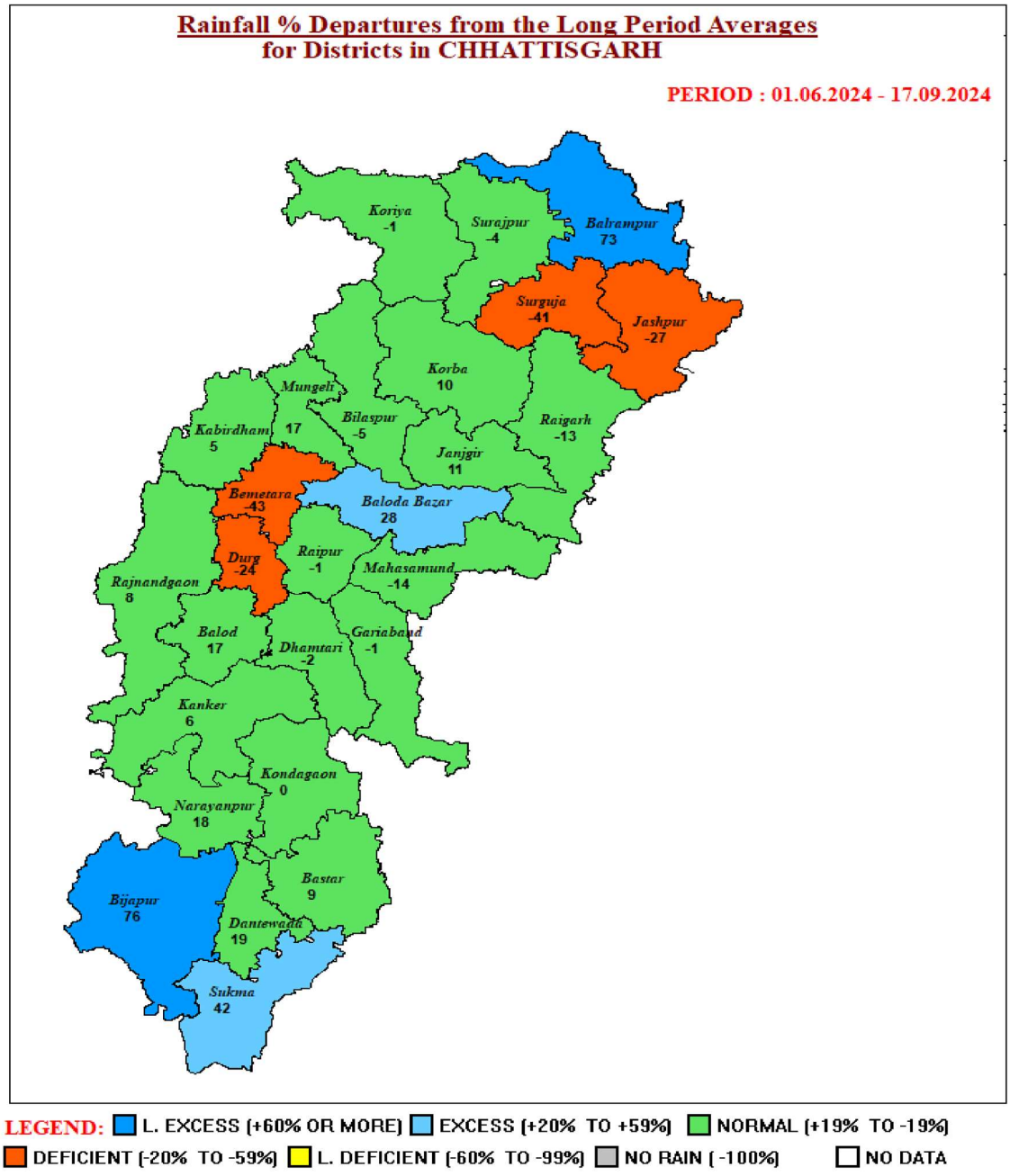
The region experiences a subtropical monsoon climate with distinct summer, monsoon, and winter seasons. The southwest monsoon prevails from June to mid-September, providing about 90% of the annual rainfall. Winter spans from October to February, while summer lasts from March to mid-June. Rainfall primarily recharges groundwater, with the Indian Meteorological Department (IMD), state departments, and agricultural universities maintaining over 200 rain gauge stations across the state. The average annual rainfall in the region is 1089.9 mm, varying across districts from a high of 2286.5 mm in Bijapur to a low of 560 mm in Bemetara.

Table-2: Districtwise variability of rainfall in Chhattisgarh (2024) (Source: IMD)

DISTRICT NAME	ACTUAL (mm)	NORMAL (mm)	DEP (%)	STATE
BALOD	1129.7	964	17	NORMAL
BALODA BAZAR	1117	874.9	28	EXCESS
BALRAMPUR	1607.2	931.1	73	LARGE EXCESS
BASTAR	1188.9	1094.8	9	NORMAL
BEMETARA	560	980.5	-43	DEFICIENT
BIJAPUR	2286.5	1296.3	76	LARGE EXCESS
BILASPUR	943.5	993.3	-5	NORMAL
DANTEWADA	1451.4	1222.5	19	NORMAL
DHAMTARI	975.5	996.4	-2	NORMAL
DURG	697.5	920.5	-24	DEFICIENT
GARIABAND	981.3	995.4	-1	NORMAL
GAURELA PENDRA MARWAHI	1179.2	1028.8	15	NORMAL
JANJGIR	1136.9	1028.1	11	NORMAL
JASHPUR	917.1	1264.8	-27	DEFICIENT
KABIRDHAM	848.4	804.7	5	NORMAL
KANKER	1328.3	1252	6	NORMAL
KHAIRAGARH CHH GANDAI	819.1	689.9	19	NORMAL
KONDAGAON	1110.1	1108.9	0	NORMAL
KORBA	1310.2	1190.2	10	NORMAL
KORIYA	1036.6	1045.5	-1	NORMAL
MAHASAMUND	860.6	1002.8	-14	NORMAL
MANENDRAGARH BHARATPUR	1029.6	1045.3	-2	NORMAL
MOHALA MANPUR CHOWKI	1171.8	970.1	21	EXCESS
MUNGELI	1044.7	891.4	17	NORMAL
NARAYANPUR	1367.9	1162.5	18	NORMAL
RAIGARH	975.7	1124.3	-13	NORMAL
RAIPUR	942.4	953	-1	NORMAL

RAJNANDGAON	1050.7	970.8	8	NORMAL
SAKTI	942.1	1055.5	-11	NORMAL
SARANGARH BILAIGARH	622	877.9	-29	DEFICIENT
SUKMA	1598.5	1124.5	42	EXCESS
SURAJPUR	1082.2	1128.7	-4	NORMAL
SURGUJA	654.5	1103.8	-41	DEFICIENT
SUBDIVISION RAINFALL	1089.9	1077.5	7	NORMAL

Figure-4: Rainfall deviation from normal rainfall (Source: IMD)



8.0 GROUND WATER LEVEL SCENARIO (May 2024)

8.1 SHALLOW AQUIFER (UNCONFINED)

8.1.1DEPTHTOWATERLEVEL (May 2024 Weathered Aquifer)

The depth to water level of 679 wells is used for the analysis. Analysis of depth to water level data of 679 wells shows water levels vary between 1.00 m bgl (Bilaspur) to 50.00 m bgl (Surguja). Water level of less than 2 m bgl is recorded in 2.21 % of wells, between 2 to 5 m bgl in 27.83% of wells, between 5 to 10 m bgl in 55.37 % of wells, between 10 to 20 m bgl in 14.28 % ofwells, between 20-40 m bgl in 0.14% of wells and water level more than 40 mbgl is registered in 0.14 % of wells. Shallow water level of less than 2 m bgl as isolated patches occurs in parts of Bilaspur, Janjgir Champa and Raigarh districts. Water level of 2 to 5 m bgl is observed mainly 189 wells distributed in districts of Bastar, Bilaspur, Dhamtari durg, Janjgir Champa, Jashpur, Korea, Raigarh, Raipur, Rajnandgaon and Surguja. Water level of 5 to 10 m bgl is observed in 376 wells throughout the state within Bastar, Bilaspur, Dhamtari, Durg, Janjgir Champa, Jashpur, Kanker, Kawadha, Korba Korea, Mahasamund, Raigarh Raipur Rajnandgaon and Surguja. Water level of 10 to 20 m bgl is in 97 wells distributed in Bilaspur, Dhamtari, Durg, Janjgir-Champa, Jashpur, Kawardha, Korba, Koriya, Mahasamund, Raigarh, Raipur, Rajnandgaon and Sarguja. Deeper water levels of more than 20 m occurs in 2 wells in districts of Sarguja & Raigarh.

