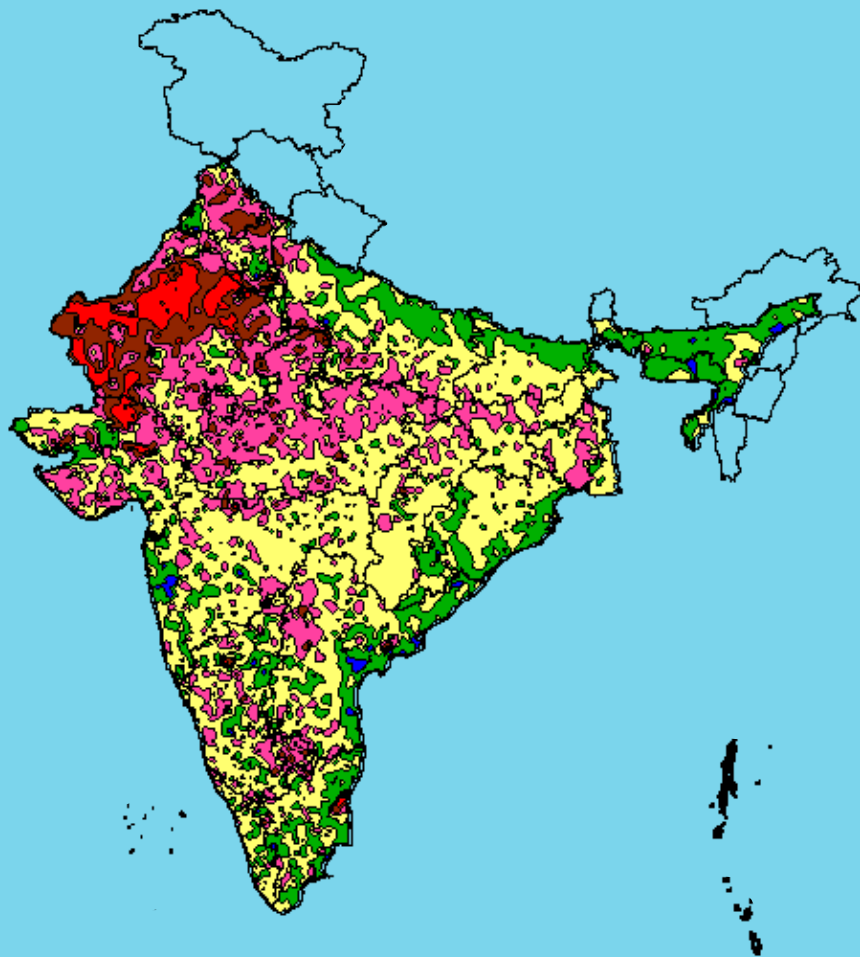




Ground Water Year Book - India

2011-12



**Central Ground Water Board
Ministry of Water Resources
Government of India
Faridabad**

May 2012



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1. HYDROGEOLOGICAL SETUP OF THE COUNTRY

1.1 GROUND WATER OCCURRENCE

The ground water 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 ground water, 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 ground water reservoirs for large scale and extensive development. The hydrogeological environment and ground water regime in the Indo-Ganga-Brahmaputra basin indicate the existence of potential aquifers having enormous fresh ground water reserve. Bestowed with high incidence of rainfall and covered by a thick pile of porous sediments, these ground water reservoirs get replenished every year and are being used heavily. In these areas, in addition to the Annual Replenishable Ground Water Resources available in the zone of water level fluctuation (Dynamic Ground Water Resource), there exists a huge ground water 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 ground water 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 type's 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. Ground water 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 ground water 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 ground water 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 GROUND WATER POTENTIAL

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

TABLE 1: GROUND WATER AQUIFER SYSTEM IN THE COUNTRY

System	Coverage	Ground water 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. 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	Unconsolidated Formations
1-25	1-10	1-5		Consolidated /Semi-Consolidated Formations
<1				Hilly Areas

2.0 GROUND WATER LEVEL SCENARIO

2.1 INTRODUCTION

Monitoring of ground water regime is an effort to obtain information on ground water levels and chemical quality through representative sampling. The important attributes of ground water regime monitoring are ground water level, ground water quality and temperature. The primary objective of establishing the ground water monitoring network stations is to record the response of ground regime to the natural and anthropogenic stresses of recharge and discharge parameters with reference to geology, climate, physiography, land use pattern and hydrologic characteristics. The natural conditions affecting the 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.

Ground water levels are being measured four times a year during January, April/ May, August and November. The regime monitoring started in the year 1969 by Central Ground Water Board. At present a network of 14966 observation wells located all over the country is being monitored. Ground water samples are collected from these observation wells once a year during the month of April/ May to obtain background information of ground water quality changes on regional scale. The database thus generated forms the basis for planning the ground water development and management programme. The ground water level and quality monitoring is 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 ground water regime. This data is used for assessment of ground water resources and changes in the regime consequent to various development and management activities.

The State-wise distribution of the ground water observation wells is given in table- 2 and depicted in Plate II.

Location of Ground Water Monitoring Wells

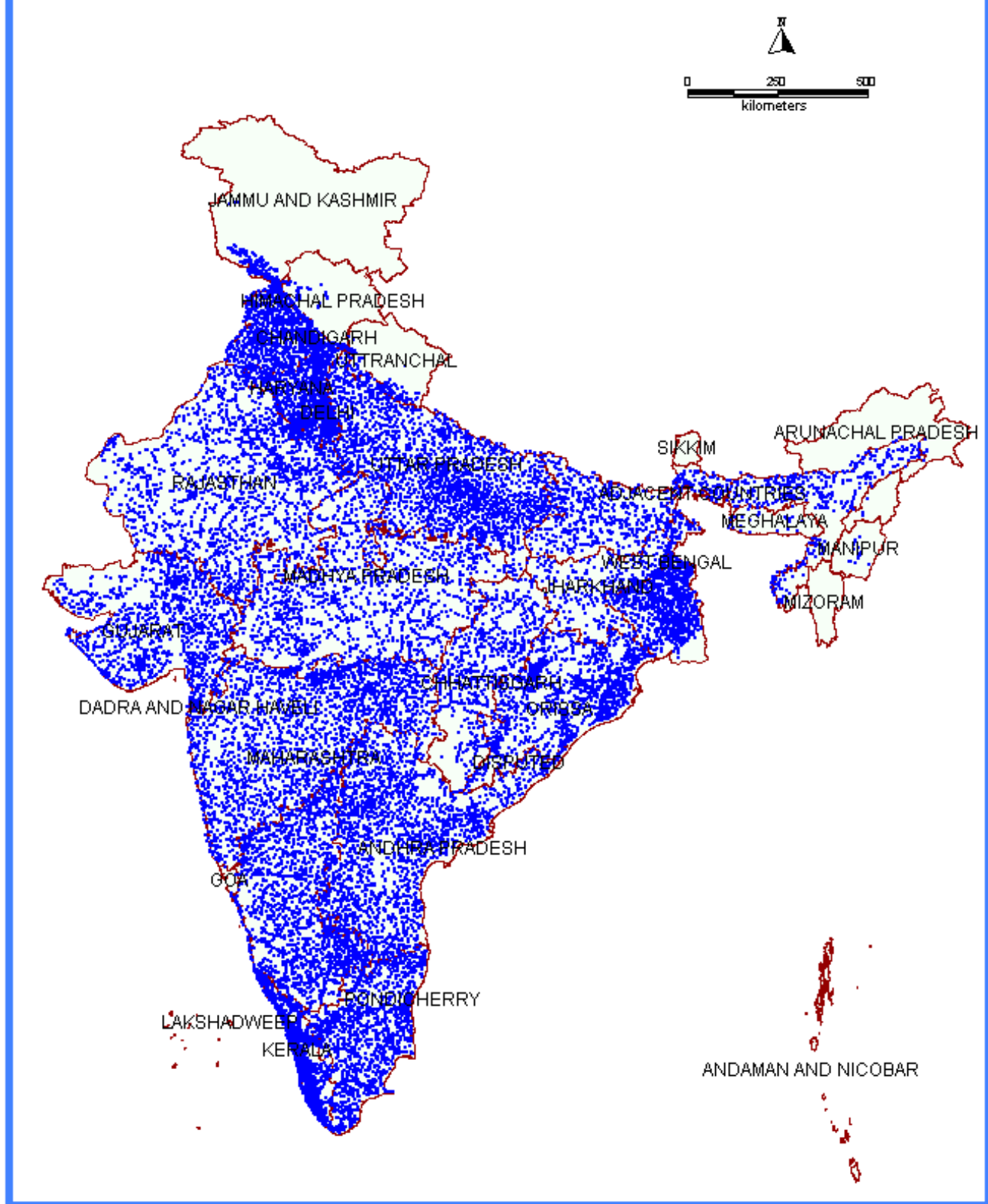


TABLE-2 STATE-WISE STATUS OF GROUND WATER MONITORING WELLS AS ON 31.03.2011

S. No.	Name of the State	Total No. of Ground Water Monitoring Wells (as on 31.03.2011)		
	States	DW	PZ	Total
1	Andhra Pradesh	591	311	902
2	Arunachal Pradesh	12	1	13
3	Assam	297	9	306
4	Bihar	314	12	326
5	Chhattisgarh	461	117	578
6	Delhi	25	137	162
7	Goa	43	10	53
8	Gujarat	635	376	1011
9	Haryana	205	186	391
10	Himachal Pradesh	86	0	86
11	Jammu & Kashmir	168	19	187
12	Jharkhand	212	14	226
13	Karnataka	1132	373	1505
14	Kerala	665	273	938
15	Madhya Pradesh	870	298	1168
16	Maharashtra	1075	142	1217
17	Manipur	13	10	23
18	Meghalaya	31	5	36
19	Nagaland	12	7	19
20	Orissa	948	162	1110
21	Punjab	154	143	297
22	Rajasthan	654	384	1038
23	Tamil Nadu	556	590	1146
24	Tripura	33	11	44
25	Uttar Pradesh	884	181	1065
26	Uttaranchal	42	67	109
27	West Bengal	468	418	886
	UTs			
1	Andaman & Nicobar	64	0	64
2	Chandigarh	1	27	28
3	Dadra & Nagar Haveli	7	0	7
4	Daman & Diu	9	5	14
5	Pondicherry	4	7	11
	Total	10671	4295	14966

2.2 DEPTH TO WATER LEVEL

Depth to Water Level – Pre Monsoon 2011

Perusal of the ground water level data for the pre monsoon 2011 indicates that in Sub-Himalayan area, north of river Ganges and in the north eastern part of the country in the Brahmaputra valley, eastern coast of Orissa, Andhra Pradesh and Tamil Nadu state, generally the depth to water level varies from 2-5 meter below ground level. Isolated pockets of shallow water level less than 2 m bgl have also been observed in west Maharashtra and coastal area of Andhra Pradesh state. In major parts of north-western states depth to water level generally ranges from 10-20 m bgl. In the western parts of the country deeper water level is recorded in the depth range of 20-40 m bgl. In North Gujarat, part of Haryana and western Rajasthan water level more than 40 m bgl is recorded. In the west coast water level is generally less than 10 m. In the east coast i.e. coastal Andhra Pradesh, shallow water level of less than 2 m have been recorded. In eastern states, water level in general ranges from 5-10m bgl. However South-eastern part of West Bengal recorded water level in the range of 10-20 m bgl. In north central India water level generally varies between 10-20 m bgl, except in isolated pockets where water level less than 10 m bgl has been observed. The peninsular part of country generally recorded a water level in the range 5-10 m bgl.

Out of total monitored wells 6.03% wells are showing water level less than 2 m bgl, 27.63 % wells are showing water in the depth range of 2-5 m bgl, 39.31% wells are showing water level in the depth range of 5-10 m bgl, 20.77% wells are showing water level in the depth range of 10-20 m bgl, 4.42% wells are showing water level in the depth range of 20-40 m and remaining 1.83 % wells are showing water level more than 40 m bgl.

Depth to Water Level – August 2011

Perusal of the ground water level data for the August 2011 indicates that in Sub-Himalayan area, north of river Ganges and, eastern coast of Orissa, Andhra Pradesh, Kerala, Gujarat, Madhya Pradesh and Coastal Tamil Nadu states generally the depth to water level varies from 2-5 meter below ground level. Shallow water level less than 2 m bgl have also been observed in west Maharashtra, Assam, Northern Uttar Pradesh, Jharkhand, Orissa and coastal area of Andhra Pradesh state. In major parts of north-western states depth to water level generally ranges from 10-20 m bgl. In the western parts of the country deeper water level is recorded in the depth range of 20-40 m bgl. In North Gujarat, part of Haryana and western Rajasthan water level more than 40 m bgl is recorded. In the west coast water level is generally less than 5 m and in western parts of Maharashtra State isolated pockets of water level less than 2 m has also been observed. In eastern states, water level in general ranges from 2-5 m bgl. However South-eastern part of West Bengal recorded water level in the range of 10-20 m bgl. In south India water level generally varies between 5-10 m bgl, except in isolated pockets where water level more than 10 m bgl has been observed.

Out of total monitored wells 31.98% wells are showing water level less than 2 m bgl, 30.93 % wells are showing water in the depth range of 2-5 m bgl, 20.74% wells are showing water level in the depth range of 5-10 m bgl, 10.58% wells are showing water level in the depth range of 10-20 m bgl, 4.11% wells are showing water level in the depth range of 20-40 m and remaining 1.66 % wells are showing water level more than 40 m bgl.

Depth to Water Level – Post Monsoon 2011

Perusal of the ground water level data for the November 2011 indicates that in Sub-Himalayan area, north of river Ganges, eastern coast of Orissa, Andhra Pradesh, Kerala, Gujarat, Maharashtra, Chhattisgarh, Madhya Pradesh, Bihar, Jharkhand, entire northeast and Coastal Tamil Nadu states generally the depth to water level varies from 2-5 meter below ground level. About 40.85 % wells are showing water in the depth range of 2-5 m bgl. Shallow water level less than 2 m bgl have also been observed in west Maharashtra, Assam, North Bihar, Orissa and coastal area of Andhra Pradesh and Tamil Nadu. In major parts of north-western states depth to water level generally ranges from 10-20 m bgl. In the western parts of the country deeper water level is recorded in the depth range of 20-40 m bgl and more than 40 m bgl. In North Gujarat, part of Haryana and western Rajasthan water level more than 40 m bgl is recorded. In the west coast water level is generally less than 5 m and in western parts of Maharashtra State isolated pockets of water level less than 2 m has also been observed. In the east coast i.e. coastal Andhra Pradesh, shallow water level of

less than 2 m have been recorded. In eastern states, water level in general ranges from 2-5 m bgl. However south-eastern part of West Bengal recorded water level in the range of 10-20 m bgl and 5-10 m bgl. In south India water level generally varies between 5-10 m bgl, except in isolated pockets where water level more than 10 m bgl has been observed.

Out of total monitored wells 19.56% wells are showing water level less than 2 m bgl, 40.85 % wells are showing water in the depth range of 2-5 m bgl, 23.81% wells are showing water level in the depth range of 5-10 m bgl, 10.45% wells are showing water level in the depth range of 10-20 m bgl, 3.69% wells are showing water level in the depth range of 20-40 m and remaining 1.64 % wells are showing water level more than 40 m bgl.

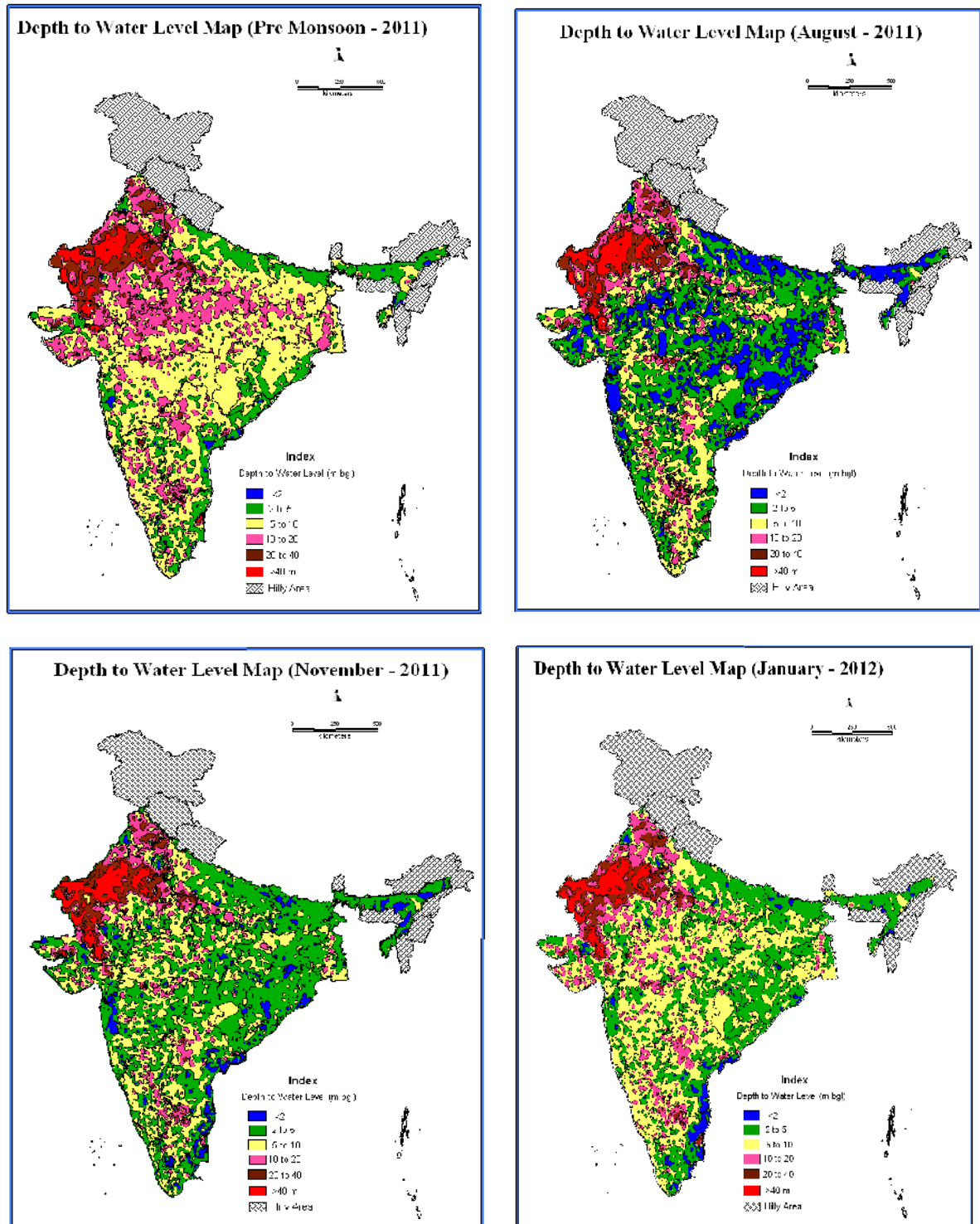
Depth to Water Level – January 2012

Perusal of the depth to water level map for the January 2012 indicates that in Sub-Himalayan area, north of river Ganges, Orissa, eastern coast of Andhra Pradesh, Tamil Nadu, north west Gujarat, western coast of Maharashtra, entire northeast states generally the depth to water level varies from 2-5 meter below ground level. About 41.67 % wells are showing water in the depth range of 2-5 m bgl. Shallow water level less than 2 m bgl have been observed mainly in coastal area of Andhra Pradesh and Tamil Nadu states. In major parts of the country especially in central India, Madhya Pradesh, Maharashtra, Karnataka, northern Andhra Pradesh, depth to water level generally ranges from 5-10 m bgl. In the western parts of the country deeper water level is recorded in the depth range of 20-40 m bgl and more than 40 m bgl. In North Gujarat, part of Haryana and western Rajasthan water level more than 40 m bgl is recorded. In the west coast water level is generally less 10 m bgl and in western parts of Maharashtra State isolated pockets of water level less than 2 m has also been observed. In the east coast i.e. coastal Andhra Pradesh and coastal Tamil Nadu shallow water level of less than 2 m have been recorded. In north-eastern states, water level in general ranges from 2-5 m bgl. However south-eastern part of West Bengal recorded water level in the range of 10-20 m bgl and 5-10 m bgl.

