



Ground Water Year Book - India 2022-2023

Central Ground Water Board
Ministry of Jal Shakti
Department of Water Resources,
River Development and Ganga Rejuvenation
Government of India

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देवश्री मुखर्जी
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MESSAGE

Groundwater serves as the backbone of India's economy by providing a significant portion of water for agricultural and industrial activities. However, global warming and climate change have disrupted rainfall patterns, leading to instances of water scarcity worldwide and placing greater stress on groundwater resources, particularly in countries like India.

The uncontrolled extraction of groundwater has resulted in a widespread decline in water levels across many states over the past few decades. Consequently, the focus of groundwater stakeholders and policymakers has shifted from mere development to comprehensive management strategies.

The groundwater level serves as a vital indicator of the balance between recharge and extraction within the groundwater system. Any fluctuations in this balance are swiftly reflected in the rise or fall of water levels. Thus, effective groundwater management necessitates the establishment of a robust database for groundwater level data. Systematic and periodic monitoring of water levels constitutes the fundamental step in addressing issues related to groundwater scarcity.

Numerous central and state agencies have been engaged in monitoring groundwater levels throughout the country for many years. The Central Ground Water Board (CGWB), the apex central government department in the groundwater sector, has been monitoring water levels nationwide since the 1970s. Currently, the CGWB operates a network comprising approximately 25,000 groundwater level monitoring stations, where water levels are monitored four times a year. The data generated through such monitoring schemes is invaluable for academicians, groundwater planners, and other stakeholders, facilitating research, scientific studies, resource estimation, groundwater modeling, and the formulation of management and regulatory plans, including artificial recharge initiatives.

I commend the CGWB for its commendable efforts in publishing the "Groundwater Year Book-India 2022-2023," an annual compilation providing insights into water levels and their dynamics across different aquifers nationwide, along with state-wise scenarios of groundwater regimes. I am confident that this report will prove immensely beneficial to all stakeholders involved in the management and conservation of groundwater resources.

(Debashree Mukherjee)

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FOREWORD

The hydrologic cycle involves the continuous circulation of water in the Earth-Atmosphere system. As part of hydrologic cycle, water infiltrate into soil and percolates to become a part of groundwater system. This groundwater is a critical natural resource, invisible but indispensable for life on our planet. Groundwater is extremely important to meet the rapidly expanding drinking, agricultural and industrial water requirement of the country. Groundwater is central to food and water security, fight against poverty, socio-economic development, and to the resilience of societies and economies to climate change. Reliance on groundwater will only increase mainly due to growing water demand by all sectors combined with increasing variation in rainfall patterns.

The changes in water levels are result of the rainfall, development pattern of the groundwater resources for irrigation and drinking water needs. Analyses of groundwater level fluctuations are aimed at observing seasonal, annual and decadal variations in groundwater levels. Therefore, the periodic and accurate monitoring of the groundwater levels both in time and space are the main pre-requisites for assessment, scientific development and planning of this vital resource. To keep track of the changes in groundwater regime, Central Ground Water Board monitors groundwater levels four times in a year i.e., January, March/April/May, August and November through a network of groundwater monitoring wells scattered throughout the length and breadth of the country.

I hope Ground Water Year Book will be of immense help to various user agencies as well as stakeholders for planning and management of groundwater resources. These data will also be helpful to the planners, technocrats, researchers, academic institutes, etc. for the formulation of various groundwater-based schemes in the country. Last but not the least, I appreciate the work done by Shri. D. N, Mandal, Dr. Gajanan Ramteke, Shri. Rajesh Kumar, Shri Ajit Singh and Mrs. Poonam Panchal in the compilation of data and preparation of this report.

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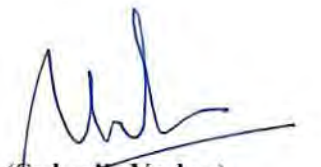
MESSAGE

Groundwater is a vital source for the agricultural, industrial, social development of the country, and playing a significant role in the financial growth of the nation. Approximately 65% of irrigation and 85% of the drinking water supply in the country depend on groundwater resources. However, the issue of excessive groundwater withdrawal compared to annual replenishment and as a result, decline in water level has become a growing concern in many areas. Managing this precious resource for the development of the country and future generations is one of the prime objectives of the Government.

Groundwater level is the cardinal response of the aquifer. In India, the groundwater level is monitored by the Central Ground Water Board through fixed monitoring stations at regular time intervals. These monitoring stations are strategically distributed spatially and in-depth to capture a snapshot of aquifer's behaviours. The water level data thus generated is utilized for estimating groundwater resources, assessing short and long-term changes in hydro geological systems, aquifer desaturation studies, numerical modelling, predicting future scenarios, and prioritizing areas for effective groundwater management and regulatory measures.

The report "Groundwater Year Book-India 2022-2023" includes the analysis and interpretation of water level data from about 25,000 monitoring stations across the country, which are monitored four times a year by CGWB. This report shows that the nearly 87% of the groundwater monitoring stations have water level less than 10 meters in post monsoon of year 2022 and 60% wells show rise in water compared to their decadal mean.

The report includes depth-to-water levels in various seasons, along with seasonal and decadal fluctuations and the State/District-wise rise and fall of the monitoring stations will provide stakeholders, policymakers, regulators, and researchers with insights into the groundwater situation in the desired area. I would like to congratulate the efforts made by CGWB in publishing such a report. I hope this report will be instrumental in the management of the groundwater resources of the country.


(Subodh Yadav)



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PREFACE

The National Ground Water Regime Monitoring Programme has become one of the most important and frontal activities of the Central Ground Water Board. The monitoring programme was initiated in a small way in 1969 by establishing one station per Degree Sheet and has been continuously strengthened ever since, with a view to create a high-density regional network so as to obtain the comprehensive scenario of groundwater regime. Presently, Central Ground Water Board has about 25000 monitoring stations throughout the country. High priority is accorded for accomplishing the measurements within the stipulated time during each monitoring schedule.

Central Ground Water Board monitors groundwater levels four times in a year i.e., during January, March/April/May, August and November through a network of National Hydrographic Network Stations (NHNS) for effective planning and management of the water resource. The data collected from monitoring wells for each monitoring schedule is compiled, processed and the salient features are brought out as a "Ground Water Year Book" issued once in a groundwater year depicting temporal as well as spatial changes in groundwater regime during the preceding year.

This report pertains to the groundwater regime scenario in the country for the year 2022-2023. It gives an overview of the status of groundwater levels monitored, seasonal and annual water level fluctuations, long term changes in groundwater levels.

The sincere efforts made by Shri. D. N, Mandal, Dr. Gajanan Ramteke, Shri. Rajesh Kumar, Shri Ajit Singh and Mrs. Poonam Panchal in the compilation of data and preparation of this report in the present form are highly appreciable.

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GROUNDWATER YEAR BOOK INDIA 2022-2023

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1. HYDROGEOLOGICAL SETUP OF THE COUNTRY

1.1 GROUNDWATER OCCURRENCE

The groundwater behavior in the Indian sub-continent is highly complicated due to the occurrence of diversified geological formations with considerable lithological and chronological variations, complex tectonic framework, climatological dissimilarities and various hydrochemical conditions. Studies carried out over the years have revealed that aquifer groups in alluvial / soft rocks even transcend the surface basin boundaries. Broadly two groups of rock formations have been identified depending on characteristically different hydraulics of groundwater, Viz. Porous Formations and Fissured Formations.

1.1.1 POROUS FORMATION

Porous formations have been further subdivided into Unconsolidated and Semi-consolidated formations.

UNCONSOLIDATED FORMATIONS

The areas covered by alluvial sediments of river basins, coastal and deltaic tracts constitute the unconsolidated formations. These are by far the most significant groundwater reservoirs for large scale and extensive development. The hydrogeological environment and groundwater regime in the Indo-Ganga-Brahmaputra basin indicate the existence of potential aquifers having enormous fresh groundwater reserve. Bestowed with high incidence of rainfall and covered by a thick pile of porous sediments, these groundwater reservoirs get replenished every year and are being used heavily. In these areas, in addition to the Annual Replenishable Groundwater Resources available in the zone of water level fluctuation (Dynamic Groundwater Resource), there exists a huge groundwater reserve in the deeper passive recharge zone below the zone of fluctuation as well as in the deeper confined aquifers which remains largely unexplored as yet. Although the mode of development of groundwater is primarily through dug wells, dug cum bore well and cavity wells, thousands of tube wells have been constructed during last few decades.

SEMI-CONSOLIDATED FORMATIONS

The semi-consolidated formations normally occur in narrow valleys or structurally faulted basins. The Gondwanas, Lathis, Tipams, Cuddalore sandstones and their equivalents are the most extensive productive aquifers in this category. Under favorable situations, these formations give rise to free-flowing wells. In selected tracts of northeastern India, these

water-bearing formations are quite productive. The Upper Gondwanas, which are generally arenaceous, in general, constitute prolific aquifers.

1.1.2 FISSURED FORMATIONS (CONSOLIDATED FORMATIONS)

The consolidated formations occupy almost two-thirds of the country. These formations, except vesicular volcanic rocks have negligible primary porosity. From the hydrogeological point of view, fissured rocks are broadly classified into four types viz. Igneous and metamorphic rocks (excluding volcanic and carbonate rocks), volcanic rocks, consolidated sedimentary rocks and Carbonate rocks.

IGNEOUS AND METAMORPHIC ROCKS EXCLUDING VOLCANIC AND CARBONATE ROCKS

The most common rock types under this category are granites, gneisses, charnockites, khondalites, quartzites, schists and associated phyllites, slates, etc. These rocks possess negligible primary porosity but attain porosity and permeability due to fracturing and weathering. Groundwater yield also depends on the rock type and grade of metamorphism. Generally, the granites, Khondalites and biotite gneisses have better yield potential as compared to charnockites.

VOLCANIC ROCKS

The predominant types of volcanic rocks are the basaltic lava flows of Deccan Plateau. The highly variable water bearing properties of different flow units control groundwater occurrence in Deccan Traps. The Deccan Traps have usually poor to moderate permeability depending on the presence of primary and secondary fractures.

CONSOLIDATED SEDIMENTARY ROCKS EXCLUDING CARBONATE ROCKS

Consolidated sedimentary rocks occur in Cuddapahs, Vindhyan and their equivalents. The formations consist of conglomerates, sandstones, shales. The presence of bedding planes, joints, contact zones and fractures controls the groundwater occurrence, movement and yield potential.

CARBONATE ROCKS

Limestones in the Cuddapah, Vindhyan and Bijawar group of rocks dominates the carbonate rocks other than marbles and dolomites. In carbonate rocks, the circulation of water creates solution cavities thereby increasing the permeability of the aquifers. The solution activity leads to widely contrasting permeabilities within short distances.

1.2 HYDROGEOLOGICAL UNITS AND THEIR GROUNDWATER POTENTIAL

Hydrogeological map of India is depicted in **Plate-I** and the geographical distribution of hydrogeological units along with their Groundwater potential is given in **Table- 1**.

TABLE-1: AQUIFER SYSTEM IN THE COUNTRY

System	Coverage	Groundwater potential
Unconsolidated formations - alluvial	Indo-Gangetic, Brahmaputra plains	Enormous reserves down to 600 m depth. High rain fall and hence recharge is ensured. Can support large-scale development through deep tube wells
	Coastal Areas	Reasonably extensive aquifers but risk of saline water intrusion
	Part of Desert area – Rajasthan and Gujarat	Scanty rainfall. Negligible recharge. Salinity hazards. Groundwater Availability at great depths.
Consolidated/semi-consolidated formations - sedimentaries, basalts and crystalline rocks	Peninsular Areas	Availability depends on secondary porosity developed due to weathering, fracturing etc. Scope for GW availability at shallow depths (20-40 m) in some areas and deeper depths (100-200 m) in other areas. Varying yields.
Hilly	Hilly states	Low storage capacity due to quick runoff

Hydrogeological Map of India



Legend

Ground Water Potential (Yield Litres/sec)

>40 25-40 10-25 <10

1-25 1-10 1-5

<1

Unconsolidated Formations

Consolidated /Semi-Consolidated Formations

Hilly Areas

2. RAINFALL VARIATIONS

Variability in the onset, withdrawal and quantum of rainfall during the monsoon season has profound impacts on water resources, power generation, agriculture, economics and ecosystems in the country. The variation in climate is perhaps greater than any other area of similar size in the world. There is a large variation in the amounts of rainfall received at different locations. The average annual rainfall is about 122 cm, but it has great spatial variations. The areas on the Western Ghats and the Sub-Himalayan areas in North East and Meghalaya Hills receive heavy rainfall of over 250 cm annually, whereas the Areas of Northern parts of Kashmir and Western Rajasthan receive rainfall less than 40 cm. The rainfall pattern roughly reflects the different climate regimes of the country, which vary from humid in the northeast (about 180 days rainfall in a year), to arid in Rajasthan (20 days rainfall in a year). Due to climatic changes, in recent times, the occurrence of high intensity rainfall event has increased and the number of rainy days has decreased. In some years, it has been observed that, the southwest monsoon has extended beyond its normal withdrawal date.

Normal Annual Rainfall

The rainfall over India has large spatial as well as temporal variability. Annual rainfall is more than 200 cm over these regions. For the country as whole, mean monthly rainfall during July (301 mm) is highest and contributes about 24.6% of annual rainfall (1219.77 mm). The mean rainfall during August is slightly lower and contributes about 21.9% of annual rainfall. June and September rainfall are almost similar and contribute 13.8% and 14.5% of annual rainfall, respectively. The mean southwest monsoon (June, July, August & September) rainfall (914 mm) contributes 75.5% of annual rainfall (1219.77 mm). Contribution of pre-monsoon (March, April & May) rainfall and post-monsoon (October, November & December) rainfall in annual rainfall is mostly the same (11%). Coefficient of variation is higher during the months of November, December, January and February. The Thematic map of distribution of annual normal rainfall is given in **Plate-II**. The map shows that, one state i.e., Rajasthan receives annual rainfall between 250 – 500 mm, 9 states and UTs between 500 mm – 1000 mm, 15 states between 1000 – 2000 mm, 4 states between 2000-3000 mm and 5 states more than 3000 mm in a year.

Normal Monsoon Rainfall

The SW monsoon is the most significant feature of the Indian climate. The season is spread over four months, but the actual period at a particular place depends on onset and withdrawal

dates. It varies from less than 75 days over West Rajasthan, to more than 120 days over the south-western regions of the country contributing to about 75% of the annual rainfall. The onset of the SW monsoon normally starts over the Kerala coast, the southern tip of the country by 1 June, advances along the Konkan coast in early June and covers the whole country by middle of July. However, onset occurs 42 about a week earlier over islands in the Bay of Bengal. The monsoon is influenced by global and local phenomenon like El Nino, northern hemispheric temperatures, sea surface temperatures, snow cover etc. Normal monsoon rainfall more than 1500 mm is being observed over most parts of northeast India, Konkan & Goa. It ranges from 317 mm in Tamil Nadu state to 6218 mm in Meghalaya state with an average of 914.46 mm.

Normal Post-monsoon rainfall

North-East (NE) monsoon or post-monsoon season is transition season associated with the establishment of the north-easterly wind regime over the Indian subcontinent. Meteorological subdivisions namely Coastal Andhra Pradesh Rayalaseema, Tamil Nadu, Kerala and South Interior Karnataka receive good amount of rainfall accounting for about 35% of their annual total in these months. Many parts of Tamil Nadu and some parts of Andhra Pradesh and Karnataka receive rainfall during this season due to the storms forming in the Bay of Bengal. It ranges from 18 mm in Rajasthan state to 910 mm in Puducherry UT with an average of 200 mm. In the north eastern states, it ranges from it ranges from 169 mm to 315 mm with an average of 239 mm.

Rainfall Variation in 2022

The distribution of annual rainfall in 2022 is given as thematic map in **Plate III**. The map shows that Ladakh received annual rainfall less than 500 mm, 7 states between 500 mm – 1000 mm, 19 states between 1000 – 2000 mm, 4 states between 2000-3000 mm and 4 states more than 3000 mm. State-wise seasonal and annual observed rainfall, and its percentage departure from normal rainfall is given in **Table 2**. This data is based on India-WRIS, IMD Gridded Data. It may be observed that during 2022, highest rainfall of 5176 mm was received at Meghalaya state and the lowest rainfall of 366.85 mm was received at Ladakh state. However, on comparing with normal rainfall, it may be seen that, Daman & Diu has the highest positive departure of 301% from its normal whereas Meghalaya is with highest negative departure of 35.32% from its normal rainfall. Negative departure from normal

annual rainfall is observed in 15 states. The national average rainfall is 1243.84 mm with a positive departure of 1.97% from normal.

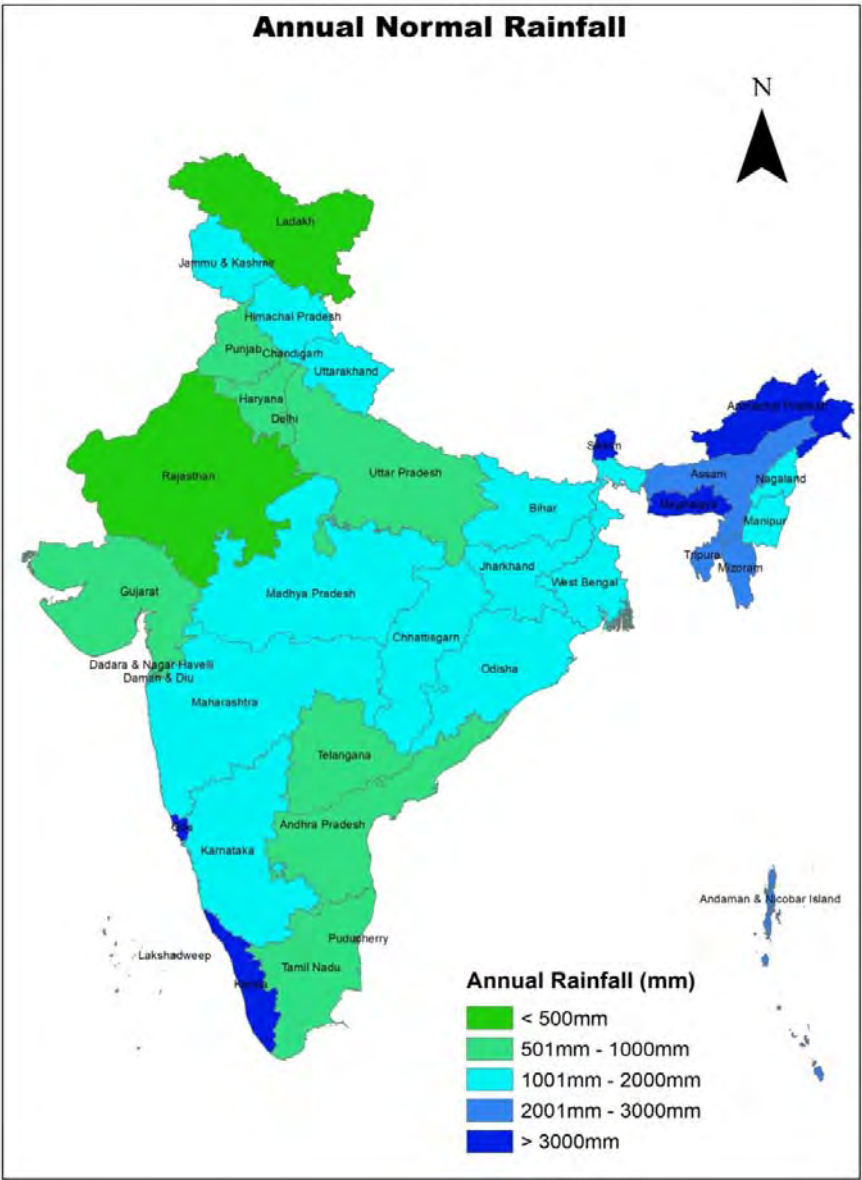
TABLE 2: STATE-WISE SEASONAL AND ANNUAL RAINFALL DISTRIBUTION (Source: IMD Gridded Data, IndiaWRIS)

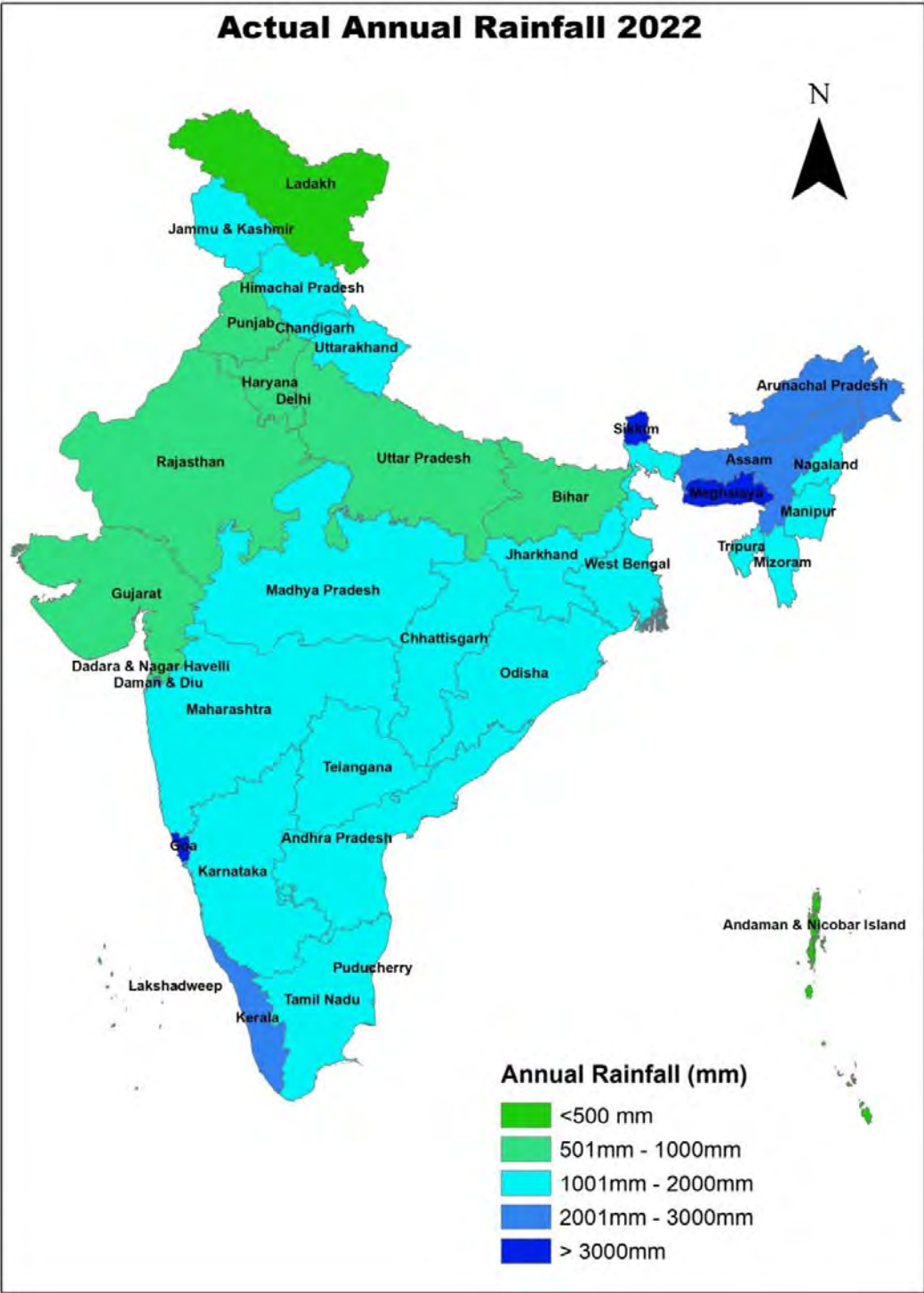
STATE	Non-Monsoon Period				Monsoon Period				Cumulative (Annual)		
	Actual (mm)	Normal (mm)	Deviation (mm)	Percentage of Non-Monsoon Rainfall from Annual	Actual (mm)	Normal (mm)	Deviation (mm)	Percentage of Monsoon Rainfall from Annual	Actual (mm)	Normal (mm)	Deviation (mm)
Andaman & Nicobar	--	1461.72	--	--	--	1447.72	--	--	--	2909.44	--
Andhra Pradesh	487.17	377.42	29.08	45.91	573.98	492.12	16.63	54.09	1061.15	869.54	22.04
Arunachal Pradesh	1457.9	1066.08	36.75	50.83	1410.48	1935.05	-27.11	49.17	2868.38	3001.13	-4.42
Assam	999.39	830.39	20.35	42.60	1346.74	1442.1	-6.61	57.40	2346.13	2272.49	3.24
Bihar	239.48	187.98	27.40	24.60	734.12	1034.27	-29.02	75.40	973.6	1222.25	-20.34
Chandigarh	317.1	231.1	37.21	26.21	892.7	846.6	5.45	73.79	1209.8	1077.7	12.26
Chhattisgarh	163.0	160	1.88	11.91	1205.65	1140.08	5.75	88.09	1368.65	1300.08	5.27
Dadra And Nagar Hav	129.57	--	--	3.73	3344.38	--	--	96.27	3473.95	--	--
Daman & Diu	47.05	50.8	-7.38	1.88	2459.46	574.2	328.33	98.12	2506.51	625	301.04
Delhi	243.35	126.9	91.77	36.40	425.23	667.1	-36.26	63.60	668.58	794	-15.80
Goa	350.58	271.3	29.22	10.01	3152.78	2773.9	13.66	89.99	3503.36	3045.2	15.05
Gujarat	23.2	38.21	-39.28	2.54	890.01	672.68	32.31	97.46	913.21	710.89	28.46
Haryana	177.5	97.92	81.27	26.15	501.16	460.09	8.93	73.85	678.66	558.01	21.62
Himachal Pradesh	370.5	550.45	-32.69	33.25	743.9	772.36	-3.68	66.75	1114.4	1322.81	-15.76
Jammu & Kashmir	507.91	648.47	-21.68	44.96	621.75	552.99	12.43	55.04	1129.66	1201.46	-5.98
Jharkhand	247.27	230.5	7.28	24.02	782.01	1095.08	-28.59	75.98	1029.28	1325.58	-22.35
Karnataka	485.37	319.73	51.81	33.36	969.45	896.12	8.18	66.64	1454.82	1215.85	19.65
Kerala	1060.37	956.38	10.87	38.71	1678.94	2140.62	-21.57	61.29	2739.31	3097	-11.55
Ladakh	170.85	--	--	46.57	196	--	--	53.43	366.85	--	--
Madhya Pradesh	139.64	105.23	32.70	10.74	1160.56	996.91	16.42	89.26	1300.2	1102.14	17.97
Maharashtra	159.84	141.56	12.91	11.78	1196.67	1001.6	19.48	88.22	1356.51	1143.16	18.66
Manipur	659.73	527.35	25.10	45.50	790.36	841.25	-6.05	54.50	1450.09	1368.6	5.95
Meghalaya	2257.63	1786.3	26.39	43.61	2919.36	6218.27	-53.05	56.39	5176.99	8004.57	-35.32
Mizoram	653.27	833.1	-21.59	33.12	1319.13	1345.1	-1.93	66.88	1972.4	2178.2	-9.45
Nagaland	606.42	559.82	8.32	37.80	997.77	1341.8	-25.64	62.20	1604.19	1901.62	-15.64
Odisha	291.03	310.48	-6.26	20.68	1116.44	1159.49	-3.71	79.32	1407.47	1469.97	-4.25

Pondicherry	897.92	1036.5	-13.37	70.29	379.46	326.7	16.15	29.71	1277.38	1363.2	-6.30
Punjab	190.93	145.71	31.03	27.63	500.07	500.42	-0.07	72.37	691	646.13	6.94
Rajasthan	68.56	43.35	58.15	10.80	566.09	418.13	35.39	89.20	634.65	461.48	37.52
Sikkim	1344.21	1066.6	26.03	37.35	2254.76	2023.9	11.41	62.65	3598.97	3090.5	16.45
Tamil Nadu	675.15	605.59	11.49	60.11	447.95	316.35	41.60	39.89	1123.1	921.94	21.82
Telangana	207.63	175.51	18.30	15.72	1113.11	766.95	45.13	84.28	1320.74	942.46	40.14
Tripura	818.74	882.88	-7.26	41.32	1162.74	1478.47	-21.36	58.68	1981.48	2361.35	-16.09
Uttar Pradesh	245.49	124.02	97.94	29.45	587.96	856.79	-31.38	70.55	833.45	980.81	-15.02
Uttarakhand	396.61	357.19	11.04	24.97	1191.58	1212.52	-1.73	75.03	1588.19	1569.71	1.18
West Bengal	447.83	397.04	12.79	29.13	1089.36	1342.21	-18.84	70.87	1537.19	1739.25	-11.62
INDIA	343.84	305.32	12.62	27.64	900	914.46	-1.58	72.36	1243.84	1219.78	1.97

It may be observed from the data that the variation of southwest monsoon rainfall is very high and it ranges from 196 mm in Ladakh to 3344.38 mm in Dadra and Nagar Haveli. The states of Andhra Pradesh, Daman & Diu, Goa, Gujarat, Jammu & Kashmir, Madhya Pradesh, Maharashtra, Pondicherry, Rajasthan, Sikkim, Tamil Nadu and Telangana has received more than normal (positive departure of more than 10%) rainfall in the monsoon season. The states of Arunachal Pradesh, Bihar, Delhi, Jharkhand, Kerala, Meghalaya, Nagaland, Tripura, Uttar Pradesh and West Bengal have received rainfall with negative departure (more than 10%) from normal. The national average monsoon rainfall is 900 mm with a negative departure of 1.58% from normal.

PLATE – II





3.0 GROUNDWATER LEVEL SCENARIO

3.1 INTRODUCTION

Ground Water Year Book is prepared annually 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, March/April/ May, August and November. The regime monitoring started in the year 1969 by Central Groundwater Board. A network of 25437 observation wells, as on 30.04.2023, located all over the country is being monitored. Groundwater samples are collected from these observation wells once a year during the month of March/April/May to obtain background information of groundwater quality changes on regional scale. The database thus generated forms the basis for planning the groundwater development and management programmes. The groundwater level and quality monitoring are of particular importance in coastal as well inland saline environment to assess the changes in salt water/fresh water interface as also the gradual quality changes in the fresh groundwater regime. This data is used for assessment of groundwater resources and changes in the regime consequent to various development and management activities.

The premonsoon water level data is collected from all the monitoring stations during the months of March/ April/ May, depending on the climatological conditions of the region. For North eastern states premonsoon data is collected during March, since the onset of monsoon is normally observed in April. Similarly for Orissa, West Bengal and Kerala where monsoon appears early in May the monitoring is carried out during the month of April. For remaining states pre-monsoon monitoring month is May. Water levels during August are monitored to access the impact of monsoon on the groundwater resources. Post monsoon data collected during November reflects the cumulative effect of groundwater recharge and withdrawal of groundwater for various purposes. January water level data indicates the effect of withdrawal for rabi crops.

The data is analyzed to know about the frequency distribution of water levels during different periods and seasonal, annual and decadal fluctuations in water levels. The water level and

water level fluctuation maps are prepared for each monitoring period to study the spatial and temporal changes in groundwater regime.

The State/UT-wise distribution of the groundwater observation wells is given in **Table 3** and depicted in **Plate-IV**.

PLATE - IV

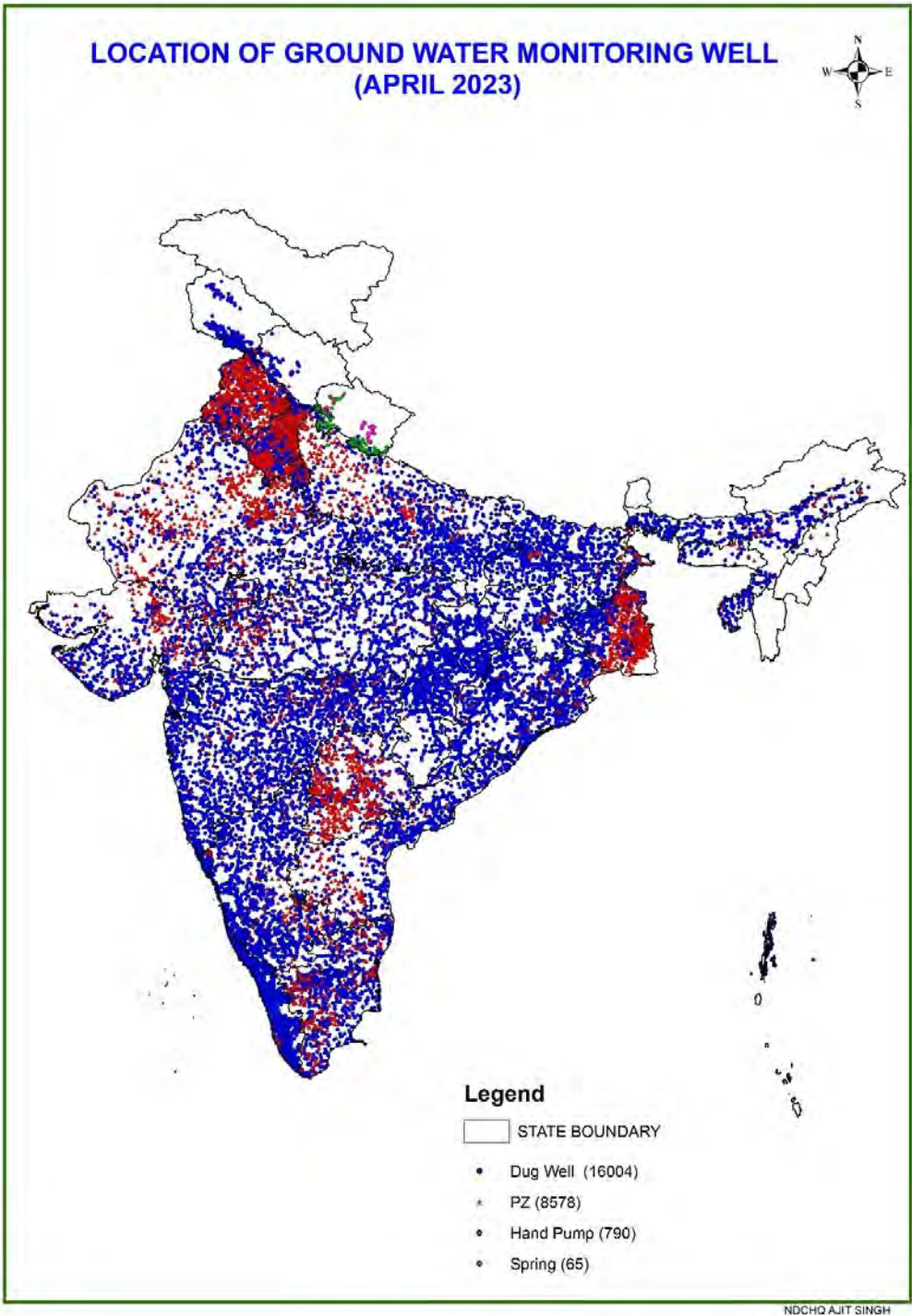


TABLE3: STATE/UT -WISE STATUS OF GROUNDWATER MONITORING WELLS

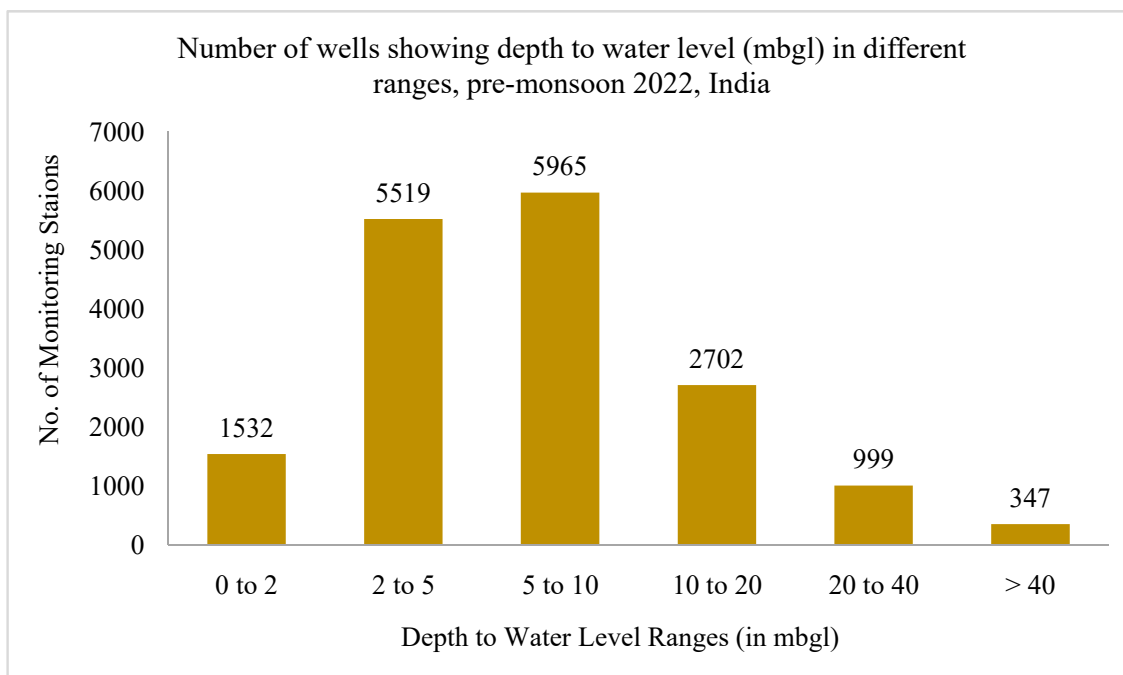
Sl No	Name of the State/UT	Number of GW Monitoring Stations (April 2023)				
		Dug Well	Piezometer	Handpump	Spring	Total
1	Andhra Pradesh	633	701	0	0	1334
2	Arunachal Pradesh	26	5	0	0	31
3	Assam	355	80	0	0	435
4	Bihar	800	90	0	0	890
5	Chhattisgarh	1041	246	0	0	1287
6	Delhi	22	107	0	0	129
7	Goa	83	45	0	0	128
8	Gujarat	836	434	0	0	1270
9	Haryana	488	809	0	0	1297
10	Himachal Pradesh	138	32	0	24	194
11	Jammu & Kashmir	287	92	0	0	379
12	Jharkhand	419	96	0	0	515
13	Karnataka	1366	780	0	0	2146
14	Kerala	1351	259	0	0	1610
15	Madhya Pradesh	1178	434	0	0	1612
16	Maharashtra	1658	273	0	0	1931
17	Manipur	2	0	0	0	2
18	Meghalaya	60	14	0	0	74
19	Mizoram	3				3
20	Nagaland	12	1	0	0	13
21	Odisha	1483	235	0	0	1718
22	Punjab	180	990	0	0	1170
23	Rajasthan	642	709	0	0	1351
24	Sikkim	0	4	0	0	4
25	Tamil Nadu	794	587	0	0	1381
26	Telangana	257	950	0	0	1207
27	Tripura	100	18	0	0	118
28	Uttar Pradesh	838	356	0	0	1194
29	Uttarakhand	40	12	132	41	225
30	West Bengal	754	185	658	0	1597
	UTs					
1	Andaman & Nicobar	110	2	0	0	112
2	Chandigarh	1	22	0	0	23
3	Dadra & Nagar Haveli	17	0	0	0	17
4	Daman & Diu	21	3	0	0	24
5	Pondicherry	9	7	0	0	16
Total		16004	8578	790	65	25437

3.2 GROUNDWATER REGIME IN UNCONFINED AQUIFER

3.2.1 DEPTH TO WATER LEVEL IN UNCONFINED AQUIFER

DEPTH TO WATER LEVEL – PRE-MONSOON 2022

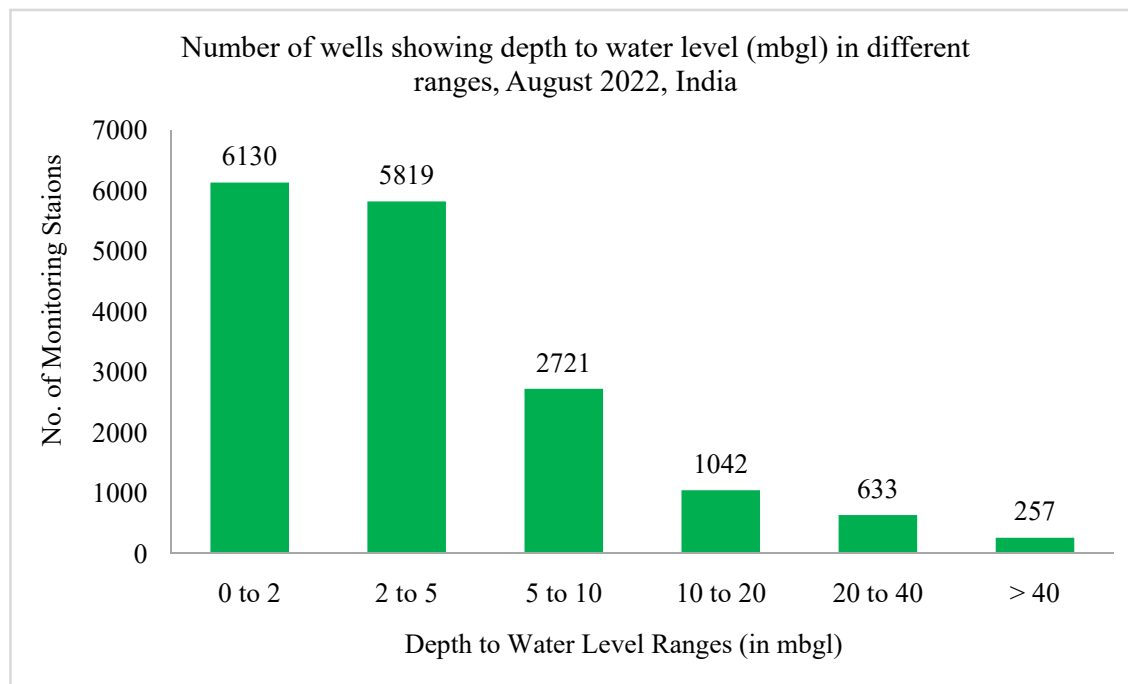
The groundwater level data for pre-monsoon 2022 indicates that out of the total 17064 wells analysed, 1532 (9%) wells are showing water level less than 2 m bgl (metres below ground level), 5519 (32.3%) wells are showing water level in the depth range of 2 to 5 m bgl, 5965 (35.0 %) wells are showing water level in the depth range of 5 to 10 m bgl, 2702 (15.8%) wells are showing water level in the depth range of 10 to 20 m bgl, 999 (5.9%) wells are showing water level in the depth range of 20 to 40 m bgl and the remaining 347 (2%) wells are showing water level more than 40 m bgl. The maximum depth to water level of 145.50 m bgl is observed in Bikaner district of Rajasthan whereas the minimum is less than 1 m bgl (**Plate VI, Annexure I**). Groundwater level data of pre-monsoon 2022 for the country reveals that the general depth to water level of the country ranges from 5 to 10 m bgl. Very shallow water level of less than 2 m bgl is observed in few states, such as Andhra Pradesh, Assam, Karnataka, Kerala, Odisha, Tamil Nadu and West Bengal in small patches. Groundwater level in the range of 2 to 5 m bgl is seen in Assam, Uttar Pradesh, Bihar, Coastal parts of Odisha, few pockets in Andhra Pradesh, Gujarat and Maharashtra. Major part of the country shows water level in the range 5 to 10 m bgl, especially in the states of Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Odisha, Chhattisgarh, Maharashtra, Gujarat, Tamil Nadu, Telangana and Karnataka. In major parts of north-western and western states, especially in the states of Delhi, Haryana, Punjab and Rajasthan, depth to water level is generally deeper and ranges from about 20 to more than 40 m bgl.