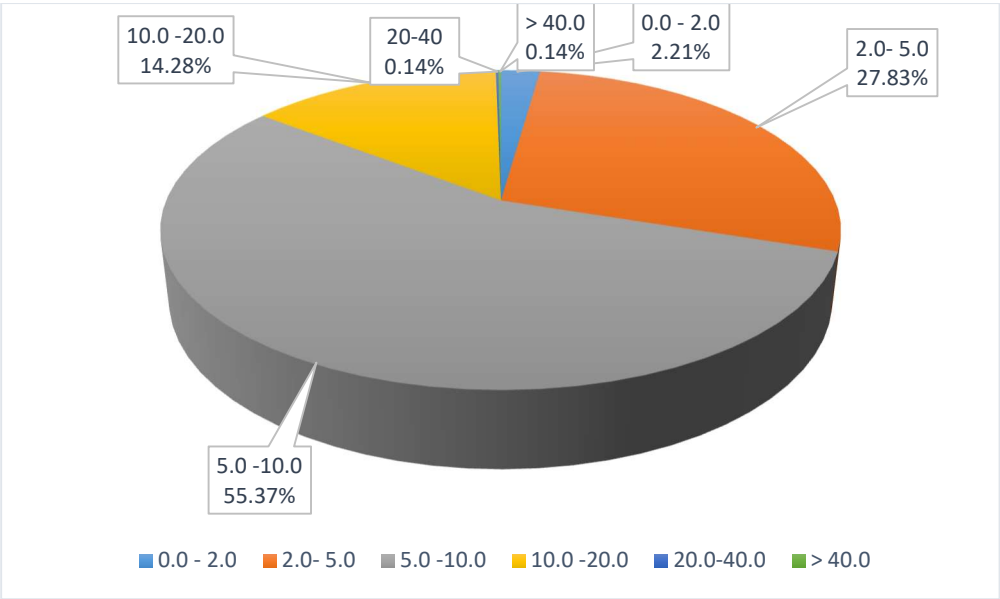


Fig: 5 Percentage of wells showing water level range in Unconfined Aquifer (ranges in mbgl)

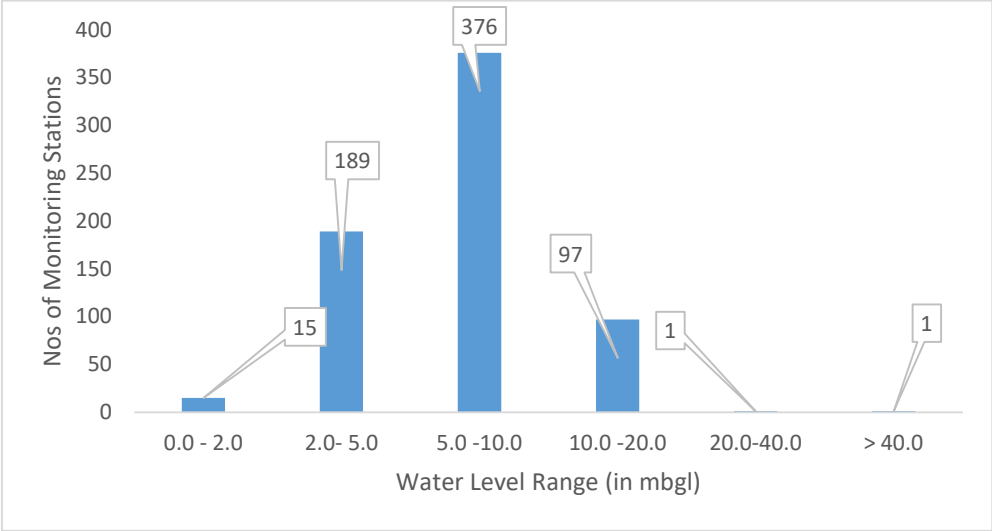


Fig: 6 Nos of wells showing water level range (in mbgl) in Unconfined Aquifer

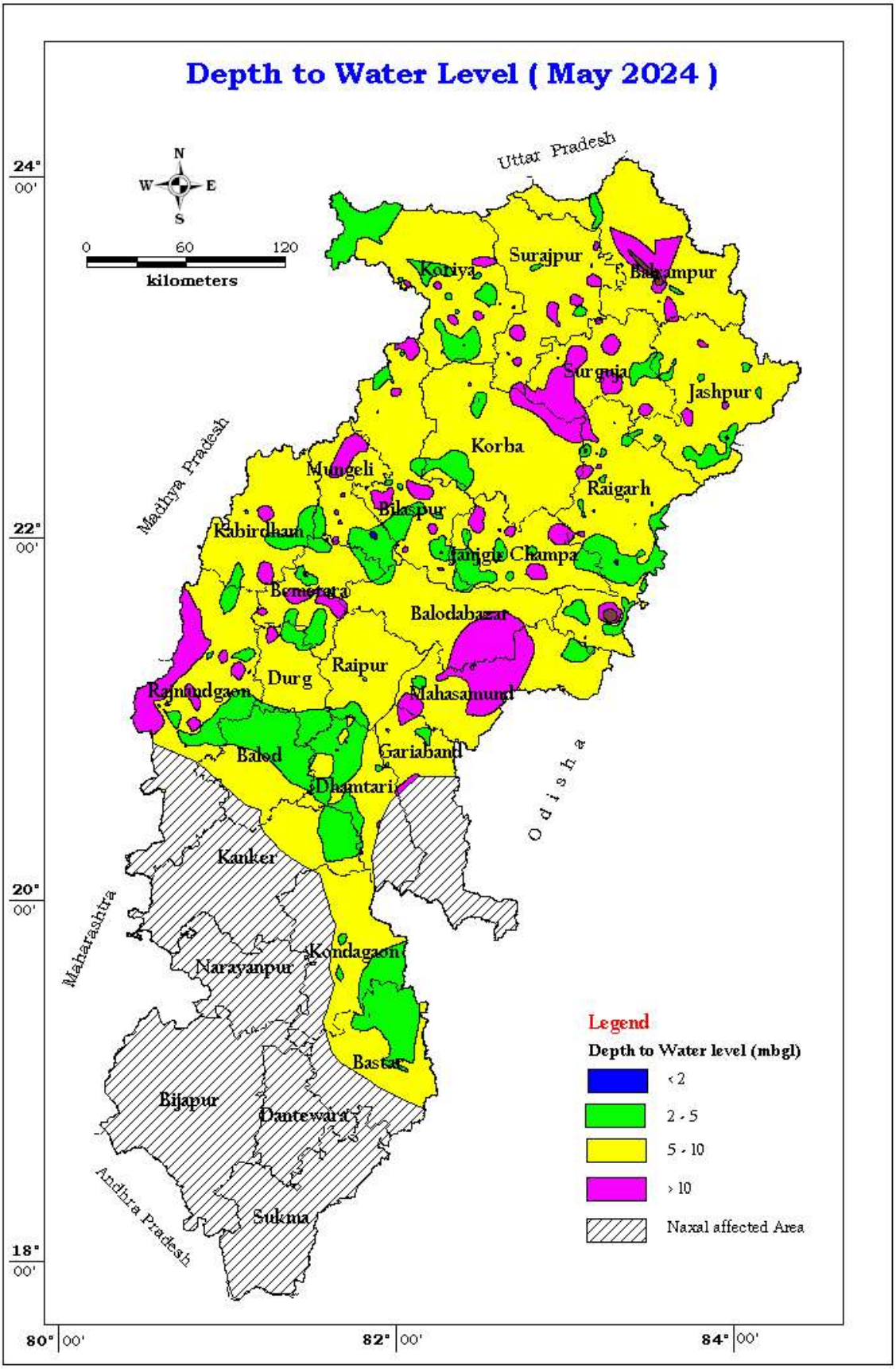


Fig: 7 Depth to Water Level Map of Unconfined Aquifers in May 2024

Table-3: Distribution of Percentage of wells showing water level range in Unconfined Aquifer for May 2024