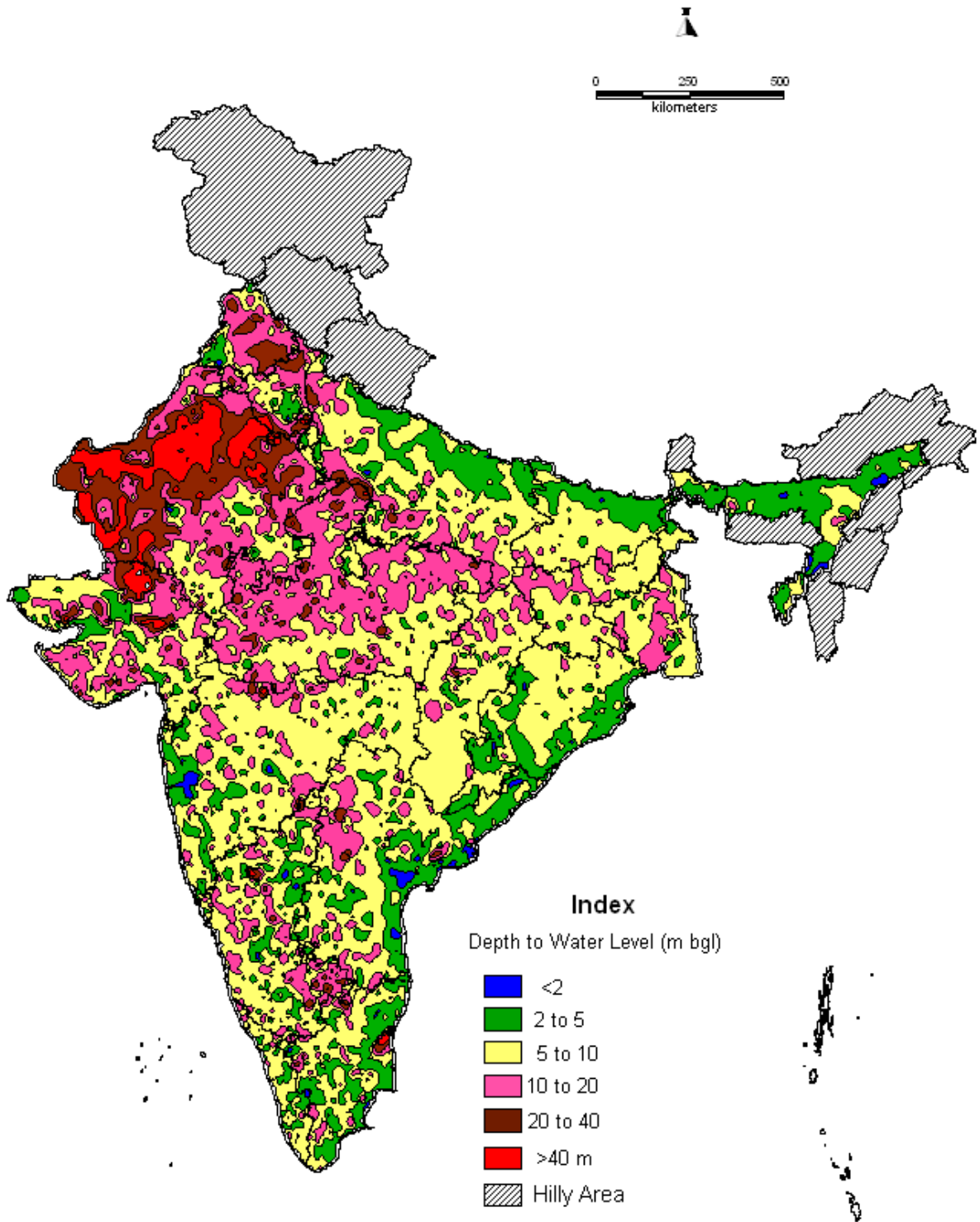
Out of total monitored wells 11.87% wells are showing water level less than 2 m bgl, 41.67 % wells are showing water in the depth range of 2-5 m bgl, 31.87% wells are showing water level in the depth range of 5-10 m bgl, 13.08% wells are showing water level in the depth range of 10-20 m bgl, 4.23% wells are showing water level in the depth range of 20-40 m and remaining 1.72 % wells are showing water level more than 40 m bgl.

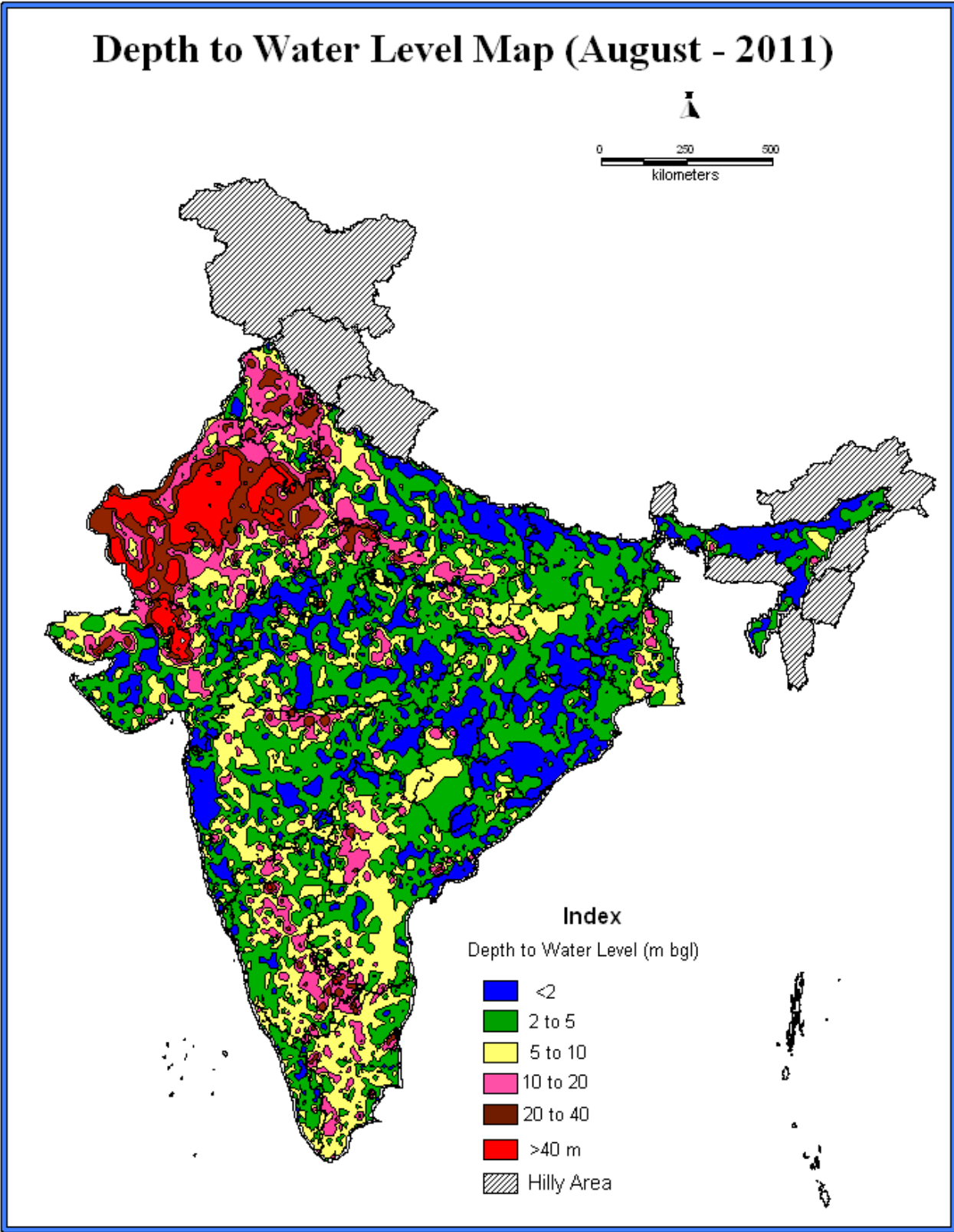
Ground water level at a glance is shown in Plate III. The depth to water level maps of different period has been depicted in Plates (IV to VII). The state wise frequency distribution of wells under different water level/fluctuation ranges for different monitoring period is given in Annexures (I to IV).

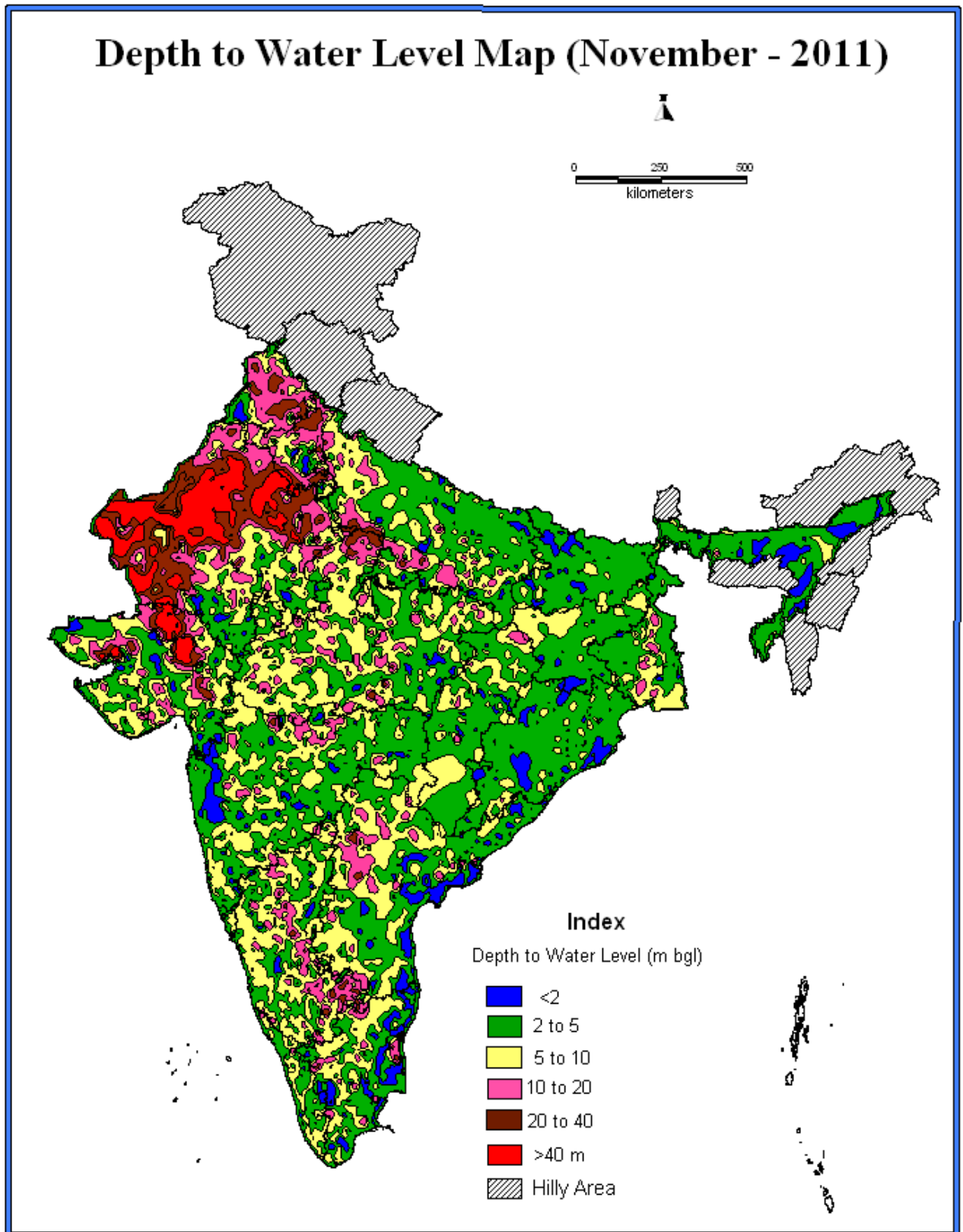
DEPTH TO WATER LEVEL AT A GLANCE



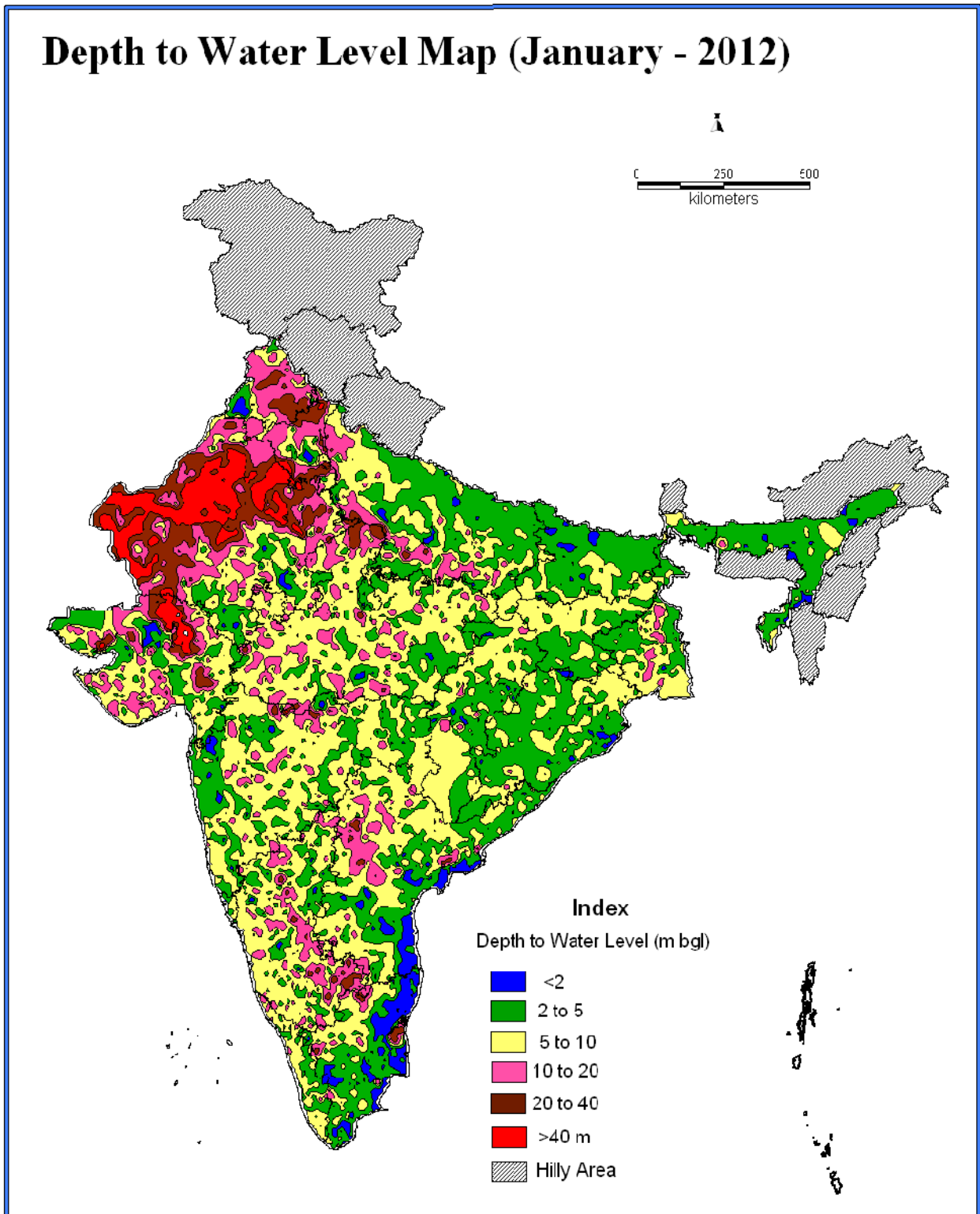
Depth to Water Level Map (Pre Monsoon - 2011)







Depth to Water Level Map (January - 2012)



2.3 ANNUAL WATER LEVEL FLUCTUATION

Annual Water Level Fluctuation (May 2010-May 2011)

A comparison of depth to water level during Pre Monsoon 2010 with Pre Monsoon 2011 reveals that in general, there is decline in the water level in the states of Uttar Pradesh, Bihar, Jharkhand, Madhya Pradesh, West Bengal, Punjab and Haryana. Most of the wells have been showing fall of water level in the range of 0-2 m. Falls in water level more than 2 meters has also been observed in various parts of the states such as Delhi, Madhya Pradesh, Bihar, Jharkhand, Punjab, Haryana and Gujarat. Rise in water level in the range of 0-2 m and 2-4 m is observed in Central Maharashtra, Andhra Pradesh, southern Rajasthan, Tamil Nadu and Gujarat states. About 62.61% wells are showing rise in water level. Out of which 44.84% wells are showing rise in water level less than 2 m. About 10.28% wells are showing rise in water level in 2-4 m range and 7.49% wells showing rise in water level more than 4 m. About 37.39 % wells are showing decline in water level, out of which 30.33% wells are showing decline in water level in less than 2 m range. About 4.62% wells are showing decline in water level in 2-4 m range. Only 2.44% wells are showing decline in water level more than 4 m range.

Annual Water Level Fluctuation (August 2010- August 2011)

A comparison of depth to water level of August 2010 with August 2011 reveals that in general, there is decline in the water level in Maharashtra, Karnataka, Andhra Pradesh and entire north eastern states. Most of the wells have been showing fall of water level in the range of 0-2 m. Fall in water level more than 2 meters has also been observed in various parts of the states such as Delhi, Punjab, Haryana, Gujarat, Maharashtra and Karnataka state. Rise in water level in the range of 0-2 m and 2-4 m is observed in Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Tamil Nadu and southern Rajasthan states.

About 60.04% wells are showing rise in water level, out of which 39.59% wells are showing rise in water level less than 2 m. About 12.32% wells are showing rise in water level in 2-4 m range and 8.13% wells showing rise in water level more than 4 m. About 39.96 % wells are showing decline in water level, out of which 31.22% wells are showing decline in water level in less than 2 m range. About 5.64% wells are showing decline in water level in 2-4 m range. Only 3.10% wells are showing decline in water level more than 4 m range.