DEPTH TO WATER LEVEL – AUGUST 2022

The groundwater level data for August 2022(**Annexure-II**) indicates that, out of the 16602 wells analysed, 6130 (36.9 %) wells are showing water level less than 2 m bgl (metres below ground level), 5819 (35.0%) wells are showing water level in the depth range of 2-5 m bgl, 2719 (16.4%) wells are showing water level in the depth range of 5-10 m bgl, 1042 (6.3%) wells are showing water level in the depth range of 10-20 m bgl, 633 (3.8%) wells are showing water level in the depth range of 20-40 m bgl and the remaining 257 (1.5%) wells are showing water level more than 40 m bgl. The map of depth to water levels during August 2022 is shown in **Plate-VII**. The general depth to water level of the country ranges from 0 to 5 m bgl. Almost 72% of the wells analysed show water level in the range of 0 to 5 m bgl. Very shallow water level of less than 2 m bgl is observed in considerable number of wells in almost all the states, except Chandigarh, Punjab, Delhi and Tamil Nadu. Water level in the range of 2 to 5 m bgl, is observed in almost all states. Punjab, where less than 15 % of wells have water level of 2 to 5 mbgl. In major parts of north-western and western states, depth to water level is generally deeper and ranges from about 10 to 40 m bgl. In parts Delhi, Haryana, Punjab and Rajasthan, water level of more than 40 m bgl is also recorded. The maximum depth to water level of 130.6 m bgl is observed at Khara in Jodhpur district of

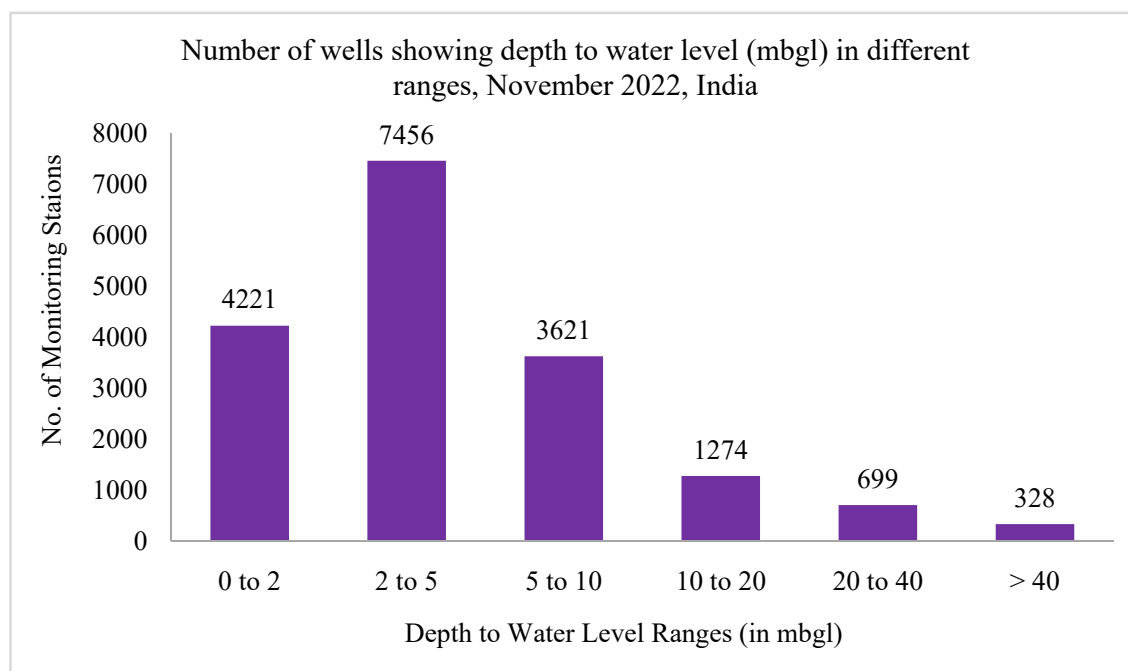
Rajasthan, whereas the minimum is 0.01 m bgl at places in Andhra Pradesh, Karnataka, Maharashtra, Gujarat and Madhya Pradesh.



DEPTH TO WATER LEVEL – NOVEMBER 2022 (POST-MONSOON)

The groundwater level data for November 2022 indicates that out of the total 17599 wells analysed, 4221 (24.0 %) wells are showing water level less than 2 m bgl, 7456 (42.4%) wells are showing water level in the depth range of 2 to 5 m bgl, 3621 (20.6%) wells are showing water level in the depth range of 5 to 10 m bgl, 1273 (7.2%) wells are showing water level in the depth range of 10 to 20 m bgl, 699 (4.0%) wells are showing water level in the depth range of 20 to 40 m bgl and the remaining 329 (1.9%) wells are showing water level more than 40 m bgl. In general, depth to water level ranges from 2 to 5 m bgl as observed at about 66.4% of the monitoring stations. Very shallow water level of less than 2 m bgl is observed in all the states, except Chandigarh. Groundwater level in the range of 2 to 5 m bgl is predominant in the entire Country, as major part of the country shows water level in the range 2 to 5 m bgl. In parts of north-western and western states, especially in the states/UTs of Chandigarh, Delhi, Haryana, Punjab and Rajasthan, depth to water level is generally deeper and ranges from about 10m bgl to more than 40 m bgl. The peninsular part of country recorded a water level in the range of 2 to 10 m bgl. The maximum depth to water level of

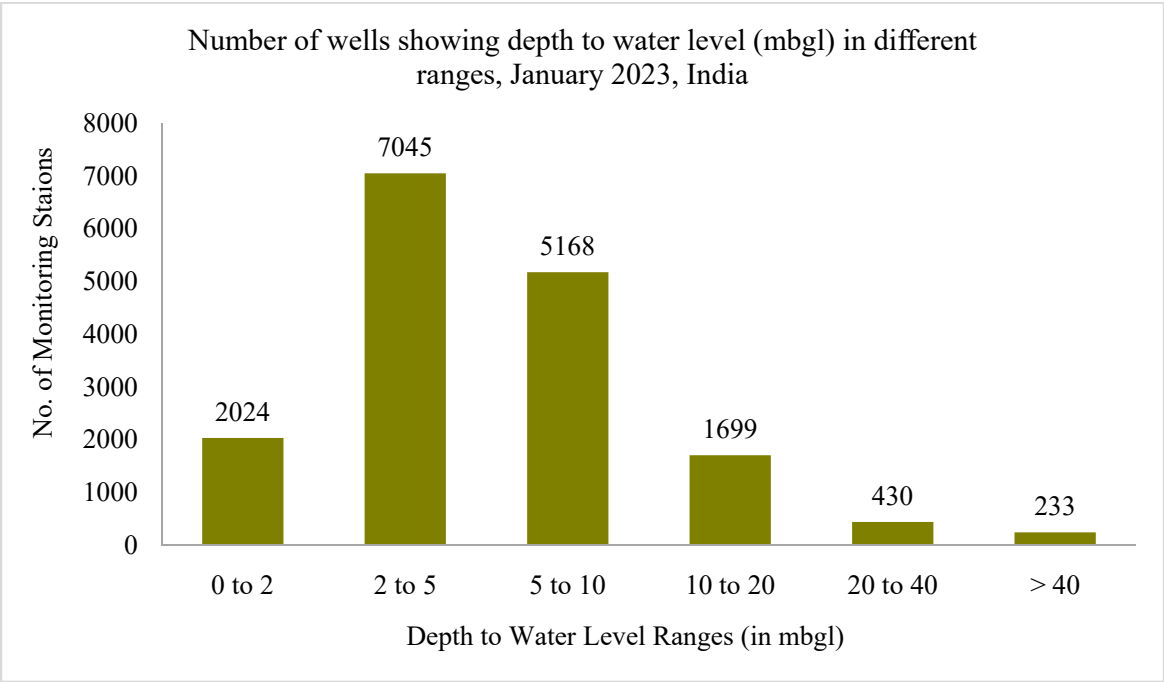
124.5 m bgl is observed in Jodhpur district of Rajasthan whereas the minimum is less than 1 m bgl(**Plate-VIII, Annexure- III**).



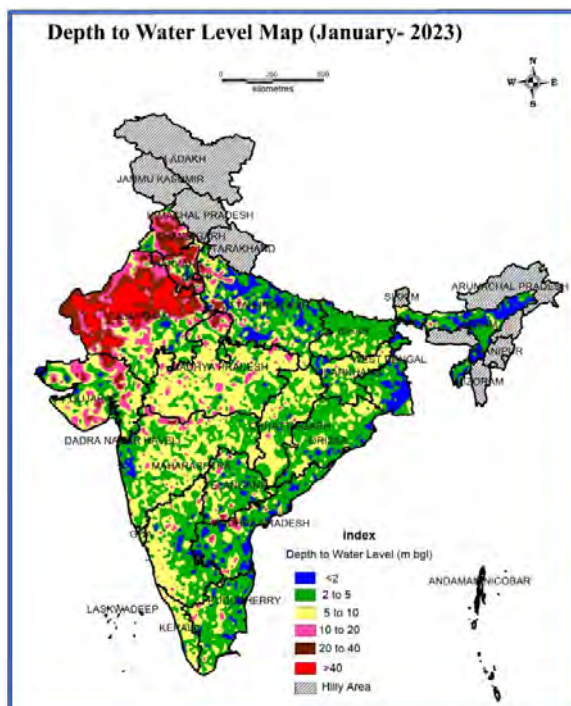
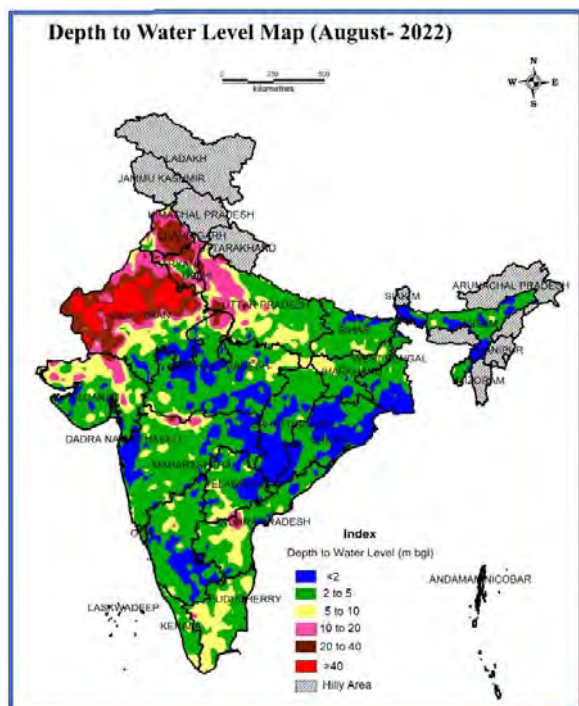
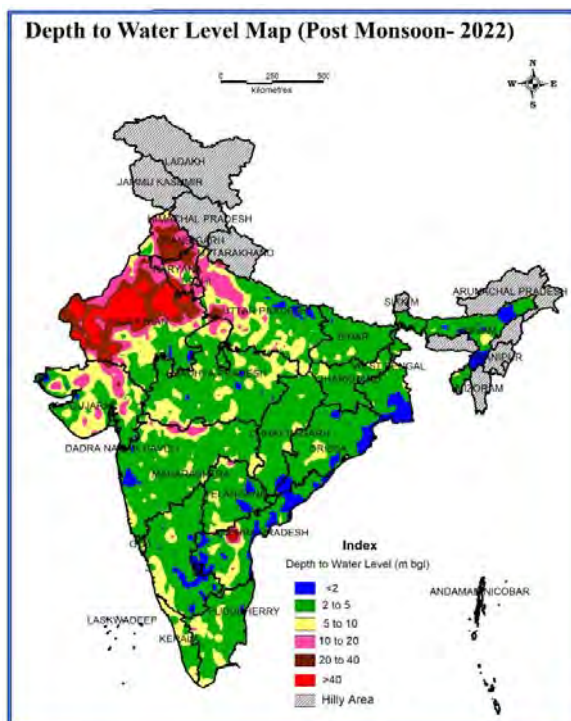
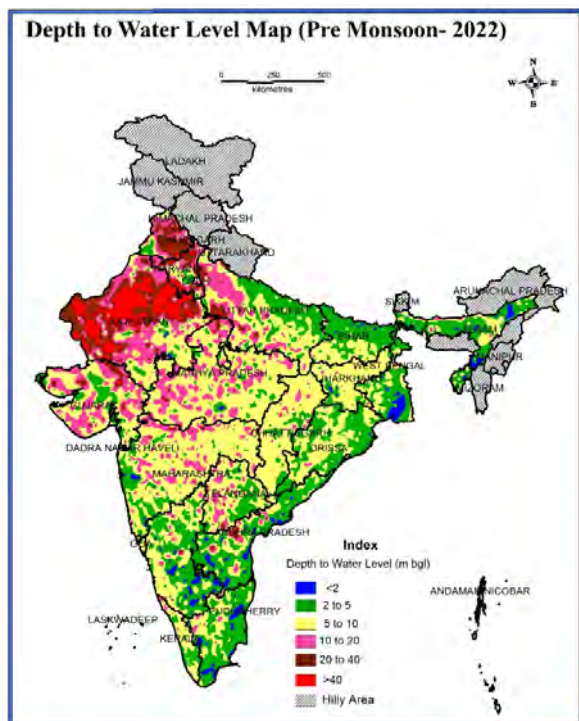
DEPTH TO WATER LEVEL– JANUARY 2023

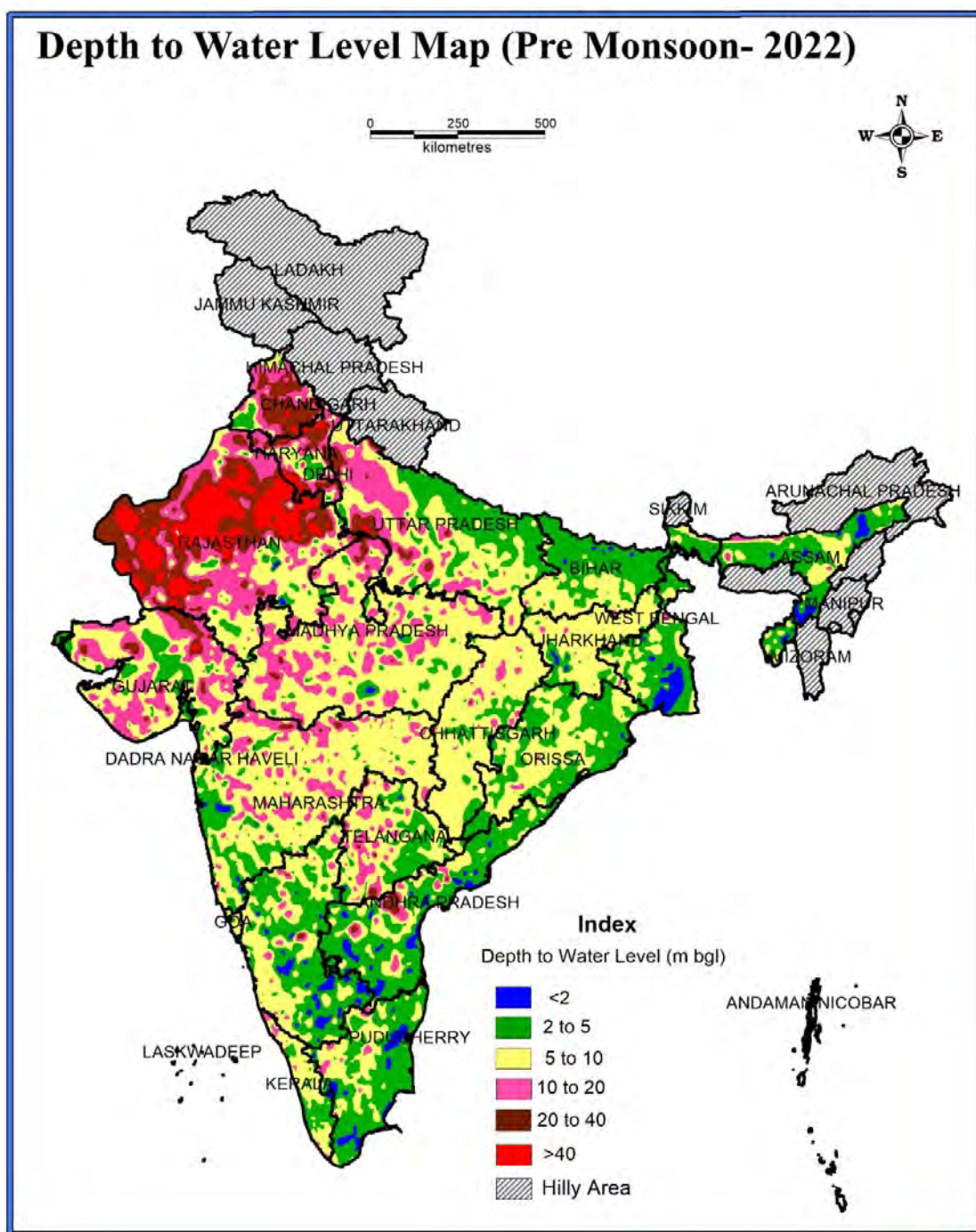
The groundwater level data for January 2023 indicates that out of the total 16599 wells analysed, 2024 (12.2%) wells are showing water level less than 2 m bgl (metres below ground level), 7045 (42.4%) wells are showing water level in the depth range of 2 to 5 m bgl, 5168 (31.1%) wells are showing water level in the depth range of 5 to 10 m bgl, 1699 (10.2%) wells are showing water level in the depth range of 10 to 20 m bgl, 430 (2.6%) wells are showing water level in the depth range of 20 to 40 m bgl and the remaining 233 (1.4%) wells are showing water level more than 40 m bgl. The maximum depth to water level of 146.11 m bgl is observed in Jodhpur district of Rajasthan, whereas the minimum is less than 1 m bgl. (**Plate-IX, Annexure-IV**). The depth to water level map of January 2023 for the country indicates that in general depth to water level ranges from 2 to 10 m bgl as observed at about 86% of the monitoring stations. Shallow water level of less than 2 m bgl is observed in very small and isolated pockets in the states of Assam, Odisha, Andhra Pradesh, Tamil Nadu, Konkan areas of Maharashtra and northern parts of Uttar Pradesh and Bihar. Water level in the range of 5 to 10 m bgl is prominent in all the states of Central and western parts of Karnataka and Kerala in Southern India. In major parts of north-western states depth to water level generally ranges from 10 to 40 m bgl. Water level of more than 40 m bgl is also

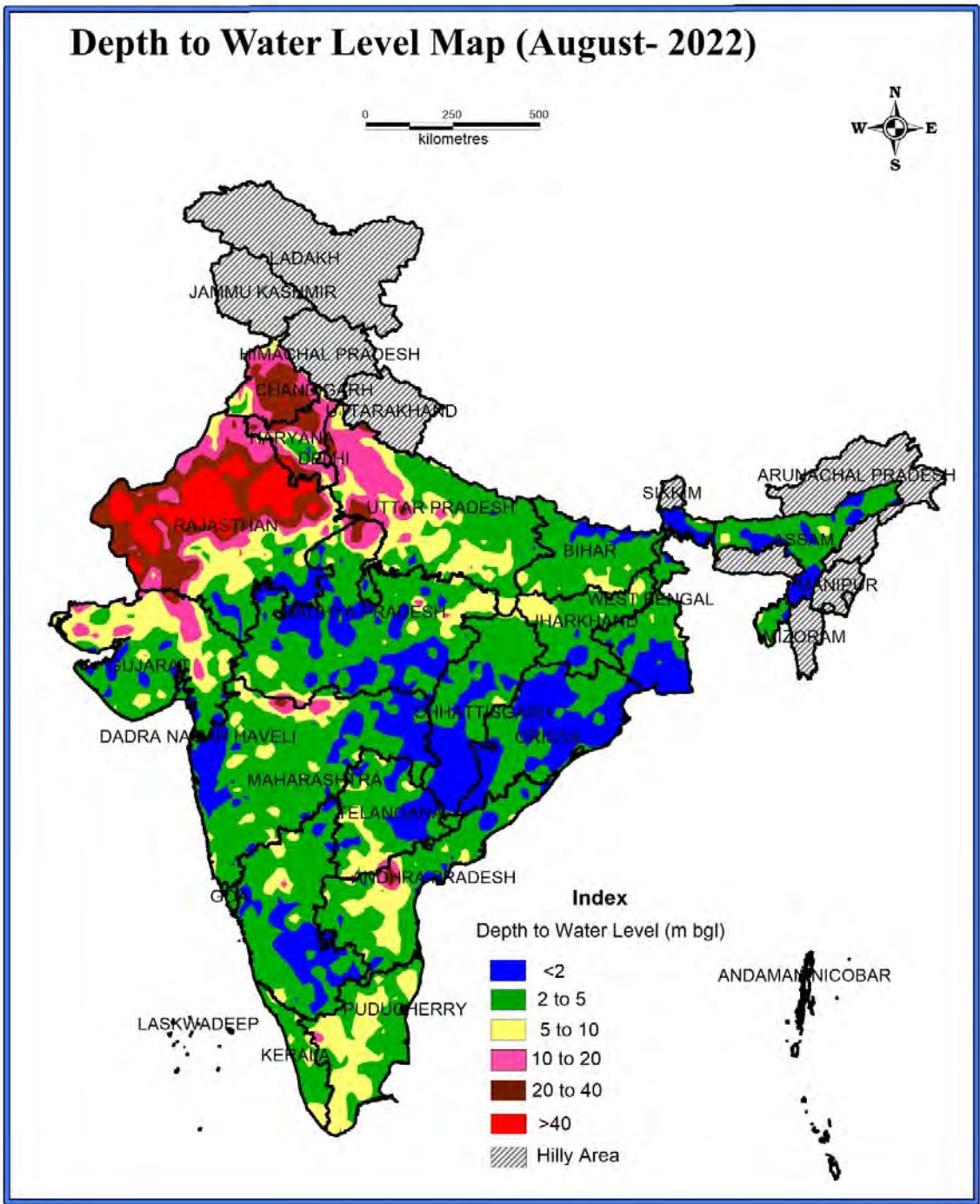
prevalent in the north western part of the country. In some parts of Haryana, Punjab and Delhi and major parts of Rajasthan, water level of more than 40 m bgl is recorded.

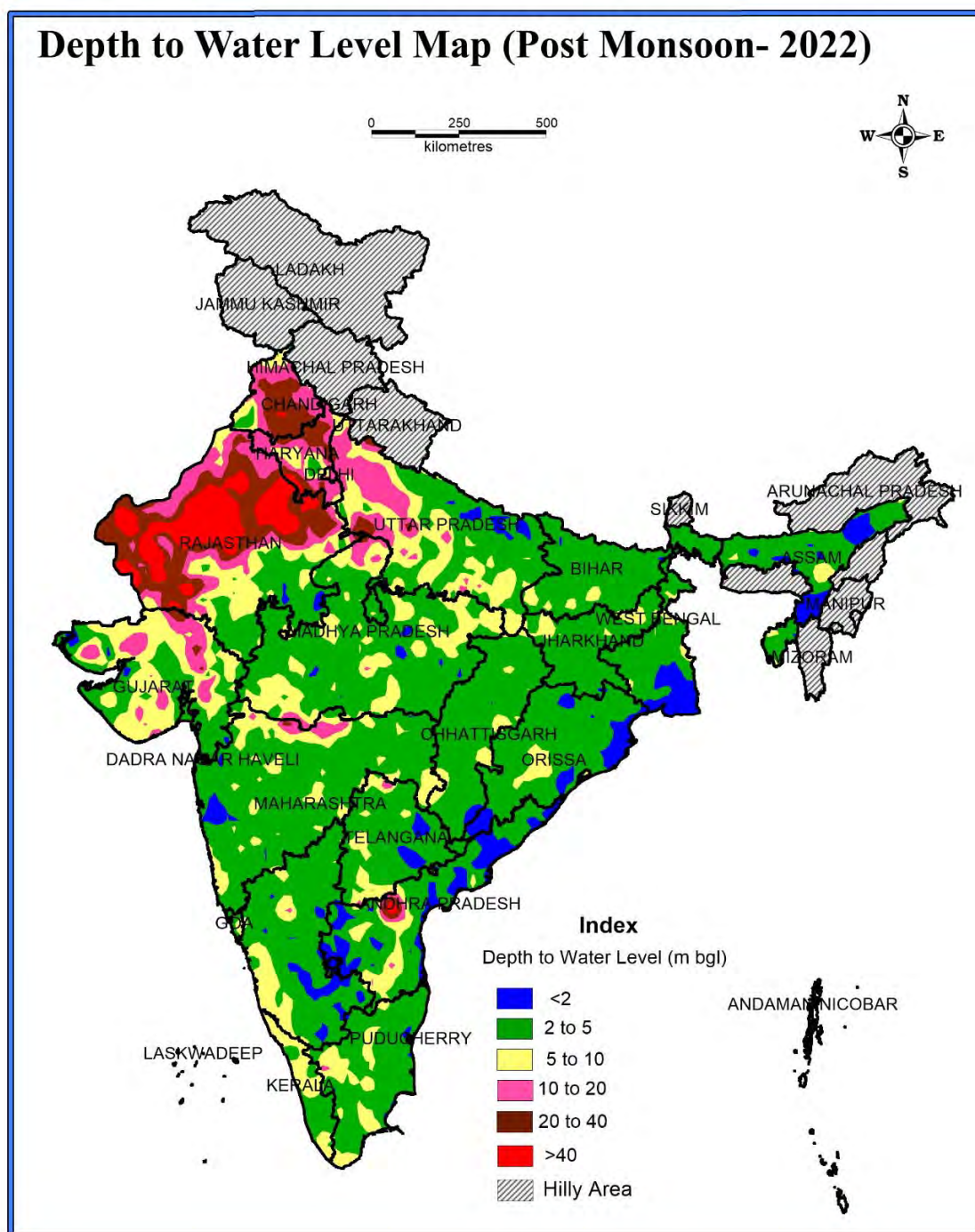


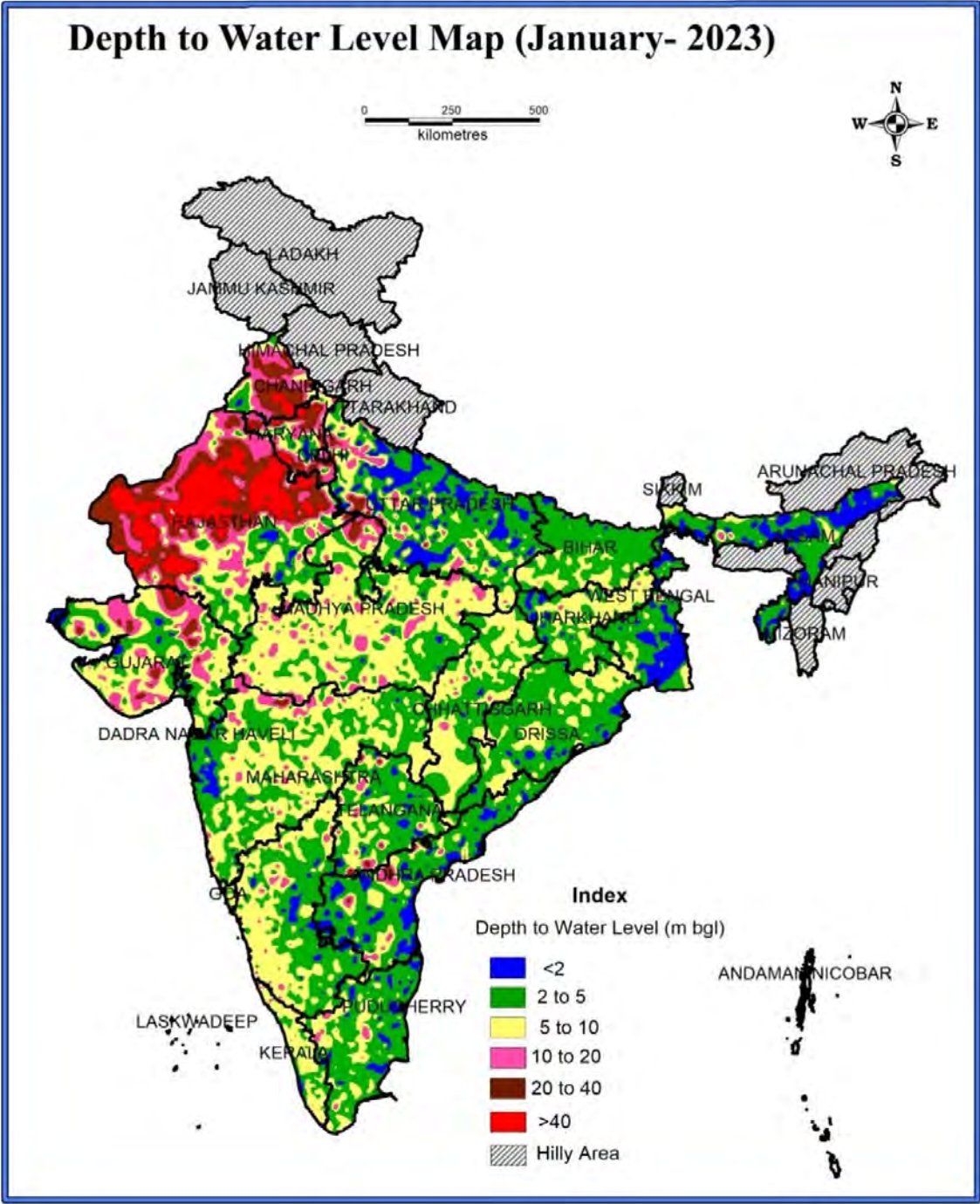
DEPTH TO WATER LEVEL AT A GLANCE







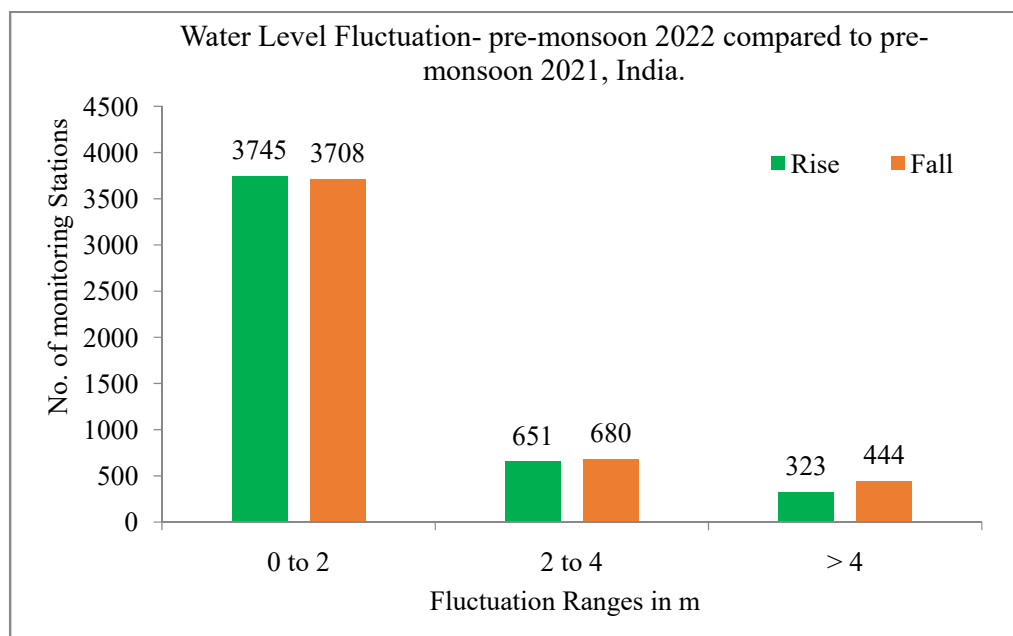




3.2.2 ANNUAL WATER LEVEL FLUCTUATION IN UNCONFINED AQUIFER

ANNUAL WATER LEVEL FLUCTUATION (PREMONSOON 2022 - PREMONSOON 2021)

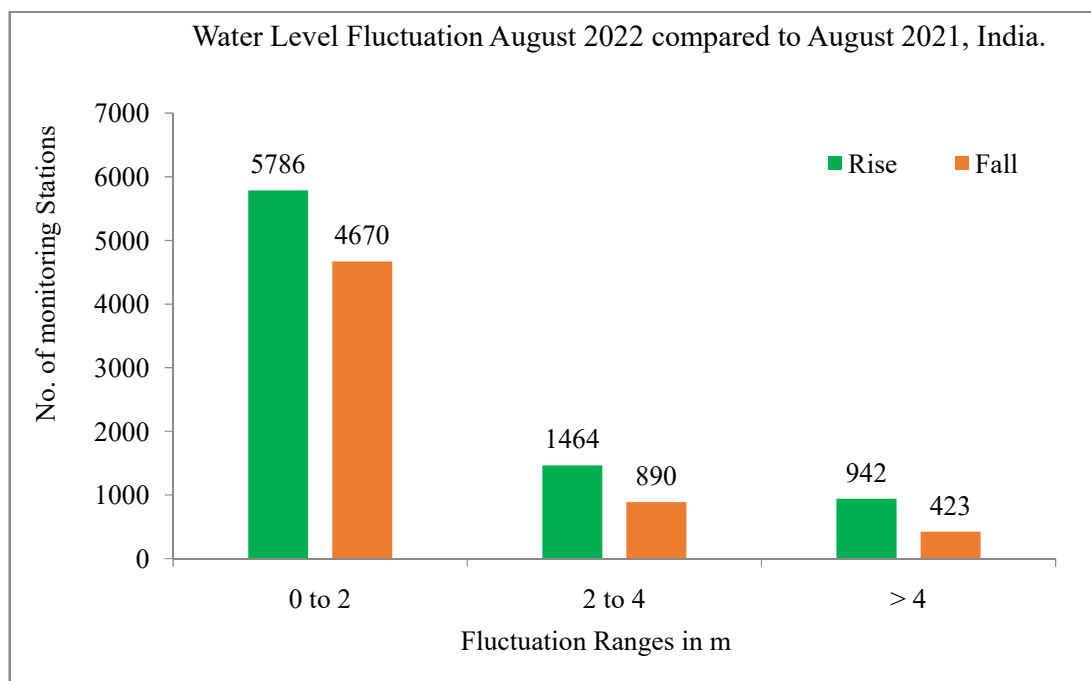
As less number of wells were monitored during pre-monsoon 2021, the water level fluctuation analysis could be done only in 9673 wells. The water level fluctuation of pre-monsoon 2022 compared to pre-monsoon 2021 shows that, 4719 (48.8%) are showing rise and 4832 (50.0%) are showing fall in water level. Remaining 122 (1.2%) stations analysed do not show any change in water level. Both rise and fall are equally predominant in the country. About 38.7% wells are showing rise in the water level in the range of less than 2 m. About 6.7% wells are showing rise in water level in 2 to 4 m range and 3.3% wells showing rise in water level more than 4 m range. Similarly, 38.3% wells are showing decline in water level in less than 2 m range. About 7% wells are showing decline in water level in 2 to 4 m range and 4.6% wells are showing decline in water level more than 4 m range. Fluctuation is mainly in the range of 0 to 2 m (**Plate XI, Annexure V**). A comparison of depth to water level of pre-monsoon 2022 to pre-monsoon 2021 also reveals that in general there is fall in water level in most part of the country. Fall is mostly in the range of 0 to 2 m, and observed in the states of Bihar, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Punjab, Rajasthan and Uttar Pradesh. Fall of more than 4 m is observed in isolated pockets, in the states of Chhattisgarh, Gujarat, Jharkhand and Rajasthan. Rise in water level is also observed in the states of Assam, Haryana, Kerala, Odisha, Tamil Nadu, West Bengal, Chandigarh, Delhi, Jammu and Kashmir and Puducherry.



ANNUAL WATER LEVEL FLUCTUATION (AUGUST 2022-AUGUST 2021)

A comparison of depth to water level of August 2022 with August 2021 reveals that in general, there is both rise and fall in water level in the country. Rise and fall are mostly in the range of 0 to 2 m. Rise in water level has been observed in the states of Andhra Pradesh, Chandigarh, Chhattisgarh, Delhi, Goa, Gujarat, Haryana, Jammu and Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Rajasthan, Tamil Nadu and Telangana (**Plate-XII, Annexure-VI**). Falling water level is observed in Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jharkhand, Kerala, Meghalaya, Tripura, Uttarakhand, West Bengal and Puducherry.

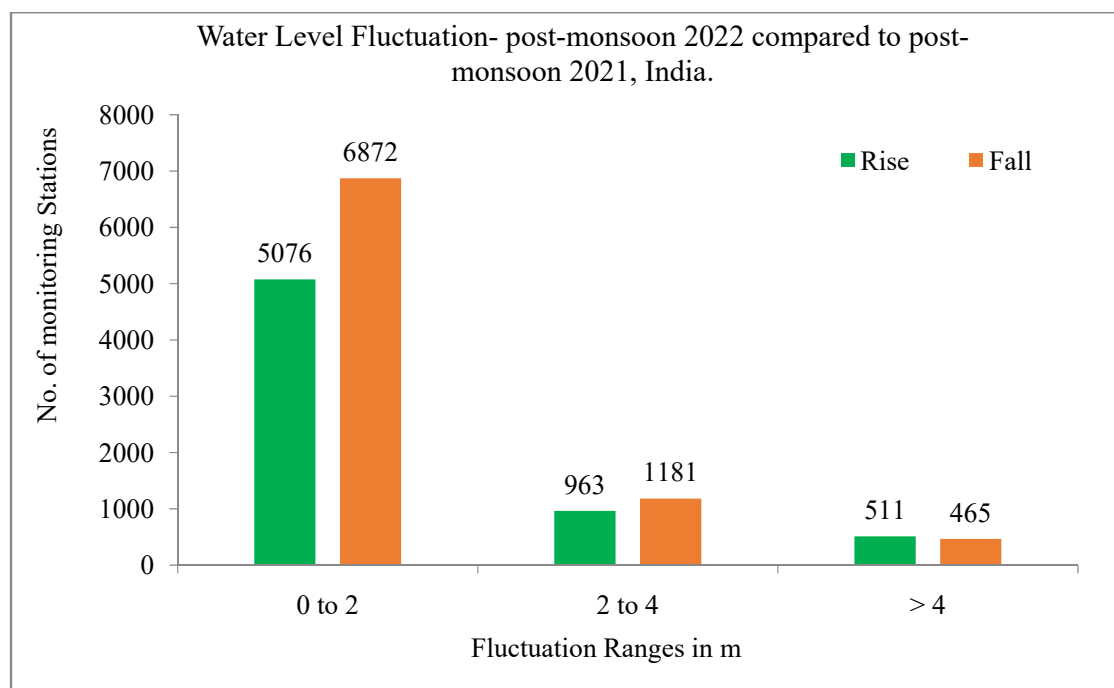
Out of total 14338 wells, about 57.1% (8192) are showing rise and 41.7% (5983) are showing fall in water level. Remaining 1.2% (163) wells do not show any change in water level. About 40.4% (5786) wells are showing rise in the range of less than 2 m, 10.2% (1464) wells in 2 to 4 m range and 6.6% (942) wells in more than 4 m range. About 41.7% wells are showing decline in water level, among which 32.6% (4670) wells are showing fall in water level in less than 2 m range, 6.2% (890) wells in water level in 2 to 4 m range and 3.0% (423) wells in more than 4 m range. Majority of the wells showing rise/decline falls in the range of 0 to 2 m.



ANNUAL WATER LEVEL FLUCTUATION(NOVEMBER 2022- NOVEMBER 2021) POST-MONSOON

The water level fluctuation of November 2022 compared to November 2021 shows that out of 15301 wells analysed, 6550 (42.8%) are showing rise and 8518 (55.7%) are showing fall in water level. Remaining 233 (1.5%) stations analysed do not show any change in water level. About 33.2% wells (5076) are showing rise in the water level in the range of less than 2 m. About 6.3% wells (963) are showing rise in water level in 2 to 4 m range and 3.3% wells (511) showing rise in water level more than 4 m range. About 55.7% wells are showing decline in water level, out of which 6872 wells (44.9%) are showing decline in water level in less than 2 m range. Majority of the wells showing rise/decline falls in the range of 0 to 2 m(**Plate-XIII, Annexure-VII**).