Distribution of Percentage of wells showing water level range in Unconfined Aquifer for May 2024									
District	**Total Wells**	**Min**	**Max**	**0.0 - 2.0**	**2.0- 5.0**	**5.0 - 10.0**	**10.0 - 20.0**	**20.0 - 40.0**	**> 40.0**
BASTAR	27	1.9	10	1 3.70%	7 25.93%	19 70.37%	0	0	0
BILASPUR	97	1	16	3 3.09%	22 22.68%	52 53.61%	20 20.62 %	0	0
DHAMTARI	27	1.5	11.21	1 3.70%	13 48.15%	10 37.04%	3 11.11 %	0	0
DURG	44	1.1	14.5	1 2.27%	18 40.91%	16 36.36%	9 20.45 %	0	0
JANJGIR-CHAMP	50	1.4	15.4	4 8.00%	17 34.00%	23 46.00%	6 12.00 %	0	0
JASHPUR	77	1.25	18.72	1 1.30%	19 24.68%	52 67.53%	5 6.49 %	0	0
KANKER	7	3.92	9.5	0	3 42.86%	4 57.14%	0	0	0
KAWARDHA	13	3.82	16	0	3 23.08%	8 61.54%	2 15.38 %	0	0
KORBA	12	1.85	10.3	1 8.33%	3 25.00%	7 58.33%	1 8.33 %	0	0
KORIYA	49	1.95	13.1	1 2.04%	14 28.57%	28 57.14%	6 12.24 %	0	0
MAHASAMUND	12	3.5	19.81	0	3 25.00%	4 33.33%	5 41.67 %	0	0
RAIGARH	97	1.2	2 2.06%	31 31.96%	53 54.64%	53 54.64%	10 10.31 %	1 1.03%	0
RAIPUR	24	2.42	0	9 37.50%	13 54.17%	13 54.17%	2 8.33 %	0	0
RAJNANDGAON	49	2.25	0	16 32.65%	23 46.94%	23 46.94%	10 20.41 %	0	0
SURGUJA	94	2.05	0	11 11.70%	64 68.09%	64 68.09%	18 19.15 %	0	1 1.06%
Total	**679**	**1**	**50**	**15**	**189**	**376**	**97**	**1**	**1**

8.1.3 Annual Fluctuation in water Level:-

Annual Fluctuation in water Level in unconfined Aquifer (May 2023 vs May 2024)

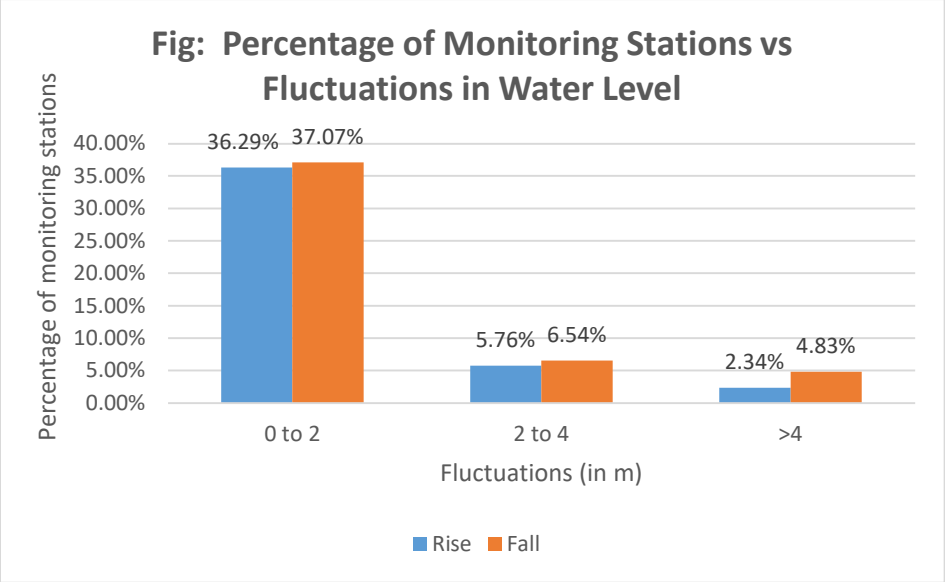


Fig: 8 Percentage of Monitoring Stations vs Ranges of rise and Fall of Water Level

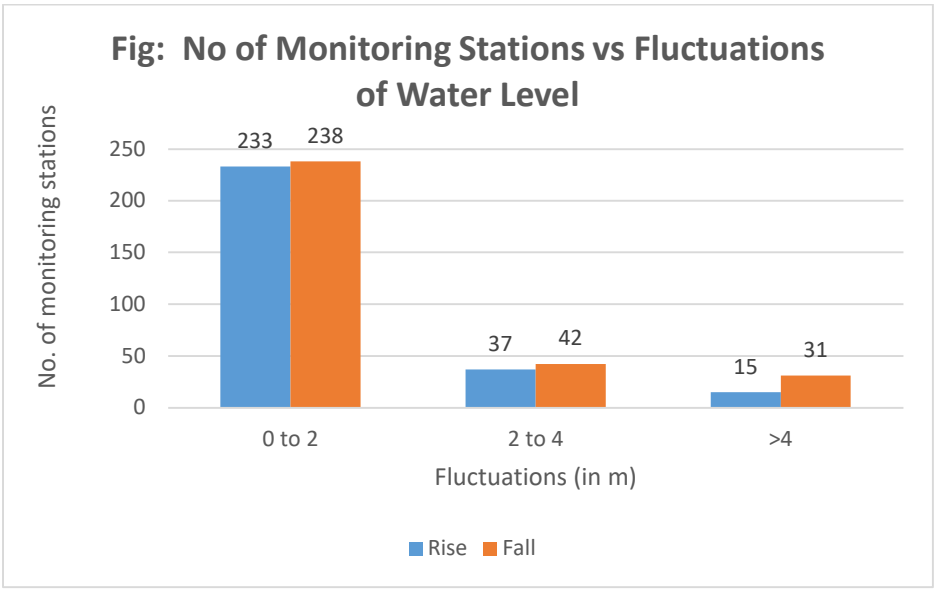


Fig: 9 Nos of Monitoring Stations vs Ranges of rise and Fall of Water Level

Rise in Water Level

Out of 285 wells, water level rise of less than 2 m is recorded in 81.75%(233)wells, 2 to 4 m in 12.98%(37) wells and more than 4 m in 5.26%(15) of the wells. Water level rise of less than 2 m is seen in all the districts, significantly in Bilaspur, Durg, Janjgir – Champa, Jashpur, Koriya, Raigarh and Sarguja. Water level rise of 2 to 4 m is observed mainly in districts such as Durg, Jaspur, Koriya, Raigarh, Sarguja. Rise of more than 4 m is significantly observed in very few wells Bastar, Rajnandgaon, Sarguja and Raigarh.