Annual Water Level Fluctuation (November 2010- November 2011)

A comparison of depth to water level of November 2010 with November 2011 reveals that in general, there is decline in the water level in Maharashtra, Karnataka, Andhra Pradesh, Orissa, south Gujarat and Assam. Most of the wells have been showing fall in water level in the range of 0-2 m. Fall in water level more than 2 meters has also been observed in various parts of the states such as Punjab, Haryana and Southern Rajasthan. Rise in water level in the range of 0-2 m and 2-4 m is observed in Madhya Pradesh, Uttar Pradesh, Bihar, Jharkhand, West Bengal, Tamil Nadu and southern Rajasthan.

About 47.43% wells are showing rise in water level. Out of which 33.93% wells are showing rise in the range of water level less than 2 m. About 8.20% wells are showing rise in water level in 2-4 m range and 5.31% wells showing rise in water level more than 4 m range. About 52.57 % wells are showing decline in water level, out of which 40.95% wells are showing decline in water level in less than 2 m range. About 7.41% wells are showing decline in water level in 2-4 m range. Only 4.21% wells are showing decline in water level more than 4 m range.

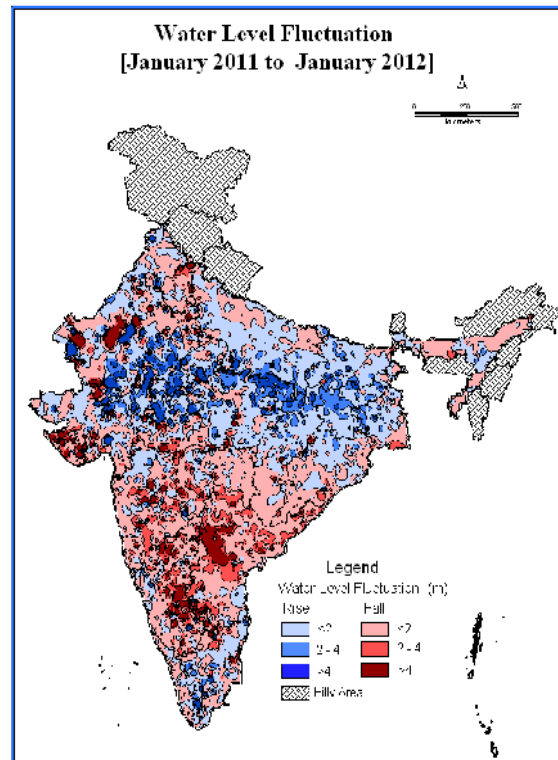
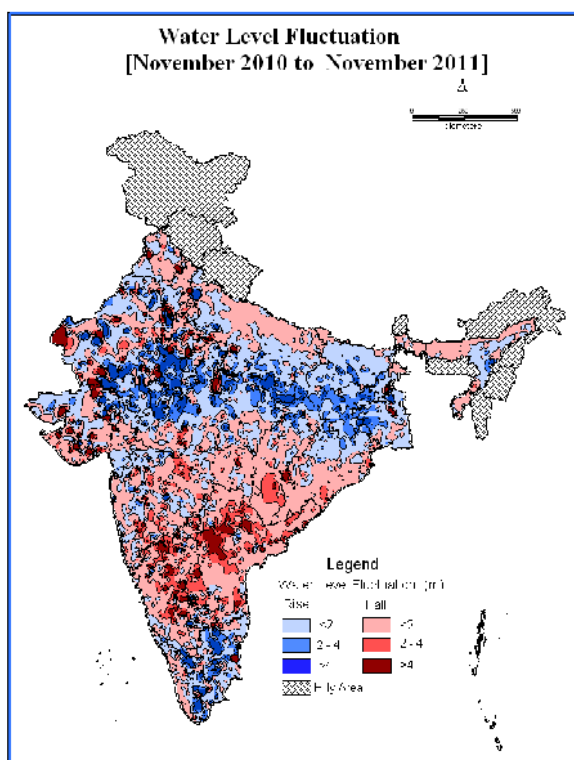
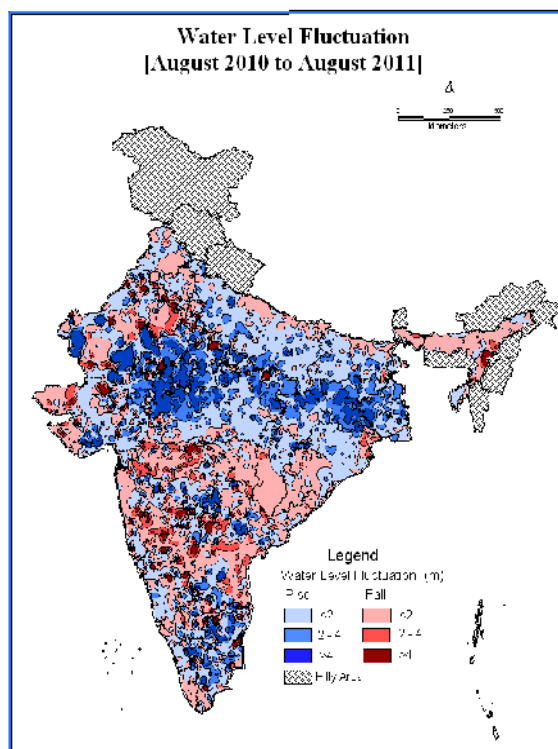
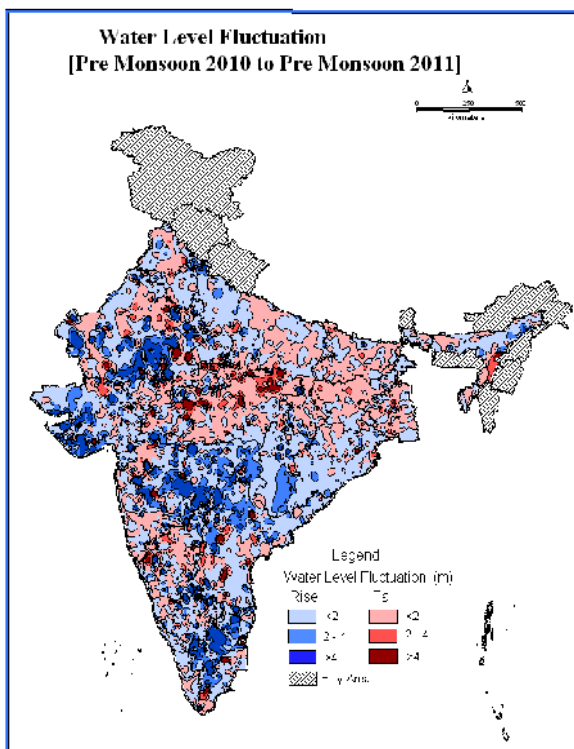
Annual Water Level Fluctuation (January 2011- January 2012)

A comparison of depth to water level data of January 2011 with January 2012 reveals that in general, there is decline in the water level in Maharashtra, Karnataka, Andhra Pradesh, Orissa, south Gujarat and Assam. Most of the wells have been showing fall in water level in the range of 0-2 m. Fall in water level more than 2 meters has been observed in various states such as Punjab, Haryana, northwest Rajasthan, south Gujarat, Maharashtra, Andhra Pradesh and Karnataka. Rise in water level in the range of 0-2 m and 2-4 m is observed in Madhya Pradesh, Uttar Pradesh, Bihar,

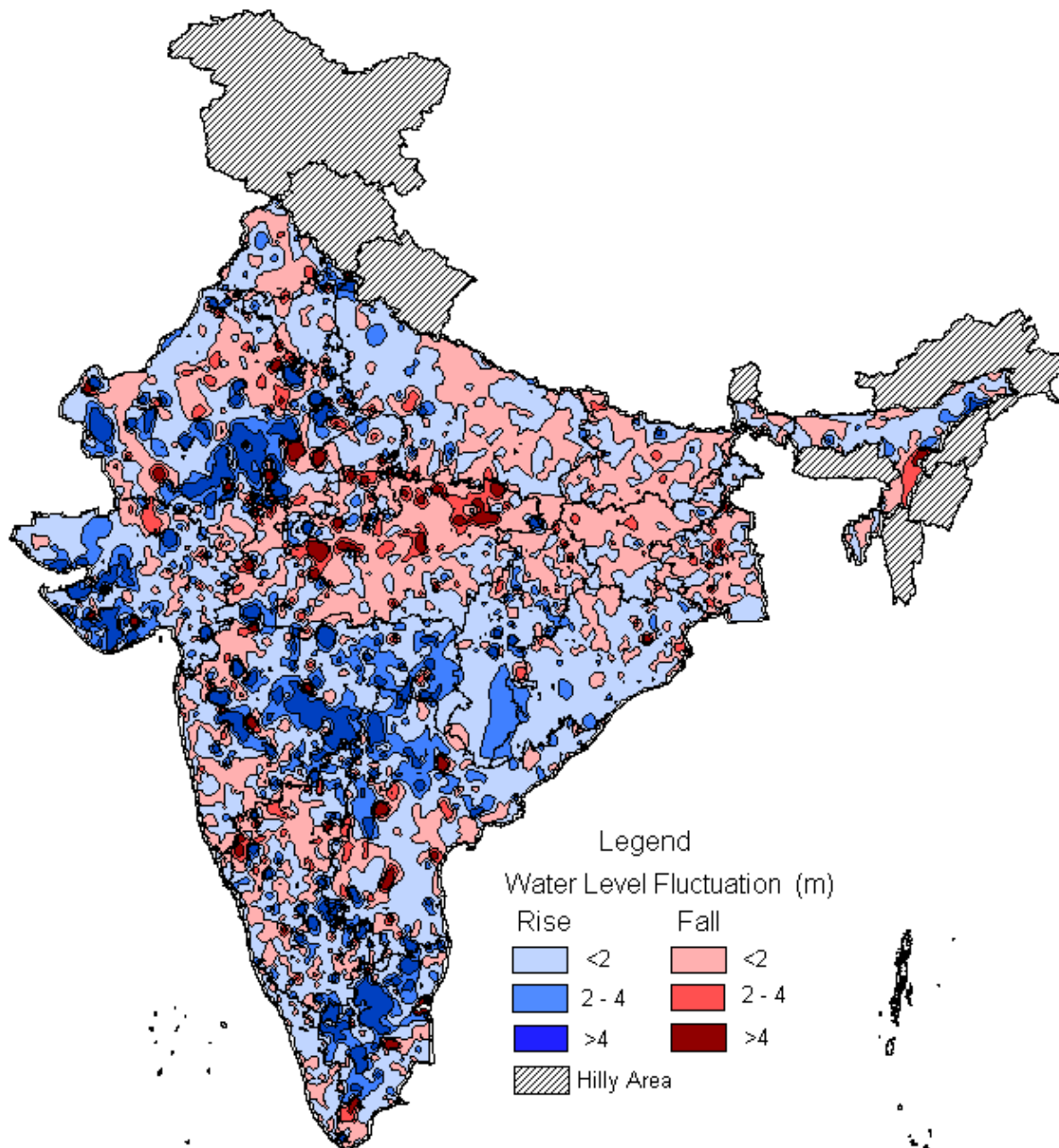
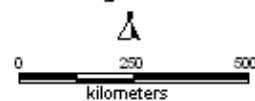
Jharkhand, West Bengal, Tamil Nadu and southern Rajasthan. About 46.73% wells are showing rise in water level. Out of which 34.99% wells are showing rise in the range of water level less than 2 m. About 7.52% wells are showing rise in water level in 2-4 m range and 4.27% wells showing rise in water level more than 4 m range. About 53.22 % wells are showing decline in water level, out of which 40.59% wells are showing decline in water level in less than 2 m range. About 7.93% wells are showing decline in water level in 2-4 m range. Only 4.70% wells are showing decline in water level more than 4 m range.

Annual water level fluctuation at a glance is shown in Plate VIII. The water level fluctuation maps of different period have been depicted in Plates (IX to XIII). The state wise frequency distribution of wells under different water level/fluctuation ranges for different monitoring period is given in Annexure (V to VIII).

ANNUAL WATER LEVEL FLUCTUATION AT A GLANCE



Water Level Fluctuation [Pre Monsoon 2010 to Pre Monsoon 2011]

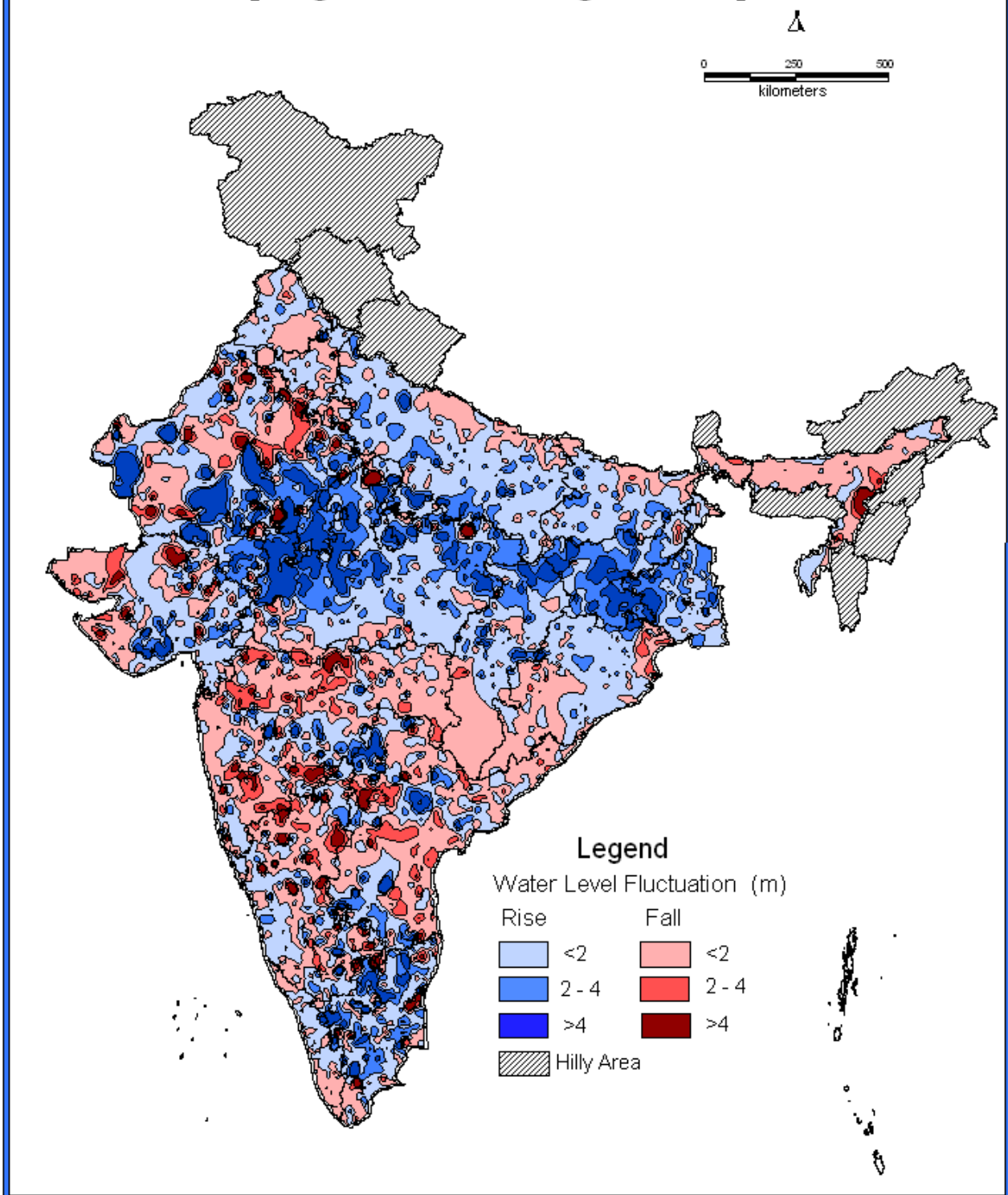


Legend

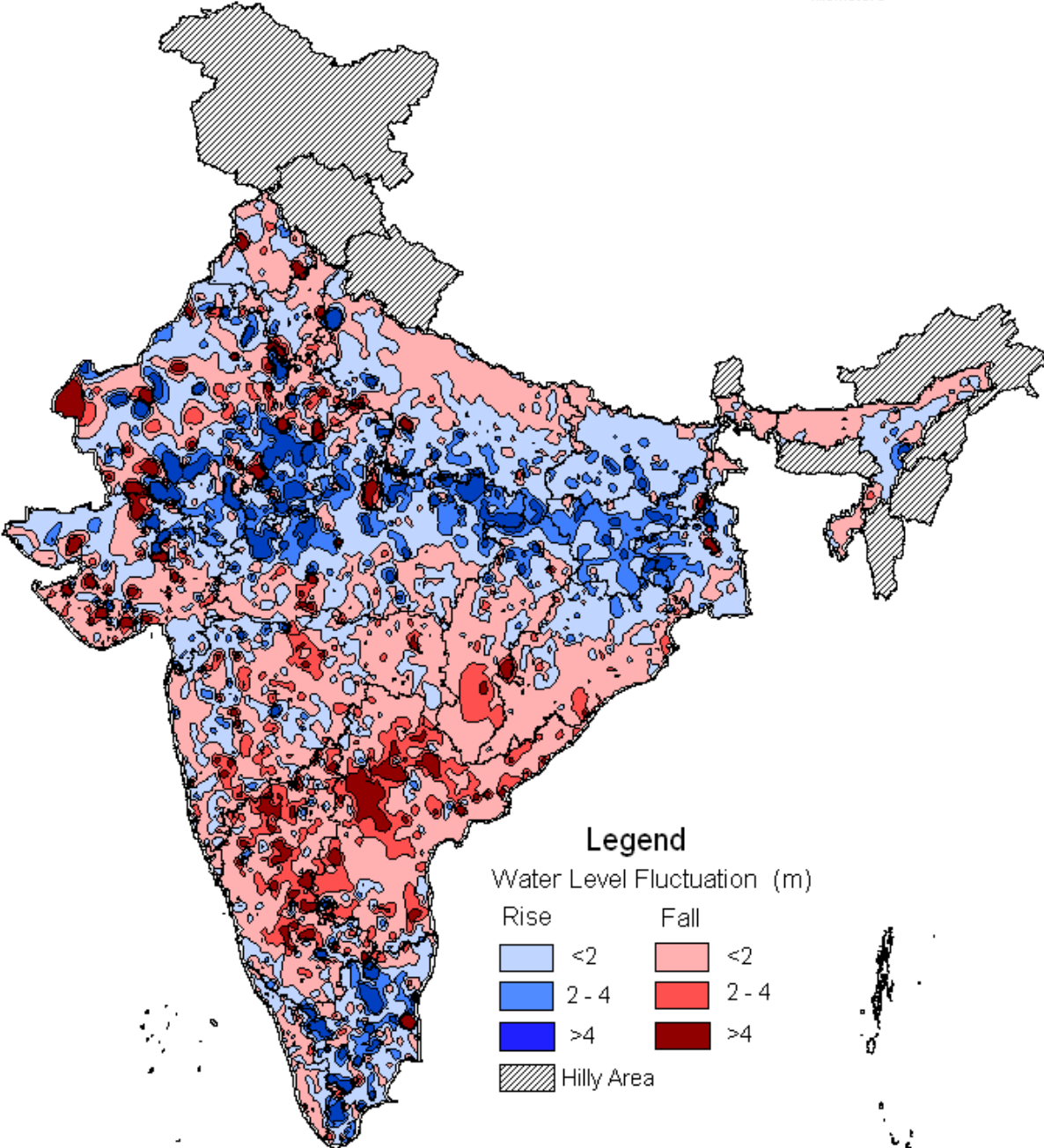
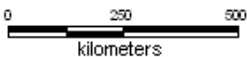
Water Level Fluctuation (m)