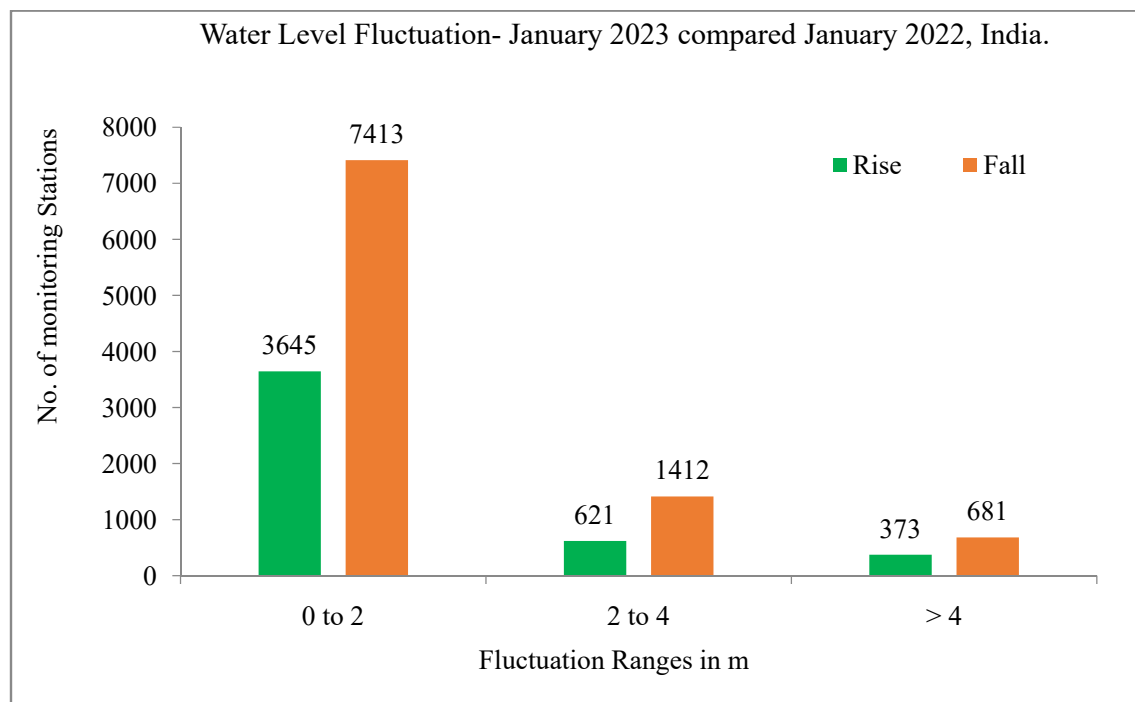
A comparison of depth to water level of November 2022 compared to November 2021 is presented in the form of water level fluctuation map reveals that in general, there is fall in water level in the central Peninsula India and western part of the country. Rise in water level is dominantly seen in all the states/UTs except in the states of Andhra Pradesh, Assam, Chhattisgarh, Haryana, Madhya Pradesh, Punjab, Rajasthan, Telangana, and Andaman & Nicobar Islands. Decline is mostly in the range of 0 to 2 m. There is fall in water level in Bihar, Odisha, Maharashtra, Karnataka, Kerala, Karnataka, Tamil Nadu West Bengal, Puducherry and Arunachal Pradesh observed in scattered pockets.



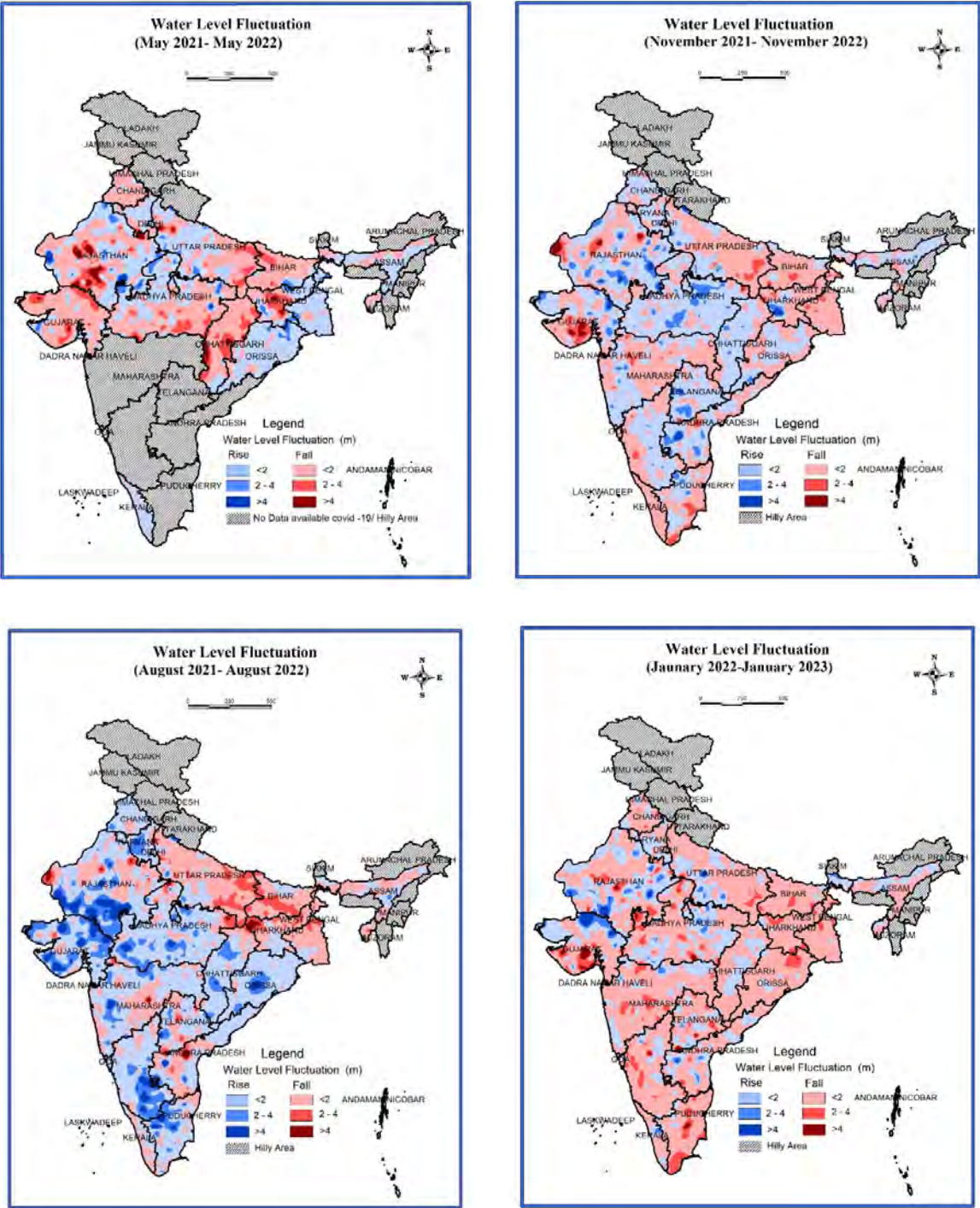
ANNUAL WATER LEVEL FLUCTUATION (JANUARY 2023- JANUARY 2022)

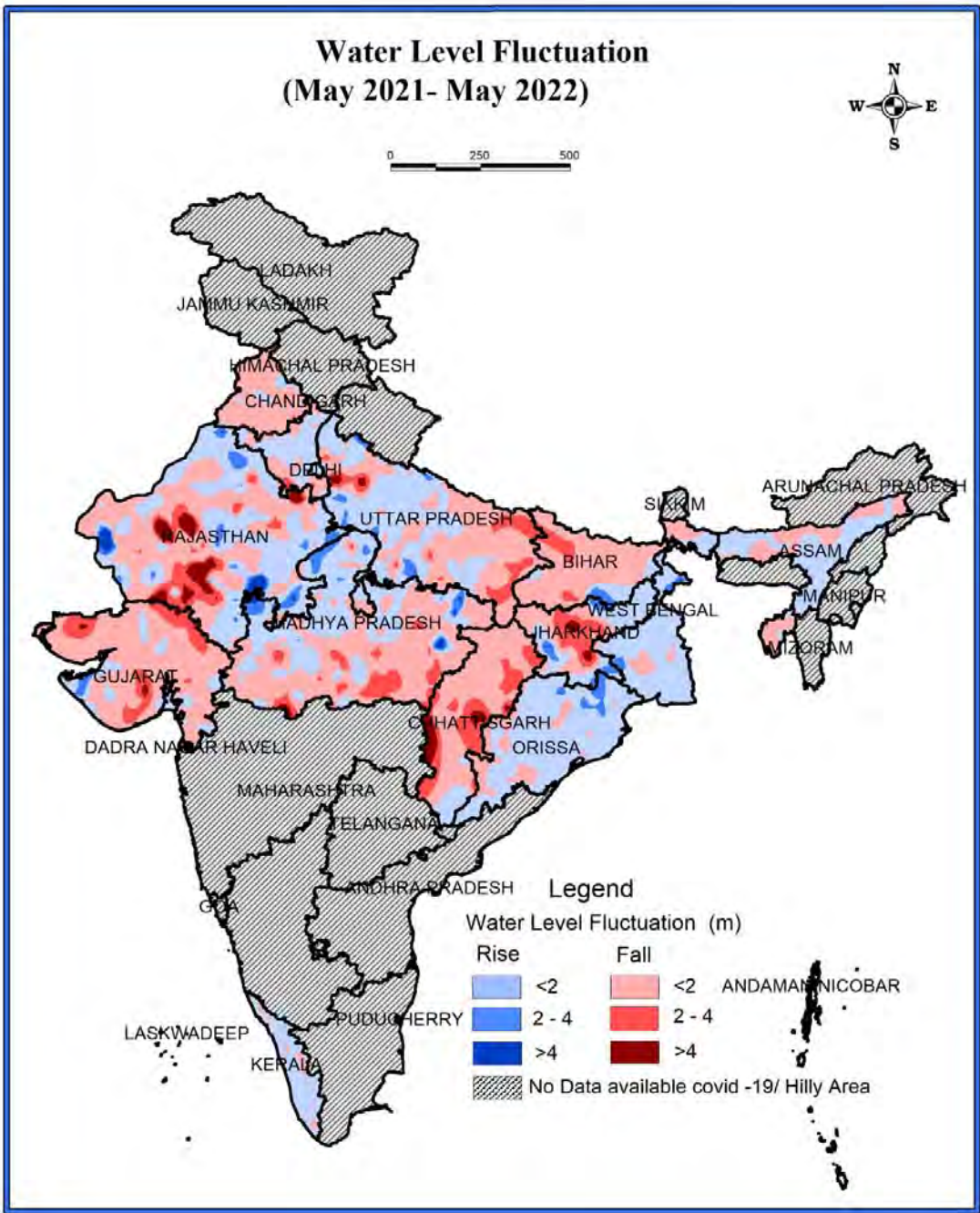
The water level fluctuation of January 2023 to January 2022 shows that out of 14314 wells analysed, 4639 (32.4%) are showing rise and 4609 (66.4%) are showing fall in water level. Remaining 169 (1.2%) stations analysed do not show any change in water level. About 25.5% (3645) wells are showing rise in the water level in the range of less than 2 m. About 4.3% (621) wells are showing rise in water level in 2 to 4 m range and 2.6% (373) wells showing rise in water level more than 4 m range. About 66.4% wells are showing decline in water level, out of which 51.8% (7413) wells are showing decline in water level in less than 2 m range. About 9.9% (1412) wells are showing decline in water level in 2 to 4 m range and 4.8% (681) wells are showing decline in water level more than 4 m range. Majority of the wells showing rise/decline falls in the range of 0 to 2 m (**Plate-XIV, Annexure-VIII**).

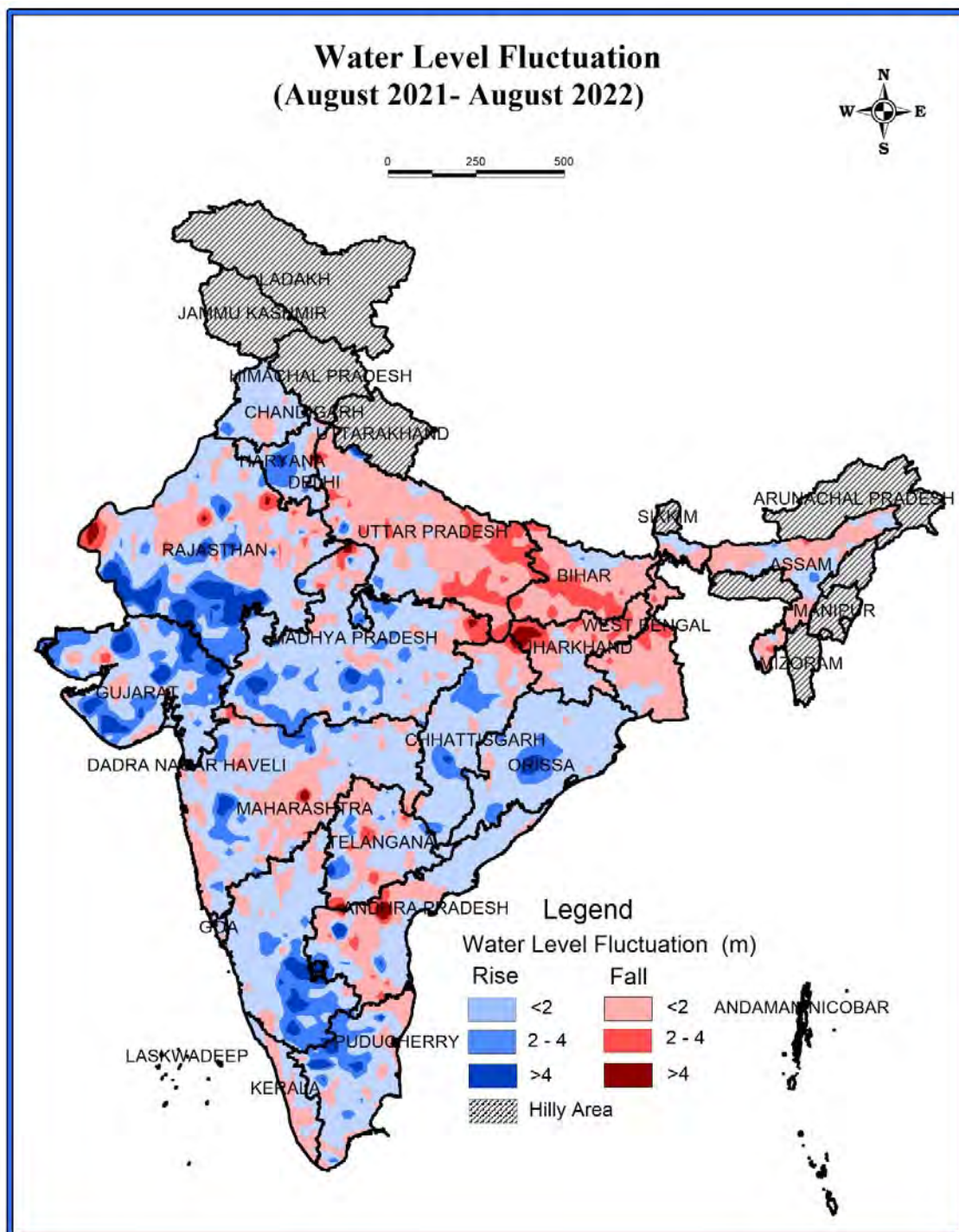
Fall in water level is observed in almost all states and UTs. Fall is mostly in the range of 0 to 2 m, although fall in the range of more than 2 m is also prevalent in all the states in small patches.

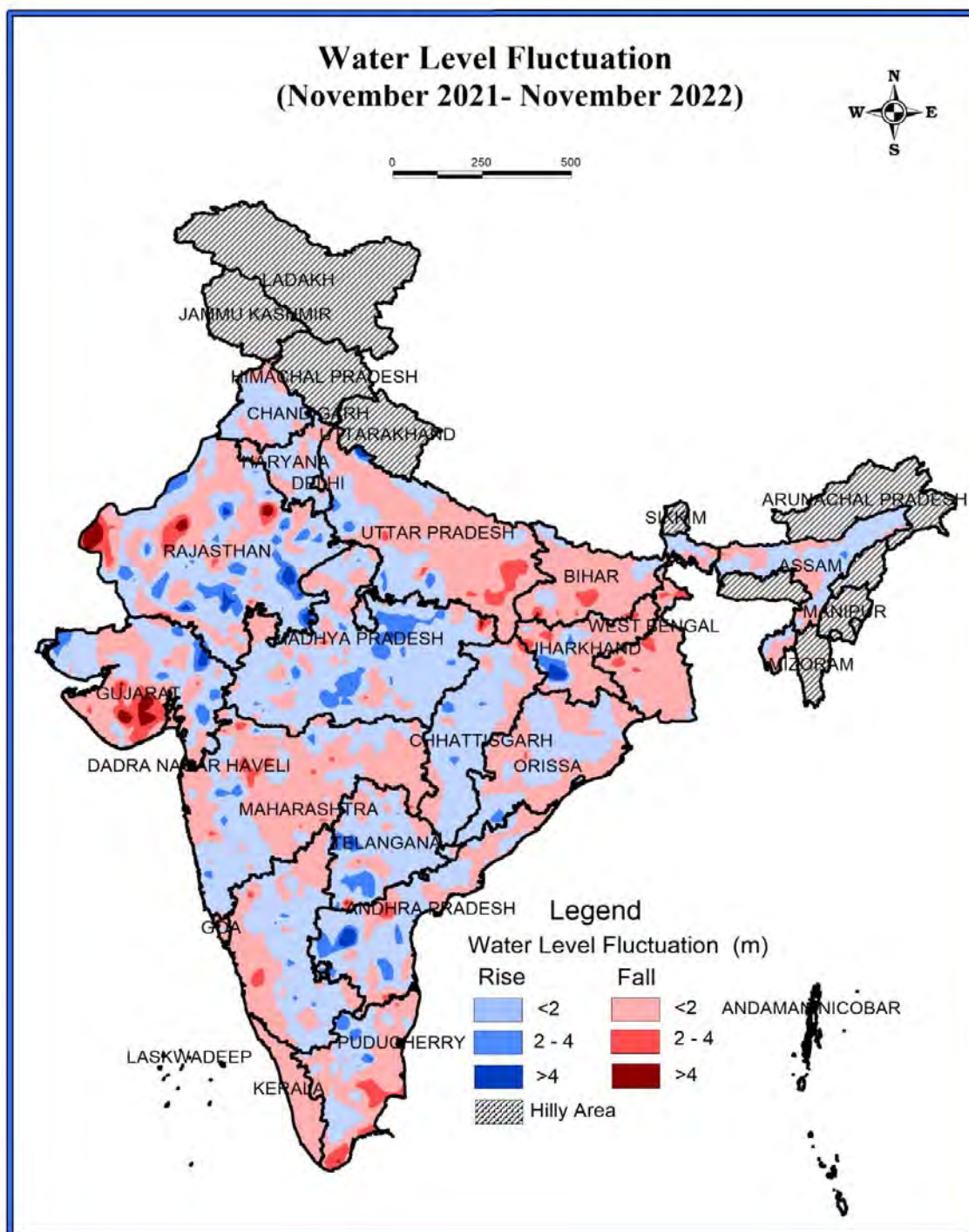


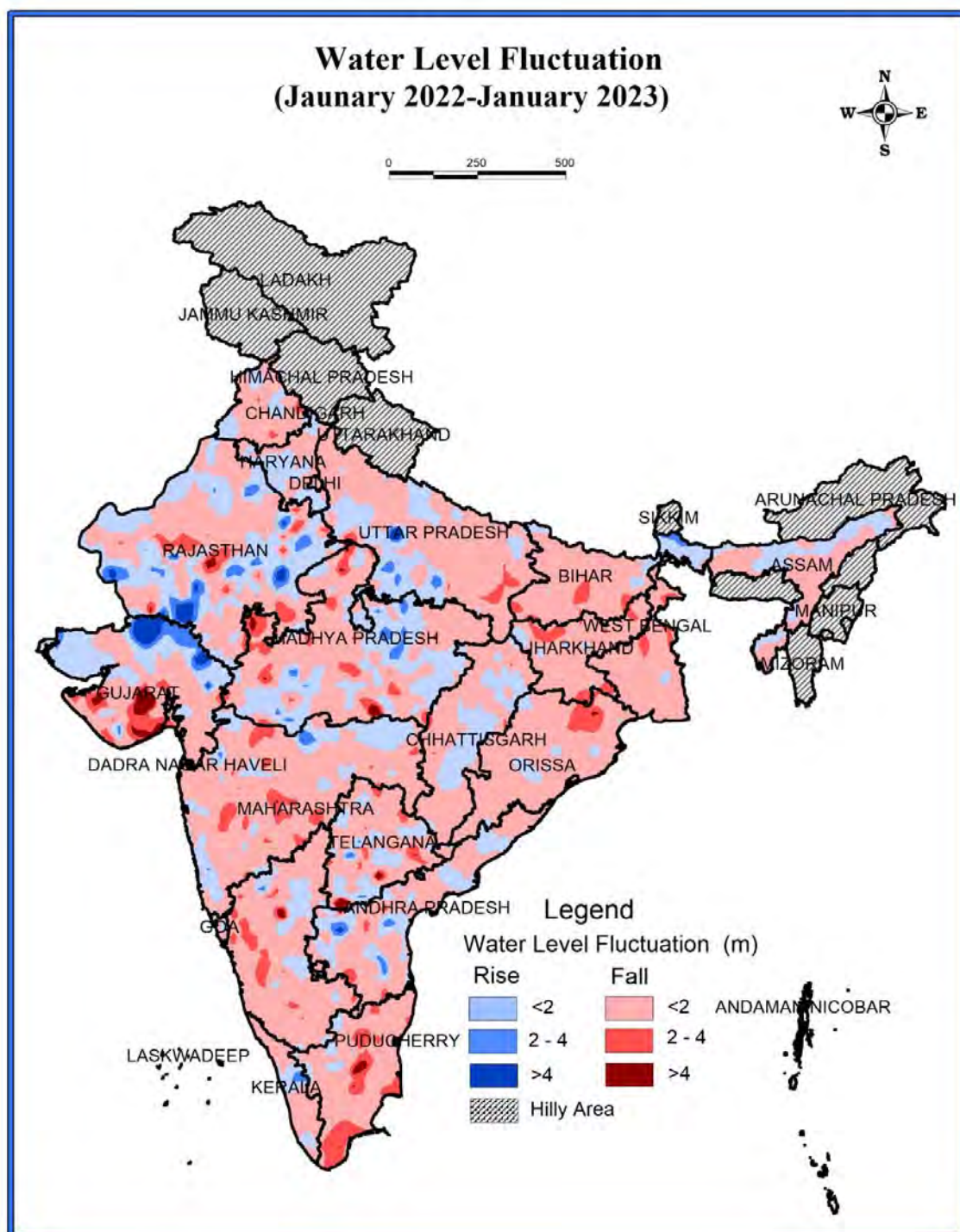
ANNUAL WATER LEVEL FLUCTUATION AT A GLANCE







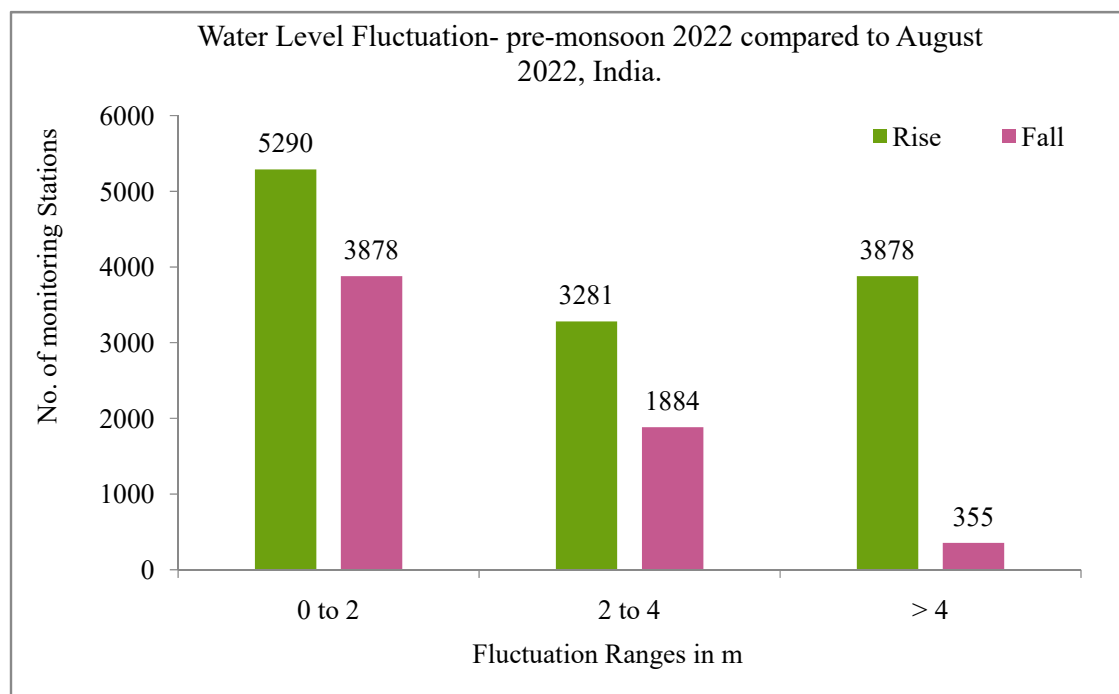




3.2.3 SEASONAL WATER LEVEL FLUCTUATION IN UNCONFINED AQUIFER

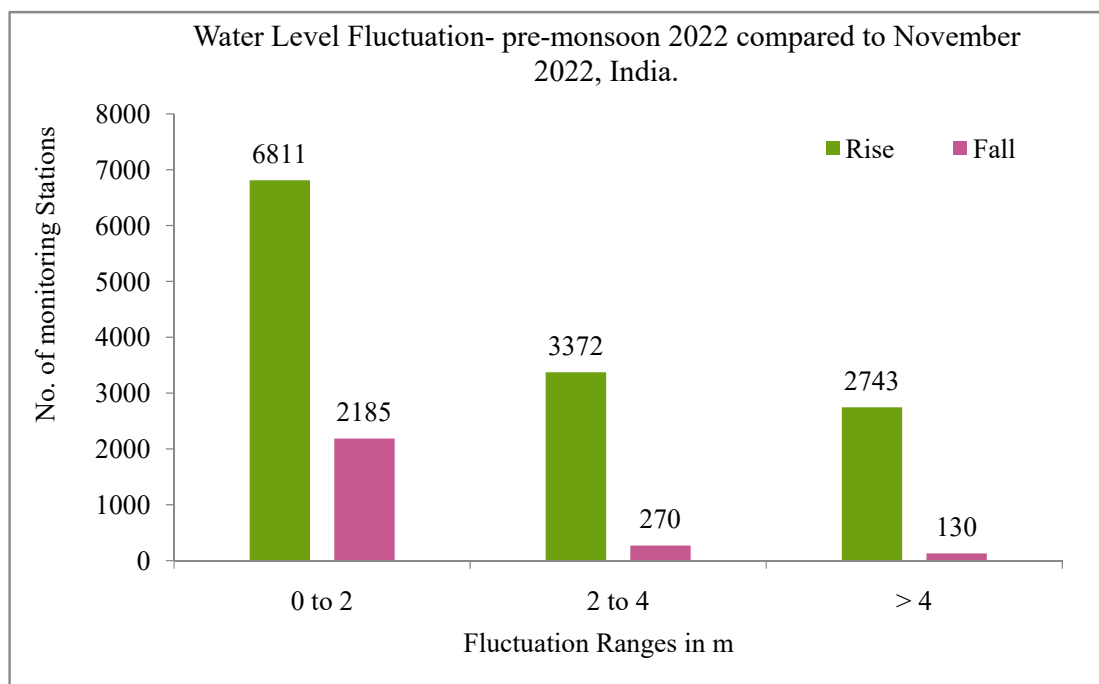
SEASONAL WATER LEVEL FLUCTUATION (PRE-MONSOON 2022- AUGUST 2022)

A comparison of depth to water level of pre-monsoon 2022 with August 2022 indicates that out of analysed 14945 wells, about 83.3% (12449) of wells are showing rise in water levels, out of which 35.4% (5290) wells are showing rise of less than 2 m range. About 22.0% (3281) wells are showing rise in water level in the range of 2 to 4 m and another 25.9 % (3878) wells are showing rise in water in range of more than 4 m. Similarly, 16.0 % (2398) wells are showing decline in water level, out of which 12.6% (1884) wells are showing decline in water in the range of 0 to 2 m, 2.4% (355) wells are showing fall in water level in the range of 2 to 4 m and the remaining 1.1 % (159) wells are showing fall in water level of more than 4 m (Plate-XVI, Annexure-IX). Rise in water level more than 4 m is mostly prominent all over the country covering in all the states. Fall of 2 to 4m or more is observed in Haryana, Jharkhand, Punjab, Madhya Pradesh, parts of Maharashtra, Gujarat and Rajasthan.



SEASONAL WATER LEVEL FLUCTUATION (PRE-MONSOON 2022- NOVEMBER 2022)

A comparison of depth to water level of pre-monsoon 2022 with November 2022 indicates that about 82.8% of wells (12926) analysed are showing rise in water levels, out of which 43.7% (6811) wells are showing rise of less than 2 m range. About 21.6 % (3372) wells are showing rise in water level in the range of 2 to 4 m and another 17.6 % (2743) wells are showing rise in water in range of more than 4 m. About 16.6% wells are showing decline in water level, out of which 14.0 % wells (2185) are showing decline in water in the range of 0 to 2 m. Rise in water level is prominent in all the states of the country. Rise in water level of more than 4 m is prominent in the most of the states such as Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Tamil Nadu, Telangana, Uttarakhand, Uttar Pradesh (**Plate XVII, Annexure X**).

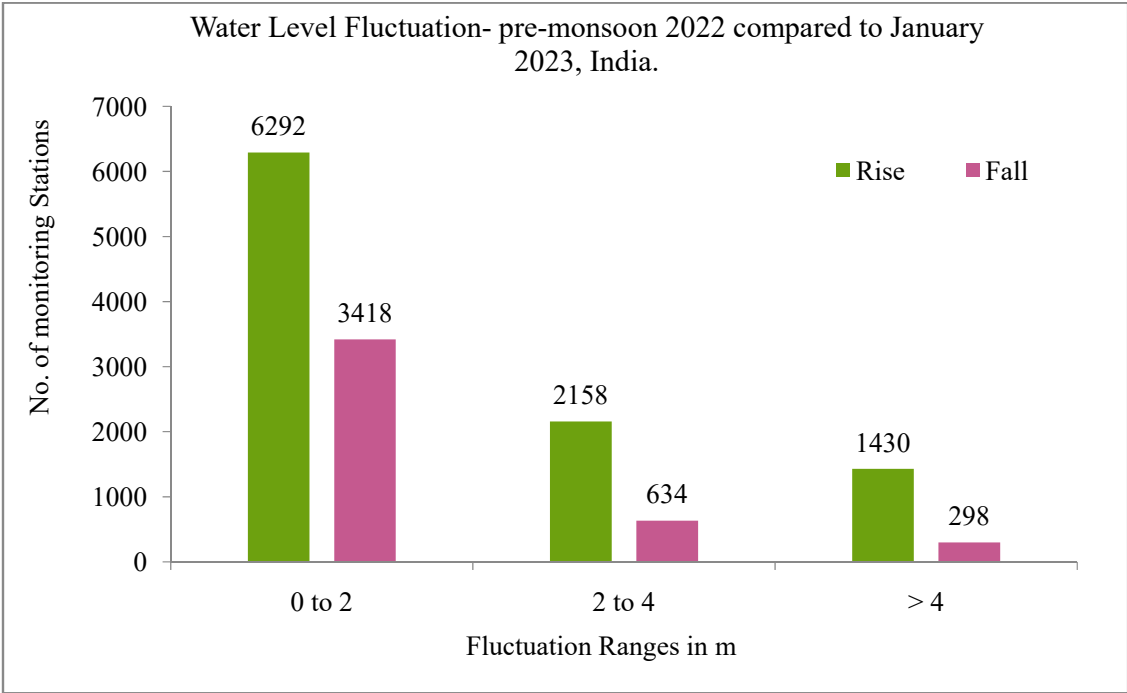


SEASONAL WATER LEVEL FLUCTUATION (PREMONSOON 2022 JANUARY 2023)

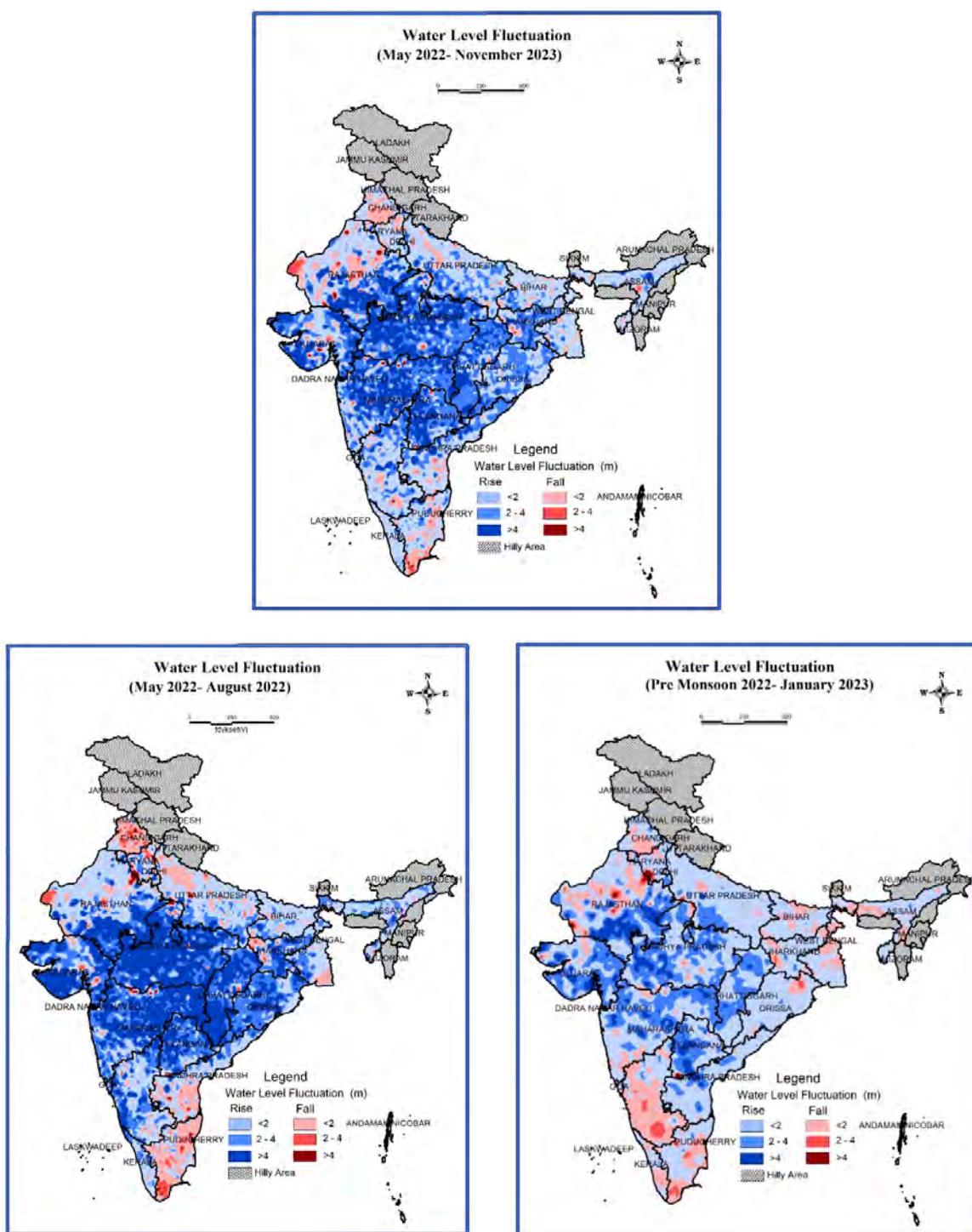
The water level fluctuation of pre-monsoon 2022 with January 2023 indicates that out of 14333 wells analysed, 9880 (68.9%) are showing rise and 4350 (30.3%) are showing fall in water level. Remaining 103 (0.8%) wells analysed do not show any change in water level. About 43.9% (6292) wells are showing rise in the water level in the range of less than 2 m.

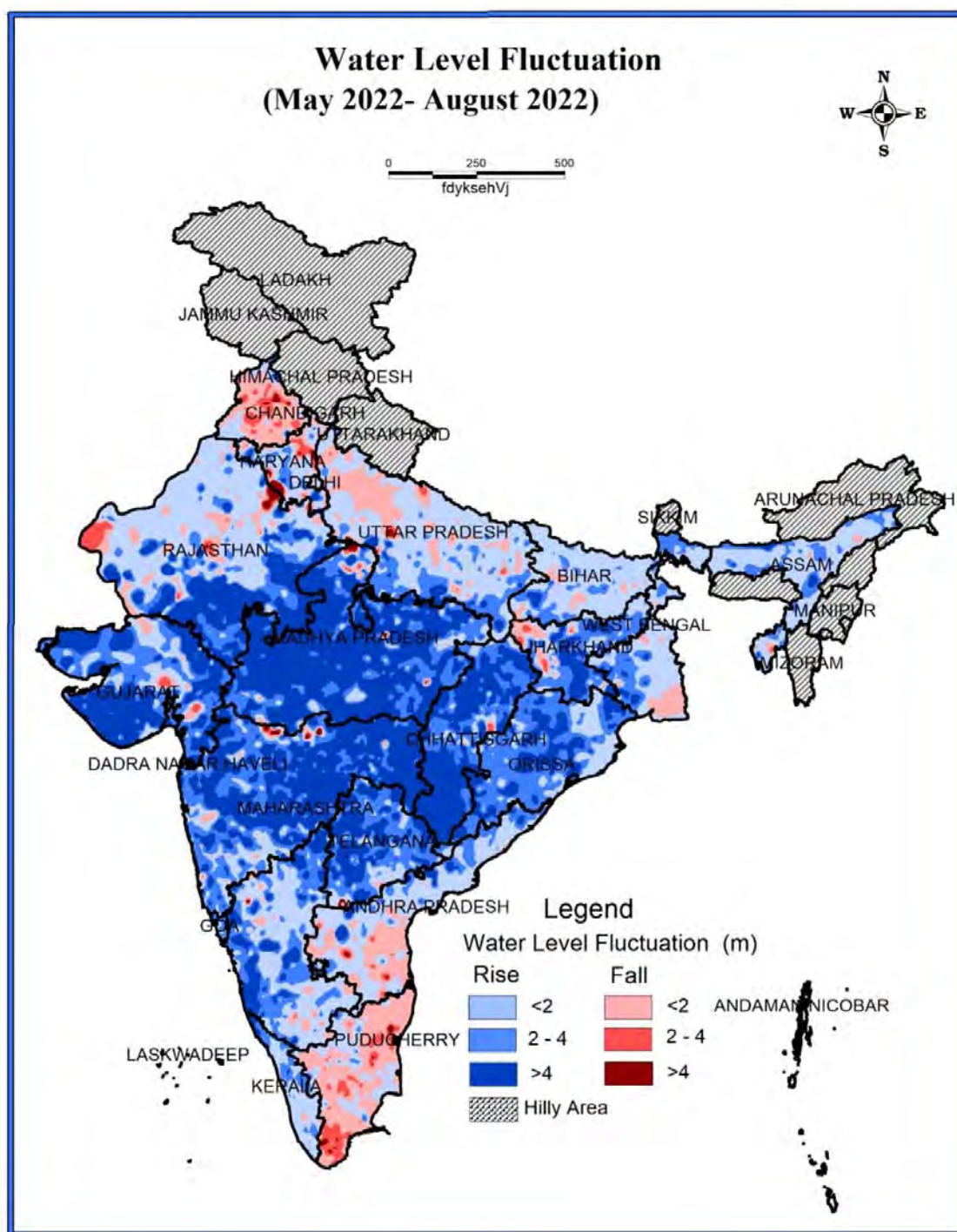
About 15.1% (2158) wells are showing rise in water level in 2 to 4 m range and another 10.0% (1430) wells showing rise in water level more than 4 m range. About 30.3% (4350) wells are showing decline in water level, out of which 23.8% (3418) wells are showing decline in water level in less than 2 m range. Majority of the wells showing rise/decline falls in the range of 0 to 2 m (**Plate XVIII, Annexure XI**).