Fall in Water Level

Out of 311 wells that have registered fall in water levels, 76.52% have recorded less than 2 m while 13.50% in the range of 2 to 4 m and remaining 9.96% wells registered water level fall of more than 4 m. Fall of less than 2 m is mainly observed in parts of Bilaspur, Durg, Bastar, Dhamtari, Janjgir Champa, Jashpur, Raigarh, Raipur, Rajnandgaon, Mahasamund, Korea, Korba and Surguja districts. Fall of 2 to 4 m is observed mainly in Bilaspur, Dhamtari, Durg, Raigarh, Janjgir Champa, Sarguja, Raipur &Rajnandgaon region.

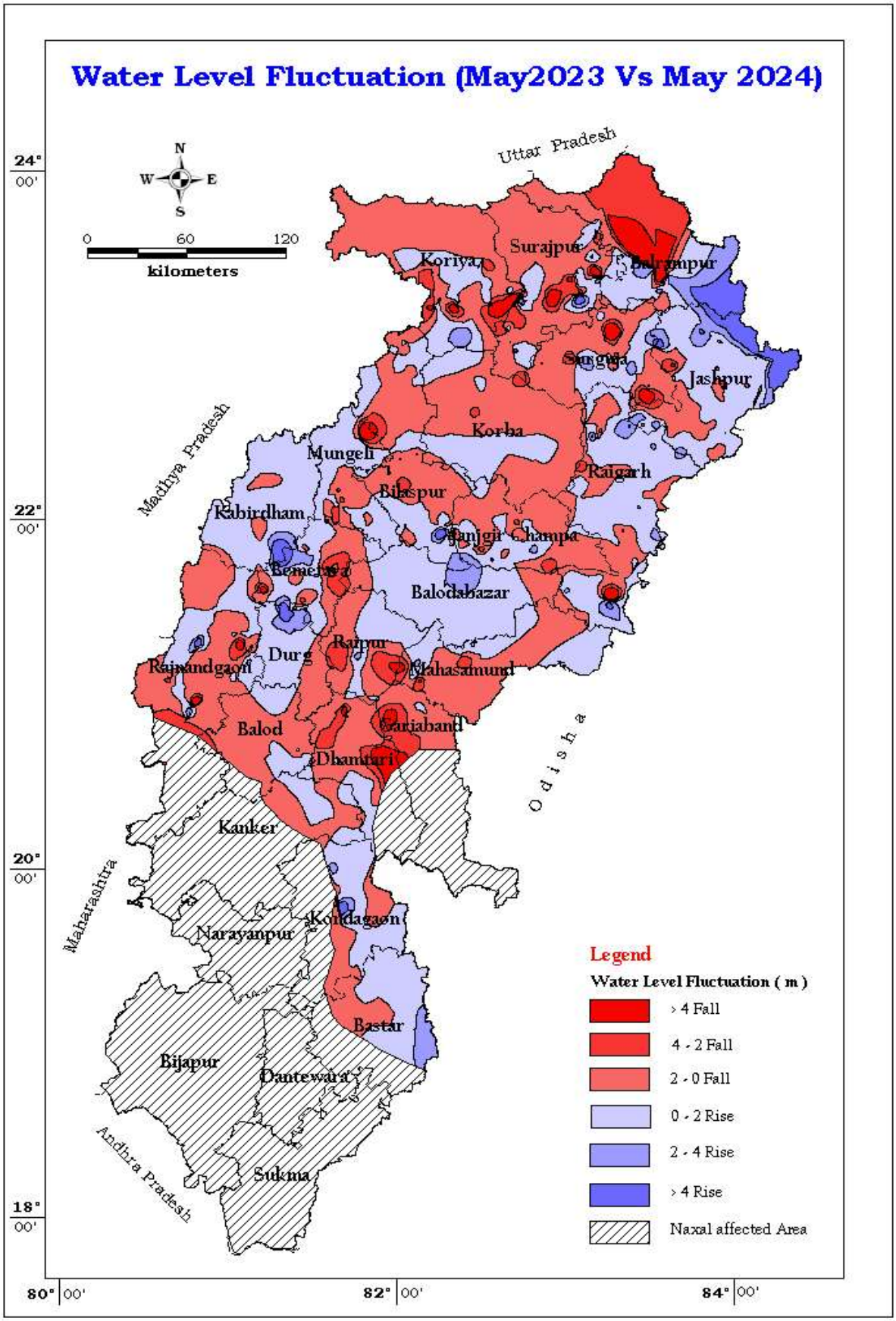


Fig 10 Annual Fluctuation in water Level in unconfined Aquifer (May 2023 vs May 2024)

Table-4: District Wise – Annual Fluctuation of WL and Frequency Distribution of wells in Unconfined Aquifer

District Wise –Annual Fluctuation of WL and Frequency Distribution of wells in Unconfined Aquifers From MAY 2023 to MAY 2024													
District Name	**No. of Wells**	**Range of Fluctuation**		**No. of Wells/Percentage Showing Fluctuation**								**Total No. of Wells**	
		Rise (m)		**Fall (m)**		**Rise (m)**			**Fall (m)**			**Rise**	**Fall**
District Name		**Min**	**Max**	**Min**	**Max**	**0 to 2**	**2 to 4**	**> 4**	**0 to 2**	**2 to 4**	**> 4**		
BASTAR	25	0.02	7.2	0.01	3.08	5 20%	2 8%	1 4%	16 64%	1 4%	0	8	17
BILASPUR	93	0.01	7.93	0.02	7.65	27 29.03%	1 1.08%	1 1.08%	36 38.71%	7 7.53%	1 1.08%	29	44
DHAMTARI	26	0.25	1.09	0.15	7.55	8 30.77%	0	0	13 50%	2 7.69%	3 11.54%	8	18
DURG	43	0.08	9.73	0.1	7.27	20 46.51%	5 11.63%	1 2.33%	10 23.26%	5 11.63%	2 4.65%	26	17
JANJGIR - CHAMPA	49	0.07	4.12	0.08	4.59	17 34.69%	2 4.08%	1 2.04%	20 40.82%	3 6.12%	1 2.04%	20	24
JASHPUR	72	0.03	12.3	0.05	4.65	32 44.44%	6 8.33%	3 4.17%	24 33.33%	0	2 2.78%	41	26
KANKER	7	0.1	0.65	0.03	2.08	3 42.86%	0	0	3 42.86%	1	0	3	4
KAWARDHA	12	0.02	9	0.02	1.29	7 58.33%	0	1 8.33%	3 25.00%	0	0	8	3
KORBA	10	0.27	1.36	0.01	2.35	4 40%	0	0	5 50%	1 10%	0	4	6
KORIYA	45	0.1	3.55	0.05	7.5	12 26.67%	4 8.89%	0	19 42.22%	4 8.89%	6 13.33%	16	29
MAHASAMUND	12	0.63	2.67	0.35	5.14	3 25%	1 8.33%	0	4 33.33%	1 8.33%	2 16.67%	4	7
RAIGARH	92	0.05	4.86	0.02	9.88	52 56.52%	5 5.43%	3 3.26%	21 22.83%	2 2.17%	1 1.09%	60	24
RAIPUR	17	0.04	3.08	0.09	5.24	6 35.29%	1 5.88%	0	5 29.41%	4 23.53%	1 5.88%	7	10
RAJNANDGAON	47	0.12	6.3	0.08	9.25	12 25.53%	1 2.13%	2 4.26%	24 51.06%	4 8.51%	2 4.26%	15	30
SURGUJA	92	0.05	7.38	0.08	43.3	25 27.17%	9 9.78%	2 2.17%	35 38.04%	7 7.61%	10 10.87%	36	52
Total	**642**	**-0.63**	**-0.65**	**0.01**	**43.3**	**233**	**37**	**15**	**238**	**42**	**31**	**285**	**311**