Rise		Fall	
Light Blue	<2	Light Red	<2
Medium Blue	2 - 4	Red	2 - 4
Dark Blue	>4	Dark Red	>4
Hatched	Hilly Area		

Water Level Fluctuation [August 2010 to August 2011]



Water Level Fluctuation [November 2010 to November 2011]

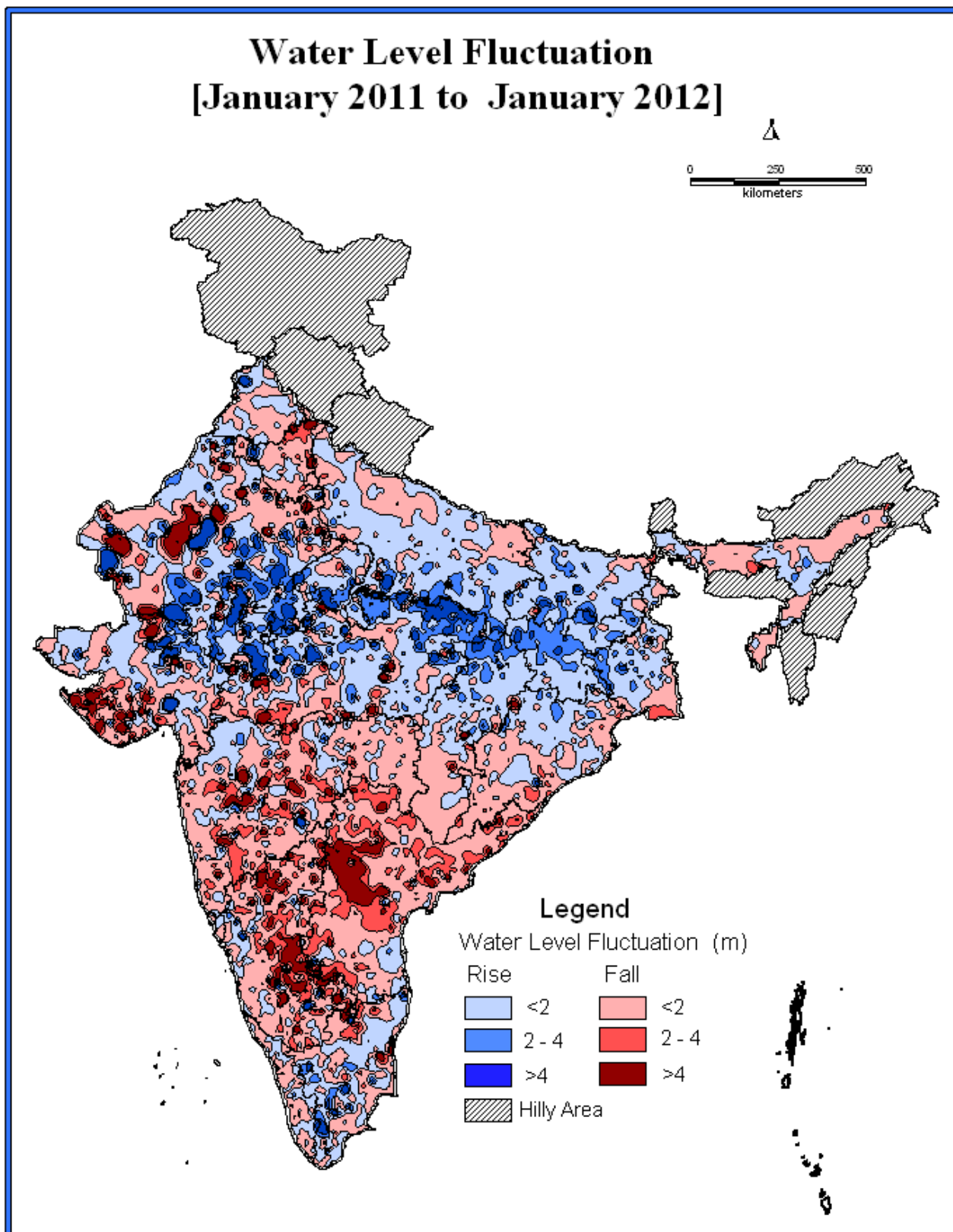


Legend

Water Level Fluctuation (m)

Rise		Fall	
Light Blue	<2	Light Red	<2
Medium Blue	2 - 4	Medium Red	2 - 4
Dark Blue	>4	Dark Red	>4
Hatched	Hilly Area		

Water Level Fluctuation [January 2011 to January 2012]



2.4 SEASONAL WATER LEVEL FLUCTUATIONS

Seasonal Water Level Fluctuation (May 2011 – August 2011)

A comparison of depth to water level during Pre Monsoon 2011 with August 2011 reveals that in general, there is rise in the water level in most parts of the country except in Punjab, Haryana, and western Rajasthan and parts of Andhra Pradesh, Karnataka and Tamil Nadu states. Most of the wells have been showing rise of water level in the range of more than 4 m range. Rise in water level less than 2 meters and 2 to 4 m range is observed mainly in alluvium formation. Decline in water level in the range of 0-2 m and 2-4 m is observed in Punjab, Haryana, Western Rajasthan, Tamil Nadu, Andhra Pradesh and Karnataka.

About 83.64% wells are showing rise in water level, out of which 33.01% wells are showing rise in water level less than 2 m. About 22.88% wells are showing rise in water level in 2-4 m range and 27.74% wells showing rise in water level more than 4 m. About 16.36 % wells are showing decline in water level, out of which 12.24% wells are showing decline in water level in less than 2 m range. About 2.56% wells are showing decline in water level in 2-4 m range. Only 1.40% wells are showing decline in water level more than 4 m range.

Seasonal Water Level Fluctuation (May 2011– November 2011)

A comparison of depth to water level during Pre Monsoon 2011 with November 2011 reveals that in general, there is rise in the water level in most parts of the country except in Punjab, Haryana, and western Rajasthan and parts of Andhra Pradesh, Karnataka and Tamil Nadu. Most of the wells have been showing rise of water level in the range of more than 4 m range. Rise in water level less than 2 meters and 2 to 4 m range is observed mainly in alluvium formation. Decline in water level in the range of 0-2 m and 2-4 m is observed in Punjab, Haryana, Western Rajasthan, Tamil Nadu, Andhra Pradesh and Karnataka. Decline in water level in the range of 4 m is observed in pockets in Punjab, Haryana, Western Rajasthan, Andhra Pradesh and Karnataka.

About 85.25% wells are showing rise in water level. Out of which 41.43% wells are showing rise in water level less than 2 m range. About 23.78% wells are showing rise in water level in 2-4 m range and 20.04% wells showing rise in water level more than 4 m. About 14.75 % wells are showing decline in water level, out of which 11.58% wells are showing decline in water level in less than 2 m range. About 1.90% wells are showing decline in water level in 2-4 m range. Only 1.27% wells are showing decline in water level more than 4 m range.

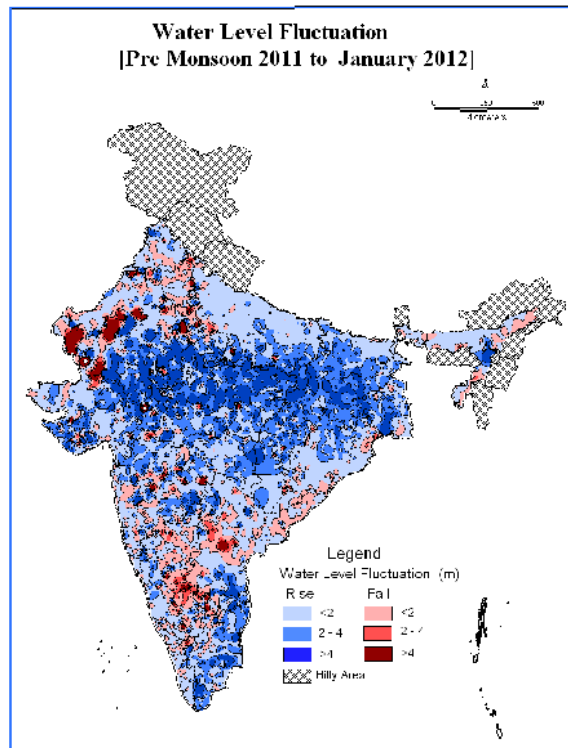
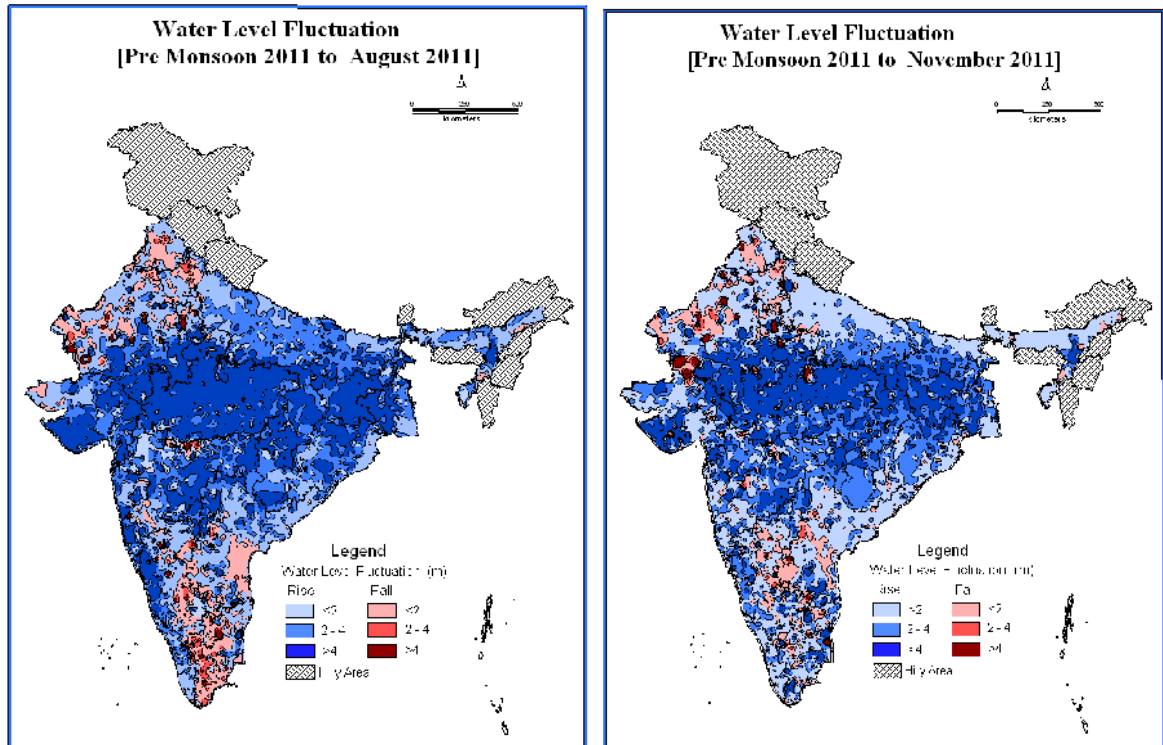
Seasonal Water Level Fluctuation (May 2011 – January 2012)

A comparison of depth to water level during Pre Monsoon 2011 with January 2012 reveals that in general, there is rise in the water level in most parts of the country except in Punjab, Haryana, and western Rajasthan and parts of Andhra Pradesh, Karnataka and Tamil Nadu states. Most of the wells have been showing rise of water level in the range of more than 4 m range. Rise in water level less than 2 meters and 2 to 4 m range is observed mainly in alluvium formation. Decline in water level in the range of 0-2 m and 2-4 m is observed in Punjab, Haryana, Western Rajasthan, Tamil Nadu, Andhra Pradesh and Karnataka states. Decline in water level in the range of more than 4 m is observed in pockets in Punjab, Haryana, Western Rajasthan, Andhra Pradesh and Karnataka states.

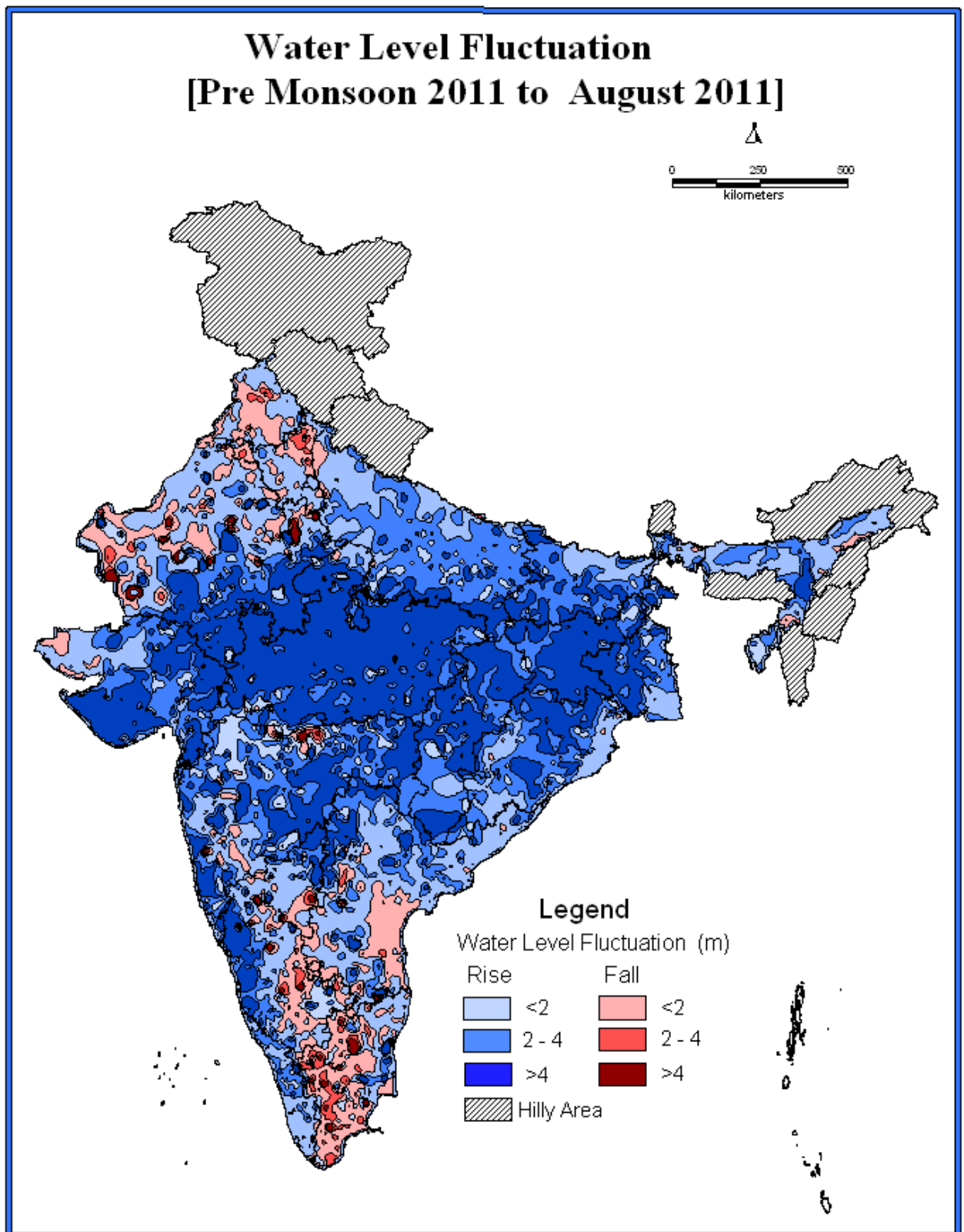
About 77.88% wells are showing rise in water level. Out of which 44.59% wells are showing rise in water level less than 2 m range. About 19.75% wells are showing rise in water level in 2-4 m range and 13.54% wells showing rise in water level more than 4 m range. About 22.12 % wells are showing decline in water level, out of which 17.15% wells are showing decline in water level in less than 2 m range. About 3.34% wells are showing decline in water level in 2-4 m range. Only 1.62% wells are showing decline in water level more than 4 m range.

Seasonal water level fluctuation at a glance is shown in Plate XIII. The water level fluctuation maps of different seasons have been depicted in Plates (XIV to XVI). The state wise frequency distribution of wells under different water level/fluctuation ranges for different monitoring period is given in Annexure (IX to XI).