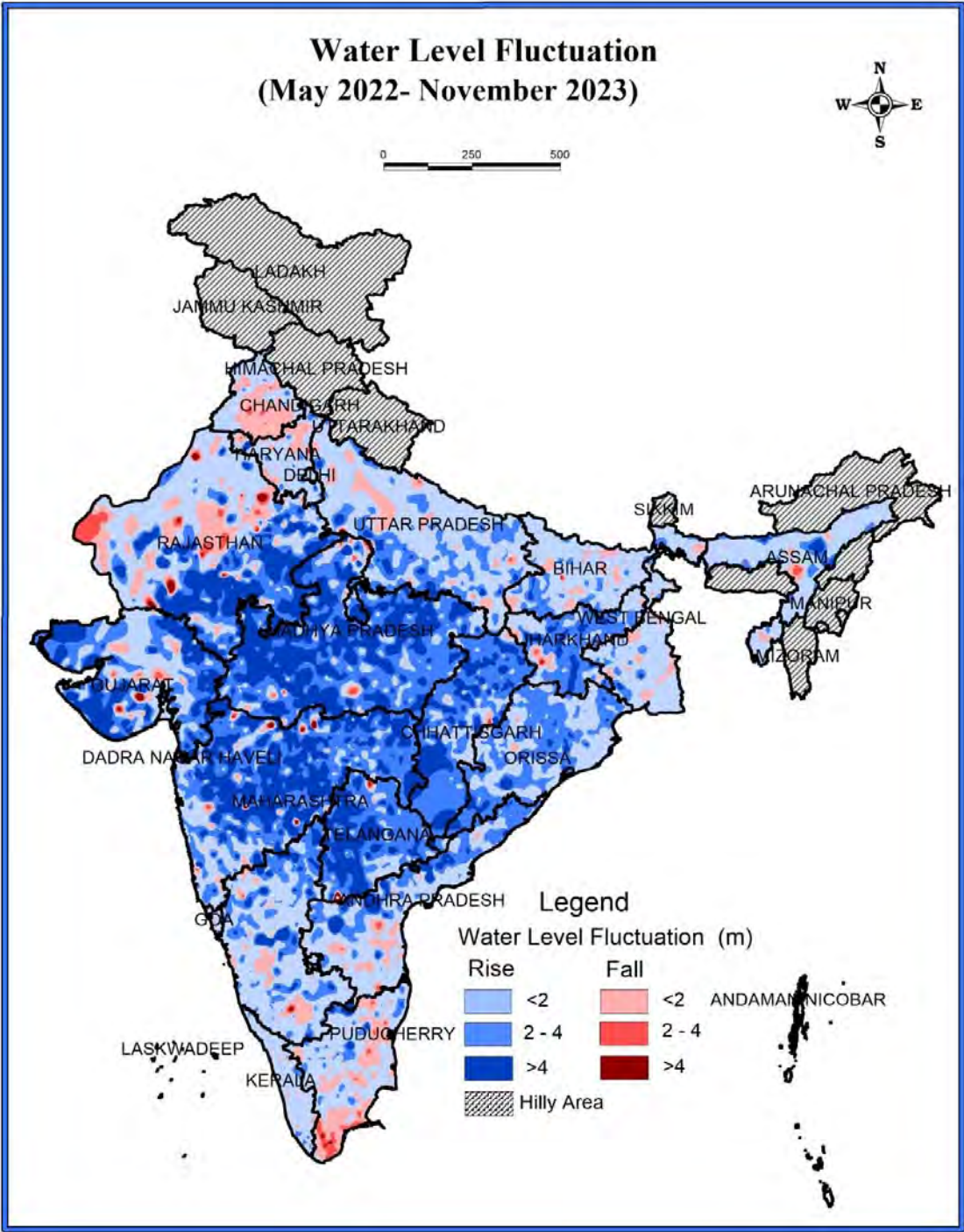
A comparison of depth to water level of pre-monsoon 2022 with January 2023 with reveals that in general, there is rise in water level in almost the entire country, except in few states. Rise in water level is prominent in all the states of the country. Rise in water level is prominent in the range of 0 to 2 m.

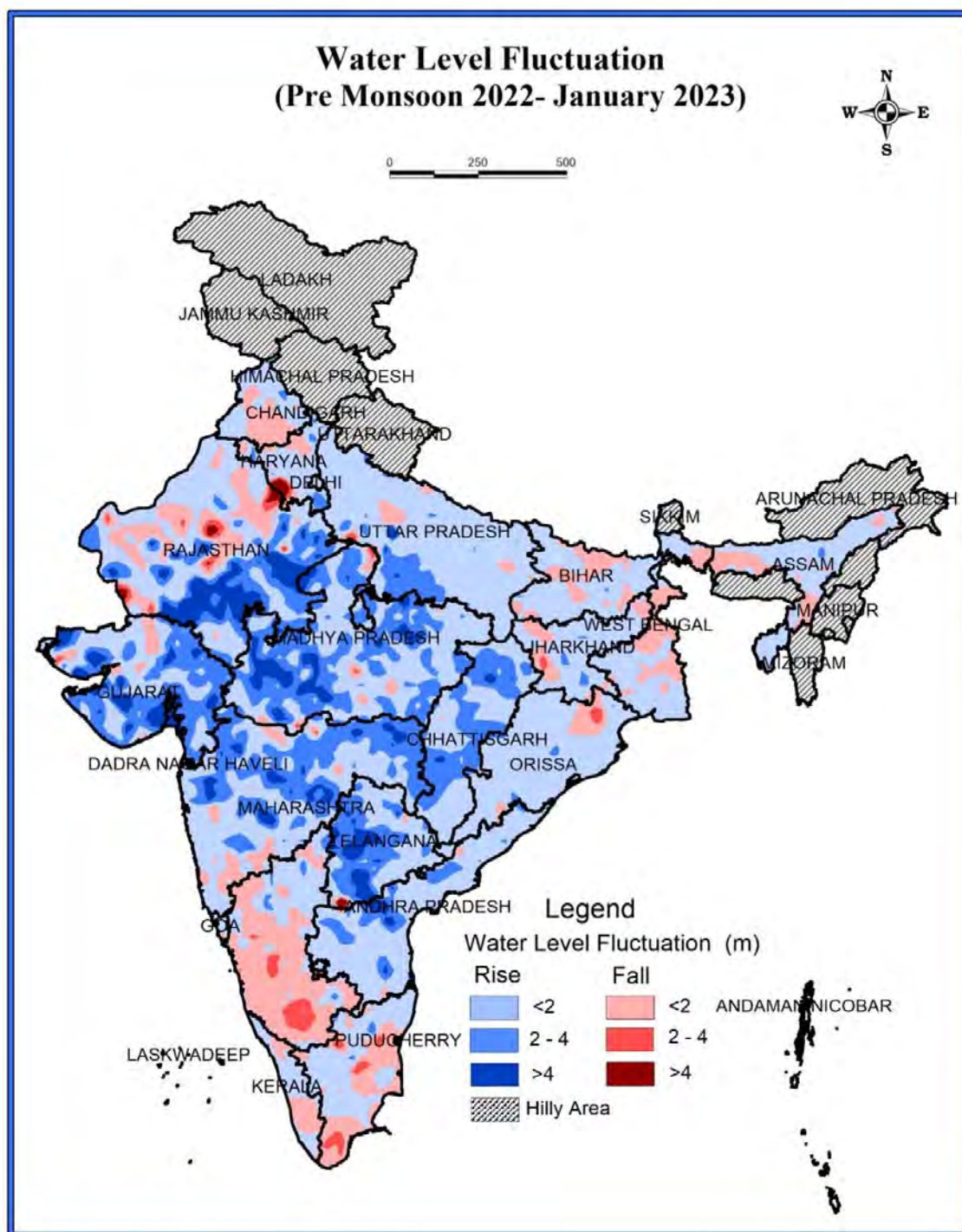


SEASONAL WATER LEVEL FLUCTUATION AT A GLANCE







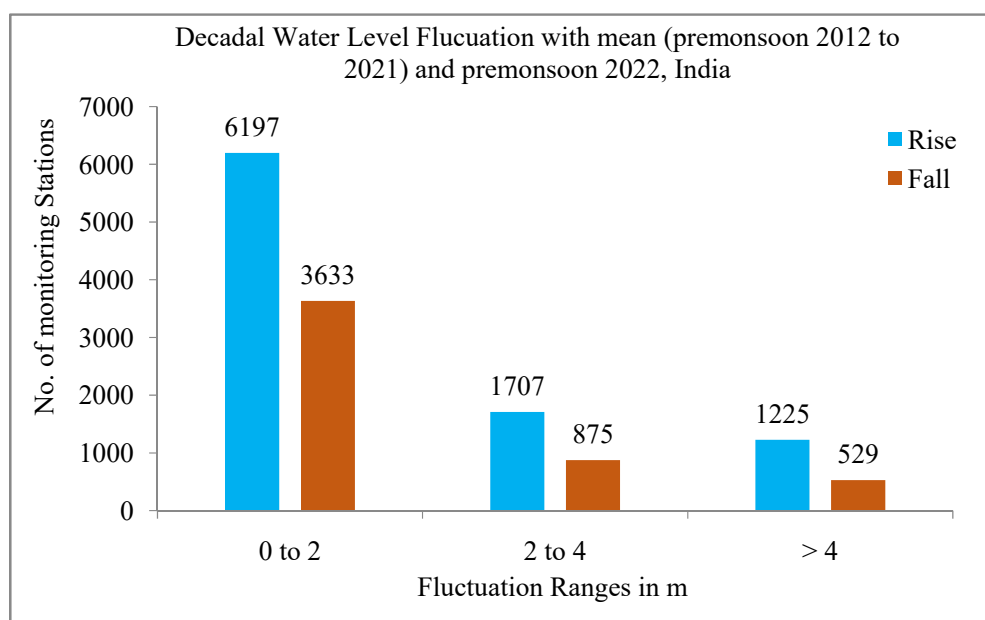


3.2.4 DECADAL WATER LEVEL FLUCTUATION

WATER LEVEL FLUCTUATION WITH DECADAL MEAN (PRE-MONSOON 2012 TO 2021) TO PRE-MONSOON 2022

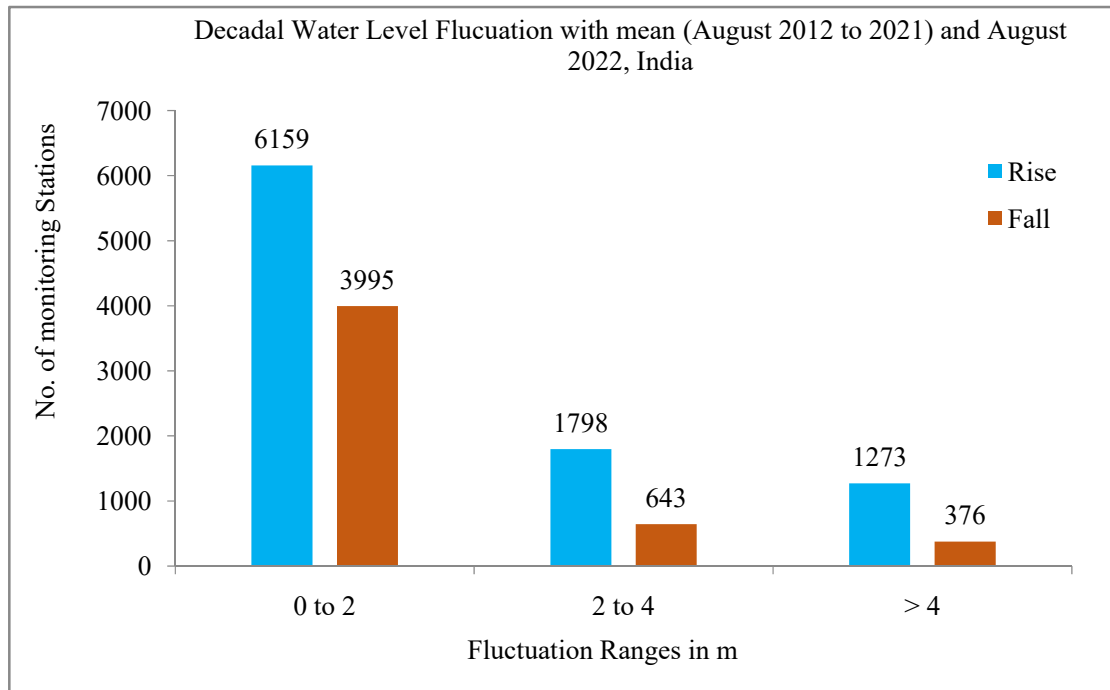
A comparison of depth to water level of pre-monsoon 2022 with decadal mean of pre-monsoon (2012-2021) indicate that 9129 (64.3%) of wells are showing rise in water level, out of which 43.7% (6197) wells are showing rise of less than 2 m. About 12.0% (1707) wells are showing rise in water level in the range of 2 to 4 m and about 8.6% (1225) wells are showing rise in water level in the range of more than 4 m. 5037 (35.5%) wells are showing decline in water level, out of which 25.6% wells are showing decline in water in the range of 0 to 2 m. 6.2% wells are showing decline in water level in 2 to 4 m range and remaining 3.7% (529) are in the range of more than 4 m. A comparison of depth to water level of pre-monsoon 2022 with decadal mean of pre-monsoon (2012-2021) indicates that 64.3% of the analysed wells show rise in water level whereas 35.5% wells show decline in water level. Less than 0.5% well show no change. Rise and decline in water level are primarily in the 0 to 2 m range. More than 50% of the wells analysed have registered rise in groundwater level, mostly in the range of 0 to 4 m, in all the states/UTs.

Decline of more than 4 m has also been observed in pockets in the states/UTs of Chhattisgarh, Delhi, Gujarat, Haryana, Maharashtra, Punjab, Rajasthan, Telangana and Uttarakhand(**Plate-XX, Annexure-XII**).



WATER LEVEL FLUCTUATION WITH DECADAL MEAN (AUGUST 2012 TO AUGUST 2021) TO AUGUST 2022

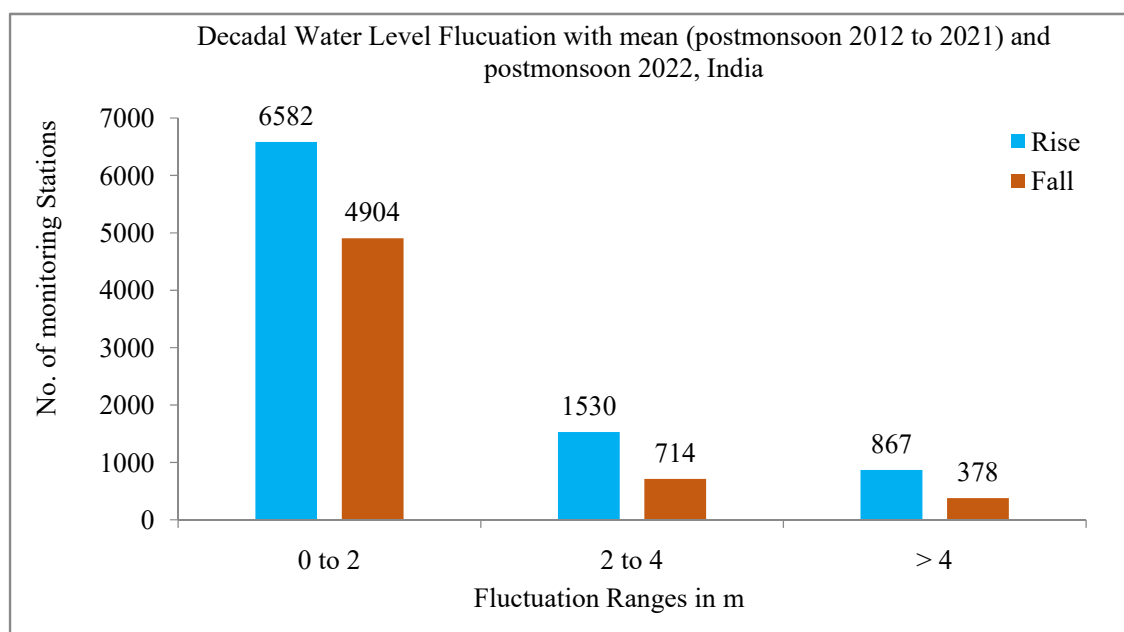
A comparison of depth to water level of August 2022 with decadal mean of August (2012-2021) indicate that about 64.7% (9230) of wells are showing rise in water level, out of which 43.2% (6159) wells are showing rise of less than 2 m. About 12.6% (1798) wells are showing rise in water in the range of 2 to 4 m and about 8.9% (1273) wells are showing rise in water level in the range of more than 4 m. About 35% (5014) wells are showing decline in water level, out of which 28% (3995) wells are showing decline in water in the range of 0 to 2 m. 4.5% (643) wells are showing decline in water level in 2 to 4 m range and remaining 2.6% (376) are in the range of more than 4 m. A comparison of depth to water level of August 2022 with decadal mean of August (2012-2021) indicates that 43.2% of the wells analysed have registered rise in groundwater level, mostly in the range of 0 to 2 m, in the states/UTs namely Arunachal Pradesh, Assam, Bihar, Chandigarh, Dadra Nagar Haveli, Delhi, Haryana, Kerala, Meghalaya, Pondicherry, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. Decline of more than 4 m has also been observed in pockets in the states/UTs of Chandigarh, Chhattisgarh, Delhi, Gujarat, Haryana, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand and West Bengal(**Plate XXI, Annexure XIII**).



WATER LEVEL FLUCTUATION WITH DECADAL MEAN (POST- MONSOON-2012 TO POST-MONSOON-2021) TO POST-MONSOON-2022

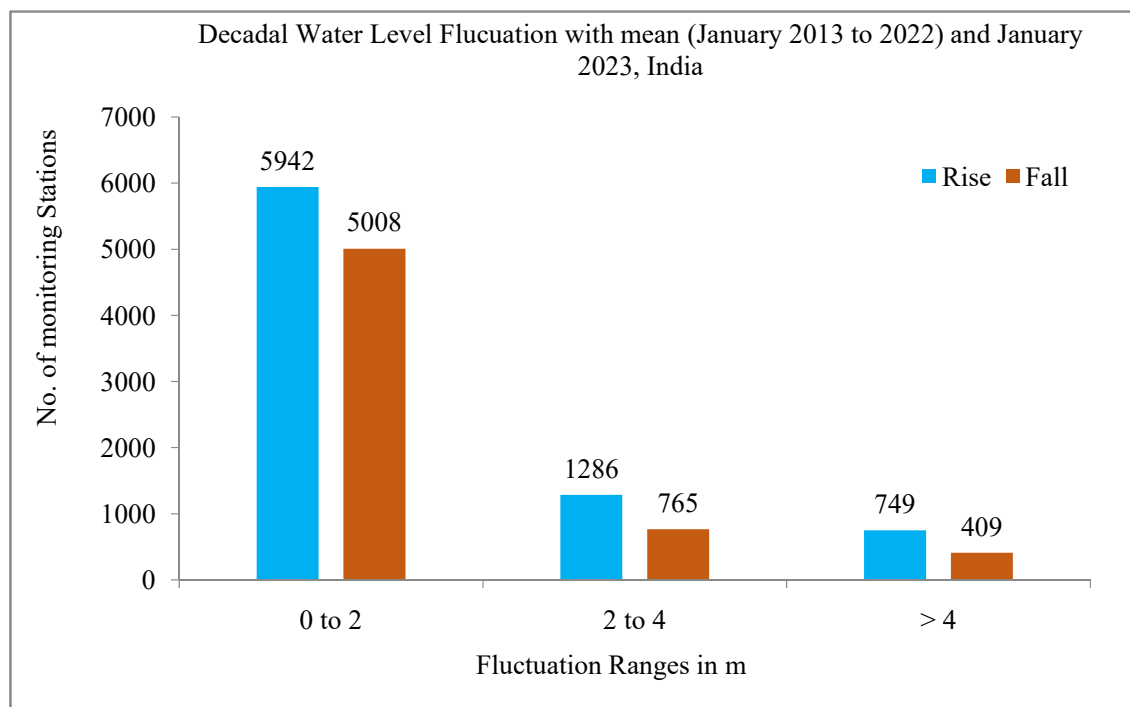
A comparison of depth to water level of post-monsoon 2022 with decadal mean of post-monsoon (2012-2021) indicate that, out of 14986 wells analysed, 8979 (59.9%) of wells are showing rise in water level, out of which 43.9% (6582) wells are showing rise of less than 2 m. About 10.2% (1530) wells are showing rise in water level in the range of 2 to 4 m and about 5.8% (867) wells are showing rise in water level in the range of more than 4 m. About 5996 (40.0%) wells showing decline in water level, 32.2% (4904) wells are showing decline in water in the range of 0 to 2 m. 4.8%(714) wells are showing decline in water level in 2 to 4 m range and remaining 2.5% (378) are in the range of more than 4 m (**Plate XXII, Annexure-XIV**).

A comparison of depth to water level of post-monsoon 2022 with decadal mean of post-monsoon(2012-2021) indicates that 43.9% of the wells have registered rise in groundwaterlevel, mostly in the range of 0 to 2 m. Rise in water level is widespread in southern India comprising of Maharashtra, Telangana, Andhra Pradesh, Gujarat, Bihar, Jharkhand, eastern Uttar Pradesh, Tamil Nadu, Karnataka and Kerala.Fall in water level within 0 to 2 m range is observed in Madhya Pradesh, Maharashtra, Goa, Chhattisgarh, Odisha and parts of NE states in patches. Decline of more than 4 m has also been observed in pockets in the states/UTs of Chandigarh, Delhi, Gujarat, Haryana, Punjab, Rajasthan and western Uttar Pradesh.

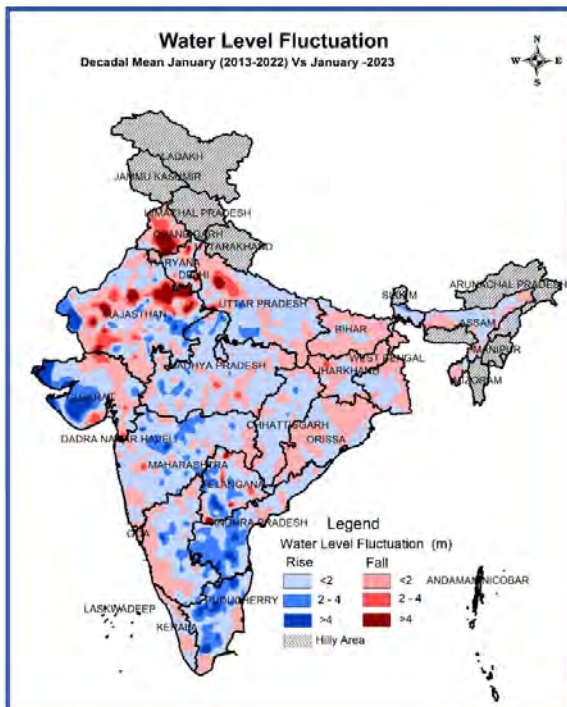
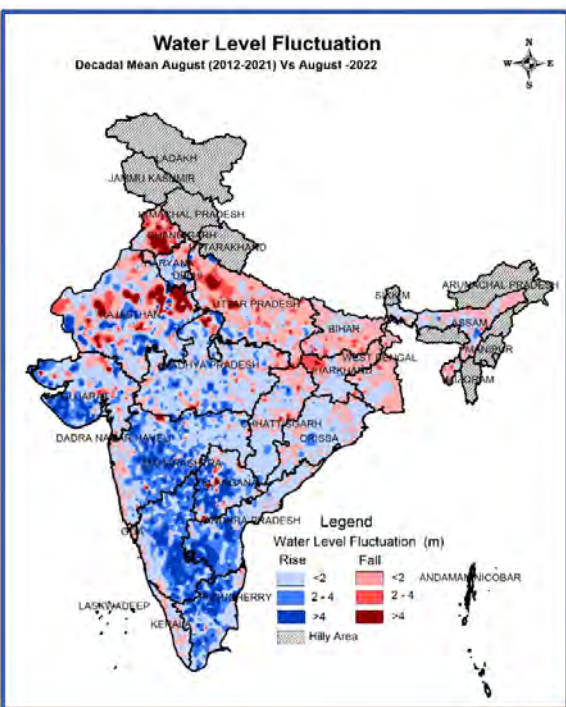
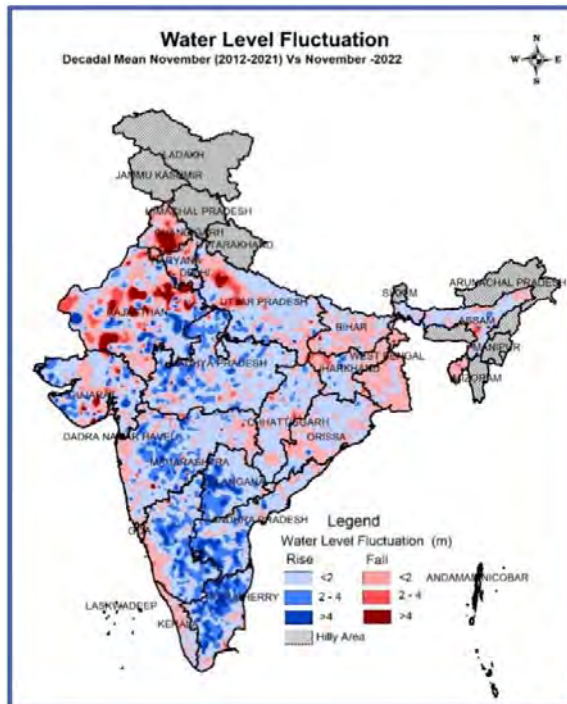
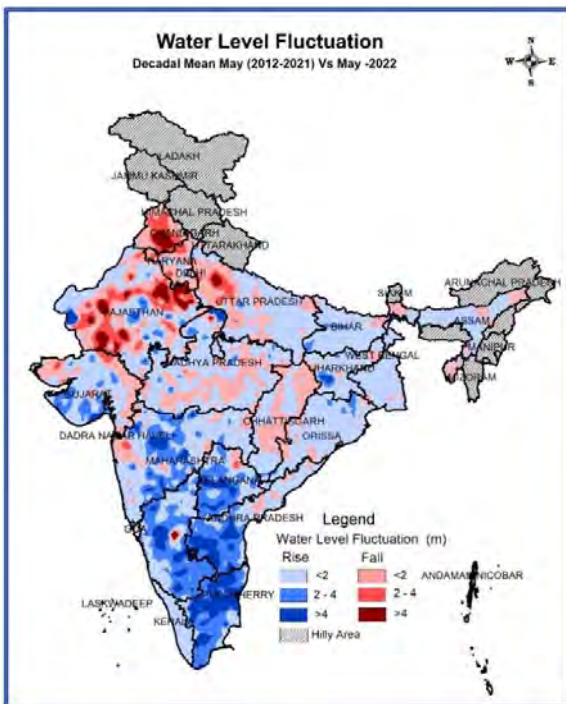


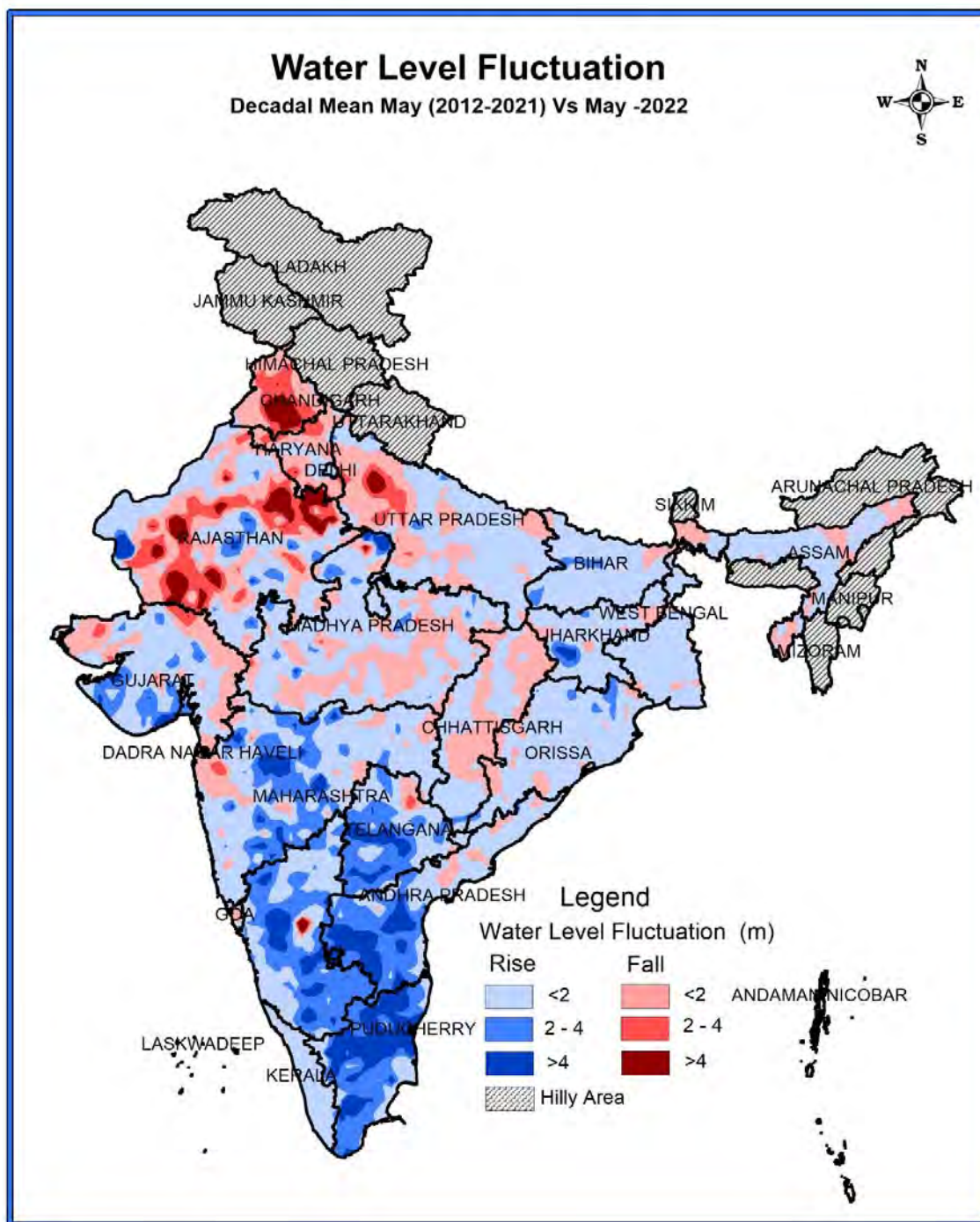
WATER LEVEL FLUCTUATION WITH DECADEAL MEAN (JANUARY 2013 TO JANUARY 2022) TO JANUARY 2023

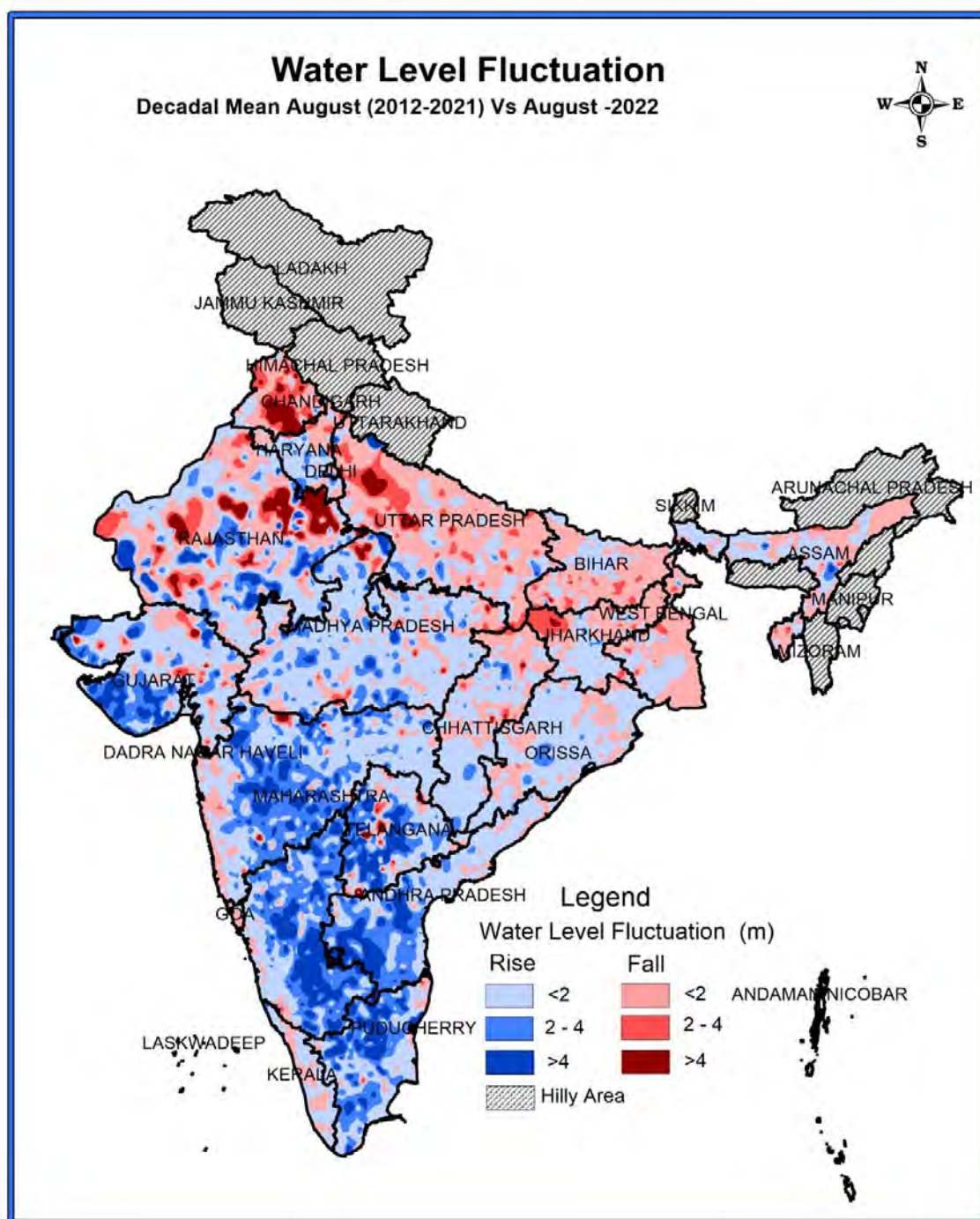
A comparison of depth to water level of January 2023 with decadal mean of January (2013-2022) indicates that out of 14283 well analysed, 8073 (about 56.5%) of wells are showing rise in water level, out of which 41.8% (5966) wells are showing rise of less than 2 m. About 9.1% (1305) wells are showing rise in water level in the range of 2 to 4 m and only 5.6% (802) wells are showing rise in the range of more than 4 m. Total 6201 (about 43.3%) wells showing decline in water level, 35.1% (5019) wells are showing decline in water in the range of 0 to 2 m. 5.6% (802) wells are showing decline in water level in 2 to 4 m range and remaining 2.9% (410) are in the range of more than 4 m. Rise in water level is observed in major portions of peninsular India in 0 to 4 m range and more than 4 m is seen in southern states Telangana, Andhra Pradesh, Kerala and Tamil Nadu. Decline in water level is observed in north eastern states Arunachal Pradesh, Tripura, Assam. In rest of India fall in water level is recorded in Bihar, Chandigarh, Goa, Punjab, Karnataka, Odisha and Rajasthan (**Plate XXIII, Annexure-XV**).

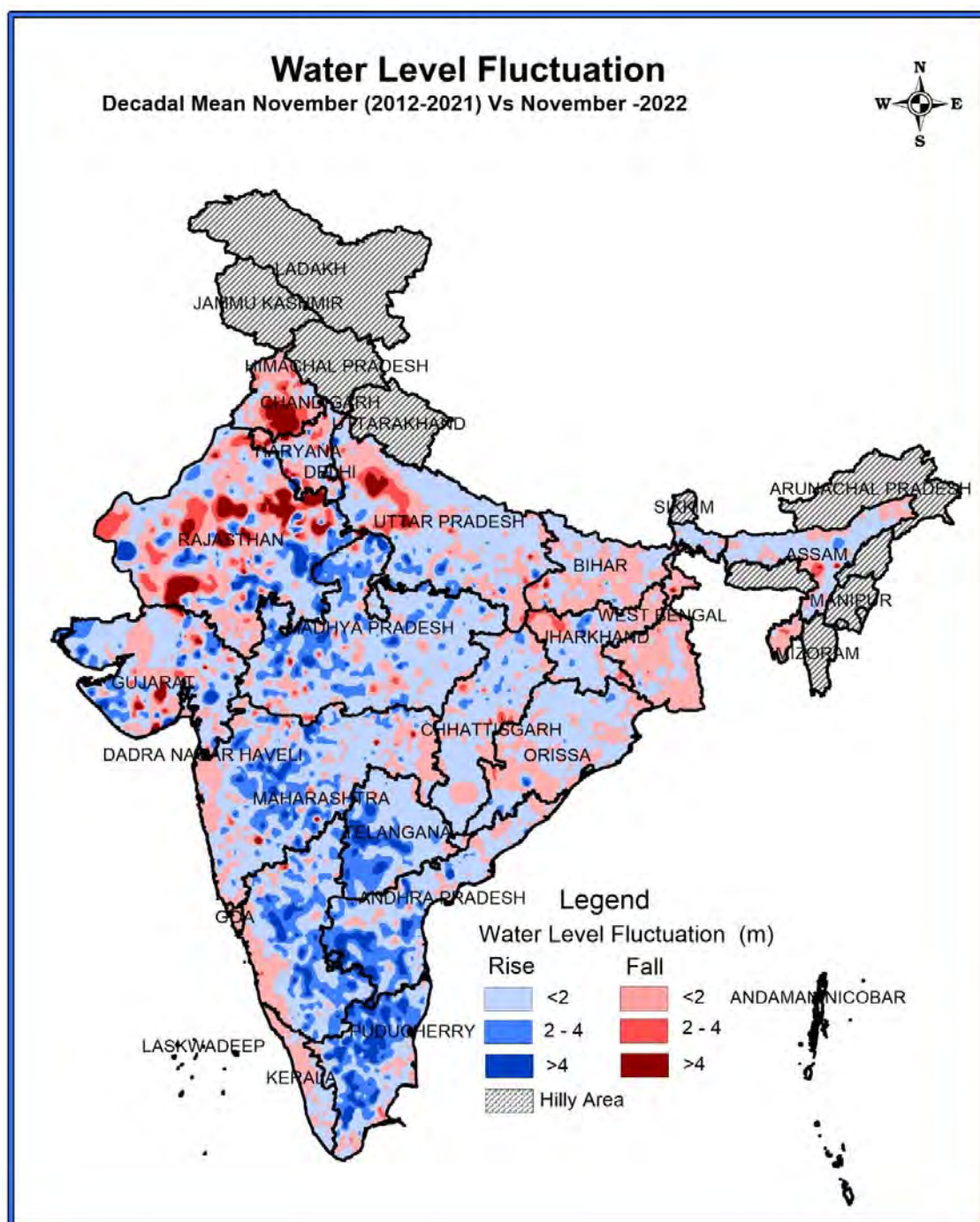


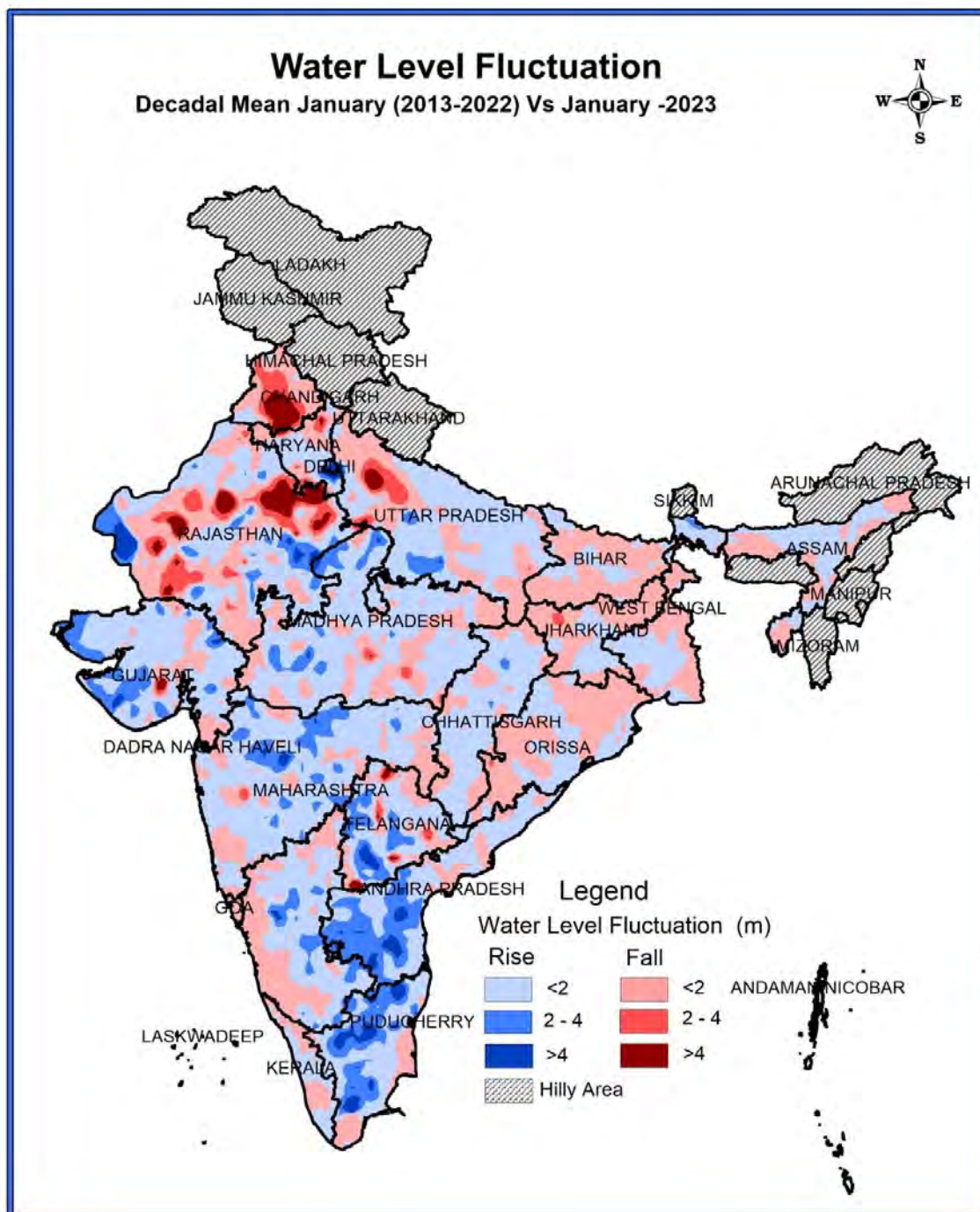
DECADAL WATER LEVEL FLUCTUATION AT A GLANCE









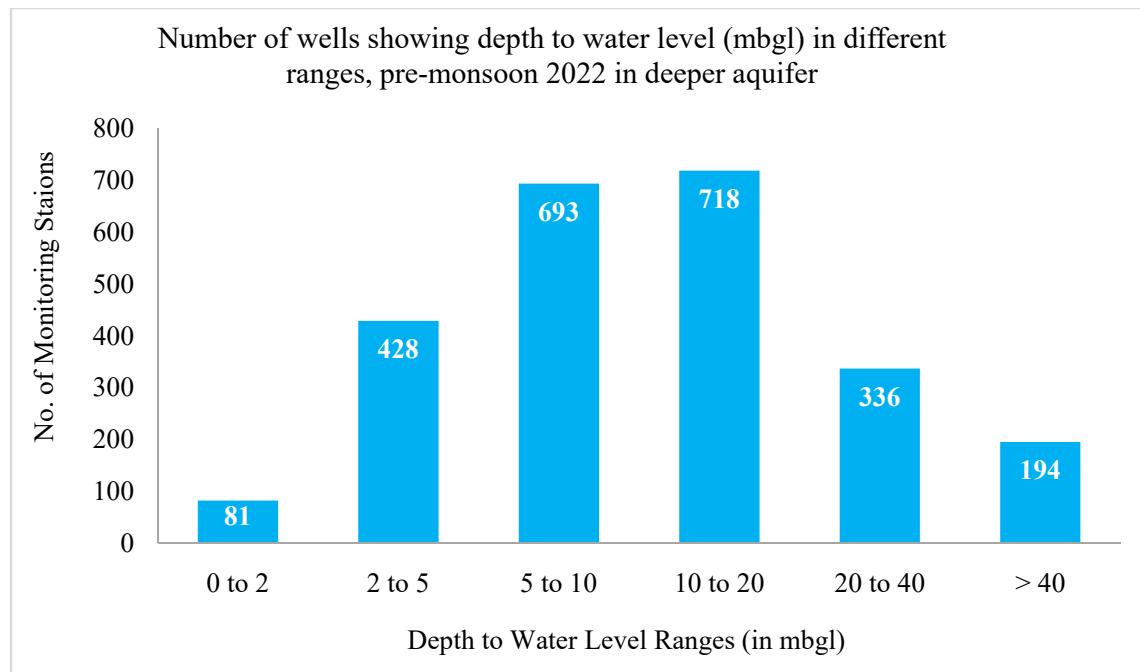


3.3 GROUNDWATER REGIME IN DEEPER AQUIFER

3.3.1 DEPTH TO WATER LEVEL IN DEEPER AQUIFER

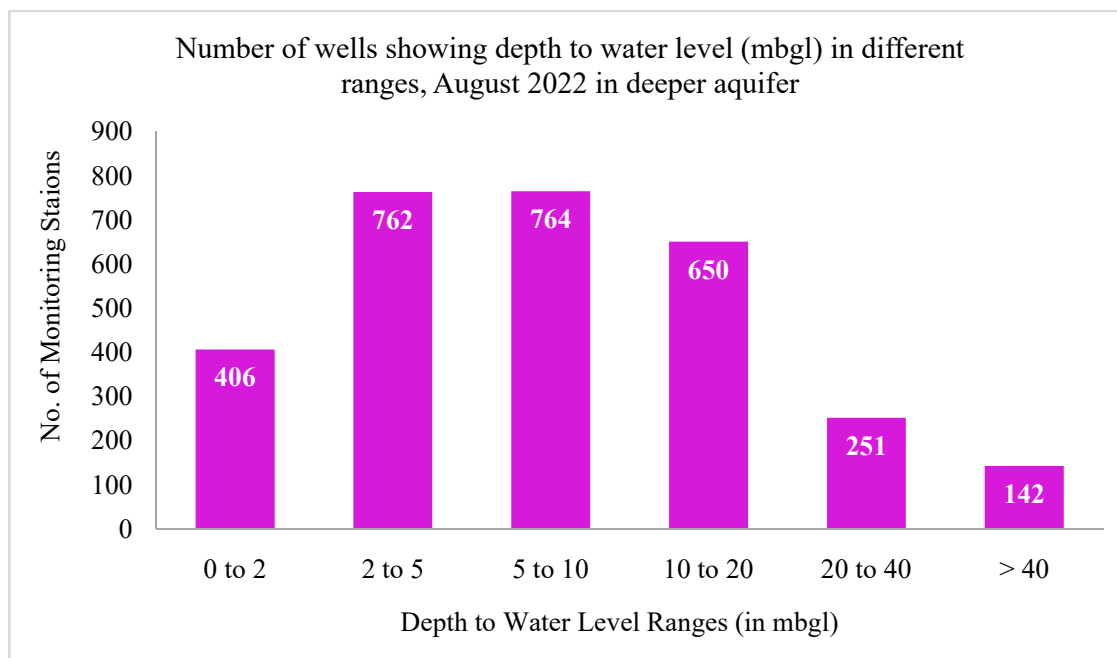
DEPTH TO WATER LEVEL – PRE-MONSOON 2022 IN DEEPER AQUIFER

The groundwater level data (*Annexure-XVI*) of deeper aquifers for pre-monsoon 2022 indicates that out of the total 2450 wells analysed, 81 (3.3%) wells are showing water level less than 2 m bgl, 428 (17.5%) wells are showing water level in the depth range of 2 to 5 m bgl, 693 (28.3%) wells are showing water level in the depth range of 5 to 10 m bgl, 718 (29.3%) wells are showing water level in the depth range of 10 to 20 m bgl, 336 (13.7%) wells are showing water level in the depth range of 20 to 40 m bgl and the remaining 194 (7.9%) wells are showing water level more than 40 m bgl. Thus, the general range of water level is between 5 to 20m. From the analysis of the data, it's also revealed that deeper piezometric level of more than 40 m is observed in Andhra Pradesh, Chhattisgarh, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Punjab, Tamil Nadu, Telangana, Uttar Pradesh, West Bengal, Delhi and Puducherry.