8.1.4 Decadal Fluctuation in water Level:-

Decadal Fluctuation in water Level in Unconfined Aquifer May (2013-2023) vs May 2024)

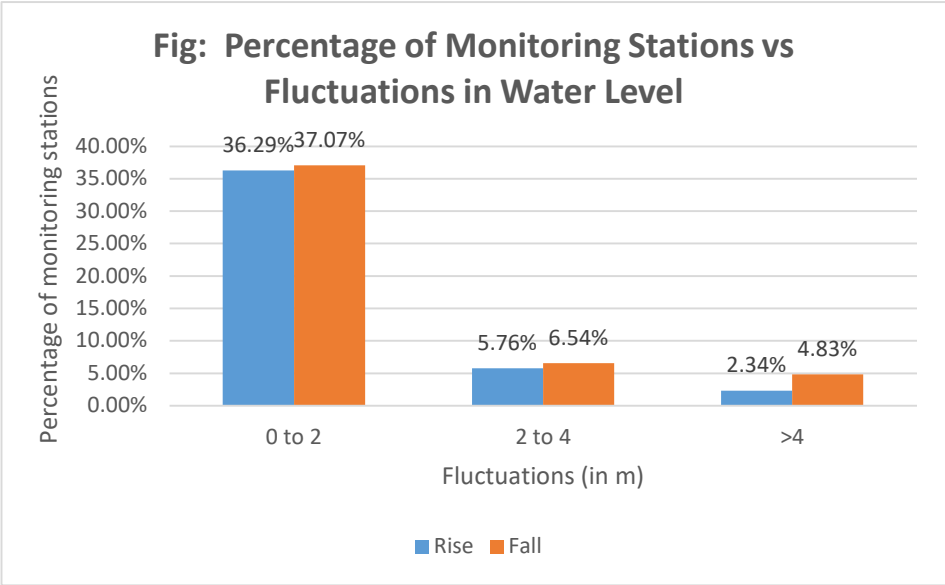


Fig: 11 Percentage of Monitoring Stations vs Fluctuations of Water Level

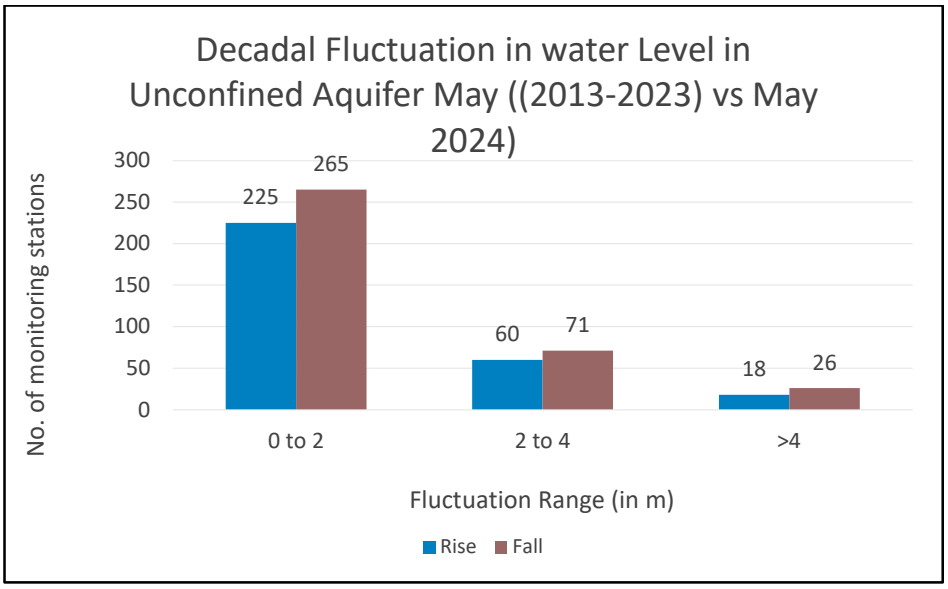


Fig: 12 Nos of Monitoring Stations vs Fluctuations of Water Level

Rise in Water Levels:

Out of 303 wells, water level rise of less than 2 m is recorded in 74.25% wells, 2 to 4 m in 19.80% wells and more than 4 m in 5.94% of the wells. Water level rise of less than 2 m is seen in all the districts, significantly in Bastar, Bilaspur, Dhamtari, Durg, Janjgir-Champa, Jashpur, Kawardha, Korba, Korea, Raigarh, Raipur, Rajnandgaon, Surguja,Koriya, Raigarh and Janjgir-Champa districts. Water level rise of 2 to 4 m is observed mainly in Bilaspur, Durg, Jashpur, Surgujadistricts and rise of more than 4 m is significantly observed in Bilaspur, Durg, Raigarh, Rajnandgaon &Surguja districts.

Fall in Water Levels:

Out of the 362 wells that have registered fall in water levels, 73.20% have recorded less than 2 m while 19.61% in the range of 2 to 4 m and remaining 7.18% wells registered water level fall of more than 4 m. Fall of less than 2 m is observed in all districts mainly in parts of Bastar, Bilaspur, Dhamtari, Durg, Jashpur, Jnajgir-Champa, Kanker, Koriya, Korba, Mahasamund, Rajnandgaon, Raigarh, Raipur & Surguja Districts. Fall of 2 to 4 m, recorded in Bilaspur, Durg, Janjgir Champa, Jaspur, Mahasamund, Raigarh, Raipur, Rajnandgaon and Sarguja districts. Fall beyond 4 m is recorded mainly in Bilaspur, Dhamtari, Durg, Rajnandgaon and Sarguja districts.