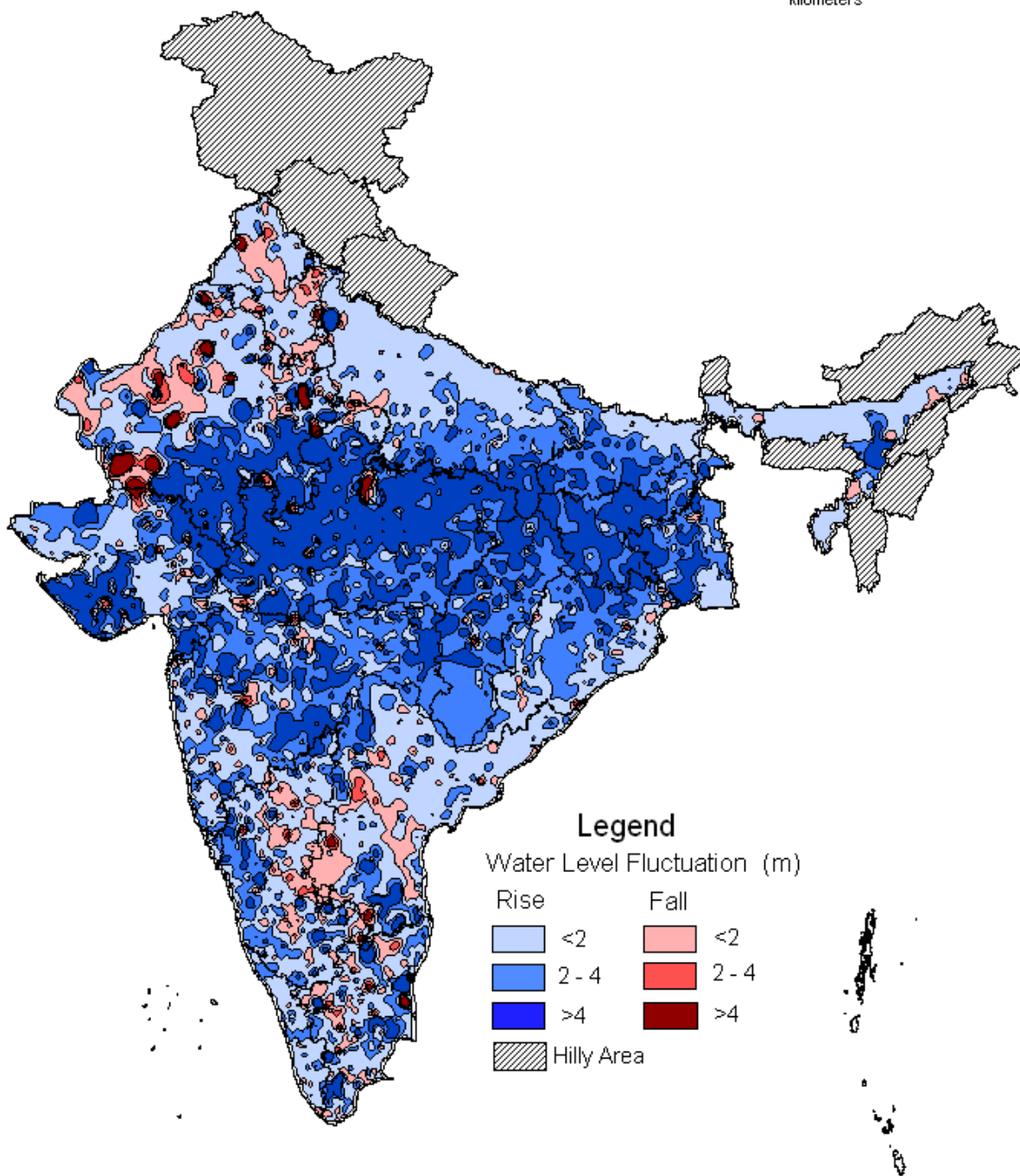
SEASONAL WATER LEVEL FLUCTUATION AT A GLANCE



Water Level Fluctuation [Pre Monsoon 2011 to August 2011]










Water Level Fluctuation [Pre Monsoon 2011 to November 2011]

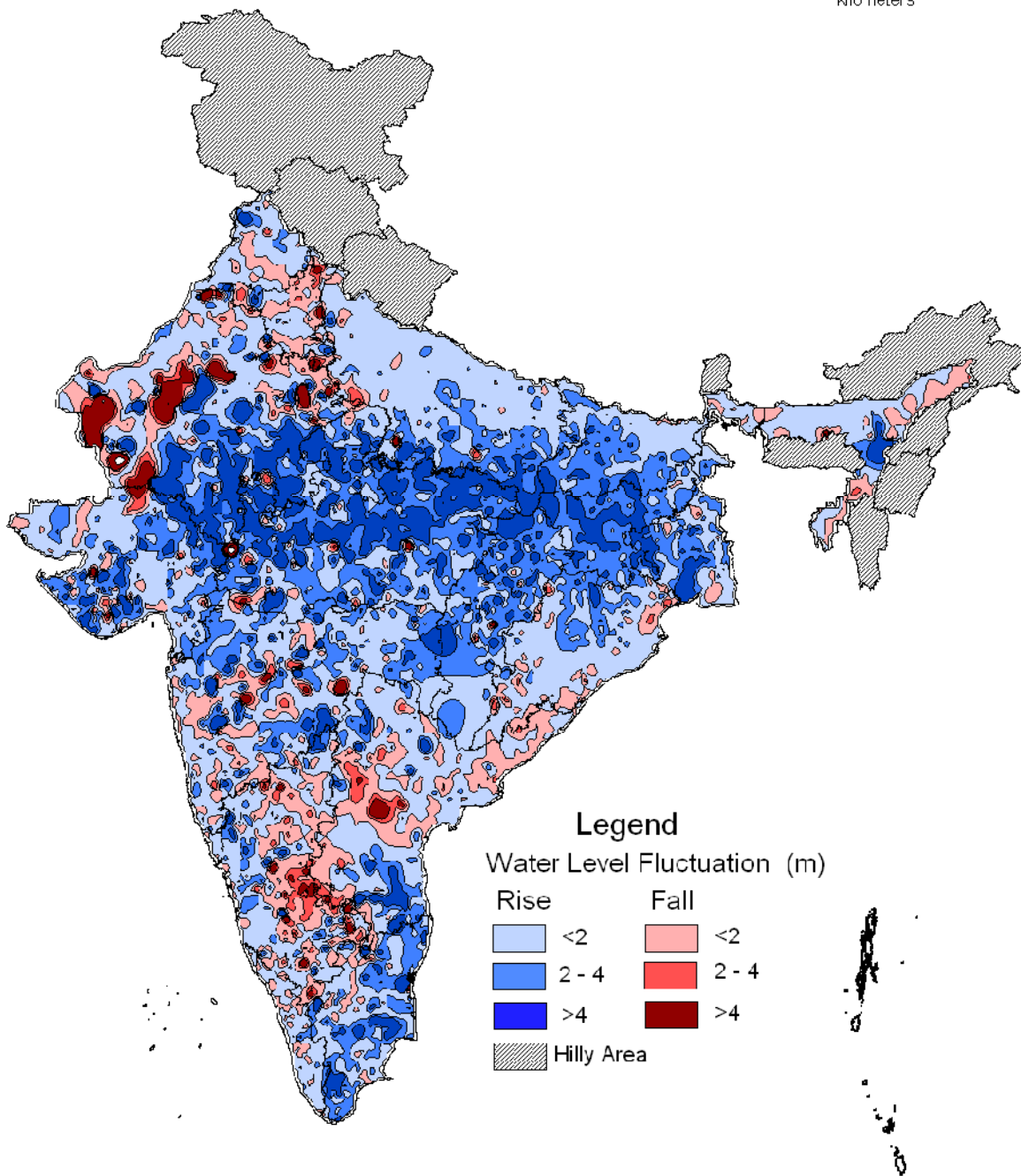


Legend








Water Level Fluctuation (m)

Rise		Fall	
	<2		<2
	2 - 4		2 - 4
	>4		>4
	Hilly Area		

Water Level Fluctuation [Pre Monsoon 2011 to January 2012]



Legend
Water Level Fluctuation (m)

Rise		Fall	
	<2		<2
	2 - 4		2 - 4
	>4		>4
	Hilly Area		

2.5 DECADAL WATER LEVEL FLUCTUATIONS

Water Level Fluctuation with Decadal Mean (May-2001 to May-2010) to May- 2011

A comparison of depth to water level during Pre Monsoon 2011 with decadal mean Pre Monsoon (2001-2010) reveals that in general, there is decline in the water level in northern, western and eastern parts of the country. In general there is rise in water level in central and Southern parts of the country. About 58.24% of wells showing rise in water level. Out of which 40.74% wells are showing rise in water level less than 2 m range. About 11.59% wells are showing rise in water in range of 2-4 m. About 5.92% wells are showing rise in water in range of >4 m. About 41.76% wells are showing decline in water level, out of which 30.17% wells are showing decline in water in the range of 0-2 m. Remaining 11.59% wells are showing decline in water level more than 2 m. Decline in water level more than 4 m is mostly prominent in the states of Rajasthan, Punjab, Haryana, Delhi and west Bengal. Rise in water level more than 4 m is observed mostly in the Gujarat, Western Rajasthan, and central Maharashtra, Tamil Nadu and in parts of Andhra Pradesh.

Water Level Fluctuation with Decadal Mean (Aug-2001 to Aug-2010) to Aug- 2011

A comparison of depth to water level of August 2011 with decadal mean August (2001-2010) reveals that in general, there is decline in the water level in north- west, east and north eastern part of the country. In general there is rise in water level in central and southern parts of the country. About 63.55% of wells showing rise in water level. Out of which 45.19% wells are showing rise in water level less than 2 m range. About 11.84% wells are showing rise in water in range of 2-4 m. About 6.51% wells are showing rise in water in range of more than 4 m. About 36.45% wells are showing decline in water level, out of which 26.42. % wells are showing decline in water in the range of 0-2 m. Remaining 8.03% wells are showing decline in water level more than 2 m. Decline in water level more than 4 m is mostly prominent in the states of Rajasthan, Punjab, Haryana, Delhi and west Bengal. Rise in water level more than 4 m is observed mostly in the Gujarat, Western Madhya Pradesh, central Maharashtra, and Tamil Nadu and in parts of Andhra Pradesh.

Water Level Fluctuation with Decadal Mean (Nov-2001 to Nov-2010) to Nov- 2011

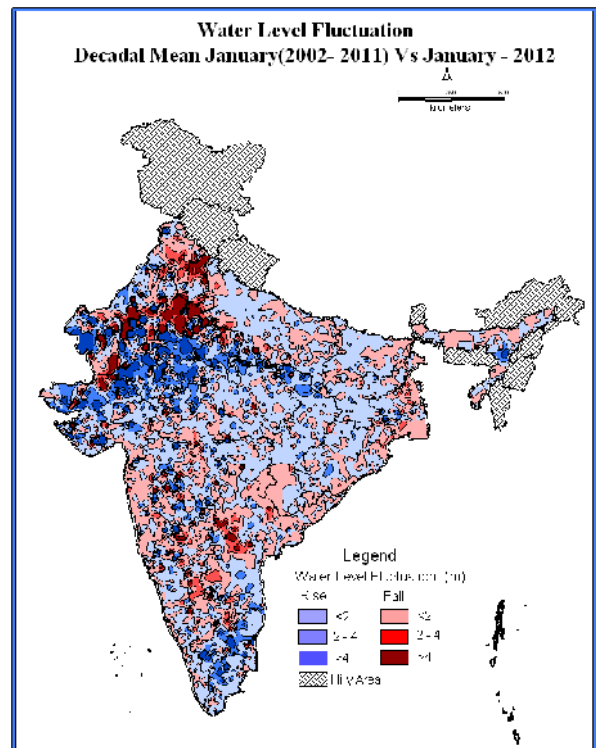
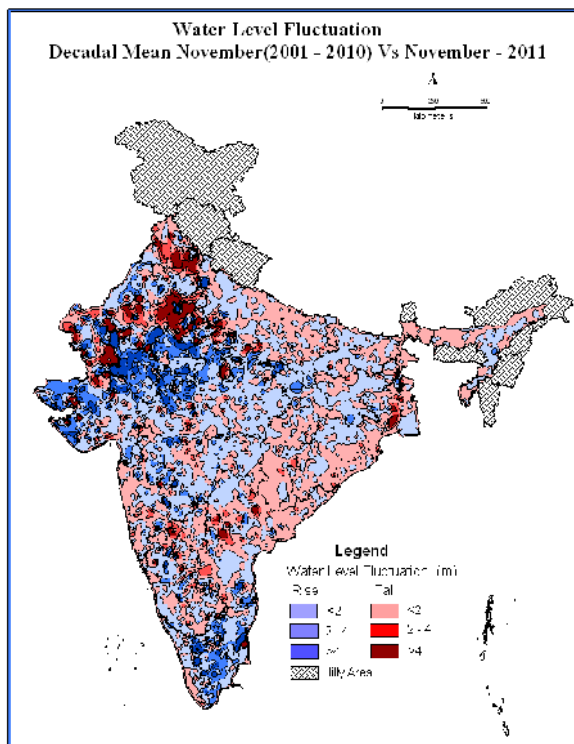
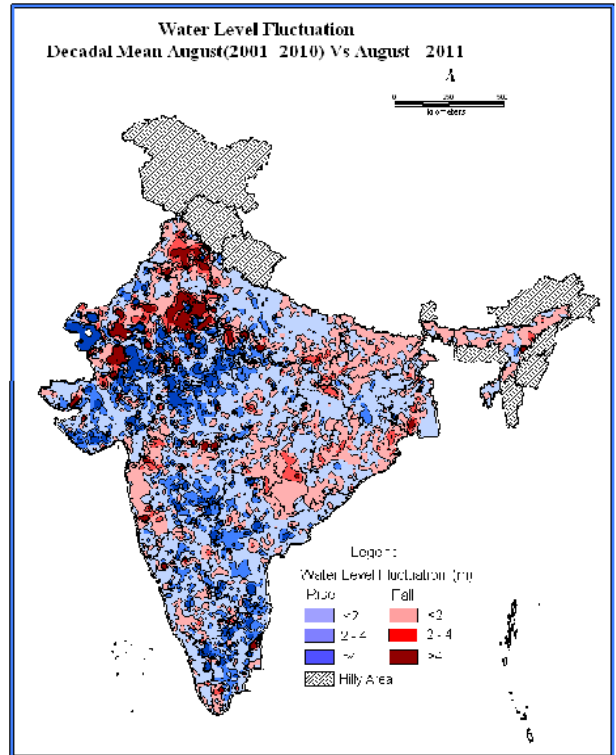
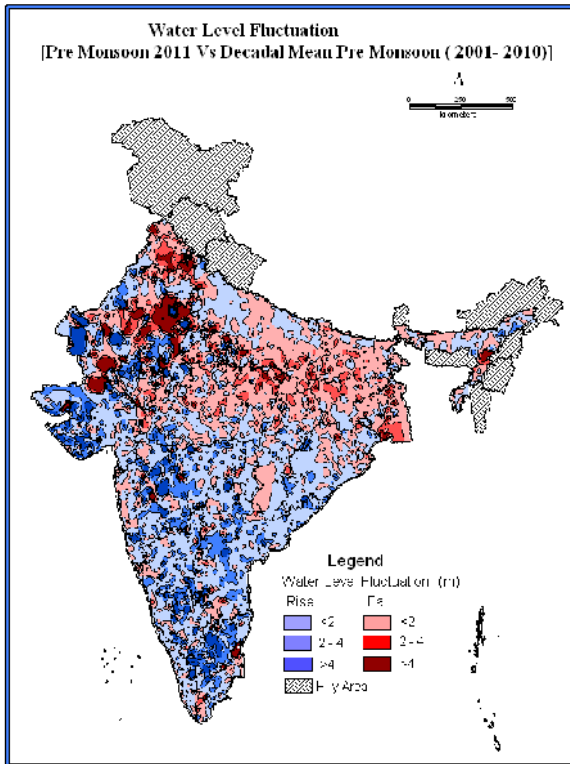
A comparison of depth to water level of November 2011 with decadal mean November (2001-2010) reveals that in general, there is decline in the water level in north- west, east and north eastern part of the country. In general there is rise in water level in central and Gujarat and Tamil Nadu. About 54.30% of wells showing rise in water level. Out of which 40.36% wells are showing rise in water level less than 2 m range. About 9.21% wells are showing rise in water in range of 2-4 m. About 4.73% wells are showing rise in water in range of more than 4 m. About 45.70% wells are showing decline in water level, out of which 35.12 % wells are showing decline in water in the range of 0-2 m. Remaining 10.58% wells are showing decline in water level more than 2 m. Decline in water level more than 4 m is mostly prominent in the states of Rajasthan, Punjab, Haryana, Delhi and West Bengal states. Rise in water level more than 4 m is observed mostly in Gujarat, southern Rajasthan, western Madhya Pradesh and Tamil Nadu.

Water Level Fluctuation with Decadal Mean (Jan-2002 to Jan-2011) to Jan- 2012

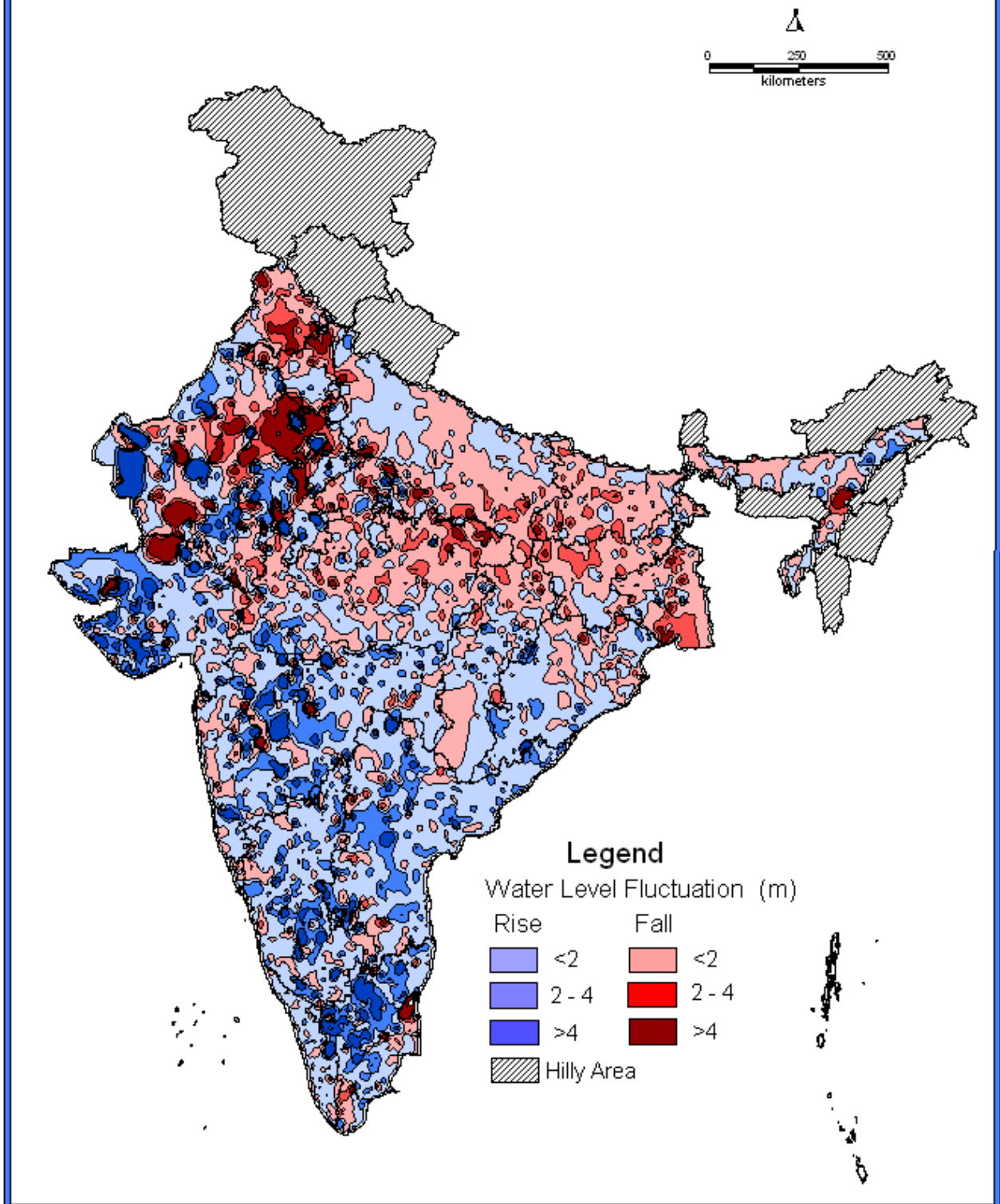
A comparison of depth to water level of January 2012 with decadal mean January (2002-2011) reveals that in general, there is decline in the water level in north- west, east and north eastern part of the country. In general there is rise in water level in central India Gujarat and Tamil Nadu. About 58.08% of wells showing rise in water level. Out of which 43.60% wells are showing rise in water level less than 2 m range. About 9.52% wells are showing rise in water level in range of 2-4 m. About 4.96% wells are showing rise in water level in range of more than 4 m. About 41.92% wells are showing decline in water level, out of which 31.93 % wells are showing decline in water level in the range of 0-2 m. Remaining 9.99% wells are showing decline in water level more than 2 m range. Decline in water level more than 4 m is mostly prominent in the states of Rajasthan, Punjab, Haryana, Delhi, Andhra Pradesh, Karnataka and western Maharashtra. Rise in water level more than 4 m is observed mostly in the Gujarat, southern Rajasthan, western Madhya Pradesh and Tamil Nadu.