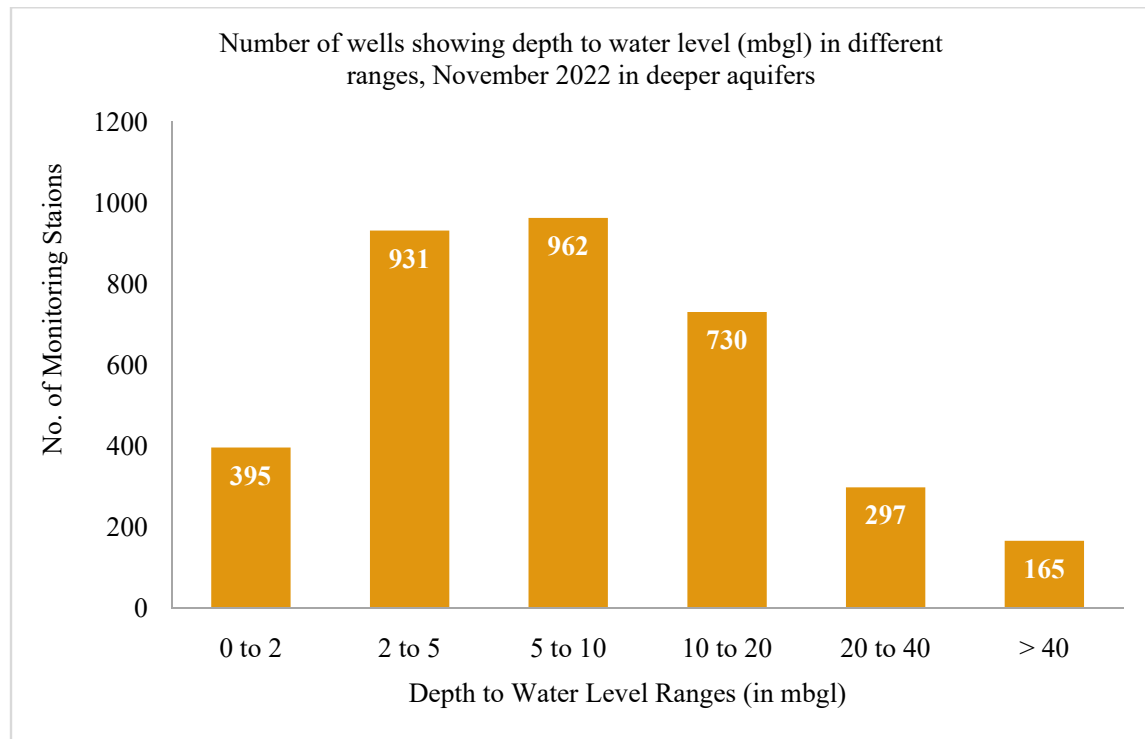
DEPTH TO WATER LEVEL – AUGUST 2022 IN DEEPER AQUIFER

The groundwater level data(**Annexure-XVII**) of deeper aquifers for August 2022 indicates that out of the total 2975 wells analysed, 406 (13.6%) wells are showing water level less than 2 m bgl, 762(25.6%) wells are showing water level in the depth range of 2 to 5 m bgl, 764 (25.7%) wells are showing water level in the depth range of 5 to 10 m bgl, 650 (21.8%) wells are showing water level in the depth range of 10 to 20 m bgl, 251 (8.4%) wells are showing water level in the depth range of 20 to 40 m bgl and the remaining 142 (4.8%) wells are showing water level more than 40 m bgl. Thus, the general range of water level is between 2 to 10m. From the analysis of the data, it's also revealed that deeper piezometric level of 20 to 40 m is observed in Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Punjab, Tamil Nadu, West Bengal, Chandigarh, Delhi and Puducherry. Deeper piezometric level of more than 40 m is observed Andhra Pradesh, Gujarat, Haryana, Punjab, Tamil Nadu, Uttarakhand, Chandigarh and Delhi.



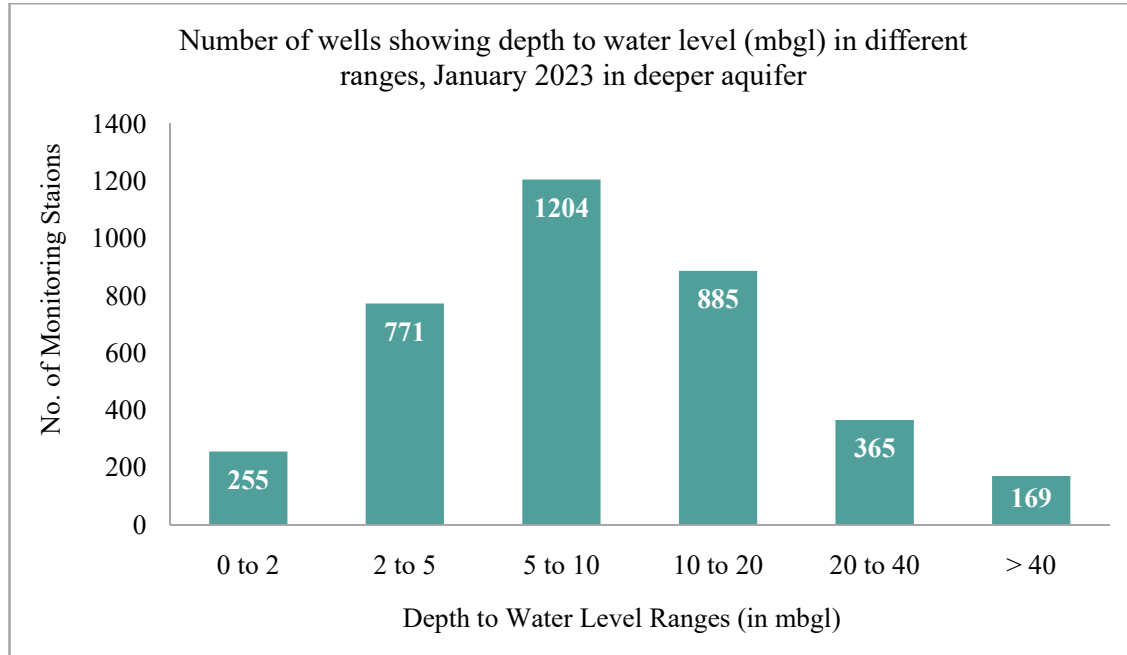
DEPTH TO WATER LEVEL – NOVEMBER 2022 IN DEEPER AQUIFER

The groundwater level data(**Annexure-XVIII**) of deeper aquifers for November 2022, indicates that out of the total 3480 wells analysed, 395(11.4%) wells are showing water level less than 2 m bgl, 931(26.8%) wells are showing water level in the depth range of 2 to 5 m bgl, 962 (27.6%) wells are showing water level in the depth range of 5 to 10 m bgl, 730 (21.0%) wells are showing water level in the depth range of 10 to 20 m bgl, 297 (8.5%) wells are showing water level in the depth range of 20 to 40 m bgl and the remaining 165 (4.7%) wells are showing water level more than 40 m bgl. Thus, the general range of water level is between 2 to 10m. From the analysis of the data, it's also revealed that deeper piezometric level of 20 to 40 m is observed in Andhra Pradesh, Chhattisgarh, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Telangana, Uttar Pradesh, West Bengal, Chandigarh, Delhi and Puducherry; and more than 40m in Andhra Pradesh, Chhattisgarh, Gujarat, Haryana, Karnataka, Maharashtra, Punjab, Tamil Nadu, Telangana, Uttarakhand, Chandigarh and Delhi



DEPTH TO WATER LEVEL – JANUARY 2023 IN DEEPER AQUIFER

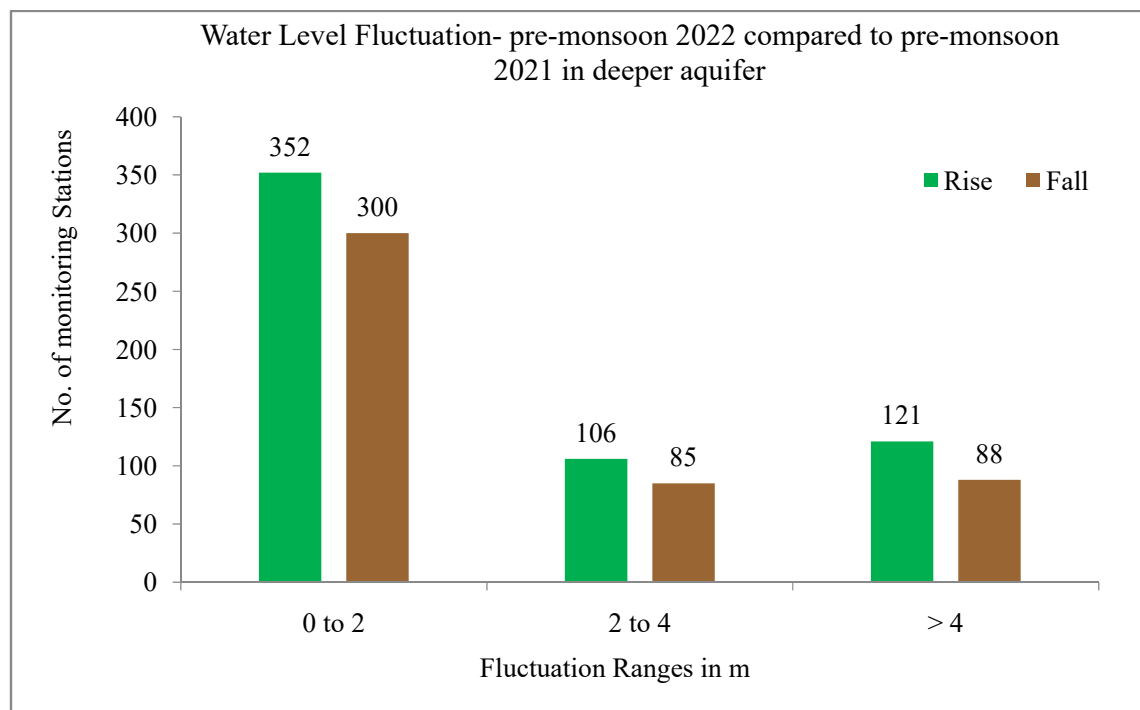
The groundwater level data (**Annexure-XIX**) of deeper aquifers for January 2023, indicates that out of the total 3649 wells analysed, 255 (7.0%) wells are showing water level less than 2 m bgl, 771 (21.1%) wells are showing water level in the depth range of 2 to 5 m bgl, 1204 (33.0%) wells are showing water level in the depth range of 5 to 10 m bgl, 885 (24.3%) wells are showing water level in the depth range of 10 to 20 m bgl, 365 (10.0%) wells are showing water level in the depth range of 20 to 40 m bgl and the remaining 169 (4.6%) wells are showing water level more than 40 m bgl. Thus, the general range of water level is between 2 to 10m. From the analysis of the data, it's also revealed that deeper piezometric level of 20 to 40 m is observed in Andhra Pradesh, Chhattisgarh, Gujarat, Haryana, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Telangana, Uttar Pradesh, West Bengal, Chandigarh, Delhi and Puducherry and more than 40 m in Andhra Pradesh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Tamil Nadu, Telangana, Uttarakhand, Chandigarh and Delhi.



3.3.2 ANNUAL WATER LEVEL FLUCTUATION IN DEEPER AQUIFER

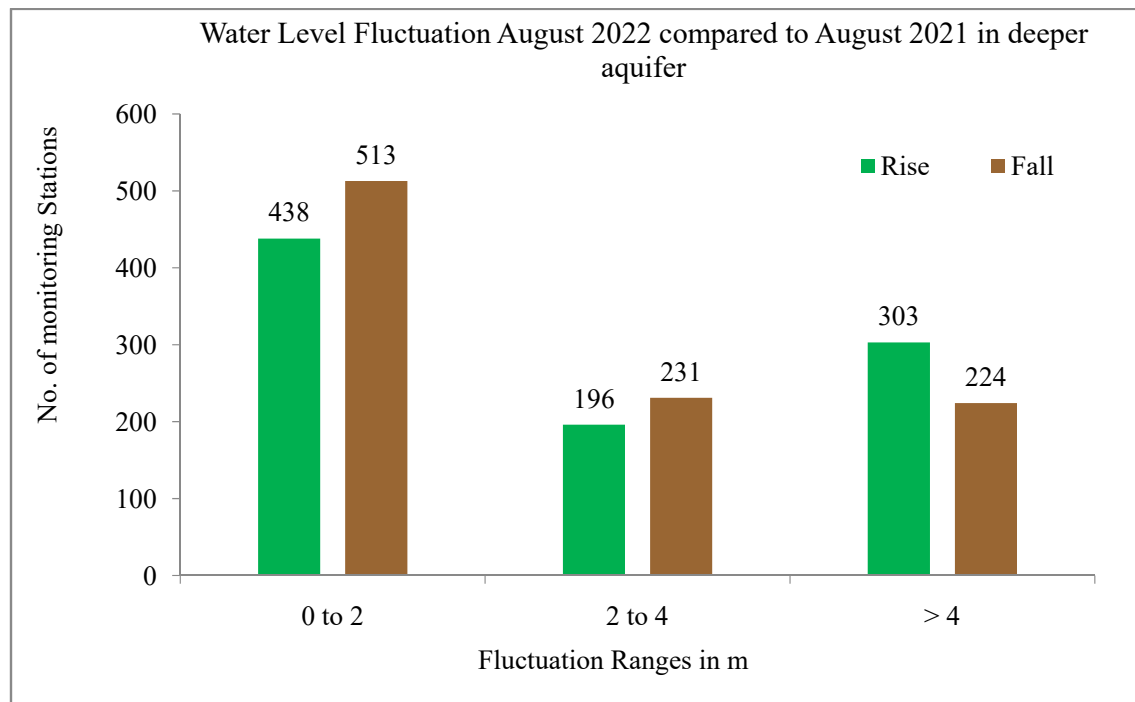
ANNUAL WATER LEVEL FLUCTUATION (PREMONSOON 2022 - PREMONSOON 2021)

A comparison of depth to water level of pre-monsoon 2022 with pre-monsoon 2021 reveals that out of total 1054 wells analysed (**Annexure-XX**), 579 (54.9%) of wells are showing rise in water level, among which 33.4% (352) wells are showing rise of less than 2 m. About 10.1% (106) wells are showing rise in water level in the range of 2 to 4 m and 11.5% (121) wells are showing rise in the range of more than 4 m. Among the 473 (44.9%) wells showing decline in water level, 28.5% (300) wells are showing decline in water in the range of 0 to 2 m. 8.1% (85) wells are showing decline in water level in 2 to 4 m range and remaining 8.3% (88) are in the range of more than 4 m. Rise in water level in majority of wells observed in Assam, Kerala, Odisha, Tamil Nadu, Telangana, Uttar Pradesh, West Bengal, Delhi and Jammu and Kashmir. Similarly fall in significant number of wells is observed in Arunachal Pradesh, Chhattisgarh, Gujarat, Haryana, Madhya Pradesh, Punjab and Puducherry.



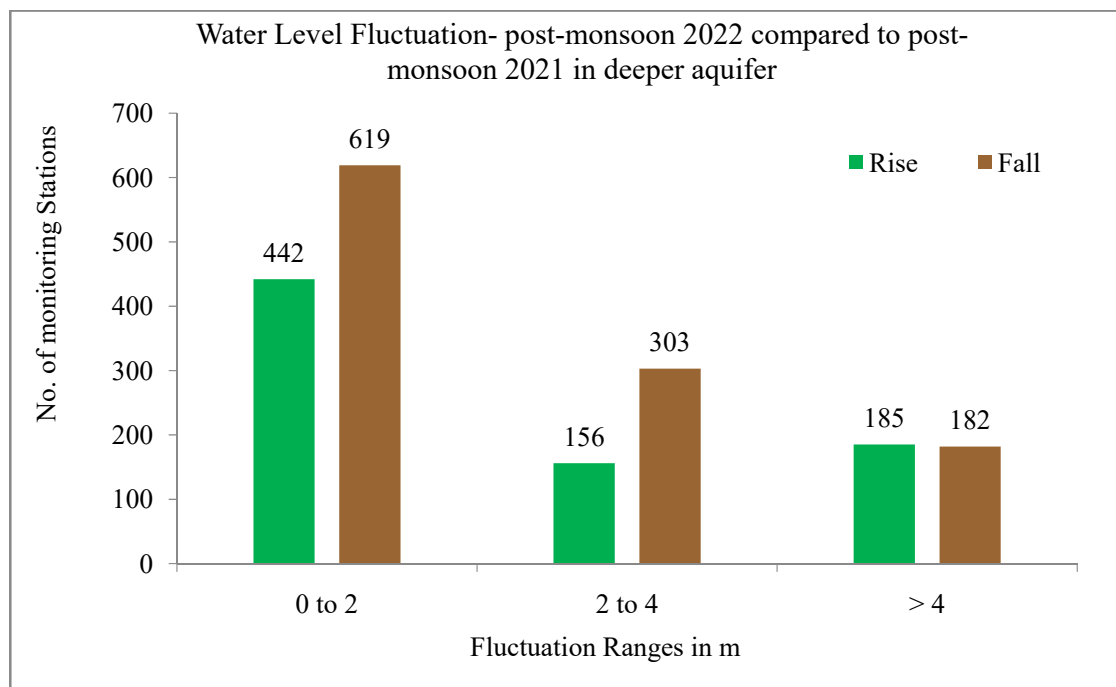
ANNUAL WATER LEVEL FLUCTUATION (AUGUST 2022 - AUGUST 2021)

A comparison of depth to water level of August 2022 with August 2021 reveals that out of total 1956 wells analysed (**Annexure-XXI**), 937 (47.9%) of wells are showing rise in water level, among which 22.4% (438) wells are showing rise of less than 2 m. About 10.0% (196) wells are showing rise in water level in the range of 2 to 4 m and 15.5% (303) wells are showing rise in the range of more than 4 m. Among the 968 (49.5%) wells showing decline in water level, 26.2% (513) wells are showing decline in water in the range of 0 to 2 m. 11.8% (231) wells are showing decline in water level in 2 to 4 m range and remaining 11.5% (224) are in the range of more than 4 m. Rise in water level in majority of wells observed in Andhra Pradesh, Chhattisgarh, Goa, Gujarat, Haryana, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Chandigarh, Delhi, Jammu and Kashmir and Puducherry. Similarly fall in significant number of wells is observed in Assam, Bihar, Meghalaya, Telangana and West Bengal.



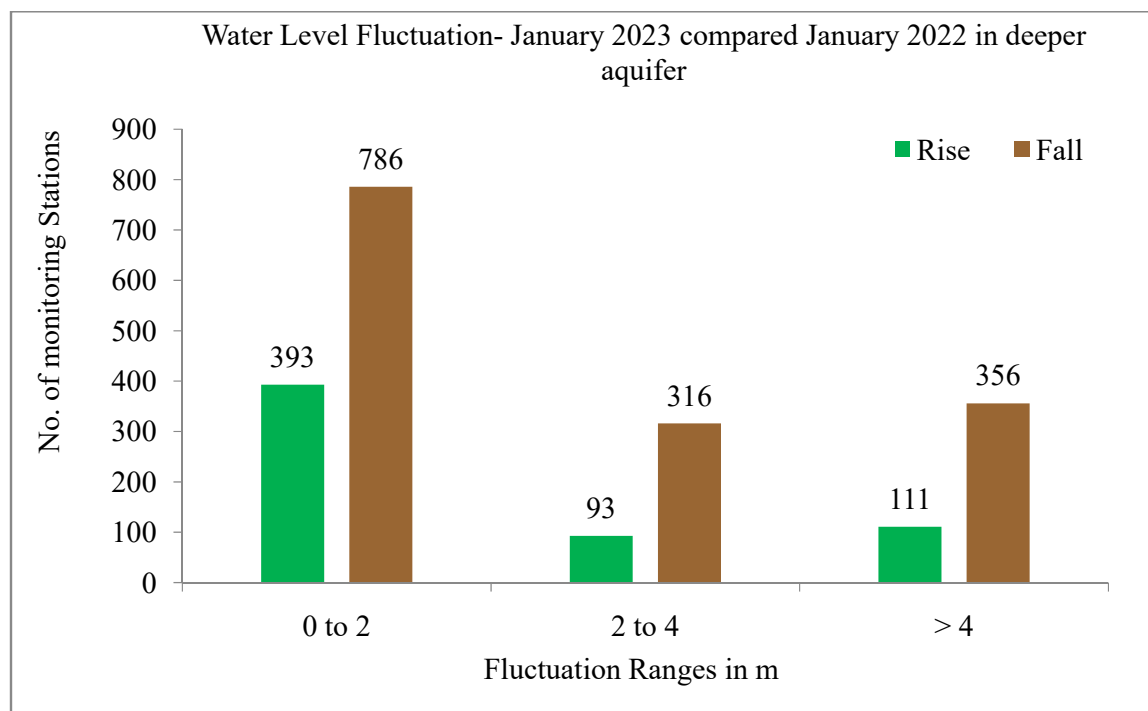
ANNUAL WATER LEVEL FLUCTUATION (NOVEMBER 2022 - NOVEMBER 2021)

A comparison of depth to water level of November 2022 with November 2021 reveals that out of total 1900 wells analysed (**Annexure-XXII**), 783 (41.2%) of wells are showing rise in water level, among which 23.3% (442) wells are showing rise of less than 2 m. About 8.2% (156) wells are showing rise in water level in the range of 2 to 4 m and 9.7% (185) wells are showing rise in the range of more than 4 m. Among the 1104 (58.1%) wells showing decline in water level, 32.6% (619) wells are showing decline in water in the range of 0 to 2 m. 15.9% (303) wells are showing decline in water level in 2 to 4 m range and remaining 9.6% (182) are in the range of more than 4 m. Rise in water level in majority of wells observed in Andhra Pradesh, Arunachal Pradesh, Assam, Karnataka, Madhya Pradesh, Meghalaya, Odisha, Telangana and Puducherry. Similarly fall in significant number of wells is observed in Chhattisgarh, Goa, Haryana, Jharkhand, Kerala, Tamil Nadu, West Bengal and Chandigarh.



ANNUAL WATER LEVEL FLUCTUATION (JANUARY 2023 - JANUARY 2022)

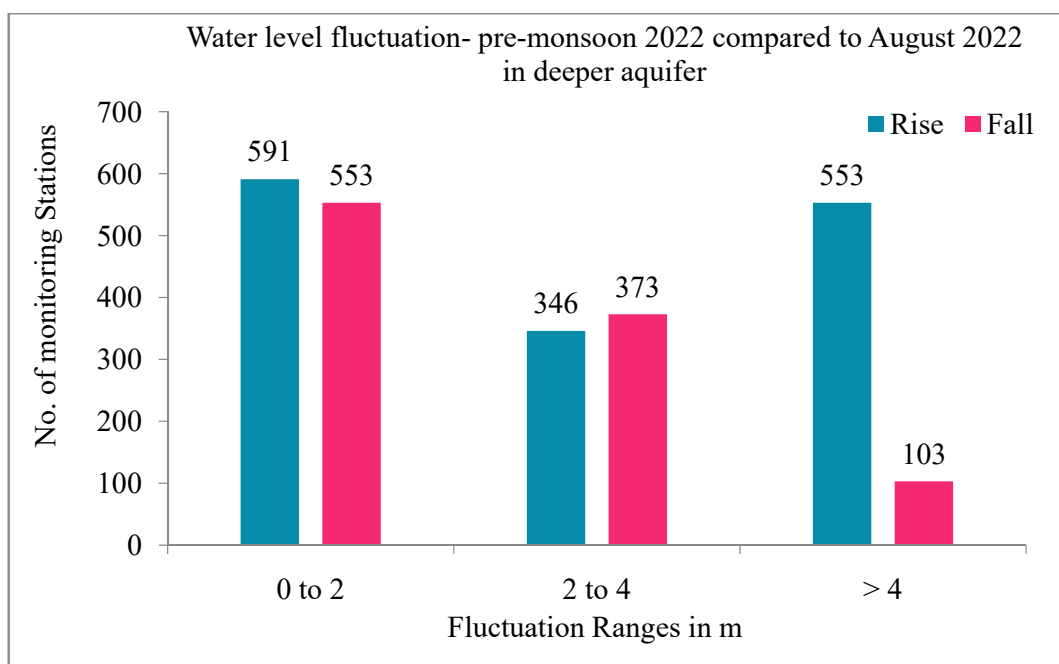
A comparison of depth to water level of January 2023 with January 2022 reveals that out of total 2068 wells analysed (**Annexure-XXIII**), 597 (28.9%) of wells are showing rise in water level, among which 19.0% (393) wells are showing rise of less than 2 m. About 4.5% (93) wells are showing rise in water level in the range of 2 to 4 m and 5.4% (111) wells are showing rise in the range of more than 4 m. Among the 1458 (70.5%) wells showing decline in water level, 38.0% (786) wells are showing decline in water in the range of 0 to 2 m. 15.3% (316) wells are showing decline in water level in 2 to 4 m range and remaining 17.2% (356) are in the range of more than 4 m. Rise in water level in majority of wells observed in Assam, Meghalaya, Chhattisgarh and Chandigarh. Similarly fall in significant number of wells is observed in Andhra Pradesh, Goa, Gujarat, Haryana, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Telangana and West Bengal



3.2.3 SEASONAL WATER LEVEL FLUCTUATION IN DEEPER AQUIFER

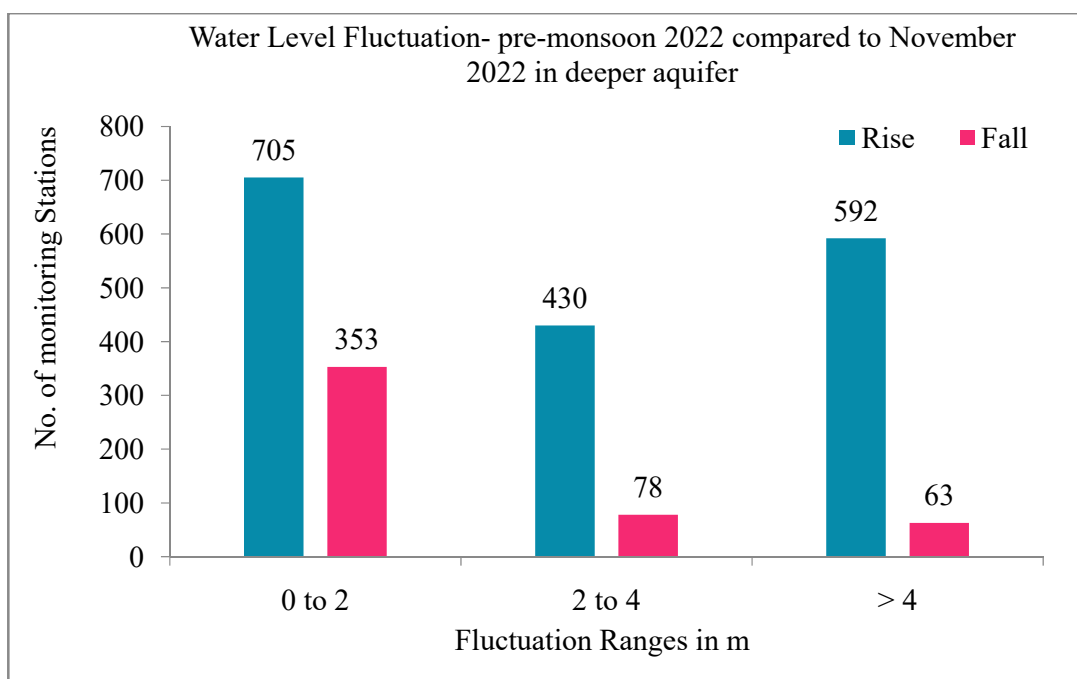
SEASONAL WATER LEVEL FLUCTUATION (PRE-MONSOON 2022- AUGUST 2022)

A comparison of depth to water level of pre-monsoon 2022 with August 2022 indicates that out of analysed 2086 wells (**Annexure-XXIV**), about 71.4% (1490) of wells are showing rise in water levels, out of which 28.3% (591) wells are showing rise of less than 2 m range. About 16.6% (346) wells are showing rise in water level in the range of 2 to 4 m and another 26.5% (553) wells are showing rise in water in range of more than 4 m. Similarly, 28.0% (584) wells are showing decline in water level, out of which 17.9% (373) wells are showing decline in water in the range of 0 to 2 m, 4.9% (103) wells are showing fall in water level in the range of 2 to 4 m and the remaining 5.2% (108) wells are showing fall in water level of more than 4 m. Rise in water level more than 4 m is mostly prominent all over the country covering in all the states except Haryana, Punjab, Tamil Nadu and Chandigarh. Fall of 2 to 4 m or more is observed in Andhra Pradesh, Gujarat, Haryana, Punjab, Tamil Nadu and West Bengal. Rise in water levels is observed in Andhra Pradesh, Assam, Bihar, Chhattisgarh, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Meghalaya, Odisha, Telangana, West Bengal, Delhi and Jammu and Kashmir.



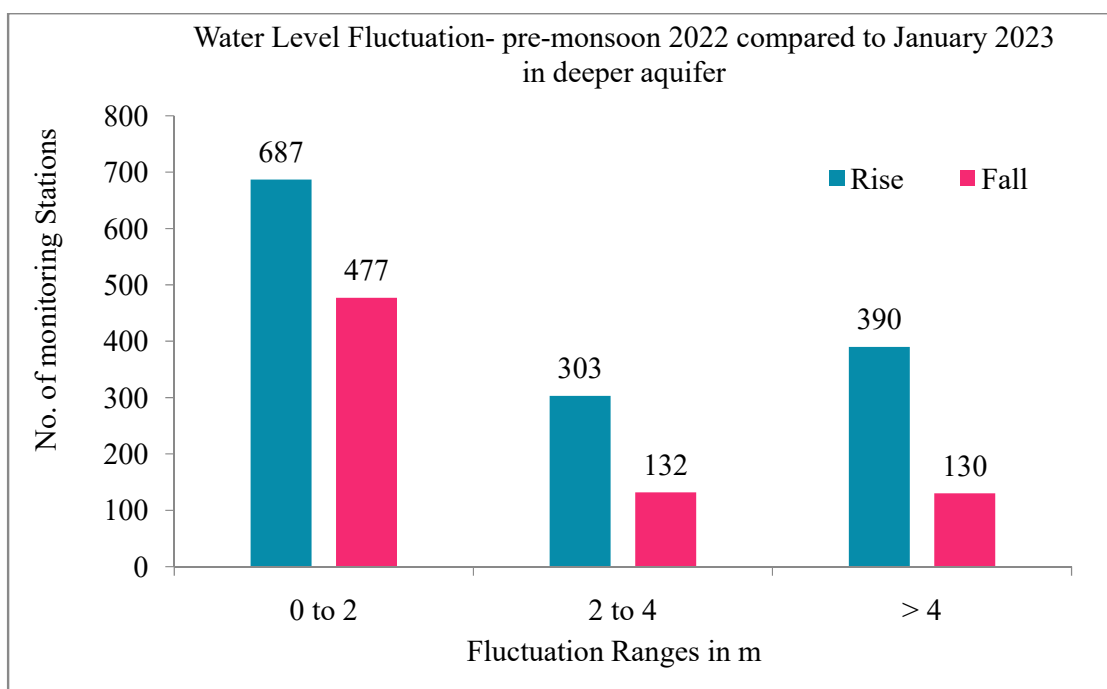
SEASONAL WATER LEVEL FLUCTUATION (PRE-MONSOON 2022- NOVEMBER 2022)

A comparison of depth to water level of pre-monsoon 2022 with November 2022 indicates that out of analysed 2231 wells (**Annexure-XXV**), about 77.4% (1727) of wells are showing rise in water levels, out of which 31.6% (705) wells are showing rise of less than 2 m range. About 19.3% (430) wells are showing rise in water level in the range of 2 to 4 m and another 26.5% (592) wells are showing rise in water in range of more than 4 m. Similarly, 22.1% (494) wells are showing decline in water level, out of which 15.8% (353) wells are showing decline in water in the range of 0 to 2 m, 3.5% (78) wells are showing fall in water level in the range of 2 to 4 m and the remaining 2.8% (63) wells are showing fall in water level of more than 4 m. Rise in water level is mostly prominent all over the country covering in all the states. Fall of 2 to 4 m or more is observed in Chhattisgarh, Haryana, Karnataka, Punjab, Tamil Nadu and West Bengal. Rise in water levels is observed in Andhra Pradesh, Assam, Chhattisgarh, Goa, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Telangana, Uttar Pradesh, West Bengal and Puducherry.



SEASONAL WATER LEVEL FLUCTUATION (PRE-MONSOON 2022- JANUARY 2023)

A comparison of depth to water level of pre-monsoon 2022 with January 2023 indicates that out of analysed 2122 wells (**Annexure-XXVI**), about 65.0% (1380) of wells are showing rise in water levels, out of which 32.4% (687) wells are showing rise of less than 2 m range. About 14.3% (303) wells are showing rise in water level in the range of 2 to 4 m and another 18.4% (390) wells are showing rise in water in range of more than 4 m. Similarly, 34.8% (739) wells are showing decline in water level, out of which 22.5% (477) wells are showing decline in water in the range of 0 to 2 m, 6.2% (132) wells are showing fall in water level in the range of 2 to 4 m and the remaining 6.1% (130) wells are showing fall in water level of more than 4 m. Rise in water level is mostly prominent all over the country covering in all the states except West Bengal and Punjab. Fall of 2 to 4 m or more is observed in scattered patches in Chhattisgarh, Gujarat, Tamil Nadu, Odisha and West Bengal. Rise in water levels is observed in all most all states. Rise of more than 4 m is observed in Andhra Pradesh, Chhattisgarh, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Telangana, West Bengal and Puducherry.