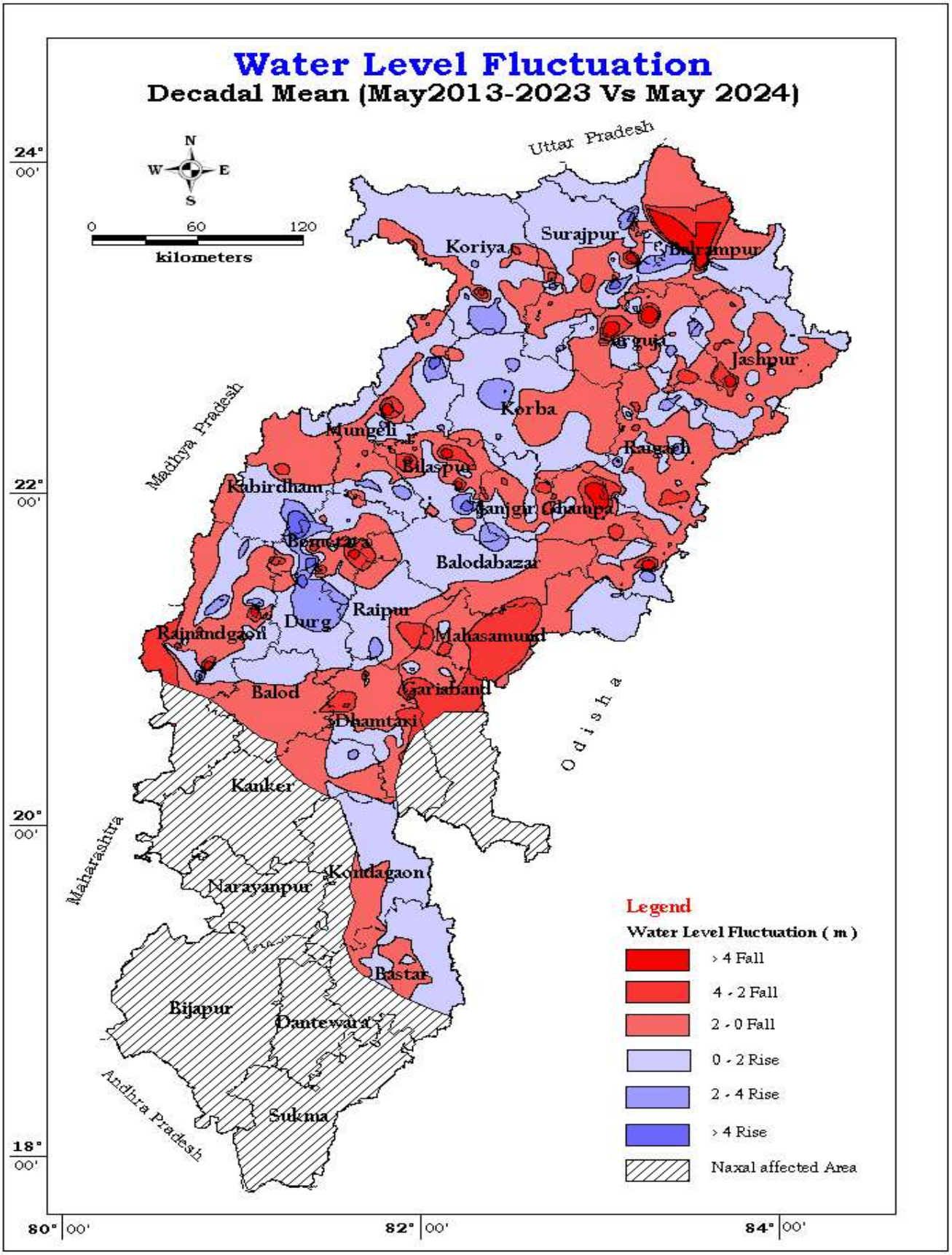


Fig 13 Decadal Fluctuation in water Level with Mean in unconfined Aquifer May ((2013-2023) vs May 2024)

District Wise - Fluctuation of Water Level with Mean and Selected Period													
District Name	**No. of Wells**	**Range of Fluctuation**				**No. of Wells/Percentage Showing Fluctuation**						**Total No. of Wells**	
		Rise (m)		**Fall (m)**		**Rise (m)**			**Fall (m)**			**Rise**	**Fall**
		Min	**Max**	**Min**	**Max**	**0 to 2**	**2 to 4**	**> 4**	**0 to 2**	**2 to 4**	**> 4**		
BASTAR	26	0.02	2.09	0.01	1.94	12 46.15%	1 3.85%	0	13 50%	0	0	13	13
BILASPUR	96	-	7.17	0.02	8.38	31 32.29%	8 8.33%	4 4.17%	41 42.71%	7 7.29%	4 4.17%	43	52
DHAMTARI	27	0.11	2.11	0.12	5.04	12 44.44%	1 3.7%	0	9 33.33%	2 7.41%	3 11.11%	13	14
DURG	44	0.08	6.86	0.13	5.19	12 27.27%	6 13.64%	2 4.55%	16 36.36%	5 11.36%	3 6.82%	20	24
JANJGIR-CHAMPA	49	0.11	5.27	0.04	6.06	20 40.82%	3 6.12%	1 2.04%	16 32.65%	7 14.29%	2 4.08%	24	25
JASHPUR	75	0.03	3.69	0.15	9.00	18 24.00%	9 12.00%	0	39 52.00%	8 10.67%	1 1.33%	27	48
KANKER	7	0.38	2.32	0.02	1.32	1 14.29%	1 14.29%	0	5 71.43%	0	0	2	5

KAWARDHA	13	0.33	9.00	0.14	3.74	7 53.85%	1 7.69%	1 7.69%	2 15.38%	1 7.69%	0	9	3
KORBA	11	0.14	4.11	0.12	1.45	5 45.45%	2 18.18%	1 9.09%	3 27.27%	0	0	8	3
KORIYA	48	0.05	3.72	0.02	5.70	20 41.67%	7 14.58%	0	15 31.25%	4 8.33%	2 4.17%	27	21
MAHASAMUND	12	0.17	2.15	1.30	4.11	2 16.67%	1 8.33%	0	3 25.00%	5 41.67%	1 8.33%	3	9
RAIGARH	96	0.01	5.00	0.04	7.45	33 34.38%	4 4.17%	3 3.13%	40 41.67%	15 15.63%	1 1.04%	40	56
RAIPUR	22	0.04	3.52	0.34	5.11	9 40.91%	2 9.09%	0	6 27.27%	4 18.18%	1 4.55%	11	11
RAJNANDGAON	48	0.01	5.26	0.02	8.58	13 27.08%	4 8.33%	3 6.25%	20 41.67%	5 10.42%	3 6.25%	20	28
SURGUJA	93	0.03	6.75	0.06	42.37	30 32.26%	10 10.75%	3 3.23%	37 39.78%	8 8.6%	5 5.38%	43	50
Total	**667**	**2.09**	**0.38**	**0.01**	**42.37**	**225**	**60**	**18**	**265**	**71**	**26**	**303**	**362**

8.1.5 DEEPER AQUIFER

8.1.5.1DEPTH TO WATERLEVEL (May 2024 Fractured Aquifer)

The depth to water level of 190 wells is used for the analysis. Analysis of depth to water level data of 190 wells shows water levels vary between 1.92 m bgl (Korba) to 68.90 m bgl (Bemetara). Water level of less than 2 m bgl is recorded in 1.05 % of wells, between 2 to 5 m bgl in 10.00% of wells, between 5 to 10 m bgl in 30.52 % of wells, between 10 to 20 m bgl in 32.63 % ofwells, between 20-40 m bgl in 22.63% of wells and water level more than 40 mbgl is registered in 3.15 % of wells.Shallow water level of less than 2 m bgl as isolated patches occurs in parts of Korba and Janjgir Champa districts. Water level of 2 to 5 m bgl is observed mainly 19 wells distributed in districts of Rajnandgaon, Raigarh, Kanker, Durg, Mahasamund, Jashpur, Raipur, Sarguja, Korba and Bastar. Water level of 5 to 10 m bgl is observed in 58 wells throughout the state within Raipur, Durg, Baloda Bazar, Mungeli, Korea, Mahasamund, Balod, Jashpur, Korba, Dhamtari, Janjgir-Champa. Gaurella-Pendra-Marwahi, Mungeli and Bemetara districts. Water level of 10 to 20 m bgl is in 62 wells distributed in Mungeli, Rajnandgaon, Korea, Kabirdham, Mahasamund, Balod, Raipur, Sakti, Balrampur, Durg, Bastar, Sarguja, Jajgir-Champa, Jashpur and Surajpur districts. Deeper water levels of 20-40 m occurs in 43 wells in districts of Kanker, Jashpur, Durg, Kabirdham, Mahasamund, Dhamtari, Bilaspur, Bastar, Sakti, Korba, Surajpur, Balod, Mahasamund, Balod Bazar, Bemetara and Raigarh. Deepest water levels of greater than 40 m occurs in 6 wells in districts of Baloda Bazar, Bemetara and Mungeli.