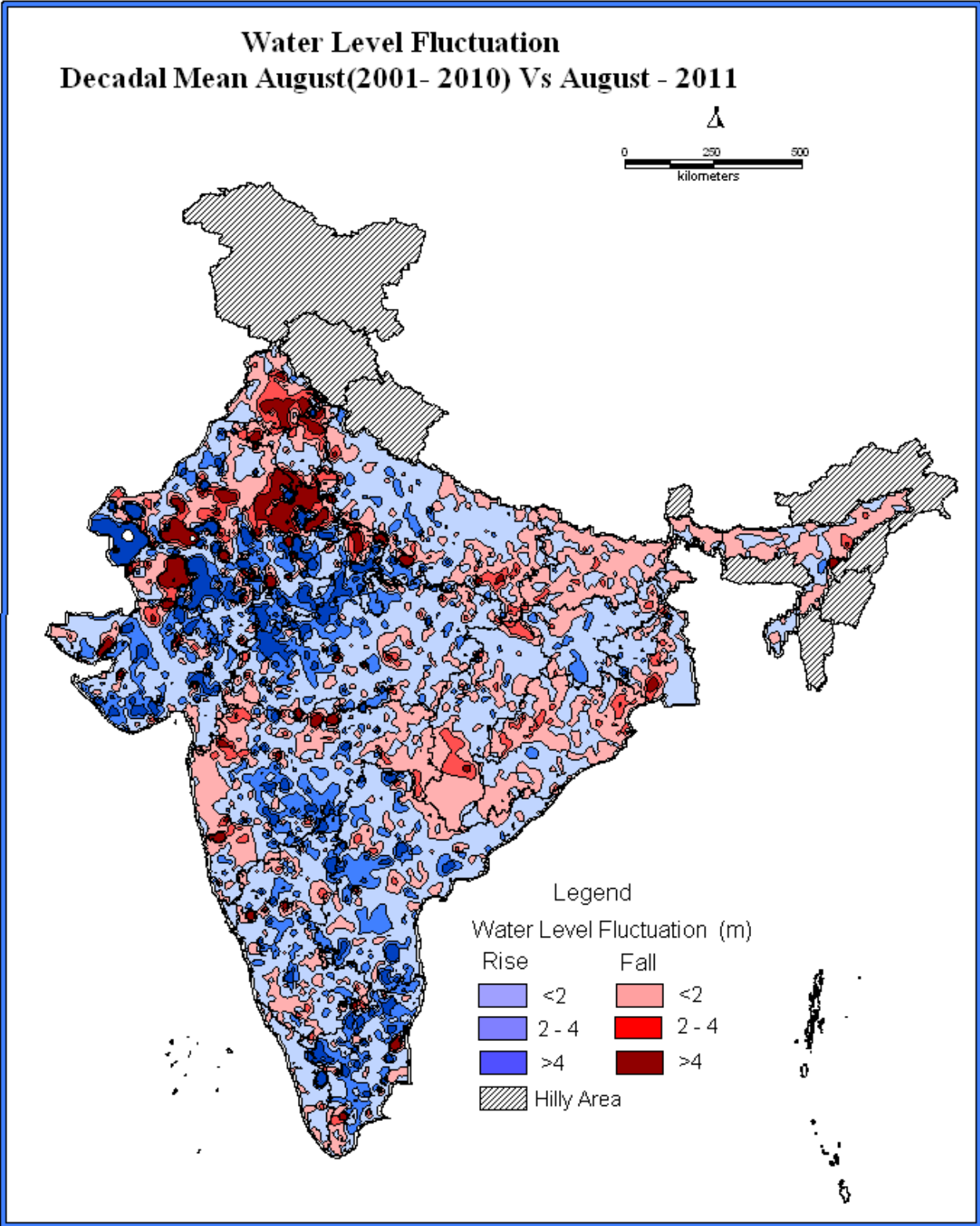
Decadal water level fluctuation at a glance is depicted in Plate XVIII. The water level fluctuation maps of different seasons have been depicted in Plates (XVIII to XXI). The state wise frequency distribution of wells under different water level/fluctuation ranges for different monitoring period is given in Annexure (XII to XV).

DECADAL WATER LEVEL FLUCTUATION AT A GLANCE

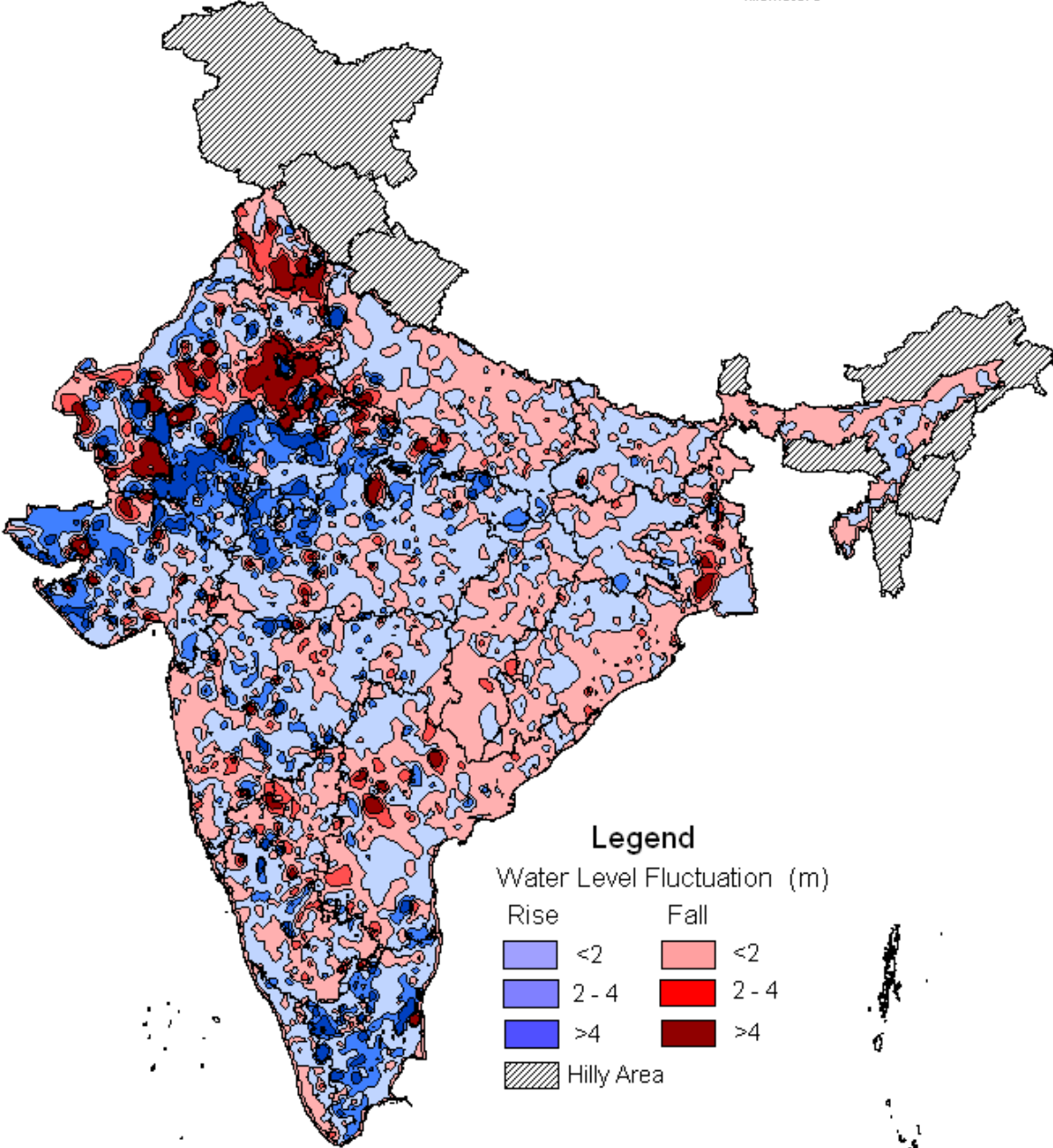
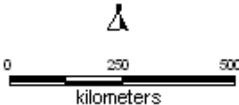


Water Level Fluctuation [Pre Monsoon 2011 Vs Decadal Mean Pre Monsoon (2001- 2010)]












Water Level Fluctuation Decadal Mean November(2001 - 2010) Vs November - 2011

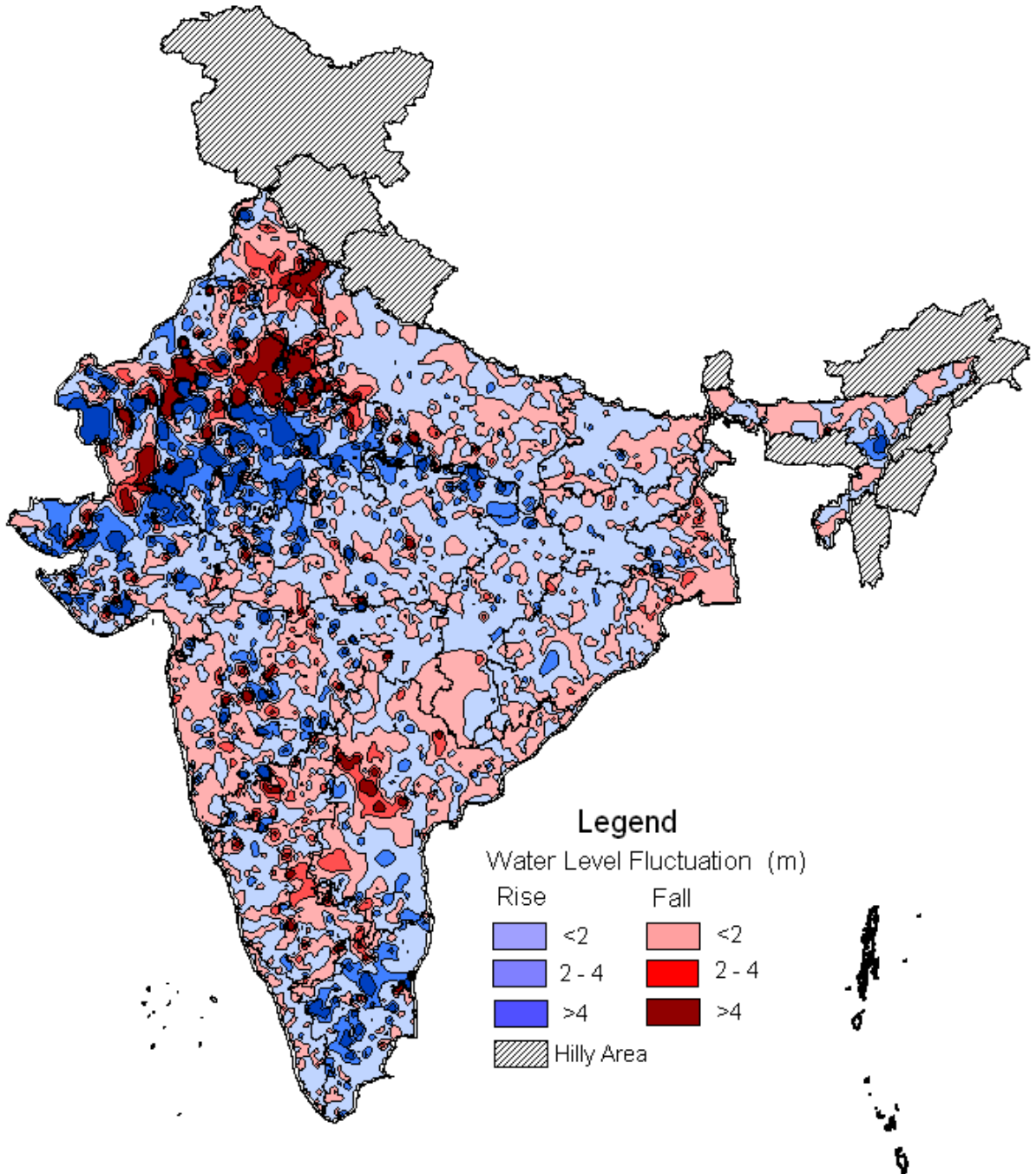
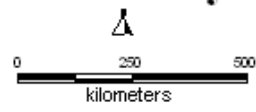


Legend

Water Level Fluctuation (m)








Rise		Fall	
	<2		<2
	2 - 4		2 - 4
	>4		>4
	Hilly Area		

Water Level Fluctuation Decadal Mean January(2002- 2011) Vs January - 2012



Legend

Water Level Fluctuation (m)

Rise		Fall	
	<2		<2
	2 - 4		2 - 4
	>4		>4
	Hilly Area		

2.6 RAINFALL VARIATIONS

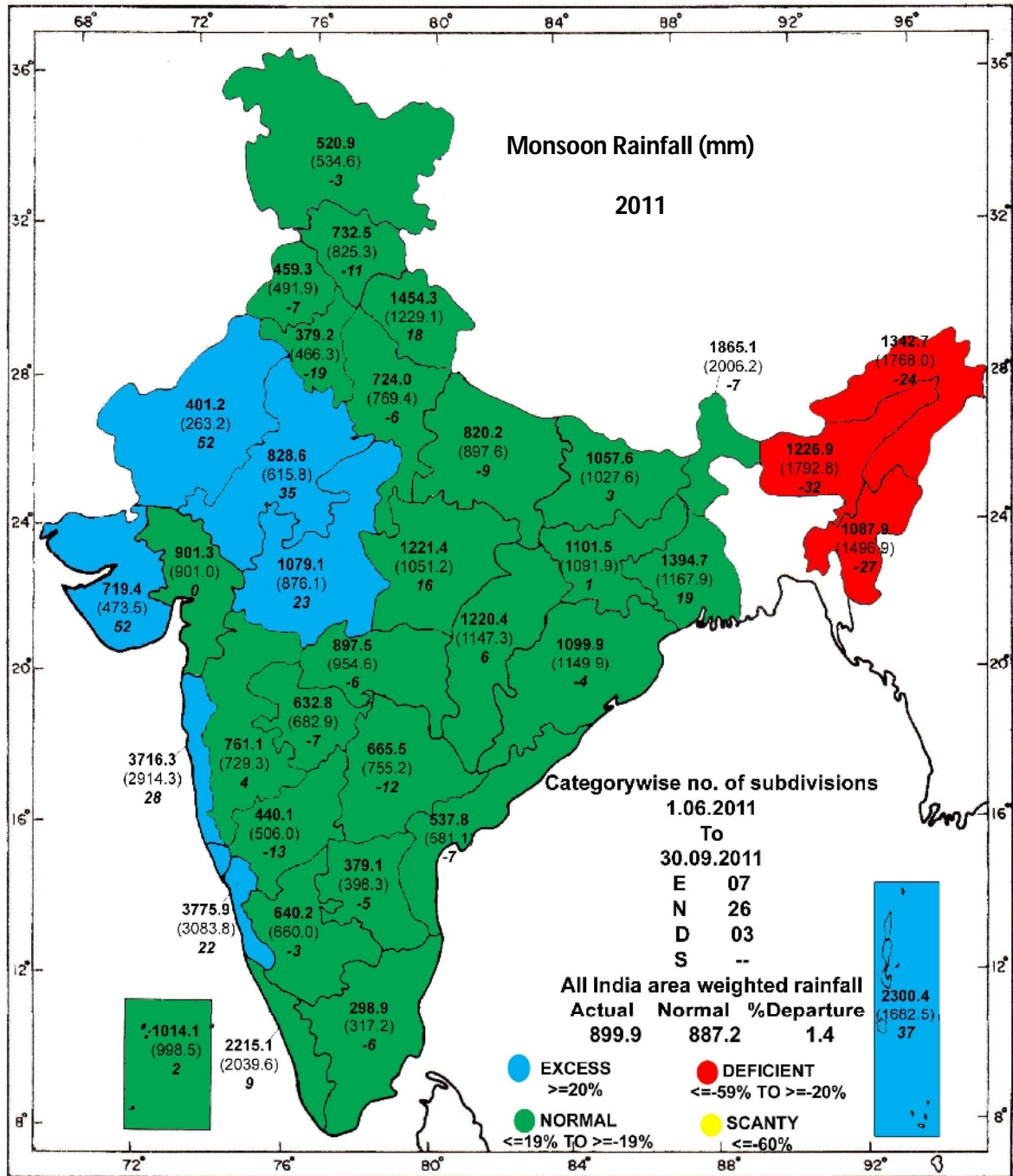
In India, rainfall is unevenly distributed spatially and temporally. From the perusal of Monsoon Rainfall 2011 map given as Plate XXII, it can be observed that the rainfall was excess in northwest parts of the country. In north eastern part of the country rainfall is deficient. Western Madhya Pradesh, Rajasthan, Gujarat and western ghat has received excess rainfall. Rest of the part of the country has received normal rainfall. A review of annual ground water availability, contribution from monsoon rainfall recharge and annual ground water draft in different states falling under overexploited category and the rainfall distribution in space brings a paradoxical situation in the sense that, withdrawal of ground water is not solely responsible for declining trends, the scanty and low rainfall resulting in meager monsoon recharge is equally important. Majority of the ground water stress areas categorized as overexploited and critical units also lies in these states.

The cumulative seasonal rainfall from 1st June to 30th September 2011 was excess in 7 meteorological subdivisions (21% of the total area of the country), normal in 26 meteorological subdivisions (71% of the total area of the country) and deficient in 3 meteorological subdivisions (8% the total area of the country). Three subdivisions (Arunachal Pradesh, Assam & Meghalaya, and NMMT) from the eastern part of the country recorded deficient rainfall.

The southwest monsoon season (June to September) rainfall for the country as a whole and the four broad geographical regions are as follows:

Region	Actual (mm)	Long Period Average (LPA) (mm)	Actual for 2011 (% of LPA)	Coefficient Of Variation (CV) (% of LPA)
All- India	899.9	887.5	101	10.7
Northwest(NW) India	654.8	615.0	107	18.9
Central India	1073.6	975.5	110	15.0
South peninsula	715.2	715.5	100	15.3
Northeast (NE) India	1233.6	1438.3	86	12.6

The seasonal rainfall is classified as normal when the actual rainfall is within $LPA \pm CV$. The CV for season rainfall over various regions is given in the table above. Similarly seasonal rainfall is classified as deficient when the actual rainfall is less than $(LPA - CV)$ and as excess when the actual rainfall is more than $(LPA+CV)$. In 2011, the southwest monsoon season (June to September) rainfall over the country as a whole was 101% of LPA. Seasonal rainfall over NE India was below its LPA by 14%. Seasonal rainfall over south Peninsula was normal. However, the seasonal rainfall over Central India and NW India were 10% and 7% above their LPA values respectively.