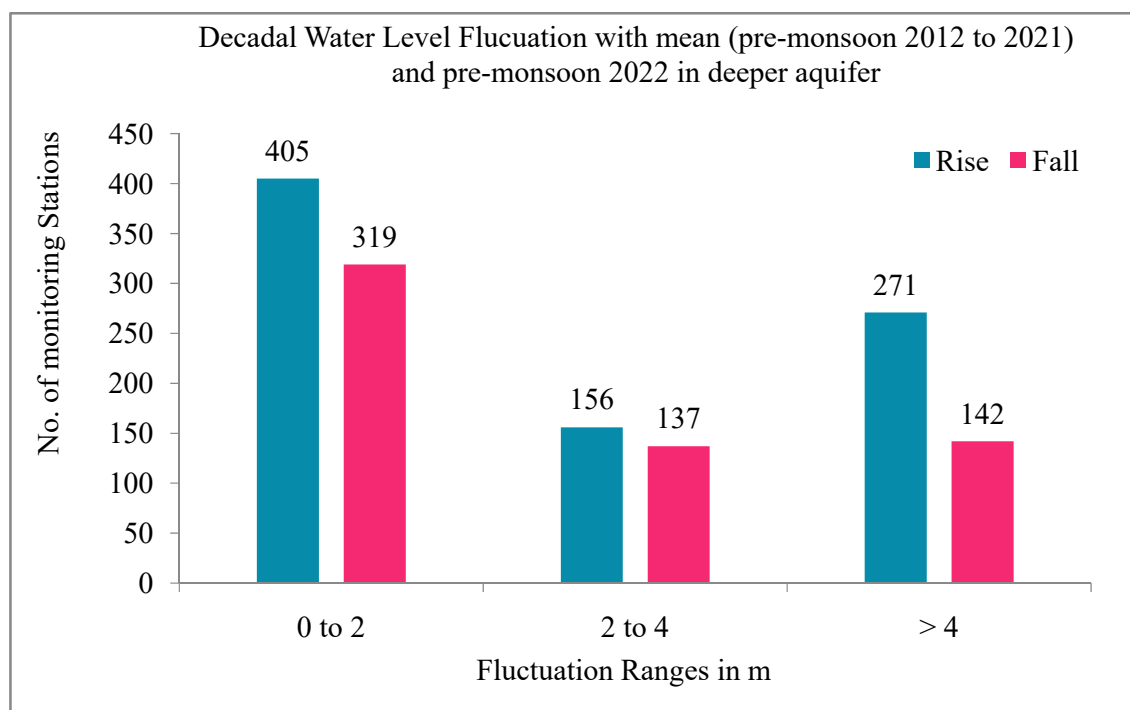


3.3.4 DECADAL WATER LEVEL FLUCTUATION IN DEEPER AQUIFER

WATER LEVEL FLUCTUATION WITH DECADAL MEAN (PRE-MONSOON-2012 TO PRE-MONSOON-2021) TO PRE-MONSOON 2022 IN DEEPER AQUIFER

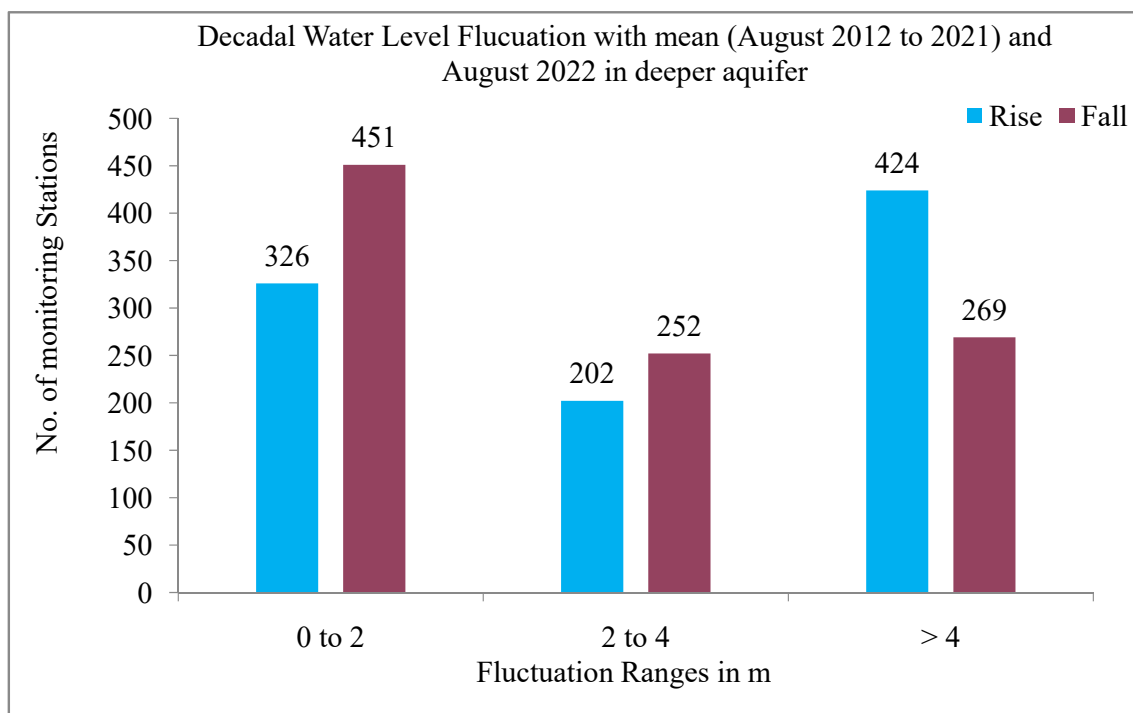
A comparison of depth to water level of pre-monsoon 2022 with decadal mean of pre-monsoon (2012-2021) indicates that, out of total 1430 wells analysed (*Annexure-XXVII*), 832 (58.2%) of wells are showing rise in water level, among which 28.3% (405) wells are showing rise of less than 2 m. About 10.9% (156) wells are showing rise in water level in the range of 2 to 4 m and only 19.0% (271) wells are showing rise in the range of more than 4 m. Among the 598 (41.8%) wells showing decline in water level, 22.3% (319) wells are showing decline in water in the range of 0 to 2 m. 9.6% (137) wells are showing decline in water level in 2 to 4 m range and remaining 9.9% (142) are in the range of more than 4 m. Rise in water level in majority of wells observed in Andhra Pradesh, Assam, Chhattisgarh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Telangana, West Bengal, Andaman and Nicobar and Delhi. Similarly fall in significant number of wells is observed in Chhattisgarh, Goa, Gujarat, Haryana, Kerala, Madhya Pradesh, Odisha, Punjab, Tamil Nadu, West Bengal and Puducherry. Rise of more than 4 m is observed in

Andhra Pradesh, Chhattisgarh, Gujarat, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Telangana and Delhi.



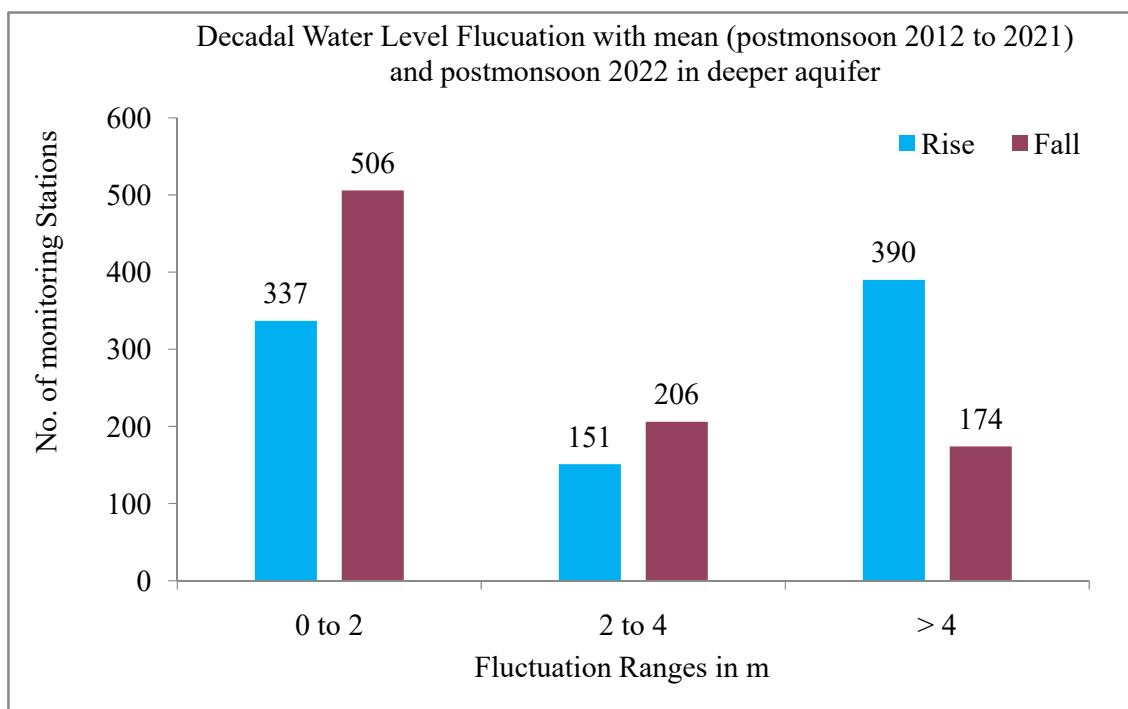
WATER LEVEL FLUCTUATION WITH DECADAL MEAN (AUGUST-2012 TO AUGUST-2021) TO AUGUST 2022 IN DEEPER AQUIFER

A comparison of depth to water level of August 2022 with decadal mean of August (2012-2021) indicates that, out of total 1924 wells analysed (**Annexure-XXVIII**), 952 (49.5%) of wells are showing rise in water level, among which 16.9% (326) wells are showing rise of less than 2 m. About 10.5% (202) wells are showing rise in water level in the range of 2 to 4 m and 22.0% (424) wells are showing rise in the range of more than 4 m. Among the 972 (50.5%) wells showing decline in water level, 23.4% (451) wells are showing decline in water in the range of 0 to 2 m. 13.1% (252) wells are showing decline in water level in 2 to 4 m range and remaining 14.0% (269) are in the range of more than 4 m. Rise in water level in majority of wells observed in Andhra Pradesh, Assam, Gujarat, Karnataka, Kerala, Madhya Pradesh, Odisha, Tamil Nadu, Delhi and Puducherry. Similarly fall in significant number of wells is observed in Chandigarh, Chhattisgarh, Gujarat, Haryana, Kerala, Odisha, Punjab, Telangana and West Bengal.



WATER LEVEL FLUCTUATION WITH DECADAL MEAN (NOVEMBER 2012 TO NOVEMBER 2021) TO NOVEMBER 2022 IN DEEPER AQUIFER

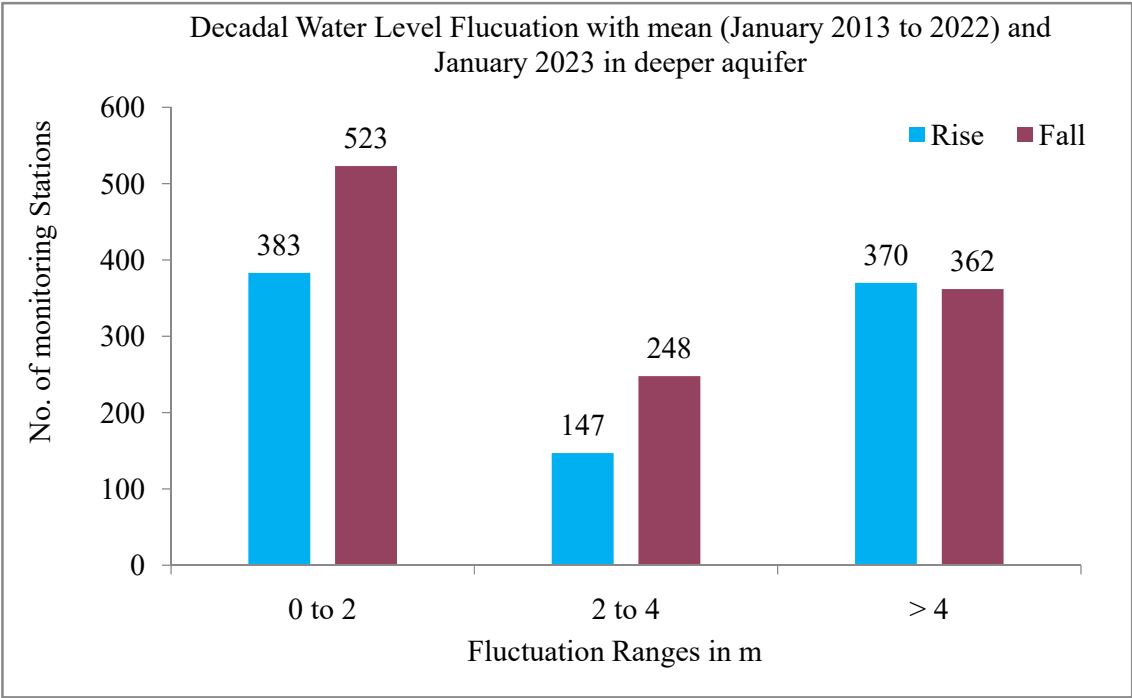
A comparison of depth to water level of November 2022 with decadal mean of November (2012-2021) indicates that, out of total 1764 wells analysed (**Annexure-XXIX**), 878 (49.8%) of wells are showing rise in water level, among which 19.1% (337) wells are showing rise of less than 2 m. About 8.6% (151) wells are showing rise in water level in the range of 2 to 4 m and only 22.1% (390) wells are showing rise in the range of more than 4 m. Among the 886 (52.2%) wells showing decline in water level, 28.7% (506) wells are showing decline in water in the range of 0 to 2 m. 11.7% (206) wells are showing decline in water level in 2 to 4 m range and remaining 9.9% (174) are in the range of more than 4 m. Rise in water level in majority of wells observed in Andhra Pradesh, Assam, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Tamil Nadu, Telangana, Chandigarh, Delhi and Puducherry. Similarly fall in significant number of wells is observed in Chhattisgarh, Goa, Gujarat, Haryana, Kerala, Punjab, Tripura and West Bengal.



WATER LEVEL FLUCTUATION WITH DECADAL MEAN (JANUARY-2013 TO JANUARY-2022) TO JANUARY-2023 IN DEEPER AQUIFER

A comparison of depth to water level of January 2023 with decadal mean of January (2013-2022) indicates that, out of total 2033 wells analysed(*Annexure-XXX*), 900(44.3%) of wells are showing rise in water level, out of which 18.8% (383) wells are showing rise of less than 2 m. About 7.2% (147) wells are showing rise in water level in the range of 2 to 4 m and 18.2% (370) wells are showing rise in the range of more than 4 m. Among the 1133 (55.7%) wells showing decline in water level, 25.7% (532) wells are showing decline in water in the range of 0 to 2 m. 12.2% (248) wells are showing decline in water level in 2 to 4 m range and remaining 17.8% (362) are in the range of more than 4 m. Rise in water level in majority of wells observed in Andhra Pradesh, Assam, Chhattisgarh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Tamil Nadu, Telangana, Delhi and Puducherry. Similarly fall in

significant number of wells is observed in Chhattisgarh, Goa, Haryana, Kerala, Meghalaya, Odisha, Punjab, Telangana, West Bengal and Chandigarh.



State-wise Depth to Water Level Distribution of Percentage of Observation Wells Pre-Monsoon 2022in Unconfined Aquifer

Sr. No.	State/UT Name	No of well analysed	DTWL, mbgl		No./Percentage of wells showing depth to water level (mbgl) in the range of											
			Min	Max	0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
					No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	714	0.01	43.28	142	19.9	357	50.0	170	23.8	33	4.6	8	1.1	4	0.6
2	Arunachal Pradesh	24	0.15	12.19	5	20.8	8	33.3	9	37.5	2	8.3	0	0.0	0	0.0
3	Assam	279	0.17	22.98	58	20.8	161	57.7	48	17.2	10	3.6	2	0.7	0	0.0
4	Bihar	585	0.35	14.08	42	7.2	330	56.4	202	34.5	11	1.9	0	0.0	0	0.0
5	Chhattisgarh	873	0.35	34.00	25	2.9	241	27.6	478	54.8	123	14.1	6	0.7	0	0.0
6	Goa	77	1.50	15.97	1	1.3	35	45.5	31	40.3	10	13.0	0	0.0	0	0.0
7	Gujarat	701	0.42	52.42	23	3.3	155	22.1	241	34.4	212	30.2	65	9.3	5	0.7
8	Haryana	990	0.65	98.00	35	3.5	193	19.5	165	16.7	240	24.2	258	26.1	99	10.0
9	Himachal Pradesh	83	0.82	29.79	6	7.2	30	36.1	22	26.5	19	22.9	6	7.2	0	0.0
10	Jharkhand	318	0.45	14.55	13	4.1	81	25.5	193	60.7	31	9.7	0	0.0	0	0.0
11	Karnataka	1383	0.04	32.26	307	22.2	470	34.0	437	31.6	166	12.0	3	0.2	0	0.0
12	Kerala	1389	0.16	51.70	150	10.8	421	30.3	582	41.9	223	16.1	11	0.8	2	0.1
13	Madhya Pradesh	1203	0.45	44.62	15	1.2	182	15.1	607	50.5	366	30.4	30	2.5	3	0.2
14	Maharashtra	1679	0.10	36.50	66	3.9	378	22.5	836	49.8	365	21.7	34	2.0	0	0.0
15	Meghalaya	48	0.58	9.37	8	16.7	30	62.5	10	20.8	0	0.0	0	0.0	0	0.0
16	Nagaland	11	1.45	18.04	1	9.1	1	9.1	6	54.5	3	27.3	0	0.0	0	0.0
17	Odisha	1314	0.15	15.70	143	10.9	671	51.1	472	35.9	28	2.1	0	0.0	0	0.0
18	Punjab	752	1.20	68.20	12	1.6	91	12.1	124	16.5	194	25.8	303	40.3	28	3.7
19	Rajasthan	945	0.25	145.50	17	1.8	97	10.3	214	22.6	254	26.9	182	19.3	181	19.2
20	Tamil Nadu	875	0.14	48.80	160	18.3	418	47.8	232	26.5	59	6.7	4	0.5	2	0.2
21	Telangana	526	0.02	69.70	30	5.7	175	33.3	210	39.9	94	17.9	14	2.7	3	0.6
22	Tripura	94	0.75	28.35	14	14.9	52	55.3	23	24.5	3	3.2	2	2.1	0	0.0
23	Uttar Pradesh	812	0.42	44.46	16	2.0	336	41.4	290	35.7	139	17.1	29	3.6	2	0.2
24	Uttarakhand	165	0.53	76.17	3	1.8	36	21.8	39	23.6	52	31.5	20	12.1	15	9.1
25	West Bengal	711	0.35	20.18	115	16.2	360	50.6	216	30.4	19	2.7	1	0.1	0	0.0
26	Andaman and Nicobar	110	0.01	5.90	86	78.2	21	19.1	3	2.7	0	0.0	0	0.0	0	0.0
27	Chandigarh	8	3.02	21.53	0	0.0	4	50.0	2	25.0	1	12.5	1	12.5	0	0.0
28	Daman & Diu and Dadra & Nagar Haveli	9	3.15	9.15	0	0.0	3	33.3	6	66.7	0	0.0	0	0.0	0	0.0
29	Delhi	117	1.25	53.34	5	4.3	35	29.9	35	29.9	27	23.1	12	10.3	3	2.6
30	Jammu and Kashmir	260	0.10	36.58	33	12.7	139	53.5	62	23.8	18	6.9	8	3.1	0	0.0
31	Puducherry	9	1.84	3.29	1	11.1	8	88.9	0	0.0	0	0.0	0	0.0	0	0.0
	Total	17064	0.01	145.50	1532	9.0	5519	32.3	5965	35.0	2702	15.8	999	5.9	347	2.0

State-wise Depth to Water Level Distribution of Percentage of Observation Wells August 2022in Unconfined Aquifer

Sr. No.	State/UT Name	No of well analysed	DTWL, mbgl		No./Percentage of wells showing depth to water level (mbgl) in the range of											
			Min	Max	0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
					No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	747	0.01	99.50	298	39.9	273	36.5	125	16.7	39	5.2	10	1.3	2	0.3
2	Arunachal Pradesh	25	0.10	13.04	11	44.0	10	40.0	3	12.0	1	4.0	0	0.0	0	0.0
3	Assam	295	0.10	23.47	161	54.6	110	37.3	19	6.4	4	1.4	1	0.3	0	0.0
4	Bihar	628	0.06	12.56	145	23.1	391	62.3	87	13.9	5	0.8	0	0.0	0	0.0
5	Chhattisgarh	965	0.01	31.00	492	51.0	363	37.6	95	9.8	12	1.2	3	0.3	0	0.0
6	Goa	80	0.56	16.75	22	27.5	39	48.8	16	20.0	3	3.8	0	0.0	0	0.0
7	Gujarat	680	0.01	60.70	241	35.4	241	35.4	111	16.3	65	9.6	19	2.8	3	0.4
8	Haryana	266	0.04	88.92	45	16.9	43	16.2	48	18.0	67	25.2	49	18.4	14	5.3
9	Himachal Pradesh	88	0.08	36.92	27	30.7	27	30.7	17	19.3	11	12.5	6	6.8	0	0.0
10	Jharkhand	364	0.09	12.10	105	28.8	165	45.3	88	24.2	6	1.6	0	0.0	0	0.0
11	Karnataka	1346	0.01	26.00	655	48.7	462	34.3	203	15.1	23	1.7	3	0.2	0	0.0
12	Kerala	1411	0.01	52.20	400	28.3	486	34.4	436	30.9	79	5.6	8	0.6	2	0.1
13	Madhya Pradesh	1288	0.01	38.92	591	45.9	443	34.4	173	13.4	65	5.0	16	1.2	0	0.0
14	Maharashtra	1691	0.01	55.27	755	44.6	651	38.5	194	11.5	72	4.3	15	0.9	4	0.2
15	Meghalaya	50	0.05	6.64	27	54.0	22	44.0	1	2.0	0	0.0	0	0.0	0	0.0
16	Nagaland	10	0.41	9.95	2	20.0	4	40.0	4	40.0	0	0.0	0	0.0	0	0.0
17	Odisha	1390	0.02	8.75	944	67.9	401	28.8	45	3.2	0	0.0	0	0.0	0	0.0
18	Punjab	618	0.13	51.20	30	4.9	58	9.4	83	13.4	140	22.7	268	43.4	39	6.3
19	Rajasthan	978	0.02	130.60	148	15.1	178	18.2	153	15.6	169	17.3	154	15.7	176	18.0
20	Tamil Nadu	891	0.36	48.00	66	7.4	429	48.1	323	36.3	67	7.5	4	0.4	2	0.2
21	Telangana	587	0.02	49.55	255	43.4	199	33.9	99	16.9	27	4.6	6	1.0	1	0.2
22	Tripura	89	0.08	27.77	29	32.6	45	50.6	10	11.2	3	3.4	2	2.2	0	0.0
23	Uttar Pradesh	801	0.05	44.11	166	20.7	318	39.7	192	24.0	100	12.5	23	2.9	2	0.2
24	Uttarakhand	160	0.24	93.90	13	8.1	36	22.5	47	29.4	34	21.3	21	13.1	9	5.6
25	West Bengal	735	0.03	19.77	376	51.2	268	36.5	79	10.7	12	1.6	0	0.0	0	0.0
26	Chandigarh	11	2.55	33.08	0	0.0	3	27.3	3	27.3	2	18.2	3	27.3	0	0.0
27	Daman & Diu and Dadra & Nagar Haveli	5	1.00	5.83	2	40.0	1	20.0	2	40.0	0	0.0	0	0.0	0	0.0
28	Delhi	117	0.43	52.68	11	9.4	28	23.9	37	31.6	24	20.5	14	12.0	3	2.6
29	Jammu and Kashmir	277	0.31	34.06	113	40.8	118	42.6	26	9.4	12	4.3	8	2.9	0	0.0
30	Puducherry	9	2.31	6.55	0	0.0	7	77.8	2	22.2	0	0.0	0	0.0	0	0.0
	Total	16602	0.01	130.60	6130	36.9	5819	35.0	2721	16.4	1042	6.3	633	3.8	257	1.5

State-wise Depth to Water Level Distribution of Percentage of Observation Wells Post-Monsoon 2022in Unconfined Aquifer

Sr. No.	State/UT Name	No of well analysed	DTWL, mbgl		No./Percentage of wells showing depth to water level (mbgl) in the range of											
			Min	Max	0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
					No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	740	0.01	37.62	370	50.0	233	31.5	100	13.5	30	4.1	7	0.9	0	0.0
2	Arunachal Pradesh	25	0.10	10.93	9	36.0	8	32.0	7	28.0	1	4.0	0	0.0	0	0.0
3	Assam	299	0.01	19.03	146	48.8	125	41.8	21	7.0	7	2.3	0	0.0	0	0.0
4	Bihar	664	0.33	11.30	104	15.7	458	69.0	99	14.9	3	0.5	0	0.0	0	0.0
5	Chhattisgarh	1024	0.20	40.00	234	22.9	619	60.4	157	15.3	13	1.3	1	0.1	0	0.0
6	Goa	83	0.15	17.24	7	8.4	37	44.6	30	36.1	9	10.8	0	0.0	0	0.0
7	Gujarat	711	0.10	61.42	121	17.0	274	38.5	201	28.3	81	11.4	30	4.2	4	0.6
8	Haryana	945	0.04	97.00	85	9.0	177	18.7	133	14.1	204	21.6	240	25.4	106	11.2
9	Himachal Pradesh	84	0.54	36.25	16	19.0	29	34.5	15	17.9	19	22.6	5	6.0	0	0.0
10	Jharkhand	392	0.40	16.10	47	12.0	244	62.2	96	24.5	5	1.3	0	0.0	0	0.0
11	Karnataka	1402	0.01	27.30	461	32.9	540	38.5	350	25.0	49	3.5	2	0.1	0	0.0
12	Kerala	1424	0.05	52.82	280	19.7	456	32.0	544	38.2	130	9.1	13	0.9	1	0.1
13	Madhya Pradesh	1225	0.02	37.67	228	18.6	585	47.8	323	26.4	79	6.4	10	0.8	0	0.0
14	Maharashtra	1724	0.10	55.00	394	22.9	850	49.3	402	23.3	63	3.7	13	0.8	2	0.1
15	Meghalaya	50	0.07	6.73	26	52.0	23	46.0	1	2.0	0	0.0	0	0.0	0	0.0
16	Nagaland	13	0.45	10.04	3	23.1	3	23.1	6	46.2	1	7.7	0	0.0	0	0.0
17	Odisha	1415	0.03	11.60	570	40.3	709	50.1	133	9.4	3	0.2	0	0.0	0	0.0
18	Punjab	502	0.79	48.79	19	3.8	75	14.9	79	15.7	143	28.5	168	33.5	18	3.6
19	Rajasthan	964	0.06	124.50	73	7.6	235	24.4	164	17.0	174	18.0	145	15.0	173	17.9
20	Tamil Nadu	896	0.52	47.52	190	21.2	463	51.7	197	22.0	44	4.9	1	0.1	1	0.1
21	Telangana	551	0.01	62.20	192	34.8	228	41.4	101	18.3	25	4.5	2	0.4	3	0.5
22	Tripura	98	0.54	26.38	26	26.5	56	57.1	11	11.2	4	4.1	1	1.0	0	0.0
23	Uttar Pradesh	904	0.15	44.14	218	24.1	367	40.6	196	21.7	101	11.2	18	2.0	4	0.4
24	Uttarakhand	152	0.20	68.10	17	11.2	44	28.9	36	23.7	27	17.8	18	11.8	10	6.6
25	West Bengal	733	0.05	16.55	193	26.3	402	54.8	124	16.9	14	1.9	0	0.0	0	0.0
26	Andaman and Nicobar	109	0.04	4.90	94	86.2	15	13.8	0	0.0	0	0.0	0	0.0	0	0.0
27	Chandigarh	13	2.51	49.01	0	0.0	4	30.8	2	15.4	3	23.1	3	23.1	1	7.7
28	Daman & Diu and Dadra & Nagar Haveli	22	1.45	7.80	2	9.1	16	72.7	4	18.2	0	0.0	0	0.0	0	0.0
29	Delhi	116	0.62	51.69	9	7.8	28	24.1	43	37.1	22	19.0	11	9.5	3	2.6
30	Jammu and Kashmir	310	0.20	88.88	86	27.7	146	47.1	45	14.5	20	6.5	11	3.5	2	0.6
31	Puducherry	9	1.16	6.04	1	11.1	7	77.8	1	11.1	0	0.0	0	0.0	0	0.0
	Total	17599	0.01	124.50	4221	24.0	7456	42.4	3621	20.6	1274	7.2	699	4.0	328	1.9

State-wise Depth to Water Level Distribution of Percentage of Observation Wells January 2023

Sr. No.	State/UT Name	No of well analysed	DTWL, mbgl		No./Percentage of wells showing depth to water level (mbgl) in the range of											
			Min	Max	0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
					No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	782	0.01	69.82	283	36.2	337	43.1	110	14.1	38	4.9	13	1.7	1	0.1
2	Arunachal Pradesh	26	0.05	11.47	6	23.1	8	30.8	9	34.6	3	11.5	0	0.0	0	0.0
3	Assam	299	0.15	20.34	69	23.1	176	58.9	45	15.1	8	2.7	1	0.3	0	0.0
4	Bihar	789	0.42	15.70	49	6.2	515	65.3	214	27.1	11	1.4	0	0.0	0	0.0
5	Chhattisgarh	1018	0.30	50.00	74	7.3	513	50.4	380	37.3	47	4.6	3	0.3	1	0.1
6	Goa	83	1.60	16.31	3	3.6	37	44.6	29	34.9	14	16.9	0	0.0	0	0.0
7	Gujarat	721	0.33	61.81	77	10.7	235	32.6	243	33.7	128	17.8	35	4.9	3	0.4
8	Haryana	268	0.09	88.92	37	13.8	52	19.4	50	18.7	71	26.5	42	15.7	16	6.0
9	Himachal Pradesh	81	0.29	38.21	10	12.3	30	37.0	20	24.7	16	19.8	5	6.2	0	0.0
10	Jharkhand	399	0.26	15.60	24	6.0	153	38.3	212	53.1	10	2.5	0	0.0	0	0.0
11	Karnataka	1365	0.01	23.50	95	7.0	539	39.5	547	40.1	182	13.3	2	0.1	0	0.0
12	Kerala	1399	0.01	53.00	168	12.0	427	30.5	600	42.9	189	13.5	12	0.9	3	0.2
13	Madhya Pradesh	1183	0.20	39.32	70	5.9	375	31.7	518	43.8	206	17.4	14	1.2	0	0.0
14	Maharashtra	1659	0.10	56.90	161	9.7	719	43.3	610	36.8	154	9.3	13	0.8	2	0.1
15	Meghalaya	49	0.20	8.27	10	20.4	29	59.2	10	20.4	0	0.0	0	0.0	0	0.0
16	Nagaland	13	1.87	12.04	1	7.7	4	30.8	6	46.2	2	15.4	0	0.0	0	0.0
17	Odisha	1408	0.05	16.50	278	19.7	778	55.3	337	23.9	15	1.1	0	0.0	0	0.0
18	Punjab	219	0.57	47.15	13	5.9	42	19.2	38	17.4	71	32.4	48	21.9	7	3.2
19	Rajasthan	958	0.15	146.11	52	5.4	175	18.3	209	21.8	194	20.3	152	15.9	176	18.4
20	Tamil Nadu	897	0.33	46.90	112	12.5	503	56.1	218	24.3	60	6.7	3	0.3	1	0.1
21	Telangana	591	0.16	59.90	121	20.5	247	41.8	172	29.1	42	7.1	7	1.2	2	0.3
22	Tripura	97	0.89	26.70	18	18.6	57	58.8	16	16.5	5	5.2	1	1.0	0	0.0
23	Uttar Pradesh	999	0.35	44.36	105	10.5	474	47.4	259	25.9	130	13.0	28	2.8	3	0.3
24	Uttarakhand	164	0.08	70.78	14	8.5	46	28.0	34	20.7	35	21.3	21	12.8	14	8.5
25	West Bengal	738	0.05	22.21	124	16.8	410	55.6	179	24.3	24	3.3	1	0.1	0	0.0
26	Chandigarh	12	2.74	48.08	0	0.0	4	33.3	2	16.7	2	16.7	3	25.0	1	8.3
27	Daman & Diu and Dadra & Nagar Haveli	5	5.49	7.34	0	0.0	0	0.0	5	100.0	0	0.0	0	0.0	0	0.0
28	Delhi	115	0.96	55.49	7	6.1	30	26.1	43	37.4	21	18.3	12	10.4	2	1.7
29	Jammu and Kashmir	253	0.12	89.00	42	16.6	123	48.6	52	20.6	21	8.3	14	5.5	1	0.4
30	Puducherry	9	1.60	6.30	1	11.1	7	77.8	1	11.1	0	0.0	0	0.0	0	0.0
	Total	16599	0.01	146.11	2024	12.2	7045	42.4	5168	31.1	1699	10.2	430	2.6	233	1.4

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from Pre-Monsoon 2021 to Pre-Monsoon 2022 in Unconfined Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	1	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	1	0
2	Arunachal Pradesh	22	10	45.5	1	4.5	0	0.0	9	40.9	1	4.5	0	0.0	11	10
3	Assam	208	103	49.5	4	1.9	2	1.0	92	44.2	4	1.9	1	0.5	109	97
4	Bihar	181	32	17.7	6	3.3	1	0.6	94	51.9	42	23.2	6	3.3	39	142
5	Chhattisgarh	636	83	13.1	13	2.0	6	0.9	326	51.3	103	16.2	90	14.2	102	519
6	Gujarat	602	148	24.6	34	5.6	24	4.0	243	40.4	77	12.8	58	9.6	206	378
7	Haryana	859	359	41.8	64	7.5	12	1.4	369	43.0	28	3.3	17	2.0	435	414
8	Himachal Pradesh	80	31	38.8	5	6.3	4	5.0	36	45.0	2	2.5	2	2.5	40	40
9	Jharkhand	115	7	6.1	8	7.0	8	7.0	33	28.7	27	23.5	32	27.8	23	92
10	Kerala	1126	645	57.3	48	4.3	14	1.2	373	33.1	25	2.2	11	1.0	707	409
11	Madhya Pradesh	1072	347	32.4	74	6.9	58	5.4	380	35.4	121	11.3	72	6.7	479	573
12	Maharashtra	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
13	Meghalaya	45	15	33.3	0	0.0	0	0.0	25	55.6	4	8.9	0	0.0	15	29
14	Odisha	1138	648	56.9	87	7.6	19	1.7	336	29.5	32	2.8	3	0.3	754	371
15	Punjab	691	180	26.0	7	1.0	7	1.0	450	65.1	25	3.6	19	2.7	194	494
16	Rajasthan	884	254	28.7	94	10.6	70	7.9	283	32.0	77	8.7	84	9.5	418	444
17	Tamil Nadu	363	170	46.8	66	18.2	40	11.0	70	19.3	10	2.8	5	1.4	276	85
18	Telangana	112	36	32.1	8	7.1	8	7.1	46	41.1	8	7.1	6	5.4	52	60
19	Tripura	91	39	42.9	0	0.0	0	0.0	49	53.8	2	2.2	0	0.0	39	51
20	Uttar Pradesh	591	234	39.6	32	5.4	13	2.2	226	38.2	65	11.0	19	3.2	279	310
21	Uttarakhand	151	55	36.4	14	9.3	11	7.3	50	33.1	11	7.3	10	6.6	80	71
22	West Bengal	378	190	50.3	49	13.0	17	4.5	111	29.4	7	1.9	4	1.1	256	122
23	Chandigarh	8	5	62.5	0	0.0	0	0.0	3	37.5	0	0.0	0	0.0	5	3
24	Daman & Diu and Dadra & Nagar Haveli	5	2	40.0	0	0.0	0	0.0	2	40.0	1	20.0	0	0.0	2	3
25	Delhi	96	47	49.0	28	29.2	5	5.2	14	14.6	0	0.0	2	2.1	80	16
26	Jammu and Kashmir	212	101	47.6	9	4.2	2	0.9	87	41.0	8	3.8	3	1.4	112	98
27	Puducherry	5	3	60.0	0	0.0	1	20.0	1	20.0	0	0.0	0	0.0	4	1
	Total	9673	3745	38.7	651	6.7	323	3.3	3708	38.3	680	7.0	444	4.6	4719	4832

N.B. 122 monitoring wells (1.2%) show no change in Water Level. Reduction in no. of wells analysed is due to less no of stations monitored during Pre-monsoon 2021 because of Covid-19 pandemic.

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from with August 2021 to August 2022 in Unconfined Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	681	296	43.5	47	6.9	22	3.2	259	38.0	34	5.0	19	2.8	365	312
2	Arunachal Pradesh	19	5	26.3	0	0.0	0	0.0	12	63.2	1	5.3	0	0.0	5	13
3	Assam	250	101	40.4	3	1.2	2	0.8	130	52.0	10	4.0	1	0.4	106	141
4	Bihar	492	87	17.7	8	1.6	2	0.4	217	44.1	134	27.2	41	8.3	97	392
5	Chhattisgarh	702	299	42.6	100	14.2	67	9.5	182	25.9	36	5.1	13	1.9	466	231
6	Goa	80	50	62.5	5	6.3	1	1.3	23	28.8	0	0.0	1	1.3	56	24
7	Gujarat	592	218	36.8	106	17.9	112	18.9	119	20.1	19	3.2	14	2.4	436	152
8	Haryana	190	83	43.7	50	26.3	23	12.1	21	11.1	7	3.7	6	3.2	156	34
9	Himachal Pradesh	80	34	42.5	1	1.3	2	2.5	40	50.0	0	0.0	3	3.8	37	43
10	Jharkhand	315	90	28.6	22	7.0	6	1.9	118	37.5	52	16.5	26	8.3	118	196
11	Karnataka	1219	598	49.1	154	12.6	122	10.0	283	23.2	38	3.1	12	1.0	874	333
12	Kerala	1268	481	37.9	82	6.5	19	1.5	601	47.4	49	3.9	19	1.5	582	669
13	Madhya Pradesh	1215	534	44.0	187	15.4	103	8.5	294	24.2	52	4.3	34	2.8	824	380
14	Maharashtra	1551	600	38.7	167	10.8	94	6.1	542	34.9	77	5.0	30	1.9	861	649
15	Meghalaya	34	10	29.4	0	0.0	0	0.0	22	64.7	0	0.0	0	0.0	10	22
16	Nagaland	10	3	30.0	2	20.0	2	20.0	1	10.0	2	20.0	0	0.0	7	3
17	Odisha	1300	832	64.0	147	11.3	43	3.3	257	19.8	6	0.5	1	0.1	1022	264
18	Punjab	172	107	62.2	19	11.0	8	4.7	34	19.8	3	1.7	1	0.6	134	38
19	Rajasthan	893	304	34.0	118	13.2	139	15.6	222	24.9	43	4.8	51	5.7	561	316
20	Tamil Nadu	828	249	30.1	101	12.2	102	12.3	309	37.3	45	5.4	15	1.8	452	369
21	Telangana	571	212	37.1	69	12.1	47	8.2	135	23.6	54	9.5	36	6.3	328	225
22	Tripura	84	32	38.1	5	6.0	1	1.2	38	45.2	7	8.3	1	1.2	38	46
23	Uttar Pradesh	630	142	22.5	28	4.4	7	1.1	293	46.5	117	18.6	41	6.5	177	451
24	Uttarakhand	151	23	15.2	6	4.0	9	6.0	84	55.6	19	12.6	10	6.6	38	113
25	West Bengal	643	203	31.6	8	1.2	4	0.6	309	48.1	75	11.7	44	6.8	215	428
26	Chandigarh	9	5	55.6	1	11.1	0	0.0	3	33.3	0	0.0	0	0.0	6	3
27	Daman & Diu and Dadra & Nagar Haveli	2	1	50.0	0	0.0	0	0.0	1	50.0	0	0.0	0	0.0	1	1
28	Delhi	92	42	45.7	12	13.0	0	0.0	29	31.5	6	6.5	3	3.3	54	38
29	Jammu and Kashmir	256	142	55.5	16	6.3	5	2.0	86	33.6	4	1.6	1	0.4	163	91
30	Puducherry	9	3	33.3	0	0.0	0	0.0	6	66.7	0	0.0	0	0.0	3	6
	Total	14338	5786	40.4	1464	10.2	942	6.6	4670	32.6	890	6.2	423	3.0	8192	5983

N.B. 163 monitoring wells (1.2%) show no change in Water Level.