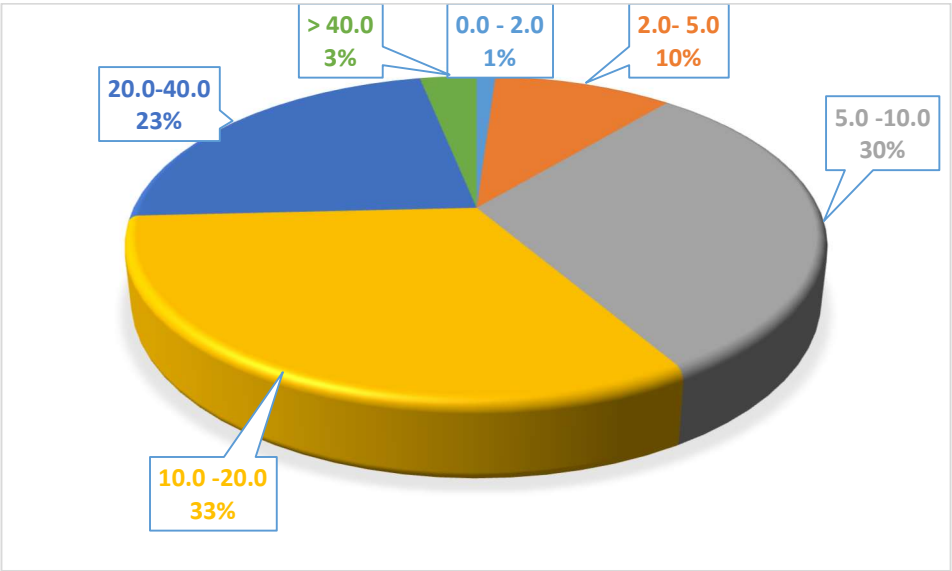


Fig: 14 Percentage of wells showing water level range in Deeper Aquifer in May 2024