Source: IMD

3.0 GROUND WATER RESOURCE AVAILABILITY AND DEVELOPMENT STATUS

3.1 DYNAMIC FRESH GROUND WATER RESOURCE

The dynamic ground water resources of the States and Union Territories have been assessed jointly by the CGWB and State Ground Water Departments under the supervision of the State level Committees. The base year of computation of the resources is 2008-09. The ground water resources in some of the north eastern states viz. Arunachal Pradesh, Manipur, Mizoram, Nagaland and Tripura have been estimated by CGWB in absence of active participation of State Govt. The ground water assessment figures computed at the State Level are presented in the following compilation. The dynamic ground water resources are also known as Annual Replenishable Ground Water Resources since it replenished/ recharged every year. The Annual Replenishable Ground Water Resource for the entire country has been assessed as 431 billion cubic meter (bcm). The major source of ground water recharge is the monsoon rainfall. About 57% of the annual replenishable resources i.e. 246 bcm are contributed by monsoon rainfall recharge. The overall contribution of rainfall to country's Annual Replenishable Ground Water Resource is 68% and the share of other sources viz. canal seepage, return flow from irrigation, recharge from tanks, ponds, and water conservations structures taken together is 32%. State-wise Ground Water Resources of India as on March, 2009 is given in **Table-3**. **Plate XXIV** presents the over-all scenario of ground water resource utilization and availability of the country. The contribution from other sources such as canal seepage, return flow from irrigation, seepage from water bodies etc in Annual Replenishable Ground Water Resource is more than of 33% in the states of Andhra Pradesh, Delhi, Haryana, Gujarat, Goa, Jammu & Kashmir, Karnataka, Punjab, Tamil Nadu, Uttar Pradesh and UT of Puducherry. South-west monsoon being the most prevalent contributor of rainfall in the country, about 73% of country's Annual Ground Water Recharge takes place during the Kharif period of cultivation. Keeping 35 bcm for natural discharge, the Net Annual Ground Water Availability for the entire country is 396 bcm.

The spatial variation in annual replenishable ground water resources is presented in Plate XII. Volumetric estimates are dependent on the areal extent of the assessment unit. Thus, relative comparison of ground water resource of different assessment units based on volumetric estimates is not possible. Hence volumetric estimates of annual replenishable ground water resources have been divided by the area of the assessment unit to arrive at estimates per unit area (in meter). Replenishable Groundwater resource is significantly high in the Indus-Ganga-Brahmaputra alluvial belt in the North, East and North East India covering the states of Punjab, Haryana, Uttar Pradesh, Bihar, West Bengal and valley areas of North Eastern States, where rainfall is plenty and thick piles of unconsolidated alluvial formations are conducive for recharge. Annual Replenishable Ground Water Resource in these regions varies from 0.25 to more than 0.5 m. The coastal alluvial belt particularly Eastern Coast also has relatively high replenishable ground water resources, in the range 0.25 to more than 0.5 m. In western India, particularly Rajasthan and parts of northern Gujarat which have arid climate, the annual replenishable ground water resources are scanty, mostly up to 0.025 m. Similarly, in major parts of the southern peninsular India covered with hard rock terrains, annual replenishable ground water recharge is less, only up to 0.10 m. This is primarily because of comparatively low infiltration and storage capacity of the rock formations prevailing in the region. The remaining part of Central India is mostly characterized by moderate recharge in the range of 0.10-0.25 m.

The overall estimates of annual replenishable ground water resources of the entire country shows a marginal decrease in the present estimate as compared to the 2004 by about 2 bcm. However there are significant variations in the recharge estimates of some of the States. The main reasons for this can be attributed to – changing ground water regime, widespread implementation of rainwater harvesting and water conservation measures, changes in rainfall pattern, adoption of revised values of parameters like Specific Yield which were estimated based on subsequent field studies and availability of improved database which helped in refinements in assessment and assessment in additional areas which were not estimated in the 2004 exercise.

3.2 STAGE OF GROUND WATER DEVELOPMENT

The stage of ground water development in the country is 61%. The status of ground water development is very high in the states of Delhi, Haryana, Punjab and Rajasthan, where the Stage of Ground Water Development is more than 100%, which implies that in the states the annual ground water consumption is more than annual ground water recharge. In the states of Gujarat, Tamil Nadu and Uttar Pradesh and UTs of Daman & Diu, Lakshadweep and Puducherry, the stage of ground water development is 70% and above. In rest of the states / UTs the stage of ground water development is below 70%. The ground water development activities have increased generally in the areas where future scope for ground water development existed. This has resulted in increase in stage of ground water development from 58% (2004) to 61% (2009).

3.3 CATEGORIZATION OF ASSESSMENT UNITS

Out of 5842 numbers of assessed administrative units (Blocks/ Talukas/ Mandals/ Districts), 802 units are Over-exploited, 169 units are Critical, 523 units are Semi-critical, and 4277 units are Safe. Apart from these, there are 71 assessment units which are completely Saline (Table-4). Number of Over-exploited and Critical administrative units are significantly higher (more than 15% of the total assessed units) in Delhi, Gujarat, Haryana, Himachal Pradesh, Karnataka, Punjab, Rajasthan and Tamil Nadu and also the UTs of Daman & Diu and Puducherry (Plate XXIII).

CATEGORIZATION OF BLOCKS/ MANDALS/ TALUKAS AS ON 31 MARCH, 2009

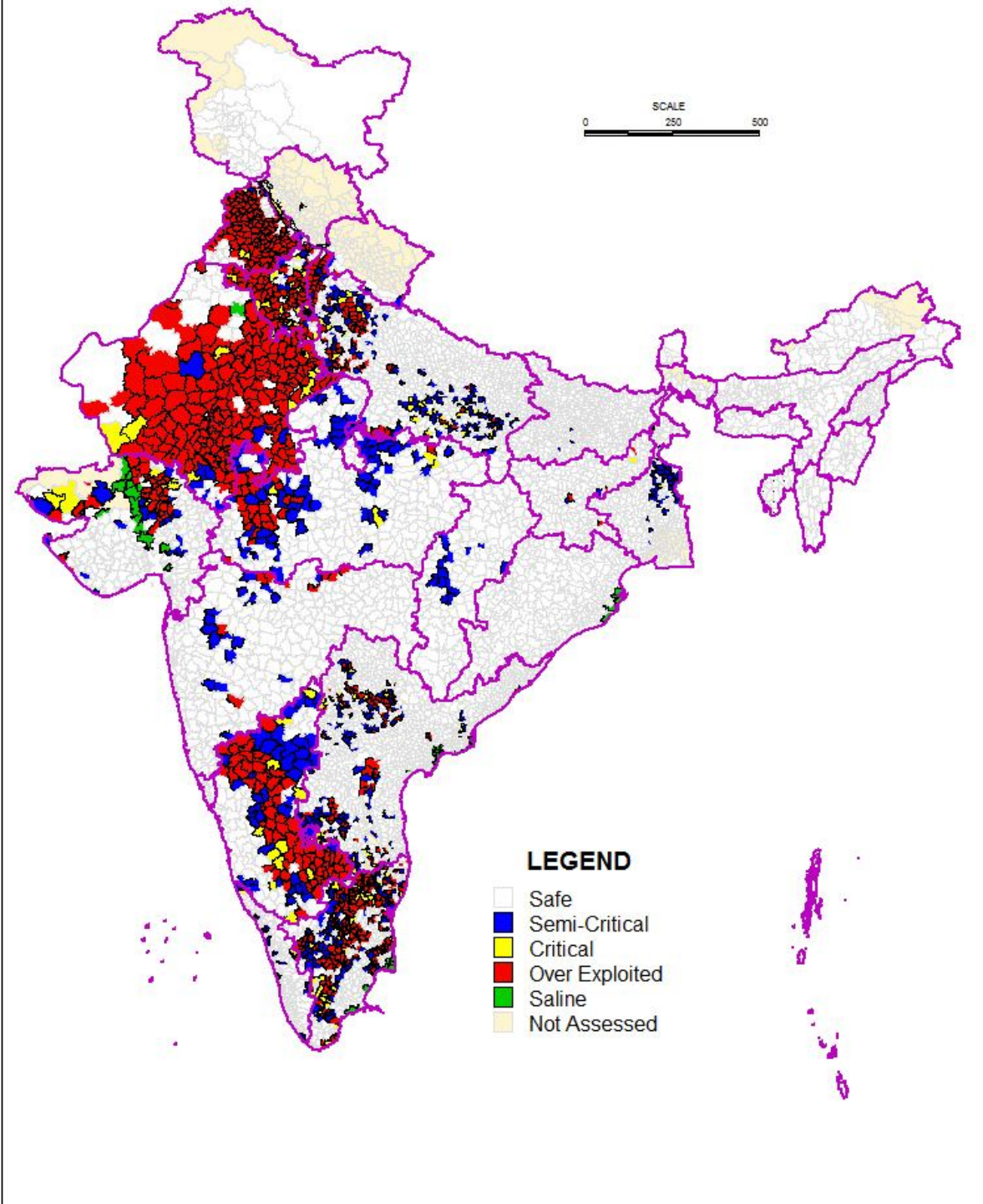
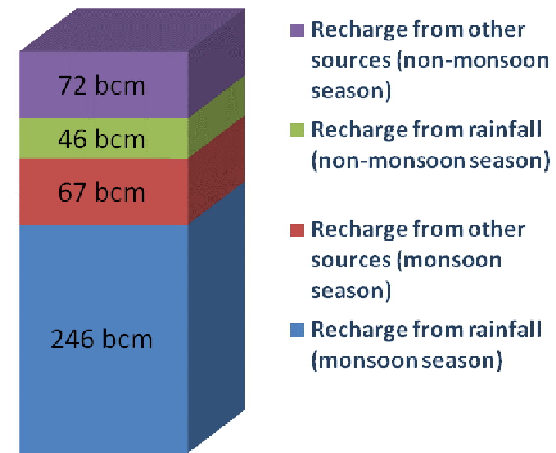
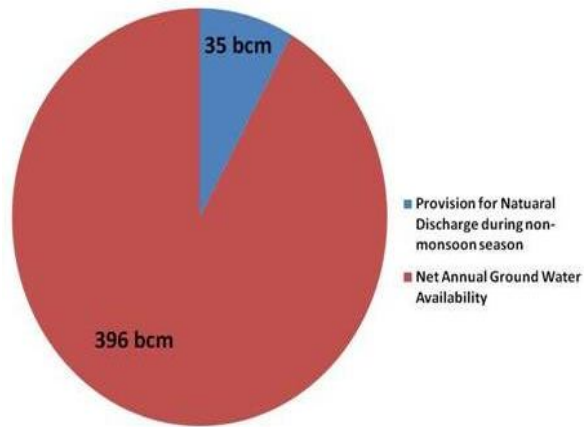


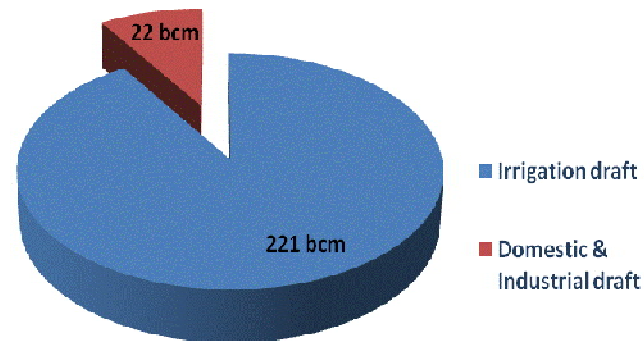
TABLE-3 STATE-WISE GROUND WATER RESOURCES AVAILABILITY, UTILIZATION AND STAGE OF DEVELOPMENT, INDIA

Sl. No.	States / Union Territories	Annual Replenishable Ground Water Resource				Natural Discharge during non-monsoon season	Net Annual Ground Water Availability	Annual Ground Water Draft			Projected demand for Domestic and Industrial uses up to 2025	Ground Water Availability for future irrigation use	Stage of Ground Water Development (%)	
		Monsoon Season		Non-monsoon Season				Total	Irrigation	Domestic and industrial uses				Total
		Recharge from rainfall	Recharge from other sources	Recharge from rainfall	Recharge from other sources									
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	States													
1	Andhra Pradesh	15.12	6.52	5.49	6.70	33.83	3.07	30.76	12.61	1.54	14.15	2.69	15.89	46
2	Arunachal Pradesh	3.41	0.0003	1.04	0.0004	4.45	0.45	4.01	0.002	0.001	0.003	0.01	4.00	0.07
3	Assam	18.95	2.20	8.62	0.59	30.35	2.537	27.81	5.333	0.69	6.026	0.977	21.50	22
4	Bihar	18.92	3.92	3.40	2.38	28.63	2.42	26.21	9.79	1.56	11.36	2.56	13.85	43
5	Chhattisgarh	9.85	0.56	0.91	0.90	12.22	0.64	11.58	3.08	0.52	3.60	0.64	7.85	31
6	Delhi	0.11	0.10	0.02	0.08	0.31	0.02	0.29	0.14	0.26	0.40	0.26	0.01	138
7	Goa	0.135	0.008	0.006	0.072	0.221	0.088	0.133	0.014	0.030	0.044	0.037	0.082	33
8	Gujarat	12.21	2.76	0.00	3.46	18.43	1.08	17.35	11.93	1.05	12.99	1.47	5.32	75
9	Haryana	3.53	2.69	1.01	3.25	10.48	0.68	9.80	11.71	0.72	12.43	0.79	-2.70	127
10	Himachal Pradesh	0.40	0.02	0.12	0.04	0.59	0.06	0.53	0.23	0.08	0.31	0.08	0.22	58
11	Jammu & Kashmir	1.45	1.69	0.36	0.19	3.70	0.37	3.33	0.15	0.58	0.73	0.82	2.35	22
12	Jharkhand	4.46	0.14	1.11	0.26	5.96	0.55	5.41	1.17	0.44	1.61	0.62	3.62	30
13	Karnataka	6.30	4.28	2.73	3.51	16.81	2.00	14.81	9.01	1.00	10.01	1.26	6.18	68
14	Kerala	4.77	0.06	0.64	1.15	6.62	0.59	6.03	1.30	1.50	2.81	1.71	3.02	47
15	Madhya Pradesh	27.49	1.10	0.80	4.56	33.95	1.70	32.25	16.66	1.33	17.99	1.83	13.76	56
16	Maharashtra	22.04	2.67	1.90	9.12	35.73	1.93	33.81	15.91	1.04	16.95	2.00	16.32	50
17	Manipur	0.24	0.01	0.19	0.01	0.44	0.04	0.40	0.0033	0.0007	0.0040	0.05	0.35	1
18	Meghalaya	1.0191	0.0000	0.2152	0.0000	1.2343	0.1234	1.1109	0.0015	0.0002	0.0017	0.0964	1.0131	0.15
19	Mizoram	0.03	Negligible	0.02	Negligible	0.044	0.004	0.039	0.000	0.0004	0.0004	0.0008	0.039	1
20	Nagaland	0.28	-	0.14	-	0.42	0.04	0.38	-	0.008	0.008	0.01	0.36	2.14
21	Orissa	11.29	2.53	1.33	2.63	17.78	1.09	16.69	3.47	0.89	4.36	1.27	11.94	26

22	Punjab	5.86	10.57	1.34	4.78	22.56	2.21	20.35	33.97	0.69	34.66	0.95	-14.57	170
23	Rajasthan	8.76	0.67	0.32	2.11	11.86	1.07	10.79	12.86	1.65	14.52	1.84	0.75	135
24	Sikkim	-	-	-	-	-	-	0.046	0.003	0.007	0.010	0.012	0.031	21
25	Tamil Nadu	7.54	11.05	2.16	2.18	22.94	2.29	20.65	14.71	1.85	16.56	1.97	4.70	80
26	Tripura	1.66	0	0.73	0.57	2.97	0.23	2.74	0.09	0.07	0.16	0.23	2.42	6
27	Uttar Pradesh	40.78	11.37	5.41	17.70	75.25	6.68	68.57	46.00	3.49	49.48	5.36	17.22	72
28	Uttarakhand	1.26	0.24	0.20	0.46	2.17	0.10	2.07	1.01	0.03	1.05	0.08	0.98	51
29	West Bengal	18.17	2.16	5.43	4.74	30.50	2.92	27.58	10.11	0.79	10.91	1.02	16.75	40
	Total States	246.05	67.32	45.63	71.45	430.45	34.99	395.52	221.29	21.83	243.14	30.65	153.26	61
	Union Territories													
1	Andaman & Nicobar	0.245	-	0.065	-	0.310	0.012	0.298	0.0006	0.010	0.011	0.015	0.283	4
2	Chandigarh	0.015	0.001	0.005	0.001	0.022	0.002	0.020	0.000	0.000	0.000	0.000	0.020	0.000
3	Dadra & Nagar Haveli	0.043	0.003	0.009	0.005	0.059	0.003	0.056	0.001	0.007	0.009	0.009	0.047	15
4	Daman & Diu	0.010	0.001	0.000	0.002	0.012	0.001	0.011	0.008	0.003	0.011	0.004	-0.001	99
5	Lakshadweep	-	-	-	-	0.0105	0.0070	0.0035	0.0000	0.0026	0.0026	0.0000	0.0000	74
6	Puducherry	0.086	0.056	0.008	0.022	0.171	0.017	0.154	0.121	0.029	0.150	0.032	0.050	98
	Total UT's	0.40	0.06	0.09	0.03	0.59	0.04	0.54	0.13	0.05	0.18	0.06	0.40	34
	Grand Total	246.45	67.38	45.71	71.48	431.03	35.03	396.06	221.42	21.89	243.32	30.71	153.66	61



Annual Replenishable Ground Water Resources (431 bcm)



Annual Ground Water Draft (243 bcm)

TABLE – 4 CATEGORISATION OF BLOCKS/MANDALS/TALUKAS IN INDIA

S. No.	States / Union Territories	Total No. of Assessed Units	Safe		Semi-critical		Critical		Over-exploited		Remarks
			Nos.	%	Nos.	%	Nos.	%	Nos.	%	
	States										
1	Andhra Pradesh	1108	867	78	93	8	26	2	84	8	38- Salinity Affected
2	Arunachal Pradesh	16	16	100	0	0	0	0	0	0	
3	Assam	23	23	100	0	0	0	0	0	0	
4	Bihar	533	529	99	4	1	0	0	0	0	
5	Chhattisgarh	146	132	90	14	10	0	0	0	0	
6	Delhi	27	2	7	5	19	0	0	20	74	
7	Goa	11	11	100	0	0	0	0	0	0	
8	Gujarat	223	156	70	20	9	6	3	27	12	14 - Salinity Affected
9	Haryana	116	18	16	9	8	21	18	68	59	
10	Himachal Pradesh	8	6	75	0	0	1	13	1	13	
11	Jammu & Kashmir	14	14	100	0	0	0	0	0	0	
12	Jharkhand	208	200	96	2	1	2	1	4	2	
13	Karnataka	270	154	57	34	13	11	4	71	26	
14	Kerala	152	126	83	22	14	3	2	1	1	
15	Madhya Pradesh	313	224	72	61	19	4	1	24	8	
16	Maharashtra	353	324	92	19	5	1	0	9	3	
17	Manipur	8	8	100	0	0	0	0	0	0	
18	Meghalaya	7	7	100	0	0	0	0	0	0	
19	Mizoram	22	22	100	0	0	0	0	0	0	
20	Nagaland	8	8	100	0	0	0	0	0	0	
21	Orissa	314	308	98	0	0	0	0	0	0	6 - Salinity Affected
22	Punjab	138	23	17	2	1	3	2	110	80	