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from with November 2021 to November 2022 in Unconfined Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	648	250	38.6	45	6.9	29	4.5	284	43.8	24	3.7	10	1.5	324	318
2	Arunachal Pradesh	19	6	31.6	1	5.3	0	0.0	9	47.4	2	10.5	0	0.0	7	11
3	Assam	258	138	53.5	10	3.9	6	2.3	98	38.0	3	1.2	3	1.2	154	104
4	Bihar	588	131	22.3	8	1.4	2	0.3	323	54.9	95	16.2	26	4.4	141	444
5	Chhattisgarh	768	326	42.4	85	11.1	30	3.9	246	32.0	54	7.0	17	2.2	441	317
6	Goa	81	23	28.4	1	1.2	0	0.0	54	66.7	1	1.2	1	1.2	24	56
7	Gujarat	626	178	28.4	61	9.7	42	6.7	226	36.1	58	9.3	53	8.5	281	337
8	Haryana	814	368	45.2	48	5.9	16	2.0	313	38.5	41	5.0	8	1.0	432	362
9	Himachal Pradesh	75	18	24.0	1	1.3	0	0.0	51	68.0	2	2.7	3	4.0	19	56
10	Jharkhand	292	58	19.9	20	6.8	14	4.8	158	54.1	28	9.6	11	3.8	92	197
11	Karnataka	1183	294	24.9	72	6.1	33	2.8	635	53.7	102	8.6	37	3.1	399	774
12	Kerala	1233	213	17.3	21	1.7	9	0.7	809	65.6	135	10.9	37	3.0	243	981
13	Madhya Pradesh	1149	532	46.3	124	10.8	67	5.8	299	26.0	54	4.7	29	2.5	723	382
14	Maharashtra	1577	454	28.8	115	7.3	51	3.2	735	46.6	135	8.6	57	3.6	620	927
15	Meghalaya	50	29	58.0	2	4.0	0	0.0	15	30.0	3	6.0	0	0.0	31	18
16	Nagaland	11	3	27.3	0	0.0	5	45.5	1	9.1	1	9.1	1	9.1	8	3
17	Odisha	1338	574	42.9	62	4.6	6	0.4	627	46.9	26	1.9	1	0.1	642	654
18	Punjab	414	231	55.8	14	3.4	6	1.4	146	35.3	8	1.9	7	1.7	251	161
19	Rajasthan	906	317	35.0	116	12.8	105	11.6	245	27.0	57	6.3	48	5.3	538	350
20	Tamil Nadu	811	140	17.3	60	7.4	45	5.5	391	48.2	129	15.9	41	5.1	245	561
21	Telangana	466	214	45.9	43	9.2	20	4.3	161	34.5	20	4.3	7	1.5	277	188
22	Tripura	93	51	54.8	4	4.3	1	1.1	31	33.3	5	5.4	0	0.0	56	36
23	Uttar Pradesh	659	180	27.3	26	3.9	8	1.2	368	55.8	57	8.6	16	2.4	214	441
24	Uttarakhand	146	54	37.0	11	7.5	6	4.1	56	38.4	15	10.3	4	2.7	71	75
25	West Bengal	643	91	14.2	5	0.8	5	0.8	388	60.3	113	17.6	41	6.4	101	542
26	Andaman and Nicobar	108	69	63.9	0	0.0	0	0.0	28	25.9	0	0.0	0	0.0	69	28
27	Chandigarh	9	4	44.4	0	0.0	0	0.0	4	44.4	1	11.1	0	0.0	4	5
28	Delhi	103	35	34.0	4	3.9	1	1.0	56	54.4	4	3.9	3	2.9	40	63
29	Jammu and Kashmir	224	95	42.4	4	1.8	4	1.8	109	48.7	5	2.2	4	1.8	103	118
30	Puducherry	9	0	0.0	0	0.0	0	0.0	6	66.7	3	33.3	0	0.0	0	9
	Total	15301	5076	33.2	963	6.3	511	3.3	6872	44.9	1181	7.7	465	3.0	6550	8518

N. B. 233 monitoring wells (1.5%) show no change in Water Level.

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from with January 2022 to January 2023 in Unconfined Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Andhra Pradesh	695	249	35.8	15	2.2	15	2.2	345	49.6	44	6.3	18	2.6	279	407
2	Arunachal Pradesh	25	11	44.0	0	0.0	0	0.0	14	56.0	0	0.0	0	0.0	11	14
3	Assam	265	143	54.0	1	0.4	0	0.0	112	42.3	3	1.1	4	1.5	144	119
4	Bihar	598	111	18.6	6	1.0	1	0.2	350	58.5	105	17.6	23	3.8	118	478
5	Chhattisgarh	725	225	31.0	51	7.0	22	3.0	339	46.8	59	8.1	26	3.6	298	424
6	Goa	83	32	38.6	2	2.4	3	3.6	40	48.2	1	1.2	2	2.4	37	43
7	Gujarat	632	154	24.4	47	7.4	37	5.9	254	40.2	67	10.6	70	11.1	238	391
8	Haryana	227	95	41.9	12	5.3	4	1.8	102	44.9	9	4.0	4	1.8	111	115
9	Himachal Pradesh	80	14	17.5	4	5.0	1	1.3	54	67.5	2	2.5	4	5.0	19	60
10	Jharkhand	311	55	17.7	6	1.9	2	0.6	173	55.6	58	18.6	16	5.1	63	247
11	Karnataka	1122	113	10.1	33	2.9	26	2.3	700	62.4	177	15.8	69	6.1	172	946
12	Kerala	1203	332	27.6	73	6.1	51	4.2	651	54.1	59	4.9	26	2.2	456	736
13	Madhya Pradesh	1100	332	30.2	68	6.2	35	3.2	430	39.1	125	11.4	80	7.3	435	635
14	Maharashtra	1520	400	26.3	71	4.7	42	2.8	723	47.6	164	10.8	92	6.1	513	979
15	Meghalaya	49	20	40.8	2	4.1	0	0.0	27	55.1	0	0.0	0	0.0	22	27
16	Nagaland	9	2	22.2	0	0.0	1	11.1	1	11.1	3	33.3	2	22.2	3	6
17	Odisha	1327	302	22.8	14	1.1	2	0.2	848	63.9	92	6.9	32	2.4	318	972
18	Punjab	168	42	25.0	6	3.6	0	0.0	107	63.7	9	5.4	4	2.4	48	120
19	Rajasthan	904	251	27.8	99	11.0	77	8.5	321	35.5	83	9.2	62	6.9	427	466
20	Tamil Nadu	821	96	11.7	21	2.6	14	1.7	482	58.7	149	18.1	56	6.8	131	687
21	Telangana	580	222	38.3	41	7.1	17	2.9	207	35.7	35	6.0	48	8.3	280	290
22	Tripura	94	36	38.3	8	8.5	1	1.1	45	47.9	2	2.1	1	1.1	45	48
23	Uttar Pradesh	674	172	25.5	19	2.8	6	0.9	405	60.1	60	8.9	7	1.0	197	472
24	Uttarakhand	158	44	27.8	2	1.3	2	1.3	93	58.9	9	5.7	6	3.8	48	108
25	West Bengal	630	110	17.5	17	2.7	11	1.7	399	63.3	68	10.8	25	4.0	138	492
26	Chandigarh	11	6	54.5	1	9.1	0	0.0	4	36.4	0	0.0	0	0.0	7	4
27	Daman & Diu and Dadra & Nagar Haveli	3	0	0.0	0	0.0	0	0.0	2	66.7	1	33.3	0	0.0	0	3
28	Delhi	78	28	35.9	1	1.3	1	1.3	42	53.8	4	5.1	1	1.3	30	47
29	Jammu and Kashmir	213	48	22.5	1	0.5	2	0.9	138	64.8	21	9.9	3	1.4	51	162
30	Puducherry	9	0	0.0	0	0.0	0	0.0	5	55.6	3	33.3	0	0.0	0	8
	Total	14314	3645	25.5	621	4.3	373	2.6	7413	51.8	1412	9.9	681	4.8	4639	9506

N. B. 169 monitoring wells (1.2%) show no change in Water Level.

State-wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from Pre-Monsoon 2022 to August 2022 in Unconfined Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Andhra Pradesh	678	365	53.8	112	16.5	38	5.6	134	19.8	16	2.4	9	1.3	515	159
2	Arunachal Pradesh	22	11	50.0	7	31.8	3	13.6	1	4.5	0	0.0	0	0.0	21	1
3	Assam	255	162	63.5	54	21.2	14	5.5	21	8.2	0	0.0	1	0.4	230	22
4	Bihar	531	339	63.8	95	17.9	25	4.7	58	10.9	10	1.9	3	0.6	459	71
5	Chhattisgarh	798	155	19.4	245	30.7	378	47.4	11	1.4	0	0.0	4	0.5	778	15
6	Goa	62	27	43.5	20	32.3	12	19.4	1	1.6	1	1.6	1	1.6	59	3
7	Gujarat	562	131	23.3	117	20.8	284	50.5	19	3.4	4	0.7	4	0.7	532	27
8	Haryana	235	76	32.3	48	20.4	23	9.8	56	23.8	18	7.7	14	6.0	147	88
9	Himachal Pradesh	79	40	50.6	22	27.8	8	10.1	8	10.1	0	0.0	0	0.0	70	8
10	Jharkhand	291	68	23.4	83	28.5	104	35.7	22	7.6	9	3.1	4	1.4	255	35
11	Karnataka	1233	541	43.9	270	21.9	278	22.5	111	9.0	13	1.1	3	0.2	1089	127
12	Kerala	1313	651	49.6	327	24.9	179	13.6	140	10.7	11	0.8	1	0.1	1157	152
13	Madhya Pradesh	1109	131	11.8	231	20.8	702	63.3	27	2.4	6	0.5	11	1.0	1064	44
14	Maharashtra	1602	266	16.6	419	26.2	821	51.2	58	3.6	13	0.8	14	0.9	1506	85
15	Meghalaya	48	31	64.6	16	33.3	1	2.1	0	0.0	0	0.0	0	0.0	48	0
16	Nagaland	9	2	22.2	0	0.0	4	44.4	3	33.3	0	0.0	0	0.0	6	3
17	Odisha	1262	495	39.2	416	33.0	329	26.1	20	1.6	0	0.0	0	0.0	1240	20
18	Punjab	576	117	20.3	25	4.3	8	1.4	297	51.6	96	16.7	33	5.7	150	426
19	Rajasthan	887	359	40.5	164	18.5	244	27.5	93	10.5	15	1.7	7	0.8	767	115
20	Tamil Nadu	838	183	21.8	26	3.1	17	2.0	473	56.4	99	11.8	34	4.1	226	606
21	Telangana	526	142	27.0	165	31.4	191	36.3	24	4.6	1	0.2	2	0.4	498	27
22	Tripura	82	43	52.4	16	19.5	8	9.8	12	14.6	2	2.4	0	0.0	67	14
23	Uttar Pradesh	735	342	46.5	173	23.5	50	6.8	145	19.7	17	2.3	4	0.5	565	166
24	Uttarakhand	154	60	39.0	20	13.0	33	21.4	25	16.2	9	5.8	7	4.5	113	41
25	West Bengal	666	368	55.3	133	20.0	87	13.1	44	6.6	5	0.8	2	0.3	588	51
26	Chandigarh	7	4	57.1	0	0.0	0	0.0	3	42.9	0	0.0	0	0.0	4	3
27	Daman & Diu and Dadra & Nagar Haveli	4	2	50.0	0	0.0	2	50.0	0	0.0	0	0.0	0	0.0	4	0
28	Delhi	116	70	60.3	3	2.6	2	1.7	36	31.0	4	3.4	1	0.9	75	41
29	Jammu and Kashmir	256	109	42.6	74	28.9	33	12.9	36	14.1	3	1.2	0	0.0	216	39
30	Puducherry	9	0	0.0	0	0.0	0	0.0	6	66.7	3	33.3	0	0.0	0	9
	Total	14945	5290	35.4	3281	22.0	3878	25.9	1884	12.6	355	2.4	159	1.1	12449	2398

N. B. 98 monitoring wells (0.66 %) show no change in Water Level.

State-wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from Pre-Monsoon 2022 to November 2022 in Unconfined Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Andhra Pradesh	651	342	52.5	159	24.4	67	10.3	67	10.3	11	1.7	2	0.3	568	80
2	Arunachal Pradesh	22	13	59.1	1	4.5	2	9.1	6	27.3	0	0.0	0	0.0	16	6
3	Assam	247	182	73.7	33	13.4	10	4.0	18	7.3	3	1.2	1	0.4	225	22
4	Bihar	550	308	56.0	97	17.6	16	2.9	115	20.9	10	1.8	2	0.4	421	127
5	Chhattisgarh	785	226	28.8	239	30.4	272	34.6	39	5.0	2	0.3	5	0.6	737	46
6	Goa	65	43	66.2	8	12.3	3	4.6	8	12.3	2	3.1	1	1.5	54	11
7	Gujarat	612	168	27.5	144	23.5	232	37.9	55	9.0	7	1.1	5	0.8	544	67
8	Haryana	857	454	53.0	68	7.9	35	4.1	261	30.5	27	3.2	9	1.1	557	297
9	Himachal Pradesh	73	48	65.8	10	13.7	6	8.2	7	9.6	2	2.7	0	0.0	64	9
10	Jharkhand	295	91	30.8	108	36.6	64	21.7	23	7.8	5	1.7	2	0.7	263	30
11	Karnataka	1323	621	46.9	239	18.1	133	10.1	281	21.2	27	2.0	11	0.8	993	319
12	Kerala	1321	856	64.8	187	14.2	50	3.8	190	14.4	11	0.8	8	0.6	1093	209
13	Madhya Pradesh	1133	225	19.9	337	29.7	502	44.3	47	4.1	10	0.9	9	0.8	1064	66
14	Maharashtra	1623	423	26.1	457	28.2	596	36.7	96	5.9	20	1.2	20	1.2	1476	136
15	Meghalaya	48	29	60.4	13	27.1	3	6.3	3	6.3	0	0.0	0	0.0	45	3
16	Nagaland	11	2	18.2	0	0.0	6	54.5	3	27.3	0	0.0	0	0.0	8	3
17	Odisha	1260	655	52.0	401	31.8	120	9.5	69	5.5	4	0.3	0	0.0	1176	73
18	Punjab	431	212	49.2	22	5.1	14	3.2	149	34.6	29	6.7	4	0.9	248	182
19	Rajasthan	873	293	33.6	167	19.1	235	26.9	124	14.2	25	2.9	20	2.3	695	169
20	Tamil Nadu	836	335	40.1	109	13.0	51	6.1	282	33.7	38	4.5	17	2.0	495	337
21	Telangana	495	144	29.1	150	30.3	179	36.2	18	3.6	1	0.2	3	0.6	473	22
22	Tripura	90	61	67.8	16	17.8	3	3.3	8	8.9	2	2.2	0	0.0	80	10
23	Uttar Pradesh	714	366	51.3	211	29.6	51	7.1	68	9.5	13	1.8	4	0.6	628	85
24	Uttarakhand	148	56	37.8	43	29.1	33	22.3	10	6.8	5	3.4	1	0.7	132	16
25	West Bengal	649	353	54.4	94	14.5	38	5.9	147	22.7	11	1.7	4	0.6	485	162
26	Andaman and Nicobar	108	75	69.4	3	2.8	0	0.0	27	25.0	0	0.0	0	0.0	78	27
27	Chandigarh	7	6	85.7	1	14.3	0	0.0	0	0.0	0	0.0	0	0.0	7	0
28	Daman & Diu and Dadra & Nagar Haveli	0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0
29	Delhi	110	73	66.4	4	3.6	3	2.7	28	25.5	2	1.8	0	0.0	80	30
30	Jammu and Kashmir	257	149	58.0	51	19.8	19	7.4	30	11.7	2	0.8	2	0.8	219	34
31	Puducherry	9	2	22.2	0	0.0	0	0.0	6	66.7	1	11.1	0	0.0	2	7
	Total	15603	6811	43.7	3372	21.6	2743	17.6	2185	14.0	270	1.7	130	0.8	12926	2585

N. B. 92 monitoring wells (0.6 %) show no change in Water Level.

State-wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from Pre-Monsoon 2022 to January 2023 in Unconfined Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Andhra Pradesh	683	414	60.6	120	17.6	46	6.7	87	12.7	5	0.7	6	0.9	580	98
2	Arunachal Pradesh	24	15	62.5	1	4.2	0	0.0	5	20.8	2	8.3	0	0.0	16	7
3	Assam	259	140	54.1	13	5.0	3	1.2	94	36.3	7	2.7	0	0.0	156	101
4	Bihar	543	283	52.1	48	8.8	11	2.0	164	30.2	29	5.3	4	0.7	342	197
5	Chhattisgarh	791	300	37.9	214	27.1	123	15.5	104	13.1	28	3.5	13	1.6	637	145
6	Goa	65	44	67.7	3	4.6	2	3.1	10	15.4	1	1.5	4	6.2	49	15
7	Gujarat	613	208	33.9	131	21.4	157	25.6	78	12.7	18	2.9	14	2.3	496	110
8	Haryana	240	101	42.1	42	17.5	20	8.3	52	21.7	17	7.1	5	2.1	163	74
9	Himachal Pradesh	73	48	65.8	4	5.5	4	5.5	14	19.2	3	4.1	0	0.0	56	17
10	Jharkhand	293	168	57.3	56	19.1	14	4.8	35	11.9	10	3.4	9	3.1	238	54
11	Karnataka	1298	252	19.4	63	4.9	44	3.4	677	52.2	178	13.7	78	6.0	359	933
12	Kerala	1288	583	45.3	71	5.5	34	2.6	519	40.3	51	4.0	19	1.5	688	589
13	Madhya Pradesh	1082	394	36.4	271	25.0	232	21.4	113	10.4	33	3.0	27	2.5	897	173
14	Maharashtra	1528	580	38.0	379	24.8	279	18.3	196	12.8	50	3.3	32	2.1	1238	278
15	Meghalaya	47	27	57.4	3	6.4	0	0.0	16	34.0	1	2.1	0	0.0	30	17
16	Nagaland	11	1	9.1	0	0.0	6	54.5	3	27.3	1	9.1	0	0.0	7	4
17	Odisha	1235	806	65.3	131	10.6	26	2.1	207	16.8	44	3.6	12	1.0	963	263
18	Punjab	165	92	55.8	11	6.7	5	3.0	50	30.3	5	3.0	2	1.2	108	57
19	Rajasthan	881	262	29.7	157	17.8	193	21.9	194	22.0	42	4.8	23	2.6	612	259
20	Tamil Nadu	828	269	32.5	93	11.2	42	5.1	339	40.9	54	6.5	29	3.5	404	422
21	Telangana	526	208	39.5	133	25.3	121	23.0	53	10.1	4	0.8	6	1.1	462	63
22	Tripura	88	50	56.8	10	11.4	2	2.3	23	26.1	2	2.3	0	0.0	62	25
23	Uttar Pradesh	671	457	68.1	90	13.4	20	3.0	92	13.7	9	1.3	2	0.3	567	103
24	Uttarakhand	158	73	46.2	37	23.4	22	13.9	14	8.9	9	5.7	3	1.9	132	26
25	West Bengal	640	317	49.5	43	6.7	18	2.8	223	34.8	24	3.8	10	1.6	378	257
26	Chandigarh	8	6	75.0	1	12.5	0	0.0	1	12.5	0	0.0	0	0.0	7	1
27	Daman & Diu and Dadra & Nagar Haveli	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
28	Delhi	81	46	56.8	2	2.5	0	0.0	32	39.5	1	1.2	0	0.0	48	33
29	Jammu and Kashmir	204	146	71.6	31	15.2	6	2.9	16	7.8	5	2.5	0	0.0	183	21
30	Puducherry	9	1	11.1	0	0.0	0	0.0	7	77.8	1	11.1	0	0.0	1	8
	Total	14333	6292	43.9	2158	15.1	1430	10.0	3418	23.8	634	4.4	298	2.1	9880	4350

N. B. 103 monitoring wells (0.8%) show no change in Water Level

State-wise Decadal Water Level Fluctuation with Mean [Pre-monsoon (2012 to 2021)] and Pre-monsoon 2022 in Unconfined Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Andhra Pradesh	648	332	51.2	109	16.8	80	12.3	109	16.8	11	1.7	6	0.9	521	126
2	Arunachal Pradesh	20	7	35.0	0	0.0	0	0.0	12	60.0	1	5.0	0	0.0	7	13
3	Assam	229	122	53.3	21	9.2	2	0.9	76	33.2	6	2.6	2	0.9	145	84
4	Bihar	514	309	60.1	66	12.8	20	3.9	113	22.0	5	1.0	1	0.2	395	119
5	Chhattisgarh	641	230	35.9	51	8.0	23	3.6	238	37.1	76	11.9	21	3.3	304	335
6	Goa	66	20	30.3	1	1.5	0	0.0	45	68.2	0	0.0	0	0.0	21	45
7	Gujarat	665	259	38.9	77	11.6	83	12.5	157	23.6	50	7.5	34	5.1	419	241
8	Haryana	895	247	27.6	47	5.3	21	2.3	344	38.4	159	17.8	75	8.4	315	578
9	Himachal Pradesh	83	34	41.0	2	2.4	3	3.6	39	47.0	4	4.8	1	1.2	39	44
10	Jharkhand	177	84	47.5	16	9.0	9	5.1	61	34.5	7	4.0	0	0.0	109	68
11	Karnataka	1239	474	38.3	347	28.0	272	22.0	101	8.2	26	2.1	14	1.1	1093	141
12	Kerala	1349	919	68.1	111	8.2	27	2.0	260	19.3	25	1.9	7	0.5	1057	292
13	Madhya Pradesh	1155	493	42.7	124	10.7	68	5.9	355	30.7	80	6.9	34	2.9	685	469
14	Maharashtra	1400	552	39.4	231	16.5	186	13.3	332	23.7	77	5.5	20	1.4	969	429
15	Meghalaya	44	16	36.4	0	0.0	0	0.0	25	56.8	3	6.8	0	0.0	16	28
16	Nagaland	7	1	14.3	1	14.3	0	0.0	4	57.1	1	14.3	0	0.0	2	5
17	Odisha	1105	647	58.6	97	8.8	19	1.7	315	28.5	24	2.2	3	0.3	763	342
18	Punjab	571	70	12.3	5	0.9	7	1.2	214	37.5	140	24.5	134	23.5	82	488
19	Rajasthan	843	257	30.5	60	7.1	64	7.6	227	26.9	103	12.2	132	15.7	381	462
20	Tamil Nadu	643	175	27.2	165	25.7	259	40.3	39	6.1	2	0.3	3	0.5	599	44
21	Telangana	164	62	37.8	45	27.4	33	20.1	18	11.0	3	1.8	3	1.8	140	24
22	Tripura	62	28	45.2	0	0.0	0	0.0	32	51.6	2	3.2	0	0.0	28	34
23	Uttar Pradesh	638	332	52.0	34	5.3	8	1.3	216	33.9	30	4.7	16	2.5	374	262
24	Uttarakhand	149	59	39.6	10	6.7	6	4.0	47	31.5	16	10.7	11	7.4	75	74
25	West Bengal	636	336	52.8	65	10.2	22	3.5	188	29.6	17	2.7	8	1.3	423	213
26	Andaman and Nicobar	109	80	73.4	5	4.6	1	0.9	22	20.2	1	0.9	0	0.0	86	23
27	Chandigarh	8	5	62.5	0	0.0	0	0.0	2	25.0	1	12.5	0	0.0	5	3
28	Daman & Diu and Dadra & Nagar Haveli	9	6	66.7	0	0.0	0	0.0	3	33.3	0	0.0	0	0.0	6	3
29	Delhi	70	23	32.9	15	21.4	12	17.1	11	15.7	5	7.1	4	5.7	50	20
30	Jammu and Kashmir	41	13	31.7	0	0.0	0	0.0	28	68.3	0	0.0	0	0.0	13	28
31	Puducherry	7	5	71.4	2	28.6	0	0.0	0	0.0	0	0.0	0	0.0	7	0
	Total	14187	6197	43.7	1707	12.0	1225	8.6	3633	25.6	875	6.2	529	3.7	9129	5037

State-wise Decadal Water Level Fluctuation with Mean [August (2012 to 2021)] and August 2022 in Unconfined Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Andhra Pradesh	637	318	49.9	98	15.4	77	12.1	135	21.2	4	0.6	5	0.8	493	144
2	Arunachal Pradesh	18	6	33.3	0	0.0	0	0.0	11	61.1	1	5.6	0	0.0	6	12
3	Assam	228	102	44.7	2	0.9	2	0.9	114	50.0	5	2.2	3	1.3	106	122
4	Bihar	585	212	36.2	15	2.6	2	0.3	298	50.9	46	7.9	12	2.1	229	356
5	Chhattisgarh	703	350	49.8	68	9.7	6	0.9	234	33.3	34	4.8	11	1.6	424	279
6	Goa	80	22	27.5	2	2.5	0	0.0	50	62.5	5	6.3	1	1.3	24	56
7	Gujarat	642	270	42.1	100	15.6	114	17.8	112	17.4	28	4.4	18	2.8	484	158
8	Haryana	179	84	46.9	29	16.2	7	3.9	45	25.1	11	6.1	3	1.7	120	59
9	Himachal Pradesh	87	24	27.6	2	2.3	0	0.0	55	63.2	4	4.6	2	2.3	26	61
10	Jharkhand	221	80	36.2	14	6.3	0	0.0	90	40.7	29	13.1	8	3.6	94	127
11	Karnataka	1326	529	39.9	319	24.1	286	21.6	168	12.7	20	1.5	4	0.3	1134	192
12	Kerala	1360	673	49.5	113	8.3	20	1.5	511	37.6	33	2.4	8	0.6	806	552
13	Madhya Pradesh	1259	630	50.0	203	16.1	75	6.0	274	21.8	54	4.3	23	1.8	908	351
14	Maharashtra	1511	663	43.9	331	21.9	232	15.4	230	15.2	30	2.0	24	1.6	1226	284
15	Meghalaya	47	29	61.7	1	2.1	0	0.0	17	36.2	0	0.0	0	0.0	30	17
16	Nagaland	10	4	40.0	1	10.0	1	10.0	2	20.0	2	20.0	0	0.0	6	4
17	Odisha	1179	726	61.6	47	4.0	2	0.2	396	33.6	8	0.7	0	0.0	775	404
18	Punjab	186	41	22.0	4	2.2	3	1.6	68	36.6	33	17.7	37	19.9	48	138
19	Rajasthan	881	295	33.5	93	10.6	88	10.0	209	23.7	86	9.8	110	12.5	476	405
20	Tamil Nadu	784	269	34.3	166	21.2	179	22.8	150	19.1	15	1.9	5	0.6	614	170
21	Telangana	573	180	31.4	115	20.1	147	25.7	56	9.8	39	6.8	26	4.5	442	121
22	Tripura	52	20	38.5	2	3.8	1	1.9	20	38.5	8	15.4	1	1.9	23	29
23	Uttar Pradesh	664	198	29.8	36	5.4	10	1.5	333	50.2	61	9.2	25	3.8	244	419
24	Uttarakhand	144	25	17.4	4	2.8	8	5.6	67	46.5	22	15.3	18	12.5	37	107
25	West Bengal	656	300	45.7	13	2.0	2	0.3	263	40.1	53	8.1	25	3.8	315	341
26	Chandigarh	10	2	20.0	1	10.0	0	0.0	3	30.0	4	40.0	0	0.0	3	7
27	Daman & Diu and Dadra & Nagar Haveli	4	3	75.0	0	0.0	0	0.0	1	25.0	0	0.0	0	0.0	3	1
28	Delhi	69	19	27.5	12	17.4	10	14.5	17	24.6	5	7.2	6	8.7	41	28
29	Jammu and Kashmir	155	82	52.9	7	4.5	1	0.6	60	38.7	3	1.9	1	0.6	90	64
30	Puducherry	9	3	33.3	0	0.0	0	0.0	6	66.7	0	0.0	0	0.0	3	6
	Total	14259	6159	43.2	1798	12.6	1273	8.9	3995	28.0	643	4.5	376	2.6	9230	5014

State-wise Decadal Water Level Fluctuation with Mean [Post-monsoon (2012 to 2021)] and post-monsoon 2022 in Unconfined Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Andhra Pradesh	621	328	52.8	83	13.4	51	8.2	148	23.8	9	1.4	1	0.2	462	158
2	Arunachal Pradesh	19	6	31.6	0	0.0	0	0.0	11	57.9	2	10.5	0	0.0	6	13
3	Assam	237	135	57.0	4	1.7	1	0.4	92	38.8	2	0.8	3	1.3	140	97
4	Bihar	621	286	46.1	16	2.6	4	0.6	268	43.2	36	5.8	9	1.4	306	313
5	Chhattisgarh	747	434	58.1	73	9.8	19	2.5	192	25.7	20	2.7	8	1.1	526	220
6	Goa	83	8	9.6	0	0.0	0	0.0	66	79.5	7	8.4	2	2.4	8	75
7	Gujarat	683	280	41.0	104	15.2	63	9.2	170	24.9	36	5.3	30	4.4	447	236
8	Haryana	787	234	29.7	78	9.9	30	3.8	273	34.7	103	13.1	69	8.8	342	445
9	Himachal Pradesh	83	23	27.7	4	4.8	0	0.0	52	62.7	3	3.6	1	1.2	27	56
10	Jharkhand	227	99	43.6	13	5.7	3	1.3	94	41.4	15	6.6	3	1.3	115	112
11	Karnataka	1262	510	40.4	177	14.0	140	11.1	394	31.2	28	2.2	12	1.0	827	434
12	Kerala	1378	596	43.3	33	2.4	8	0.6	698	50.7	32	2.3	10	0.7	637	740
13	Madhya Pradesh	1170	604	51.6	232	19.8	84	7.2	194	16.6	40	3.4	15	1.3	920	249
14	Maharashtra	1576	697	44.2	259	16.4	127	8.1	407	25.8	61	3.9	22	1.4	1083	490
15	Meghalaya	47	27	57.4	2	4.3	0	0.0	16	34.0	2	4.3	0	0.0	29	18
16	Nagaland	12	5	41.7	2	16.7	1	8.3	3	25.0	1	8.3	0	0.0	8	4
17	Odisha	1189	667	56.1	29	2.4	3	0.3	465	39.1	24	2.0	1	0.1	699	490
18	Punjab	441	111	25.2	10	2.3	8	1.8	172	39.0	82	18.6	57	12.9	129	311
19	Rajasthan	871	260	29.9	105	12.1	88	10.1	233	26.8	89	10.2	96	11.0	453	418
20	Tamil Nadu	808	268	33.2	170	21.0	185	22.9	165	20.4	17	2.1	3	0.4	623	185
21	Telangana	161	89	55.3	37	23.0	20	12.4	14	8.7	1	0.6	0	0.0	146	15
22	Tripura	70	22	31.4	2	2.9	1	1.4	40	57.1	5	7.1	0	0.0	25	45
23	Uttar Pradesh	689	373	54.1	54	7.8	14	2.0	204	29.6	30	4.4	14	2.0	441	248
24	Uttarakhand	142	68	47.9	13	9.2	5	3.5	38	26.8	12	8.5	6	4.2	86	56
25	West Bengal	640	241	37.7	14	2.2	1	0.2	324	50.6	49	7.7	11	1.7	256	384
26	Andaman and Nicobar	108	75	69.4	0	0.0	0	0.0	33	30.6	0	0.0	0	0.0	75	33
27	Chandigarh	11	5	45.5	0	0.0	0	0.0	3	27.3	1	9.1	2	18.2	5	6
28	Daman & Diu and Dadra & Nagar Haveli	21	12	57.1	0	0.0	0	0.0	9	42.9	0	0.0	0	0.0	12	9
29	Delhi	67	26	38.8	12	17.9	9	13.4	15	22.4	2	3.0	3	4.5	47	20
30	Jammu and Kashmir	207	90	43.5	3	1.4	2	1.0	107	51.7	5	2.4	0	0.0	95	112
31	Puducherry	8	3	37.5	1	12.5	0	0.0	4	50.0	0	0.0	0	0.0	4	4
	Total	14986	6582	43.9	1530	10.2	867	5.8	4904	32.7	714	4.8	378	2.5	8979	5996

State-wise Decadal Water Level Fluctuation with Mean [January (2013 to 2022)] and January2023 in Unconfined Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Andhra Pradesh	655	361	55.1	81	12.4	51	7.8	145	22.1	12	1.8	5	0.8	493	162
2	Arunachal Pradesh	20	9	45.0	0	0.0	0	0.0	9	45.0	2	10.0	0	0.0	9	11
3	Assam	250	117	46.8	6	2.4	0	0.0	121	48.4	5	2.0	0	0.0	123	126
4	Bihar	628	248	39.5	23	3.7	1	0.2	323	51.4	27	4.3	5	0.8	272	355
5	Chhattisgarh	772	387	50.1	98	12.7	18	2.3	221	28.6	36	4.7	12	1.6	503	269
6	Goa	83	9	10.8	1	1.2	2	2.4	64	77.1	5	6.0	2	2.4	12	71
7	Gujarat	710	287	40.4	100	14.1	89	12.5	167	23.5	46	6.5	21	3.0	476	234
8	Haryana	233	109	46.8	27	11.6	4	1.7	62	26.6	24	10.3	7	3.0	140	93
9	Himachal Pradesh	81	20	24.7	1	1.2	2	2.5	53	65.4	2	2.5	3	3.7	23	58
10	Jharkhand	231	78	33.8	8	3.5	1	0.4	122	52.8	19	8.2	3	1.3	87	144
11	Karnataka	1230	340	27.6	111	9.0	56	4.6	586	47.6	105	8.5	30	2.4	507	721
12	Kerala	1357	607	44.7	43	3.2	25	1.8	622	45.8	44	3.2	16	1.2	675	682
13	Madhya Pradesh	1116	524	47.0	146	13.1	59	5.3	285	25.5	66	5.9	36	3.2	729	387
14	Maharashtra	1506	698	46.3	213	14.1	108	7.2	400	26.6	60	4.0	27	1.8	1019	487
15	Meghalaya	47	16	34.0	0	0.0	0	0.0	28	59.6	3	6.4	0	0.0	16	31
16	Nagaland	12	4	33.3	1	8.3	1	8.3	3	25.0	3	25.0	0	0.0	6	6
17	Odisha	1181	500	42.3	21	1.8	2	0.2	599	50.7	50	4.2	9	0.8	523	658
18	Punjab	178	38	21.3	6	3.4	1	0.6	72	40.4	37	20.8	24	13.5	45	133
19	Rajasthan	881	263	29.9	102	11.6	77	8.7	233	26.4	89	10.1	117	13.3	442	439
20	Tamil Nadu	832	300	36.1	128	15.4	138	16.6	227	27.3	31	3.7	8	1.0	566	266
21	Telangana	575	219	38.1	93	16.2	91	15.8	87	15.1	29	5.0	51	8.9	403	167
22	Tripura	72	35	48.6	3	4.2	0	0.0	31	43.1	3	4.2	0	0.0	38	34
23	Uttar Pradesh	683	363	53.1	35	5.1	10	1.5	236	34.6	27	4.0	12	1.8	408	275
24	Uttarakhand	150	67	44.7	11	7.3	4	2.7	45	30.0	13	8.7	10	6.7	82	68
25	West Bengal	638	330	51.7	28	4.4	10	1.6	234	36.7	27	4.2	9	1.4	368	270
26	Chandigarh	12	5	41.7	0	0.0	1	8.3	4	33.3	0	0.0	2	16.7	6	6
27	Daman & Diu and Dadra & Nagar Haveli	5	1	20.0	0	0.0	0	0.0	3	60.0	1	20.0	0	0.0	1	4
28	Delhi	109	22	20.2	19	17.4	51	46.8	10	9.2	6	5.5	1	0.9	92	17
29	Jammu and Kashmir	28	8	28.6	0	0.0	0	0.0	20	71.4	0	0.0	0	0.0	8	20
30	Puducherry	8	1	12.5	0	0.0	0	0.0	7	87.5	0	0.0	0	0.0	1	7
	Total	14283	5966	41.8	1305	9.1	802	5.6	5019	35.1	772	5.4	410	2.9	8073	6201

State-wise Depth to Water Level Distribution of Percentage of Observation Wells Pre-Monsoon 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of well analysed	DTWL, mbgl		No./Percentage of wells showing depth to water level (mbgl) in the range of											
			Min	Max	0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
					No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	171	0.75	155.42	8	4.7	42	24.6	55	32.2	44	25.7	12	7.0	10	5.8
2	Arunachal Pradesh	4	4.76	6.20	0	0.0	1	25.0	3	75.0	0	0.0	0	0.0	0	0.0
3	Assam	27	0.57	16.75	2	7.4	15	55.6	8	29.6	2	7.4	0	0.0	0	0.0
4	Bihar	10	3.90	18.50	0	0.0	1	10.0	3	30.0	6	60.0	0	0.0	0	0.0
5	Chhattisgarh	105	2.35	46.72	0	0.0	10	9.5	44	41.9	41	39.0	8	7.6	2	1.9
6	Goa	30	1.15	25.75	1	3.3	7	23.3	12	40.0	8	26.7	2	6.7	0	0.0
7	Gujarat	105	3.37	195.72	0	0.0	9	8.6	13	12.4	8	7.6	20	19.0	55	52.4
8	Haryana	144	1.22	92.00	3	2.1	8	5.6	13	9.0	34	23.6	48	33.3	38	26.4
9	Himachal Pradesh	1	2.50	2.50	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0
10	Jharkhand	10	4.50	33.00	0	0.0	1	10.0	3	30.0	5	50.0	1	10.0	0	0.0
11	Karnataka	226	0.04	97.50	14	6.2	35	15.5	58	25.7	75	33.2	38	16.8	6	2.7
12	Kerala	59	0.82	50.00	5	8.5	7	11.9	17	28.8	21	35.6	7	11.9	2	3.4
13	Madhya Pradesh	106	3.08	55.14	0	0.0	2	1.9	22	20.8	40	37.7	36	34.0	6	5.7
14	Maharashtra	74	3.00	150.70	0	0.0	8	10.8	27	36.5	22	29.7	9	12.2	8	10.8
15	Meghalaya	9	2.17	32.78	0	0.0	4	44.4	1	11.1	2	22.2	2	22.2	0	0.0
16	Odisha	98	0.32	52.05	5	5.1	31	31.6	36	36.7	20	20.4	4	4.1	2	2.0
17	Punjab	65	2.68	77.80	0	0.0	2	3.1	5	7.7	18	27.7	33	50.8	7	10.8
18	Tamil Nadu	278	0.01	89.49	25	9.0	81	29.1	69	24.8	41	14.7	24	8.6	38	13.7
19	Telangana	259	0.71	132.85	14	5.4	51	19.7	83	32.0	73	28.2	28	10.8	10	3.9
20	Tripura	3	3.37	15.42	0	0.0	1	33.3	1	33.3	1	33.3	0	0.0	0	0.0
21	Uttar Pradesh	23	3.78	31.64	0	0.0	2	8.7	11	47.8	5	21.7	5	21.7	0	0.0
22	Uttarakhand	4	8.40	86.62	0	0.0	0	0.0	1	25.0	0	0.0	0	0.0	3	75.0
23	West Bengal	614	0.30	30.00	4	0.7	108	17.6	204	33.2	248	40.4	50	8.1	0	0.0
24	Andaman and Nicobar	2	3.51	7.19	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0
25	Chandigarh	6	19.33	63.41	0	0.0	0	0.0	0	0.0	1	16.7	1	16.7	4	66.7
26	Delhi	6	12.40	66.01	0	0.0	0	0.0	0	0.0	1	16.7	2	33.3	3	50.0
27	Jammu and Kashmir	4	7.47	15.74	0	0.0	0	0.0	2	50.0	2	50.0	0	0.0	0	0.0
28	Puducherry	7	5.85	24.85	0	0.0	0	0.0	1	14.3	0	0.0	6	85.7	0	0.0
	Total	2450	0.01	195.72	81	3.3	428	17.5	693	28.3	718	29.3	336	13.7	194	7.9

State-wise Depth to Water Level Distribution of Percentage of Observation Wells August 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of well analysed	DTWL, mbgl		No./Percentage of wells showing depth to water level (mbgl) in the range of											
			Min	Max	0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
					No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	290	0.01	177.30	35	12.1	75	25.9	85	29.3	69	23.8	19	6.6	7	2.4
2	Arunachal Pradesh	4	2.10	2.64	0	0.0	4	100.0	0	0.0	0	0.0	0	0.0	0	0.0
3	Assam	28	0.10	22.66	12	42.9	10	35.7	5	17.9	0	0.0	1	3.6	0	0.0
4	Bihar	43	0.83	19.64	4	9.3	13	30.2	14	32.6	12	27.9	0	0.0	0	0.0
5	Chhattisgarh	131	0.65	58.00	10	7.6	47	35.9	41	31.3	29	22.1	3	2.3	1	0.8
6	Goa	21	0.72	18.56	6	28.6	6	28.6	3	14.3	6	28.6	0	0.0	0	0.0
7	Gujarat	102	0.41	265.30	5	4.9	5	4.9	7	6.9	16	15.7	14	13.7	55	53.9
8	Haryana	81	0.55	96.10	2	2.5	3	3.7	4	4.9	21	25.9	34	42.0	17	21.0
9	Himachal Pradesh	2	0.87	3.44	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0	0	0.0
10	Jharkhand	92	0.12	27.60	8	8.7	29	31.5	32	34.8	16	17.4	7	7.6	0	0.0
11	Karnataka	200	0.10	64.60	30	15.0	61	30.5	46	23.0	44	22.0	18	9.0	1	0.5
12	Kerala	63	0.60	48.60	8	12.7	8	12.7	26	41.3	16	25.4	4	6.3	1	1.6
13	Madhya Pradesh	132	0.01	41.82	24	18.2	42	31.8	36	27.3	21	15.9	8	6.1	1	0.8
14	Maharashtra	75	0.30	51.00	11	14.7	29	38.7	21	28.0	8	10.7	4	5.3	2	2.7
15	Meghalaya	12	2.03	41.40	0	0.0	4	33.3	5	41.7	0	0.0	2	16.7	1	8.3
16	Odisha	101	0.03	27.91	27	26.7	36	35.6	23	22.8	12	11.9	3	3.0	0	0.0
17	Punjab	62	1.77	65.34	2	3.2	1	1.6	1	1.6	20	32.3	28	45.2	10	16.1
18	Tamil Nadu	270	0.80	100.00	19	7.0	62	23.0	87	32.2	43	15.9	26	9.6	33	12.2
19	Telangana	465	0.01	67.47	180	38.7	133	28.6	81	17.4	49	10.5	17	3.7	5	1.1
20	Tripura	5	2.90	14.23	0	0.0	3	60.0	1	20.0	1	20.0	0	0.0	0	0.0
21	Uttar Pradesh	14	4.30	32.19	0	0.0	1	7.1	9	64.3	2	14.3	2	14.3	0	0.0
22	Uttarakhand	3	7.80	64.75	0	0.0	0	0.0	1	33.3	0	0.0	0	0.0	2	66.7
23	West Bengal	754	0.32	32.41	22	2.9	188	24.9	233	30.9	257	34.1	54	7.2	0	0.0
24	Chandigarh	7	14.97	63.70	0	0.0	0	0.0	0	0.0	2	28.6	2	28.6	3	42.9
25	Delhi	6	13.41	66.51	0	0.0	0	0.0	0	0.0	1	16.7	2	33.3	3	50.0
26	Jammu and Kashmir	7	4.72	15.08	0	0.0	1	14.3	3	42.9	3	42.9	0	0.0	0	0.0
27	Puducherry	5	19.20	24.36	0	0.0	0	0.0	0	0.0	2	40.0	3	60.0	0	0.0
	Total	2975	0.01	265.30	406	13.6	762	25.6	764	25.7	650	21.8	251	8.4	142	4.8