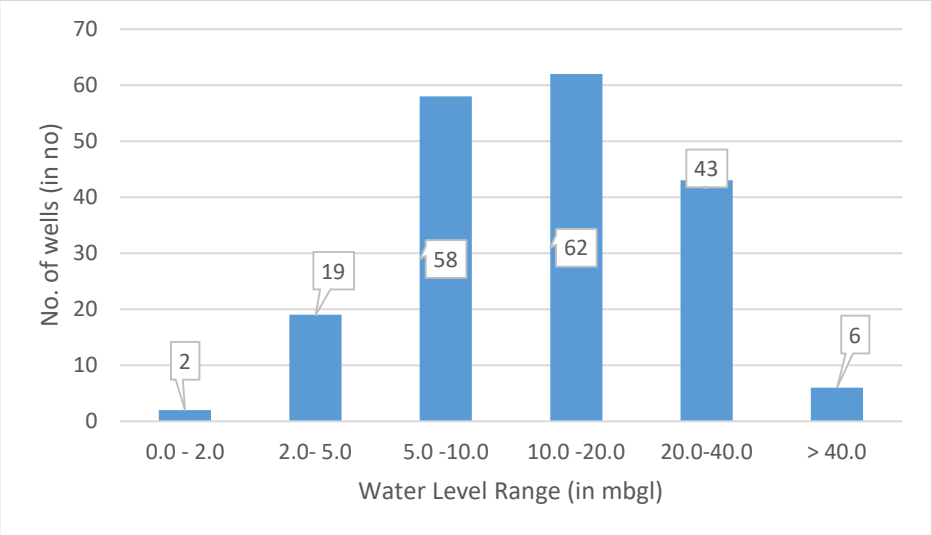


Fig: 14 Nos of wells showing water level range in Deeper Aquifer in May 2024

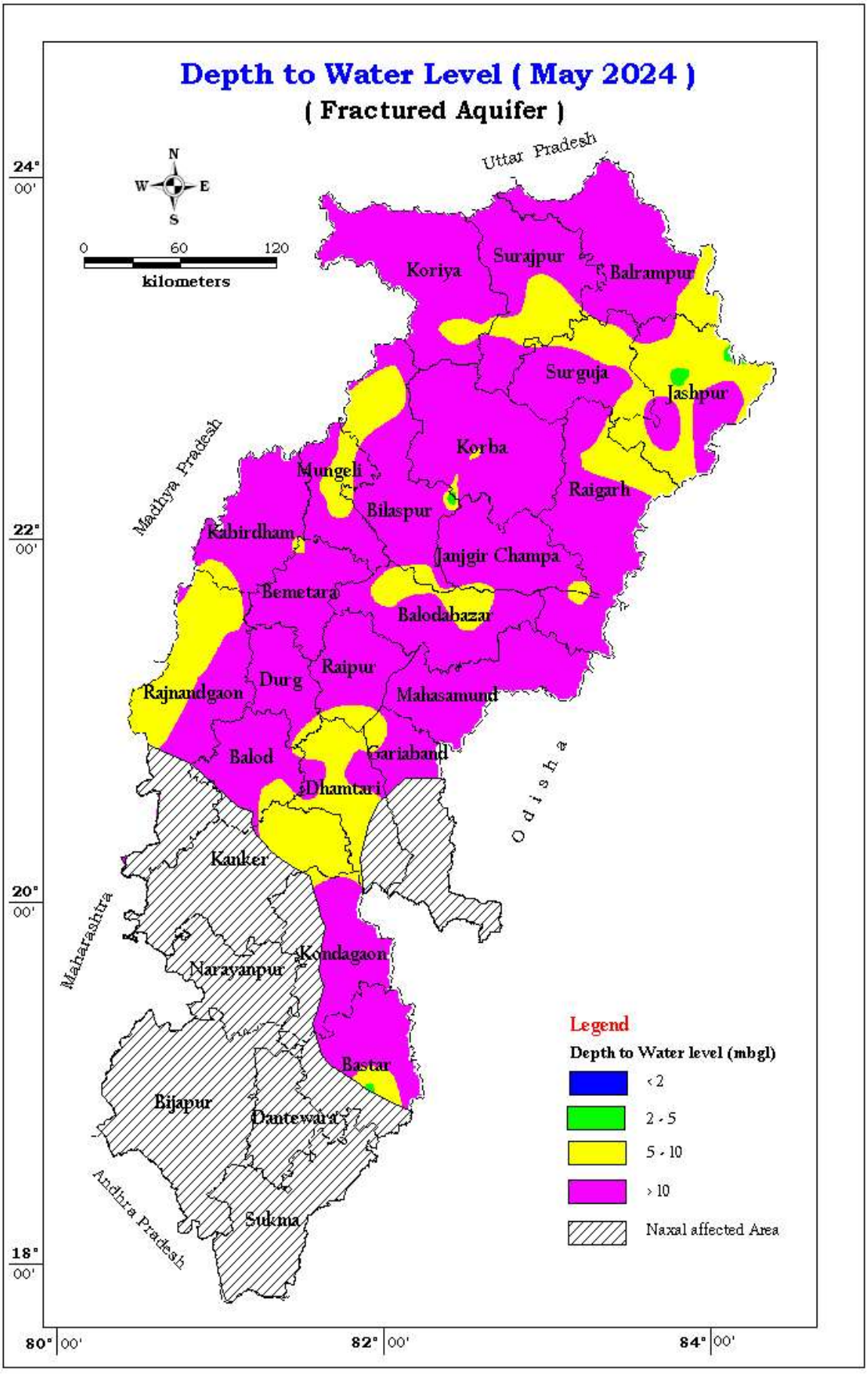


Fig: 15 Depth to Piezometric Level in Deeper Aquifers in May 2024

8.1.6 Annual Fluctuation in water Level:-

Annual Fluctuation in water Level in Fractured Aquifer (May 2023 vs May 2024):-

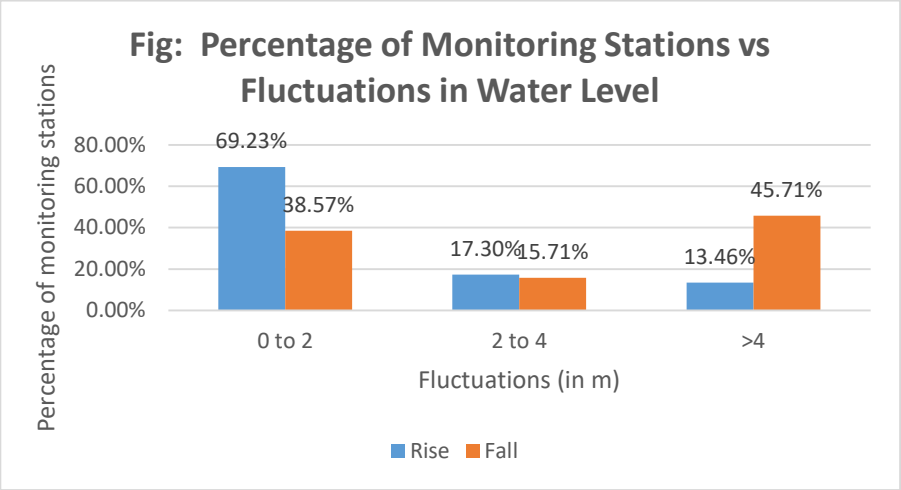


Fig: 16 No of Monitoring Stations vs Fluctuations in Water Level

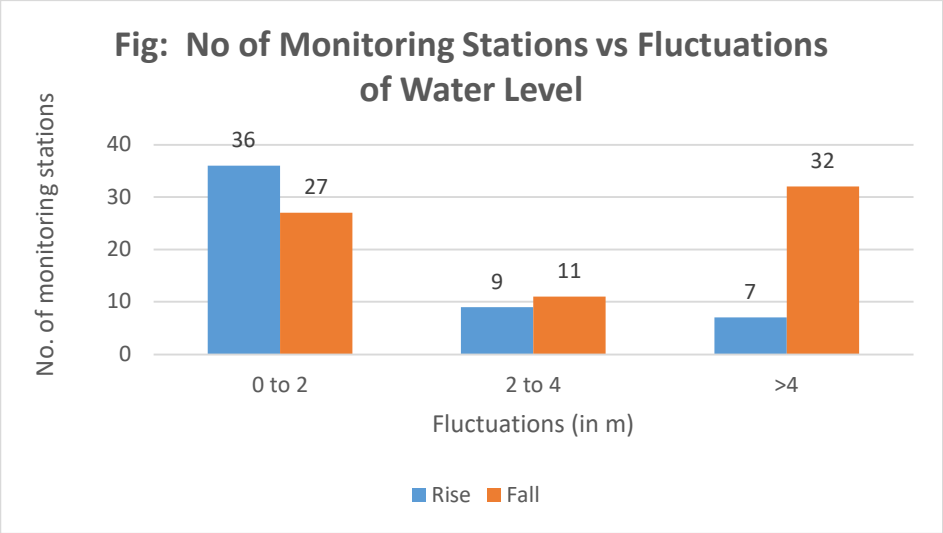


Fig: 17 No of Monitoring Stations vs Fluctuations in Water Level

Rise in Water Level

Out of 52 wells, water level rise of less than 2 m is recorded in 69.23% (36) wells, 2 to 4 m in 17.30 %(9) wells and more than 4 m in 13.46% (7) of the wells. Water level rise of less than 2 m is seen in all the districts, significantly in Sarguja, Bilaspur, Dhamtari, Korba, Raigarh, Durg, Jashpur, Kawardha, Rajnandgaon, Raipur, Mahasamund, Dhamtari and Janjgir-Champa districts. Water level rise of 2 to 4 m is observed mainly in districts such as, Korea, Bastar, Surguja, Janjgir-Champa, Durg and Kawardha districts. Rise of more than 4 m is significantly observed in Bastar, Kawardha, Rajnandgaon and Janjgir-Champa districts.

Fall in Water Level

Out of 70 wells that have registered fall in water levels, 38.57%(27) have recorded less than 2 m while 15.71% (11) in the range of 2 to 4 m and remaining 45.71% (32) wells registered water level fall of more than 4 m. Fall of less than 2 m is mainly observed in parts of Bastar, Rajnandgaon, Kawardha, Korea, Sarguja, Bastar, Dhamtari, Bilapur, Jashpur, Durg, Raipur and Janjgir-Champa districts. Fall of 2 to 4 m is observed mainly in Surguja, Durg, Korba, Rajnandgaon, Bilaspur, Rajnandgaon and Janjgir-Champa districts. Fall of more than 4 m is significantly observed in Janjgir-Champa, Durg, Surguja, Mahasamund, Rajnandgaon, Bastar, Korba, Raigarh and Bilaspur districts.

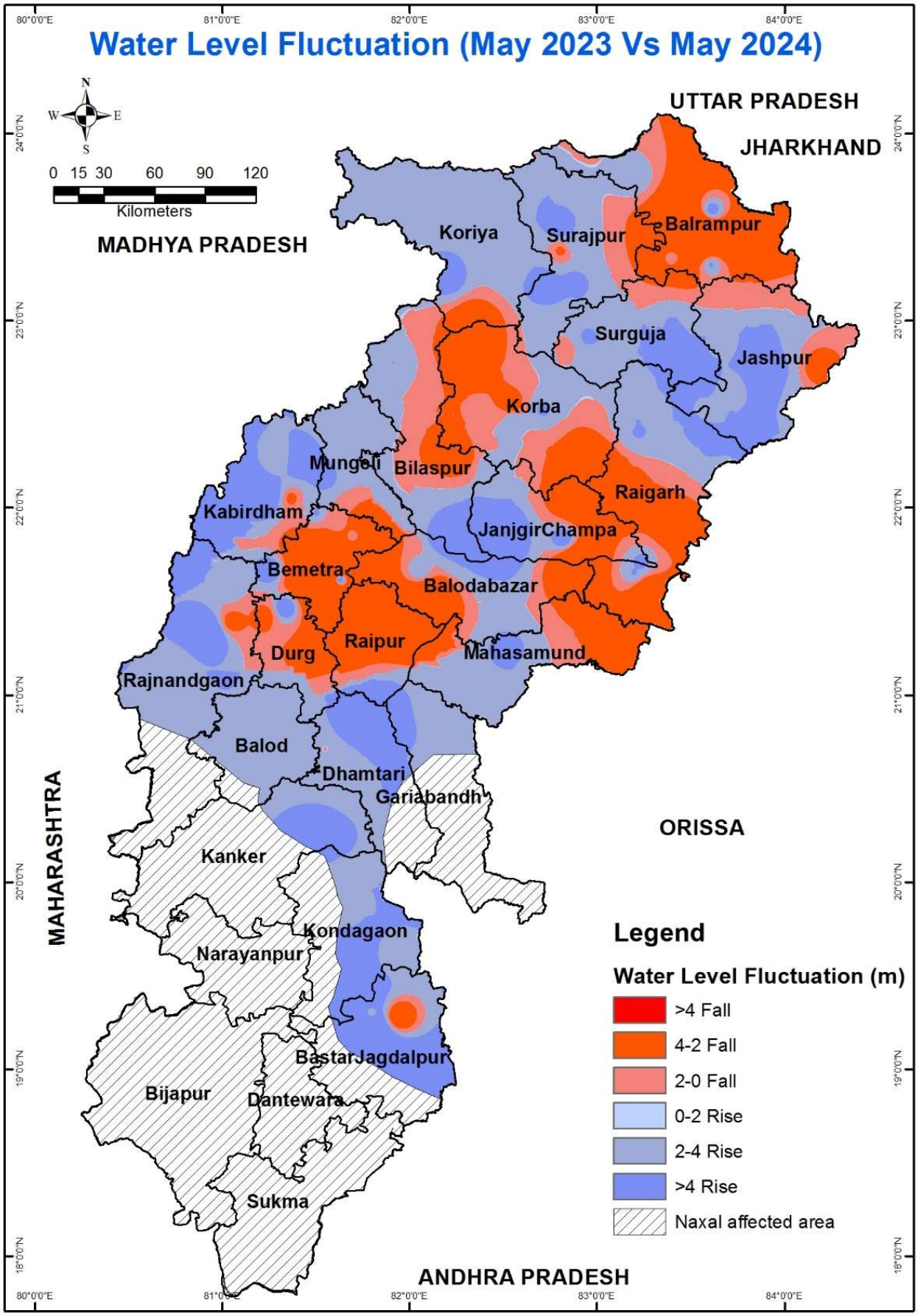


Fig: 18 Water Level Fluctuation Map (May 2023 vs. May 2024) in Fractured Aquifer