State-wise Depth to Water Level Distribution of Percentage of Observation Wells November 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of well analysed	DTWL, mbgl		No./Percentage of wells showing depth to water level (mbgl) in the range of											
			Min	Max	0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
					No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	291	0.01	84.40	68	23.4	83	28.5	69	23.7	59	20.3	9	3.1	3	1.0
2	Arunachal Pradesh	4	1.54	3.75	1	25.0	3	75.0	0	0.0	0	0.0	0	0.0	0	0.0
3	Assam	43	0.55	23.30	11	25.6	21	48.8	9	20.9	1	2.3	1	2.3	0	0.0
4	Bihar	60	1.44	14.30	3	5.0	30	50.0	21	35.0	6	10.0	0	0.0	0	0.0
5	Chhattisgarh	163	1.35	58.00	3	1.8	49	30.1	64	39.3	41	25.2	5	3.1	1	0.6
6	Goa	38	1.15	25.10	5	13.2	11	28.9	11	28.9	8	21.1	3	7.9	0	0.0
7	Gujarat	103	1.67	191.17	2	1.9	13	12.6	8	7.8	12	11.7	17	16.5	51	49.5
8	Haryana	157	0.60	92.30	3	1.9	8	5.1	15	9.6	39	24.8	54	34.4	38	24.2
9	Himachal Pradesh	2	1.63	4.85	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0	0	0.0
10	Jharkhand	88	0.51	26.35	2	2.3	26	29.5	35	39.8	20	22.7	5	5.7	0	0.0
11	Karnataka	246	0.05	122.20	31	12.6	83	33.7	57	23.2	54	22.0	19	7.7	2	0.8
12	Kerala	68	0.50	49.53	7	10.3	9	13.2	27	39.7	19	27.9	5	7.4	1	1.5
13	Madhya Pradesh	173	0.40	47.84	10	5.8	56	32.4	54	31.2	38	22.0	14	8.1	1	0.6
14	Maharashtra	77	0.10	56.20	6	7.8	27	35.1	15	19.5	16	20.8	10	13.0	3	3.9
15	Meghalaya	12	2.03	41.75	0	0.0	3	25.0	4	33.3	2	16.7	2	16.7	1	8.3
16	Odisha	212	0.15	44.52	27	12.7	81	38.2	66	31.1	30	14.2	7	3.3	1	0.5
17	Punjab	72	1.46	61.90	2	2.8	3	4.2	7	9.7	21	29.2	30	41.7	9	12.5
18	Tamil Nadu	373	0.22	93.65	46	12.3	113	30.3	88	23.6	55	14.7	31	8.3	40	10.7
19	Telangana	415	0.02	58.73	126	30.4	133	32.0	97	23.4	44	10.6	10	2.4	5	1.2
20	Tripura	5	2.97	14.36	0	0.0	3	60.0	1	20.0	1	20.0	0	0.0	0	0.0
21	Uttar Pradesh	80	1.05	36.76	9	11.3	23	28.8	27	33.8	11	13.8	10	12.5	0	0.0
22	Uttarakhand	12	0.47	79.10	2	16.7	2	16.7	3	25.0	2	16.7	0	0.0	3	25.0
23	West Bengal	758	0.39	30.49	30	4.0	148	19.5	281	37.1	240	31.7	59	7.8	0	0.0
24	Andaman and Nicobar	2	2.16	10.34	0	0.0	1	50.0	0	0.0	1	50.0	0	0.0	0	0.0
25	Chandigarh	6	14.96	64.44	0	0.0	0	0.0	0	0.0	2	33.3	1	16.7	3	50.0
26	Delhi	6	13.08	66.75	0	0.0	0	0.0	0	0.0	1	16.7	2	33.3	3	50.0
27	Jammu and Kashmir	7	6.02	15.60	0	0.0	0	0.0	3	42.9	4	57.1	0	0.0	0	0.0
28	Puducherry	7	3.89	23.19	0	0.0	1	14.3	0	0.0	3	42.9	3	42.9	0	0.0
	Total	3480	0.01	191.17	395	11.4	931	26.8	962	27.6	730	21.0	297	8.5	165	4.7

State-wise Depth to Water Level Distribution of Percentage of Observation Wells January 2023 in Deeper Aquifer

Sr. No.	State/UT Name	No of well analysed	DTWL, mbgl		No./Percentage of wells showing depth to water level (mbgl) in the range of											
			Min	Max	0 to 2		2 to 5		5 to 10		10 to 20		20 to 40		> 40	
					No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
1	Andhra Pradesh	390	0.01	74.90	62	15.9	101	25.9	132	33.8	68	17.4	19	4.9	8	2.1
2	Arunachal Pradesh	4	1.81	5.59	1	25.0	2	50.0	1	25.0	0	0.0	0	0.0	0	0.0
3	Assam	49	0.65	26.96	10	20.4	19	38.8	17	34.7	2	4.1	1	2.0	0	0.0
4	Bihar	59	1.35	22.02	1	1.7	18	30.5	30	50.8	9	15.3	1	1.7	0	0.0
5	Chhattisgarh	147	1.57	58.00	1	0.7	28	19.0	52	35.4	52	35.4	13	8.8	1	0.7
6	Goa	40	1.00	24.16	4	10.0	7	17.5	16	40.0	10	25.0	3	7.5	0	0.0
7	Gujarat	111	2.47	198.83	0	0.0	12	10.8	11	9.9	13	11.7	22	19.8	53	47.7
8	Haryana	85	0.90	67.61	2	2.4	4	4.7	10	11.8	21	24.7	30	35.3	18	21.2
9	Himachal Pradesh	1	1.47	1.47	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
10	Jharkhand	94	1.70	33.12	2	2.1	11	11.7	46	48.9	26	27.7	9	9.6	0	0.0
11	Karnataka	266	1.05	128.00	13	4.9	51	19.2	102	38.3	73	27.4	23	8.6	4	1.5
12	Kerala	66	0.01	54.27	6	9.1	10	15.2	17	25.8	23	34.8	9	13.6	1	1.5
13	Madhya Pradesh	170	0.50	199.45	1	0.6	18	10.6	57	33.5	54	31.8	29	17.1	11	6.5
14	Maharashtra	78	1.74	51.00	2	2.6	15	19.2	32	41.0	12	15.4	13	16.7	4	5.1
15	Meghalaya	13	1.86	48.16	1	7.7	3	23.1	3	23.1	1	7.7	3	23.1	2	15.4
16	Odisha	199	0.29	46.95	15	7.5	46	23.1	89	44.7	37	18.6	10	5.0	2	1.0
17	Punjab	63	1.27	59.59	1	1.6	5	7.9	6	9.5	18	28.6	25	39.7	8	12.7
18	Tamil Nadu	380	0.50	94.50	40	10.5	117	30.8	100	26.3	49	12.9	33	8.7	41	10.8
19	Telangana	504	0.09	57.84	81	16.1	167	33.1	157	31.2	71	14.1	20	4.0	8	1.6
20	Tripura	4	3.15	8.00	0	0.0	2	50.0	2	50.0	0	0.0	0	0.0	0	0.0
21	Uttar Pradesh	103	0.10	31.44	6	5.8	34	33.0	24	23.3	25	24.3	14	13.6	0	0.0
22	Uttarakhand	11	2.86	84.30	0	0.0	3	27.3	3	27.3	2	18.2	0	0.0	3	27.3
23	West Bengal	785	0.37	29.98	5	0.6	97	12.4	294	37.5	307	39.1	82	10.4	0	0.0
24	Chandigarh	8	10.24	63.10	0	0.0	0	0.0	0	0.0	4	50.0	2	25.0	2	25.0
25	Delhi	6	13.51	66.60	0	0.0	0	0.0	0	0.0	1	16.7	2	33.3	3	50.0
26	Jammu and Kashmir	6	6.03	15.31	0	0.0	0	0.0	3	50.0	3	50.0	0	0.0	0	0.0
27	Puducherry	7	4.16	22.75	0	0.0	1	14.3	0	0.0	4	57.1	2	28.6	0	0.0
	Total	3649	0.01	199.45	255	7.0	771	21.1	1204	33.0	885	24.3	365	10.0	169	4.6

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from Pre-Monsoon 2021 to Pre-Monsoon 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Arunachal Pradesh	4	0	0.0	0	0.0	1	25.0	1	25.0	2	50.0	0	0.0	1	3
2	Assam	10	5	50.0	1	10.0	0	0.0	4	40.0	0	0.0	0	0.0	6	4
3	Bihar	4	1	25.0	0	0.0	0	0.0	1	25.0	1	25.0	1	25.0	1	3
4	Chhattisgarh	55	8	14.5	4	7.3	1	1.8	17	30.9	13	23.6	12	21.8	13	42
5	Gujarat	94	17	18.1	4	4.3	3	3.2	44	46.8	12	12.8	14	14.9	24	70
6	Haryana	85	30	35.3	4	4.7	2	2.4	39	45.9	9	10.6	0	0.0	36	48
7	Jharkhand	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	1
8	Kerala	43	21	48.8	1	2.3	5	11.6	13	30.2	0	0.0	3	7.0	27	16
9	Madhya Pradesh	91	21	23.1	4	4.4	19	20.9	26	28.6	9	9.9	12	13.2	44	47
10	Meghalaya	6	3	50.0	0	0.0	0	0.0	2	33.3	0	0.0	1	16.7	3	3
11	Odisha	33	15	45.5	3	9.1	1	3.0	12	36.4	1	3.0	1	3.0	19	14
12	Punjab	53	19	35.8	2	3.8	1	1.9	20	37.7	7	13.2	4	7.5	22	31
13	Tamil Nadu	149	58	38.9	21	14.1	37	24.8	22	14.8	6	4.0	5	3.4	116	33
14	Telangana	44	14	31.8	4	9.1	6	13.6	13	29.5	1	2.3	6	13.6	24	20
15	Tripura	3	0	0.0	0	0.0	0	0.0	3	100.0	0	0.0	0	0.0	0	3
16	Uttar Pradesh	7	5	71.4	0	0.0	0	0.0	2	28.6	0	0.0	0	0.0	5	2
17	Uttarakhand	4	1	25.0	0	0.0	1	25.0	1	25.0	0	0.0	1	25.0	2	2
18	West Bengal	347	130	37.5	56	16.1	41	11.8	72	20.7	21	6.1	26	7.5	227	119
19	Chandigarh	5	1	20.0	0	0.0	1	20.0	2	40.0	1	20.0	0	0.0	2	3
20	Delhi	5	0	0.0	2	40.0	1	20.0	2	40.0	0	0.0	0	0.0	3	2
21	Jammu and Kashmir	4	2	50.0	0	0.0	1	25.0	1	25.0	0	0.0	0	0.0	3	1
22	Puducherry	7	1	14.3	0	0.0	0	0.0	3	42.9	2	28.6	1	14.3	1	6
	Total	1054	352	33.4	106	10.1	121	11.5	300	28.5	85	8.1	88	8.3	579	473

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from August 2021 to August 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	72	17	23.6	10	13.9	12	16.7	16	22.2	11	15.3	6	8.3	39	33
2	Arunachal Pradesh	4	4	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	0
3	Assam	10	4	40.0	0	0.0	0	0.0	4	40.0	2	20.0	0	0.0	4	6
4	Bihar	3	0	0.0	0	0.0	0	0.0	1	33.3	0	0.0	2	66.7	0	3
5	Chhattisgarh	90	22	24.4	12	13.3	11	12.2	22	24.4	11	12.2	10	11.1	45	43
6	Goa	21	11	52.4	3	14.3	0	0.0	7	33.3	0	0.0	0	0.0	14	7
7	Gujarat	78	26	33.3	10	12.8	14	17.9	16	20.5	2	2.6	10	12.8	50	28
8	Haryana	46	16	34.8	8	17.4	6	13.0	10	21.7	1	2.2	5	10.9	30	16
9	Himachal Pradesh	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
10	Jharkhand	11	0	0.0	2	18.2	4	36.4	2	18.2	2	18.2	1	9.1	6	5
11	Karnataka	178	35	19.7	22	12.4	87	48.9	22	12.4	8	4.5	4	2.2	144	34
12	Kerala	46	20	43.5	2	4.3	3	6.5	16	34.8	2	4.3	3	6.5	25	21
13	Madhya Pradesh	123	33	26.8	19	15.4	38	30.9	17	13.8	3	2.4	12	9.8	90	32
14	Maharashtra	34	13	38.2	3	8.8	3	8.8	13	38.2	1	2.9	1	2.9	19	15
15	Meghalaya	5	0	0.0	0	0.0	1	20.0	4	80.0	0	0.0	0	0.0	1	4
16	Nagaland	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
17	Odisha	66	42	63.6	11	16.7	3	4.5	6	9.1	2	3.0	2	3.0	56	10
18	Punjab	44	23	52.3	3	6.8	5	11.4	6	13.6	4	9.1	3	6.8	31	13
19	Tamil Nadu	241	51	21.2	35	14.5	65	27.0	66	27.4	13	5.4	10	4.1	151	89
20	Telangana	340	44	12.9	29	8.5	29	8.5	72	21.2	40	11.8	79	23.2	102	191
21	Tripura	5	3	60.0	0	0.0	0	0.0	2	40.0	0	0.0	0	0.0	3	2
22	Uttar Pradesh	8	3	37.5	0	0.0	0	0.0	5	62.5	0	0.0	0	0.0	3	5
23	Uttarakhand	4	0	0.0	1	25.0	0	0.0	1	25.0	2	50.0	0	0.0	1	3
24	West Bengal	502	62	12.4	19	3.8	20	4.0	200	39.8	126	25.1	75	14.9	101	401
25	Chandigarh	7	4	57.1	2	28.6	0	0.0	1	14.3	0	0.0	0	0.0	6	1
26	Delhi	6	1	16.7	3	50.0	0	0.0	2	33.3	0	0.0	0	0.0	4	2
27	Jammu and Kashmir	5	1	20.0	0	0.0	2	40.0	1	20.0	0	0.0	1	20.0	3	2
28	Puducherry	5	1	20.0	2	40.0	0	0.0	1	20.0	1	20.0	0	0.0	3	2
	Total	1956	438	22.4	196	10.0	303	15.5	513	26.2	231	11.8	224	11.5	937	968

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from November 2021 to November 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Andhra Pradesh	91	29	31.9	5	5.5	20	22.0	21	23.1	8	8.8	7	7.7	54	36
2	Arunachal Pradesh	4	3	75.0	1	25.0	0	0.0	0	0.0	0	0.0	0	0.0	4	0
3	Assam	19	9	47.4	4	21.1	0	0.0	4	21.1	1	5.3	1	5.3	13	6
4	Bihar	6	0	0.0	0	0.0	0	0.0	3	50.0	2	33.3	1	16.7	0	6
5	Chhattisgarh	110	29	26.4	12	10.9	7	6.4	35	31.8	19	17.3	6	5.5	48	60
6	Goa	36	8	22.2	1	2.8	0	0.0	19	52.8	5	13.9	2	5.6	9	26
7	Gujarat	82	22	26.8	11	13.4	8	9.8	27	32.9	8	9.8	6	7.3	41	41
8	Haryana	95	33	34.7	6	6.3	3	3.2	44	46.3	5	5.3	2	2.1	42	51
9	Himachal Pradesh	1	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	1
10	Jharkhand	6	1	16.7	0	0.0	1	16.7	2	33.3	2	33.3	0	0.0	2	4
11	Karnataka	172	37	21.5	20	11.6	53	30.8	40	23.3	16	9.3	6	3.5	110	62
12	Kerala	44	5	11.4	2	4.5	0	0.0	24	54.5	6	13.6	7	15.9	7	37
13	Madhya Pradesh	105	41	39.0	16	15.2	20	19.0	15	14.3	3	2.9	8	7.6	77	26
14	Maharashtra	31	8	25.8	3	9.7	4	12.9	12	38.7	1	3.2	2	6.5	15	15
15	Meghalaya	8	4	50.0	1	12.5	0	0.0	2	25.0	1	12.5	0	0.0	5	3
16	Nagaland	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
17	Odisha	84	35	41.7	6	7.1	1	1.2	33	39.3	2	2.4	5	6.0	42	40
18	Punjab	29	12	41.4	2	6.9	1	3.4	11	37.9	1	3.4	2	6.9	15	14
19	Tamil Nadu	228	42	18.4	28	12.3	34	14.9	73	32.0	33	14.5	17	7.5	104	123
20	Telangana	160	69	43.1	20	12.5	14	8.8	39	24.4	9	5.6	8	5.0	103	56
21	Tripura	5	3	60.0	0	0.0	0	0.0	2	40.0	0	0.0	0	0.0	3	2
22	Uttar Pradesh	6	2	33.3	0	0.0	0	0.0	3	50.0	0	0.0	1	16.7	2	4
23	Uttarakhand	4	2	50.0	0	0.0	1	25.0	1	25.0	0	0.0	0	0.0	3	1
24	West Bengal	553	40	7.2	14	2.5	18	3.3	202	36.5	179	32.4	100	18.1	72	481
25	Andaman and Nicobar	2	0	0.0	0	0.0	0	0.0	1	50.0	1	50.0	0	0.0	0	2
26	Chandigarh	5	2	40.0	0	0.0	0	0.0	2	40.0	1	20.0	0	0.0	2	3
27	Delhi	6	0	0.0	3	50.0	0	0.0	2	33.3	0	0.0	1	16.7	3	3
28	Puducherry	7	5	71.4	1	14.3	0	0.0	1	14.3	0	0.0	0	0.0	6	1
	Total	1900	442	23.3	156	8.2	185	9.7	619	32.6	303	15.9	182	9.6	783	1104

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from January 2023 to January 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	97	22	22.7	7	7.2	6	6.2	37	38.1	12	12.4	13	13.4	35	62
2	Assam	25	13	52.0	1	4.0	0	0.0	8	32.0	2	8.0	1	4.0	14	11
3	Chhattisgarh	95	37	38.9	9	9.5	4	4.2	28	29.5	7	7.4	10	10.5	50	45
4	Goa	34	8	23.5	1	2.9	0	0.0	23	67.6	1	2.9	0	0.0	9	24
5	Gujarat	87	28	32.2	9	10.3	4	4.6	28	32.2	9	10.3	9	10.3	41	46
6	Haryana	55	18	32.7	5	9.1	1	1.8	28	50.9	2	3.6	0	0.0	24	30
7	Jharkhand	8	0	0.0	0	0.0	0	0.0	3	37.5	3	37.5	2	25.0	0	8
8	Karnataka	165	21	12.7	9	5.5	36	21.8	64	38.8	15	9.1	19	11.5	66	98
9	Kerala	51	10	19.6	2	3.9	2	3.9	23	45.1	6	11.8	8	15.7	14	37
10	Madhya Pradesh	98	21	21.4	4	4.1	8	8.2	28	28.6	9	9.2	25	25.5	33	62
11	Maharashtra	44	9	20.5	0	0.0	7	15.9	19	43.2	3	6.8	6	13.6	16	28
12	Meghalaya	9	6	66.7	0	0.0	0	0.0	3	33.3	0	0.0	0	0.0	6	3
13	Odisha	89	17	19.1	2	2.2	3	3.4	49	55.1	7	7.9	11	12.4	22	67
14	Punjab	32	3	9.4	1	3.1	0	0.0	20	62.5	5	15.6	3	9.4	4	28
15	Tamil Nadu	254	38	15.0	14	5.5	16	6.3	115	45.3	38	15.0	33	13.0	68	186
16	Telangana	391	91	23.3	17	4.3	15	3.8	117	29.9	50	12.8	94	24.0	123	261
17	Tripura	3	2	66.7	0	0.0	0	0.0	1	33.3	0	0.0	0	0.0	2	1
18	Uttar Pradesh	8	2	25.0	0	0.0	0	0.0	5	62.5	1	12.5	0	0.0	2	6
19	Uttarakhand	5	2	40.0	0	0.0	0	0.0	1	20.0	2	40.0	0	0.0	2	3
20	West Bengal	499	41	8.2	7	1.4	8	1.6	178	35.7	143	28.7	122	24.4	56	443
21	Chandigarh	6	3	50.0	1	16.7	0	0.0	2	33.3	0	0.0	0	0.0	4	2
22	Delhi	6	0	0.0	3	50.0	0	0.0	2	33.3	1	16.7	0	0.0	3	3
23	Puducherry	7	1	14.3	1	14.3	1	14.3	4	57.1	0	0.0	0	0.0	3	4
	Total	2068	393	19.0	93	4.5	111	5.4	786	38.0	316	15.3	356	17.2	597	1458

State-wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from Pre-Monsoon 2022 to August 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	146	52	35.6	17	11.6	26	17.8	34	23.3	6	4.1	10	6.8	95	50
2	Arunachal Pradesh	4	0	0.0	4	100.0	0	0.0	0	0.0	0	0.0	0	0.0	4	0
3	Assam	22	10	45.5	9	40.9	0	0.0	2	9.1	1	4.5	0	0.0	19	3
4	Bihar	5	4	80.0	0	0.0	1	20.0	0	0.0	0	0.0	0	0.0	5	0
5	Chhattisgarh	92	16	17.4	13	14.1	49	53.3	9	9.8	1	1.1	4	4.3	78	14
6	Goa	18	5	27.8	5	27.8	7	38.9	1	5.6	0	0.0	0	0.0	17	1
7	Gujarat	84	21	25.0	11	13.1	35	41.7	8	9.5	1	1.2	7	8.3	67	16
8	Haryana	54	7	13.0	2	3.7	3	5.6	12	22.2	13	24.1	17	31.5	12	42
9	Himachal Pradesh	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
10	Jharkhand	8	0	0.0	1	12.5	6	75.0	1	12.5	0	0.0	0	0.0	7	1
11	Karnataka	163	44	27.0	33	20.2	68	41.7	8	4.9	4	2.5	5	3.1	145	17
12	Kerala	55	19	34.5	17	30.9	11	20.0	3	5.5	2	3.6	2	3.6	47	7
13	Madhya Pradesh	95	7	7.4	6	6.3	72	75.8	2	2.1	4	4.2	4	4.2	85	10
14	Maharashtra	63	12	19.0	11	17.5	35	55.6	3	4.8	1	1.6	1	1.6	58	5
15	Meghalaya	9	2	22.2	4	44.4	2	22.2	1	11.1	0	0.0	0	0.0	8	1
16	Nagaland	1	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	1	0
17	Odisha	92	29	31.5	31	33.7	27	29.3	2	2.2	2	2.2	0	0.0	87	4
18	Punjab	43	4	9.3	2	4.7	1	2.3	11	25.6	14	32.6	10	23.3	7	35
19	Tamil Nadu	251	56	22.3	9	3.6	13	5.2	114	45.4	29	11.6	28	11.2	78	171
20	Telangana	254	44	17.3	73	28.7	124	48.8	4	1.6	3	1.2	6	2.4	241	13
21	Tripura	3	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0
22	Uttar Pradesh	13	5	38.5	0	0.0	0	0.0	8	61.5	0	0.0	0	0.0	5	8
23	Uttarakhand	4	2	50.0	0	0.0	1	25.0	1	25.0	0	0.0	0	0.0	3	1
24	West Bengal	586	240	41.0	95	16.2	70	11.9	142	24.2	21	3.6	14	2.4	405	177
25	Chandigarh	5	2	40.0	0	0.0	0	0.0	3	60.0	0	0.0	0	0.0	2	3
26	Delhi	6	4	66.7	0	0.0	0	0.0	2	33.3	0	0.0	0	0.0	4	2
27	Jammu and Kashmir	4	1	25.0	1	25.0	1	25.0	0	0.0	1	25.0	0	0.0	3	1
28	Puducherry	5	1	20.0	2	40.0	0	0.0	2	40.0	0	0.0	0	0.0	3	2
	Total	2086	591	28.3	346	16.6	553	26.5	373	17.9	103	4.9	108	5.2	1490	584

State-wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from Pre-Monsoon 2022 to November 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	144	57	39.6	29	20.1	42	29.2	9	6.3	2	1.4	3	2.1	128	14
2	Arunachal Pradesh	4	1	25.0	2	50.0	1	25.0	0	0.0	0	0.0	0	0.0	4	0
3	Assam	28	16	57.1	10	35.7	0	0.0	1	3.6	1	3.6	0	0.0	26	2
4	Bihar	5	1	20.0	2	40.0	1	20.0	1	20.0	0	0.0	0	0.0	4	1
5	Chhattisgarh	97	17	17.5	29	29.9	32	33.0	13	13.4	3	3.1	3	3.1	78	19
6	Goa	31	22	71.0	2	6.5	2	6.5	3	9.7	1	3.2	1	3.2	26	5
7	Gujarat	87	25	28.7	14	16.1	29	33.3	13	14.9	2	2.3	3	3.4	68	18
8	Haryana	123	49	39.8	11	8.9	1	0.8	46	37.4	12	9.8	4	3.3	61	62
9	Himachal Pradesh	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
10	Jharkhand	8	1	12.5	1	12.5	6	75.0	0	0.0	0	0.0	0	0.0	8	0
11	Karnataka	209	46	22.0	46	22.0	96	45.9	11	5.3	6	2.9	3	1.4	188	20
12	Kerala	57	30	52.6	11	19.3	6	10.5	7	12.3	0	0.0	3	5.3	47	10
13	Madhya Pradesh	98	8	8.2	11	11.2	72	73.5	3	3.1	2	2.0	2	2.0	91	7
14	Maharashtra	66	15	22.7	16	24.2	29	43.9	0	0.0	2	3.0	4	6.1	60	6
15	Meghalaya	8	3	37.5	1	12.5	2	25.0	2	25.0	0	0.0	0	0.0	6	2
16	Nagaland	1	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	1	0
17	Odisha	88	38	43.2	30	34.1	14	15.9	5	5.7	0	0.0	0	0.0	82	5
18	Punjab	36	6	16.7	1	2.8	1	2.8	21	58.3	6	16.7	1	2.8	8	28
19	Tamil Nadu	254	92	36.2	44	17.3	33	13.0	58	22.8	11	4.3	13	5.1	169	82
20	Telangana	246	42	17.1	60	24.4	130	52.8	7	2.8	5	2.0	2	0.8	232	14
21	Tripura	3	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	3	0
22	Uttar Pradesh	21	12	57.1	2	9.5	2	9.5	3	14.3	0	0.0	1	4.8	16	4
23	Uttarakhand	4	1	25.0	0	0.0	3	75.0	0	0.0	0	0.0	0	0.0	4	0
24	West Bengal	588	209	35.5	106	18.0	84	14.3	145	24.7	23	3.9	20	3.4	399	188
25	Andaman and Nicobar	2	1	50.0	0	0.0	0	0.0	0	0.0	1	50.0	0	0.0	1	1
26	Chandigarh	5	2	40.0	1	20.0	0	0.0	2	40.0	0	0.0	0	0.0	3	2
27	Delhi	6	2	33.3	0	0.0	1	16.7	3	50.0	0	0.0	0	0.0	3	3
28	Jammu and Kashmir	4	2	50.0	0	0.0	1	25.0	0	0.0	1	25.0	0	0.0	3	1
29	Puducherry	7	3	42.9	1	14.3	3	42.9	0	0.0	0	0.0	0	0.0	7	0
	Total	2231	705	31.6	430	19.3	592	26.5	353	15.8	78	3.5	63	2.8	1727	494

State-wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from Pre-Monsoon 2022 to January 2023 in Deeper Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	152	64	42.1	31	20.4	41	27.0	10	6.6	0	0.0	5	3.3	136	15
2	Arunachal Pradesh	4	0	0.0	3	75.0	0	0.0	1	25.0	0	0.0	0	0.0	3	1
3	Assam	29	18	62.1	2	6.9	0	0.0	6	20.7	2	6.9	1	3.4	20	9
4	Bihar	5	0	0.0	0	0.0	2	40.0	3	60.0	0	0.0	0	0.0	2	3
5	Chhattisgarh	90	18	20.0	19	21.1	25	27.8	6	6.7	9	10.0	13	14.4	62	28
6	Goa	30	21	70.0	1	3.3	1	3.3	5	16.7	1	3.3	1	3.3	23	7
7	Gujarat	89	36	40.4	13	14.6	10	11.2	13	14.6	8	9.0	9	10.1	59	30
8	Haryana	53	26	49.1	2	3.8	5	9.4	16	30.2	4	7.5	0	0.0	33	20
9	Himachal Pradesh	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
10	Jharkhand	8	0	0.0	3	37.5	1	12.5	2	25.0	1	12.5	1	12.5	4	4
11	Karnataka	208	51	24.5	21	10.1	59	28.4	41	19.7	19	9.1	16	7.7	131	76
12	Kerala	53	19	35.8	5	9.4	3	5.7	19	35.8	3	5.7	4	7.5	27	26
13	Madhya Pradesh	96	17	17.7	17	17.7	51	53.1	4	4.2	2	2.1	5	5.2	85	11
14	Maharashtra	63	19	30.2	15	23.8	15	23.8	5	7.9	2	3.2	7	11.1	49	14
15	Meghalaya	9	5	55.6	2	22.2	0	0.0	2	22.2	0	0.0	0	0.0	7	2
16	Nagaland	1	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
17	Odisha	90	45	50.0	13	14.4	9	10.0	12	13.3	6	6.7	4	4.4	67	22
18	Punjab	31	12	38.7	1	3.2	2	6.5	13	41.9	2	6.5	1	3.2	15	16
19	Tamil Nadu	253	85	33.6	47	18.6	27	10.7	67	26.5	11	4.3	16	6.3	159	94
20	Telangana	256	85	33.2	52	20.3	98	38.3	15	5.9	1	0.4	5	2.0	235	21
21	Tripura	2	2	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	2	0
22	Uttar Pradesh	22	13	59.1	4	18.2	1	4.5	3	13.6	1	4.5	0	0.0	18	4
23	Uttarakhand	4	1	25.0	1	25.0	2	50.0	0	0.0	0	0.0	0	0.0	4	0
24	West Bengal	552	139	25.2	49	8.9	32	5.8	231	41.8	59	10.7	42	7.6	220	332
25	Chandigarh	5	4	80.0	0	0.0	1	20.0	0	0.0	0	0.0	0	0.0	5	0
26	Delhi	6	2	33.3	0	0.0	1	16.7	3	50.0	0	0.0	0	0.0	3	3
27	Jammu and Kashmir	3	1	33.3	0	0.0	1	33.3	0	0.0	1	33.3	0	0.0	2	1
28	Puducherry	7	3	42.9	1	14.3	3	42.9	0	0.0	0	0.0	0	0.0	7	0
	Total	2122	687	32.4	303	14.3	390	18.4	477	22.5	132	6.2	130	6.1	1380	739

State-wise Decadal Water Level Fluctuation with Mean [Pre-monsoon (2012 to 2021)] and Pre-monsoon 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Andhra Pradesh	37	9	24.3	7	18.9	11	29.7	2	5.4	3	8.1	5	13.5	27	10
2	Assam	10	7	70.0	1	10.0	0	0.0	2	20.0	0	0.0	0	0.0	8	2
3	Bihar	9	1	11.1	3	33.3	0	0.0	3	33.3	1	11.1	1	11.1	4	5
4	Chhattisgarh	76	25	32.9	9	11.8	12	15.8	16	21.1	7	9.2	7	9.2	46	30
5	Goa	31	9	29.0	0	0.0	1	3.2	20	64.5	1	3.2	0	0.0	10	21
6	Gujarat	86	15	17.4	12	14.0	17	19.8	15	17.4	6	7.0	21	24.4	44	42
7	Haryana	74	7	9.5	5	6.8	2	2.7	30	40.5	15	20.3	15	20.3	14	60
8	Karnataka	167	29	17.4	30	18.0	92	55.1	9	5.4	1	0.6	6	3.6	151	16
9	Kerala	54	25	46.3	5	9.3	10	18.5	11	20.4	2	3.7	1	1.9	40	14
10	Madhya Pradesh	101	19	18.8	7	6.9	41	40.6	19	18.8	5	5.0	10	9.9	67	34
11	Maharashtra	26	7	26.9	1	3.8	14	53.8	0	0.0	0	0.0	4	15.4	22	4
12	Meghalaya	4	0	0.0	0	0.0	0	0.0	4	100.0	0	0.0	0	0.0	0	4
13	Nagaland	1	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	1	0
14	Odisha	39	23	59.0	5	12.8	0	0.0	6	15.4	3	7.7	2	5.1	28	11
15	Punjab	45	2	4.4	0	0.0	0	0.0	16	35.6	14	31.1	13	28.9	2	43
16	Tamil Nadu	95	22	23.2	22	23.2	38	40.0	9	9.5	1	1.1	3	3.2	82	13
17	Telangana	29	8	27.6	2	6.9	11	37.9	2	6.9	0	0.0	6	20.7	21	8
18	Tripura	2	1	50.0	0	0.0	0	0.0	1	50.0	0	0.0	0	0.0	1	1
19	Uttar Pradesh	6	3	50.0	0	0.0	0	0.0	2	33.3	1	16.7	0	0.0	3	3
20	Uttarakhand	4	1	25.0	0	0.0	1	25.0	0	0.0	2	50.0	0	0.0	2	2
21	West Bengal	515	190	36.9	45	8.7	14	2.7	149	28.9	74	14.4	43	8.3	249	266
22	Andaman and Nicobar	2	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0	2	0
23	Chandigarh	4	0	0.0	0	0.0	1	25.0	1	25.0	1	25.0	1	25.0	1	3
24	Delhi	6	1	16.7	0	0.0	3	50.0	0	0.0	0	0.0	2	33.3	4	2
25	Puducherry	7	1	14.3	1	14.3	1	14.3	2	28.6	0	0.0	2	28.6	3	4
Total		1430	405	28.3	156	10.9	271	19.0	319	22.3	137	9.6	142	9.9	832	598

State-wise Decadal Water Level Fluctuation with Mean [August (2012 to 2021)] and August 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall						Rise	Fall
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Andhra Pradesh	54	6	11.1	8	14.8	30	55.6	2	3.7	4	7.4	4	7.4	44	10
2	Assam	10	4	40.0	2	20.0	0	0.0	4	40.0	0	0.0	0	0.0	6	4
3	Bihar	7	1	14.3	0	0.0	0	0.0	2	28.6	3	42.9	1	14.3	1	6
4	Chhattisgarh	98	20	20.4	11	11.2	10	10.2	25	25.5	13	13.3	19	19.4	41	57
5	Goa	21	7	33.3	1	4.8	0	0.0	12	57.1	1	4.8	0	0.0	8	13
6	Gujarat	76	12	15.8	10	13.2	15	19.7	7	9.2	9	11.8	23	30.3	37	39
7	Haryana	23	5	21.7	3	13.0	1	4.3	9	39.1	3	13.0	2	8.7	9	14
8	Karnataka	196	28	14.3	32	16.3	119	60.7	12	6.1	2	1.0	3	1.5	179	17
9	Kerala	55	20	36.4	5	9.1	3	5.5	18	32.7	5	9.1	4	7.3	28	27
10	Madhya Pradesh	131	30	22.9	38	29.0	35	26.7	15	11.5	3	2.3	10	7.6	103	28
11	Maharashtra	33	9	27.3	5	15.2	16	48.5	2	6.1	1	3.0	0	0.0	30	3
12	Meghalaya	6	2	33.3	0	0.0	1	16.7	3	50.0	0	0.0	0	0.0	3	3
13	Nagaland	1	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	1	0
14	Odisha	44	23	52.3	4	9.1	0	0.0	13	29.5	1	2.3	3	6.8	27	17
15	Punjab	38	3	7.9	2	5.3	1	2.6	9	23.7	9	23.7	14	36.8	6	32
16	Tamil Nadu	226	51	22.6	42	18.6	105	46.5	19	8.4	4	1.8	5	2.2	198	28
17	Telangana	293	25	8.5	22	7.5	74	25.3	53	18.1	37	12.6	82	28.0	121	172
18	Tripura	3	1	33.3	0	0.0	0	0.0	2	66.7	0	0.0	0	0.0	1	2
19	Uttar Pradesh	7	1	14.3	1	14.3	0	0.0	2	28.6	2	28.6	1	14.3	2	5
20	Uttarakhand	4	1	25.0	0	0.0	0	0.0	1	25.0	0	0.0	2	50.0	1	3
21	West Bengal	581	72	12.4	15	2.6	9	1.5	238	41.0	153	26.3	94	16.2	96	485
22	Chandigarh	6	2	33.3	0	0.0	1	16.7	1	16.7	1	16.7	1	16.7	3	3
23	Delhi	6	1	16.7	0	0.0	3	50.0	0	0.0	1	16.7	1	16.7	4	2
24	Puducherry	5	2	40.0	1	20.0	0	0.0	2	40.0	0	0.0	0	0.0	3	2
	Total	1924	326	16.9	202	10.5	424	22.0	451	23.4	252	13.1	269	14.0	952	972

State-wise Decadal Water Level Fluctuation with Mean [November (2012 to 2021)] and November 2022 in Deeper Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	71	13	18.3	9	12.7	38	53.5	5	7.0	2	2.8	4	5.6	60	11
2	Assam	13	7	53.8	0	0.0	0	0.0	6	46.2	0	0.0	0	0.0	7	6
3	Bihar	8	1	12.5	0	0.0	1	12.5	5	62.5	1	12.5	0	0.0	2	6
4	Chhattisgarh	113	34	30.1	10	8.8	5	4.4	38	33.6	17	15.0	9	8.0	49	64
5	Goa	40	3	7.5	0	0.0	0	0.0	33	82.5	4	10.0	0	0.0	3	37
6	Gujarat	76	14	18.4	11	14.5	17	22.4	18	23.7	1	1.3	15	19.7	42	34
7	Haryana	64	15	23.4	7	10.9	1	1.6	13	20.3	13	20.3	15	23.4	23	41
8	Jharkhand	1	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
9	Karnataka	195	41	21.0	17	8.7	109	55.9	23	11.8	3	1.5	2	1.0	167	28
10	Kerala	61	20	32.8	3	4.9	3	4.9	29	47.5	4	6.6	2	3.3	26	35
11	Madhya Pradesh	107	27	25.2	19	17.8	45	42.1	7	6.5	4	3.7	5	4.7	91	16
12	Maharashtra	31	11	35.5	4	12.9	14	45.2	2	6.5	0	0.0	0	0.0	29	2
13	Meghalaya	4	1	25.0	0	0.0	0	0.0	3	75.0	0	0.0	0	0.0	1	3
14	Nagaland	1	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
15	Odisha	47	25	53.2	1	2.1	0	0.0	12	25.5	6	12.8	3	6.4	26	21
16	Punjab	32	0	0.0	1	3.1	0	0.0	9	28.1	8	25.0	14	43.8	1	31
17	Tamil Nadu	250	47	18.8	43	17.2	120	48.0	24	9.6	8	3.2	8	3.2	210	40
18	Telangana	29	7	24.1	1	3.4	14	48.3	4	13.8	1	3.4	2	6.9	22	7
19	Tripura	5	1	20.0	0	0.0	0	0.0	4	80.0	0	0.0	0	0.0	1	4
20	Uttar Pradesh	5	2	40.0	0	0.0	0	0.0	2	40.0	1	20.0	0	0.0	2	3
21	Uttarakhand	4	2	50.0	0	0.0	1	25.0	1	25.0	0	0.0	0	0.0	3	1
22	West Bengal	587	63	10.7	19	3.2	16	2.7	265	45.1	133	22.7	91	15.5	98	489
23	Andaman and Nicobar	2	1	50.0	0	0.0	0	0.0	0	0.0	0	0.0	1	50.0	1	1
24	Chandigarh	5	1	20.0	1	20.0	1	20.0	1	20.0	0	0.0	1	20.0	3	2
25	Delhi	6	0	0.0	0	0.0	4	66.7	0	0.0	0	0.0	2	33.3	4	2
26	Puducherry	7	0	0.0	4	57.1	1	14.3	2	28.6	0	0.0	0	0.0	5	2
	Total	1764	337	19.1	151	8.6	390	22.1	506	28.7	206	11.7	174	9.9	878	886

State-wise Decadal Water Level Fluctuation with Mean [January (2013 to 2022)] and January 2023 in Deeper Aquifer

Sr. No.	State/UT Name	No of wells analysed	No. of wells in different depth range												Total No. of wells	
			Rise						Fall							
			0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%	Rise	Fall
1	Andhra Pradesh	75	13	17.3	16	21.3	37	49.3	4	5.3	0	0.0	5	6.7	66	9
2	Assam	13	8	61.5	0	0.0	0	0.0	4	30.8	1	7.7	0	0.0	8	5
3	Bihar	10	0	0.0	0	0.0	3	30.0	3	30.0	3	30.0	1	10.0	3	7
4	Chhattisgarh	101	36	35.6	7	6.9	10	9.9	24	23.8	13	12.9	11	10.9	53	48
5	Goa	39	3	7.7	1	2.6	0	0.0	34	87.2	1	2.6	0	0.0	4	35
6	Gujarat	85	22	25.9	9	10.6	17	20.0	16	18.8	7	8.2	14	16.5	48	37
7	Haryana	40	13	32.5	2	5.0	1	2.5	11	27.5	10	25.0	3	7.5	16	24
8	Jharkhand	1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	100.0	0	1
9	Karnataka	193	33	17.1	18	9.3	85	44.0	42	21.8	8	4.1	7	3.6	136	57
10	Kerala	60	25	41.7	4	6.7	1	1.7	16	26.7	4	6.7	10	16.7	30	30
11	Madhya Pradesh	103	31	30.1	11	10.7	36	35.0	13	12.6	2	1.9	10	9.7	78	25
12	Maharashtra	33	9	27.3	3	9.1	12	36.4	6	18.2	1	3.0	2	6.1	24	9
13	Meghalaya	5	2	40.0	0	0.0	0	0.0	2	40.0	0	0.0	1	20.0	2	3
14	Nagaland	1	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0
15	Odisha	45	17	37.8	2	4.4	0	0.0	12	26.7	10	22.2	4	8.9	19	26
16	Punjab	30	1	3.3	0	0.0	0	0.0	6	20.0	9	30.0	14	46.7	1	29
17	Tamil Nadu	259	57	22.0	36	13.9	101	39.0	38	14.7	11	4.2	16	6.2	194	65
18	Telangana	334	28	8.4	23	6.9	54	16.2	55	16.5	62	18.6	112	33.5	105	229
19	Tripura	3	0	0.0	0	0.0	0	0.0	3	100.0	0	0.0	0	0.0	0	3
20	Uttar Pradesh	8	4	50.0	0	0.0	0	0.0	3	37.5	0	0.0	1	12.5	4	4
21	Uttarakhand	4	0	0.0	1	25.0	0	0.0	2	50.0	0	0.0	1	25.0	1	3
22	West Bengal	571	76	13.3	11	1.9	8	1.4	226	39.6	105	18.4	145	25.4	95	476
23	Chandigarh	7	2	28.6	0	0.0	1	14.3	2	28.6	0	0.0	2	28.6	3	4
24	Delhi	6	0	0.0	0	0.0	4	66.7	0	0.0	0	0.0	2	33.3	4	2
25	Puducherry	7	3	42.9	2	28.6	0	0.0	1	14.3	1	14.3	0	0.0	5	2
	Total	2033	383	18.8	147	7.2	370	18.2	523	25.7	248	12.2	362	17.8	900	1133