S. No.	States / Union Territories	Total No. of Assessed Units	Safe	Semi-critical	Critical	Over-exploited	Remarks				
			Nos.	%	Nos.	%	Nos.	%	Nos.	%	
23	Rajasthan	239	31	13	16	7	25	10	166	69	1 - Salinity Affected
24	Sikkim	4	4	100	0	0	0	0	0	0	
25	Tamil Nadu	386	136	35	67	17	33	9	139	36	11 - Salinity Affected
26	Tripura	39	39	100	0	0	0	0	0	0	
27	Uttar Pradesh	820	605	74	107	13	32	4	76	9	
28	Uttarakhand	17	11	65	5	29	1	6	0	0	
29	West Bengal	269	231	86	38	14	0	0	0	0	
	Total States	5792	4235	73	518	9	169	3	800	14	
	Union Territories										
1	Andaman & Nicobar	33	33	100	0	0	0	0	0	0	
2	Chandigarh	1	1	100	0	0	0	0	0	0	
3	Dadra & Nagar Haveli	1	1	100	-	-	-	-	-	-	-
4	Daman & Diu	2	0	0	1	50	0	0	1	50	
5	Lakshadweep	9	5	56	4	44	0	0	0	0	
6	Puducherry	4	2	50	0	0	0	0	1	25	1 - Salinity Affected
	Total Union Territories	50	42	84	5	10	0	0	2	4	
	Grand Total	5842	4277	73	523	9	169	3	802	14	71 - Salinity Affected

Blocks- Bihar, Chhattisgarh, Haryana, Jharkhand, Kerala, M.P., Manipur, Mizoram, Orissa, Punjab, Rajasthan, Tamil Nadu, Tripura, UP, Uttarakhand, WB

Talukas (Command/Non-Command) -Karnataka

Mandal - Andhra Pradesh

Talukas - Goa, Gujarat, Maharashtra, NCT Delhi

Districts (Valley) - Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Meghalaya, Manipur, Mizoram, Nagaland, Sikkim, Tripura

Islands - Lakshadweep, Andaman & Nicobar Islands

Region - Puducherry

UT - Chandigarh, Dadra & Nagar Haveli, Daman & Diu

State-wise Depth to water Level and Distribution of Percentage of Wells for the Period of Pre Monsoon-2011

Annexure- I

S. No.	Name of State	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	679	0.05	41.80	84	12.37	250	36.82	248	36.52	92	13.55	4	0.59	1	0.15
2	Arunachal Pradesh	12	1.59	11.01	2	16.67	5	41.67	3	25.00	2	16.67	0	0.00	0	0.00
3	Assam	209	0.05	19.58	40	19.14	122	58.37	42	20.10	5	2.39	0	0.00	0	0.00
4	Bihar	269	1.16	15.00	8	2.97	90	33.46	150	55.76	21	7.81	0	0.00	0	0.00
5	Chandigarh	18	2.65	37.67	0	0.00	3	16.67	6	33.33	5	27.78	4	22.22	0	0.00
6	Chhattisgarh	360	0.53	24.90	12	3.33	78	21.67	200	55.56	69	19.17	1	0.28	0	0.00
7	Dadra & Nagar Haveli	6	2.35	9.95	0	0.00	3	50.00	3	50.00	0	0.00	0	0.00	0	0.00
8	Delhi	142	0.96	66.45	8	5.63	35	24.65	38	26.76	33	23.24	18	12.68	10	7.04
9	Goa	44	1.21	26.09	3	6.82	20	45.45	14	31.82	6	13.64	1	2.27	0	0.00
10	Gujarat & Daman-Diu	665	0.34	64.58	27	4.06	141	21.20	239	35.94	199	29.92	53	7.97	6	0.90
11	Haryana	315	0.53	63.30	22	6.98	80	25.40	79	25.08	90	28.57	41	13.02	3	0.95
12	Himachal Pradesh	77	0.38	29.95	8	10.39	24	31.17	23	29.87	19	24.68	3	3.90	0	0.00
13	Jammu & Kashmir	134	0.82	37.40	17	12.69	68	50.75	27	20.15	12	8.96	10	7.46	0	0.00
14	Jharkhand	180	1.61	19.80	2	1.11	16	8.89	106	58.89	56	31.11	0	0.00	0	0.00
15	Karnataka	901	0.38	30.68	79	8.77	259	28.75	374	41.51	186	20.64	3	0.33	0	0.00
16	Kerala	700	0.12	41.20	68	9.71	200	28.57	310	44.29	109	15.57	12	1.71	1	0.14
17	Madhya Pradesh	857	1.75	47.00	1	0.12	69	8.05	364	42.47	385	44.92	36	4.20	2	0.23
18	Maharashtra	812	0.10	62.58	40	4.93	192	23.65	423	52.09	141	17.36	13	1.60	3	0.37
19	Meghalaya	27	1.03	8.09	4	14.81	21	77.78	2	7.41	0	0.00	0	0.00	0	0.00
20	Orissa	873	0.00	16.55	85	9.74	359	41.12	390	44.67	39	4.47	0	0.00	0	0.00
21	Pondicherry	7	2.04	3.66	0	0.00	7	100.00	0	0.00	0	0.00	0	0.00	0	0.00
22	Punjab	193	0.67	33.00	8	4.15	32	16.58	53	27.46	70	36.27	30	15.54	0	0.00
23	Rajasthan	824	0.65	111.70	14	1.70	57	6.92	179	21.72	246	29.85	174	21.12	154	18.69
24	Tamil Nadu	654	0.55	50.40	64	9.79	258	39.45	228	34.86	79	12.08	18	2.75	7	1.07
25	Tripura	27	1.39	6.60	3	11.11	16	59.26	8	29.63	0	0.00	0	0.00	0	0.00
26	Uttar Pradesh	723	0.51	40.51	9	1.24	261	36.10	295	40.80	136	18.81	21	2.90	1	0.14
27	Uttaranchal	46	2.03	18.29	0	0.00	19	41.30	15	32.61	12	26.09	0	0.00	0	0.00
28	West Bengal	520	0.32	24.90	12	2.31	154	29.62	220	42.31	122	23.46	12	2.31	0	0.00
	Total	10274			620	6.03	2839	27.63	4039	39.31	2134	20.77	454	4.42	188	1.83

State-wise Depth to water Level and Distribution of Percentage of Wells for the Period of Aug-2011

Annexure - II

S. No.	Name of State	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	706	0.00	41.00	206	29.18	243	34.42	193	27.34	61	8.64	2	0.28	1	0.14
2	Arunachal Pradesh	6	0.90	2.90	3	50.00	3	50.00	0	0.00	0	0.00	0	0.00	0	0.00
3	Assam	206	0.01	18.59	123	59.71	66	32.04	13	6.31	4	1.94	0	0.00	0	0.00
4	Bihar	276	0.03	15.07	100	36.23	139	50.36	36	13.04	1	0.36	0	0.00	0	0.00
5	Chandigarh	23	1.95	54.12	1	4.35	3	13.04	5	21.74	7	30.43	4	17.39	3	13.04
6	Chhattisgarh	292	0.00	24.90	164	56.16	90	30.82	29	9.93	7	2.40	2	0.68	0	0.00
7	Dadra & Nagar Haveli	6	1.10	8.50	2	33.33	2	33.33	2	33.33	0	0.00	0	0.00	0	0.00
8	Delhi	134	0.58	66.80	26	19.40	23	17.16	28	20.90	33	24.63	14	10.45	10	7.46
9	Goa	41	0.41	14.29	23	56.10	12	29.27	4	9.76	2	4.88	0	0.00	0	0.00
10	Gujarat	725	0.03	53.78	253	34.90	220	30.34	134	18.48	77	10.62	37	5.10	4	0.55
11	Haryana	299	0.07	63.62	44	14.72	57	19.06	69	23.08	74	24.75	51	17.06	4	1.34
12	Himachal Pradesh	73	0.04	28.36	22	30.14	30	41.10	11	15.07	9	12.33	1	1.37	0	0.00
13	Jammu & Kashmir	128	0.09	28.75	66	51.56	33	25.78	14	10.94	6	4.69	9	7.03	0	0.00
14	Jharkhand	179	0.07	11.09	64	35.75	69	38.55	45	25.14	1	0.56	0	0.00	0	0.00
15	Karnataka	774	0.03	24.85	176	22.74	265	34.24	226	29.20	105	13.57	2	0.26	0	0.00
16	Kerala	646	0.00	30.20	198	30.65	208	32.20	193	29.88	41	6.35	6	0.93	0	0.00
17	Madhya Pradesh	951	0.00	47.00	385	40.48	298	31.34	169	17.77	77	8.10	20	2.10	2	0.21
18	Maharashtra	972	0.10	42.00	329	33.85	327	33.64	236	24.28	72	7.41	7	0.72	1	0.10
19	Manipur	1	0.85	0.85	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00
20	Meghalaya	27	0.54	7.22	13	48.15	13	48.15	1	3.70	0	0.00	0	0.00	0	0.00
21	Orissa	846	0.00	12.24	445	52.60	312	36.88	84	9.93	5	0.59	0	0.00	0	0.00
22	Pondicherry	9	3.09	36.12	0	0.00	4	44.44	0	0.00	4	44.44	1	11.11	0	0.00
23	Punjab	166	0.12	36.26	18	10.84	30	18.07	37	22.29	48	28.92	33	19.88	0	0.00
24	Rajasthan	863	0.00	115.10	121	14.02	107	12.40	151	17.50	170	19.70	159	18.42	155	17.96
25	Tamil Nadu	969	0.50	38.22	89	9.18	305	31.48	325	33.54	176	18.16	74	7.64	0	0.00
26	Tripura	29	0.10	5.67	16	55.17	12	41.38	1	3.45	0	0.00	0	0.00	0	0.00
27	Uttar Pradesh	761	0.03	33.84	272	35.74	217	28.52	152	19.97	98	12.88	22	2.89	0	0.00
28	Uttaranchal	50	0.07	60.66	20	40.00	17	34.00	7	14.00	6	12.00	0	0.00	0	0.00
29	West Bengal	776	0.02	21.45	317	40.85	277	35.70	103	13.27	75	9.66	4	0.52	0	0.00
	Total	10934			3497	31.98	3382	30.93	2268	20.74	1159	10.60	448	4.10	180	1.65

State-wise Depth to water Level and Distribution of Percentage of Wells for the Period of November-2011

Annexure - III

S. No.	Name of State	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	697	0.00	44.30	182	26.11	252	36.15	194	27.83	68	9.76	0	0.00	1	0.14
2	Arunachal Pradesh	11	1.87	6.07	2	18.18	7	63.64	2	18.18	0	0.00	0	0.00	0	0.00
3	Assam	236	0.22	16.24	85	36.02	129	54.66	19	8.05	3	1.27	0	0.00	0	0.00
4	Bihar	266	0.40	11.85	66	24.81	159	59.77	40	15.04	1	0.38	0	0.00	0	0.00
5	Chandigarh	25	2.38	54.60	0	0.00	4	16.00	6	24.00	7	28.00	5	20.00	3	12.00
6	Chhattisgarh	308	0.51	19.00	52	16.88	186	60.39	63	20.45	7	2.27	0	0.00	0	0.00
7	Dadra & Nagar Haveli	6	2.70	8.68	0	0.00	5	83.33	1	16.67	0	0.00	0	0.00	0	0.00
8	Delhi	131	0.91	66.73	14	10.69	32	24.43	28	21.37	33	25.19	13	9.92	11	8.40
9	Goa	40	0.45	14.52	6	15.00	17	42.50	15	37.50	2	5.00	0	0.00	0	0.00
10	Gujarat	741	0.12	98.80	120	16.19	273	36.84	204	27.53	93	12.55	46	6.21	5	0.67
11	Haryana	308	0.21	63.20	54	17.53	55	17.86	70	22.73	80	25.97	46	14.94	3	0.97
12	Himachal Pradesh	78	0.46	27.32	16	20.51	27	34.62	24	30.77	7	8.97	4	5.13	0	0.00
13	Jammu & Kashmir	130	0.20	35.27	39	30.00	57	43.85	19	14.62	9	6.92	6	4.62	0	0.00
14	Jharkhand	167	0.89	13.33	18	10.78	96	57.49	50	29.94	3	1.80	0	0.00	0	0.00
15	Karnataka	873	0.05	26.75	163	18.67	321	36.77	267	30.58	119	13.63	3	0.34	0	0.00
16	Kerala	646	0.15	34.40	156	24.15	212	32.82	213	32.97	59	9.13	6	0.93	0	0.00
17	Madhya Pradesh	868	0.25	47.00	92	10.60	387	44.59	282	32.49	84	9.68	21	2.42	2	0.23
18	Maharastra	1036	0.14	27.10	171	16.51	502	48.46	295	28.47	62	5.98	6	0.58	0	0.00
19	Manipur	1	2.70	2.70	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00	0	0.00
20	Meghalaya	27	0.40	4.71	9	33.33	18	66.67	0	0.00	0	0.00	0	0.00	0	0.00
21	Orissa	889	0.02	11.32	263	29.58	500	56.24	122	13.72	4	0.45	0	0.00	0	0.00
22	Pondicherry	7	0.37	2.50	5	71.43	2	28.57	0	0.00	0	0.00	0	0.00	0	0.00
23	Punjab	189	0.06	34.20	11	5.82	38	20.11	38	20.11	65	34.39	37	19.58	0	0.00
24	Rajasthan	850	0.01	116.40	83	9.76	145	17.06	162	19.06	154	18.12	151	17.76	155	18.24
25	Tamil Nadu	888	0.00	53.00	269	30.29	282	31.76	199	22.41	97	10.92	38	4.28	3	0.34
26	Tripura	22	1.69	5.66	3	13.64	17	77.27	2	9.09	0	0.00	0	0.00	0	0.00
27	Uttar Pradesh	802	0.47	37.20	131	16.33	360	44.89	177	22.07	114	14.21	20	2.49	0	0.00
28	Uttaranchal	47	0.23	16.23	10	21.28	18	38.30	11	23.40	8	17.02	0	0.00	0	0.00
29	West Bengal	786	0.02	22.39	146	18.58	419	53.31	136	17.30	78	9.92	7	0.89	0	0.00
	Total	11075			2166	19.56	4521	40.82	2639	23.83	1157	10.45	409	3.69	183	1.65

State-wise Depth to water Level and Distribution of Percentage of Wells for the Period of January-2012

Annexure - IV

S. No.	Name of State	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (mbgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	701	0.00	43.61	126	17.97	257	36.66	223	31.81	89	12.70	5	0.71	1	0.14
2	Arunachal Pradesh	8	1.55	10.26	1	12.50	5	62.50	1	12.50	1	12.50	0	0.00	0	0.00
3	Assam	206	0.06	16.46	36	17.48	132	64.08	36	17.48	2	0.97	0	0.00	0	0.00
4	Bihar	263	0.34	11.41	31	11.79	167	63.50	64	24.33	1	0.38	0	0.00	0	0.00
5	Chandigarh	16	3.11	51.92	0	0.00	2	12.50	2	12.50	7	43.75	3	18.75	2	12.50
6	Chhattisgarh	349	0.05	21.97	52	14.90	171	49.00	106	30.37	19	5.44	1	0.29	0	0.00
7	Dadra & Nagar Haveli	6	3.28	10.40	0	0.00	3	50.00	2	33.33	1	16.67	0	0.00	0	0.00
8	Delhi	132	0.89	66.84	14	10.61	32	24.24	30	22.73	31	23.48	14	10.61	11	8.33
9	Goa	35	1.05	14.96	4	11.43	19	54.29	9	25.71	3	8.57	0	0.00	0	0.00
10	Gujarat	756	0.35	54.38	67	8.86	222	29.37	268	35.45	132	17.46	63	8.33	4	0.53
11	Haryana	170	0.43	68.65	17	10.00	20	11.76	32	18.82	54	31.76	43	25.29	4	2.35
12	Himachal Pradesh	74	0.46	28.50	12	16.22	24	32.43	23	31.08	12	16.22	3	4.05	0	0.00
13	Jammu & Kashmir	132	0.03	35.65	24	18.18	66	50.00	25	18.94	10	7.58	7	5.30	0	0.00
14	Jharkhand	181	1.43	11.96	6	3.31	84	46.41	88	48.62	3	1.66	0	0.00	0	0.00
15	Karnataka	889	0.04	29.83	89	10.01	285	32.06	346	38.92	167	18.79	2	0.22	0	0.00
16	Kerala	679	0.05	37.60	94	13.84	212	31.22	274	40.35	87	12.81	12	1.77	0	0.00
17	Madhya Pradesh	935	0.40	41.35	33	3.53	297	31.76	413	44.17	167	17.86	24	2.57	1	0.11
18	Maharastra	1070	0.03	54.95	73	6.82	410	38.32	463	43.27	106	9.91	16	1.50	2	0.19
19	Manipur	2	3.11	5.62	0	0.00	1	50.00	1	50.00	0	0.00	0	0.00	0	0.00
20	Meghalaya	29	0.53	7.60	6	20.69	19	65.52	4	13.79	0	0.00	0	0.00	0	0.00
21	Orissa	865	0.00	11.80	115	13.29	467	53.99	274	31.68	9	1.04	0	0.00	0	0.00
22	Pondicherry	9	0.47	37.12	3	33.33	1	11.11	0	0.00	4	44.44	1	11.11	0	0.00
23	Punjab	184	0.12	43.60	14	7.61	35	19.02	37	20.11	66	35.87	31	16.85	1	0.54
24	Rajasthan	900	0.01	116.10	52	5.78	122	13.56	200	22.22	188	20.89	172	19.11	166	18.44
25	Tamil Nadu	952	0.00	40.50	305	32.04	311	32.67	198	20.80	93	9.77	44	4.62	1	0.11
26	Tripura	30	1.13	7.44	6	20.00	16	53.33	8	26.67	0	0.00	0	0.00	0	0.00
27	Uttar Pradesh	796	0.26	36.80	88	11.06	373	46.86	204	25.63	109	13.69	22	2.76	0	0.00
28	Uttaranchal	40	1.30	25.75	2	5.00	18	45.00	12	30.00	7	17.50	1	2.50	0	0.00
29	West Bengal	781	0.68	20.07	58	7.43	396	50.70	223	28.55	95	12.16	9	1.15	0	0.00
	Total	11190			1328	11.87	4167	37.24	3566	31.87	1463	13.07	473	4.23	193	1.72

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from Pre Monsoon 2010 to Pre Monsoon 2011

Annexure - V

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall	
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	561	0.02	11.27	0.01	10.10	272	48.48	87	15.51	29	5.17	142	25.31	16	2.85	15	2.67	388	69.16	173	30.84
2	Arunachal Pradesh	12	0.03	1.58	0.03	0.53	8	66.67	0	0.00	0	0.00	4	33.33	0	0.00	0	0.00	8	66.67	4	33.33
3	Assam	177	0.01	5.66	0.01	4.57	87	49.15	18	10.17	12	6.78	54	30.51	4	2.26	2	1.13	117	66.10	60	33.90
4	Bihar	192	0.01	6.10	0.01	4.53	69	35.94	6	3.13	6	3.13	99	51.56	11	5.73	1	0.52	81	42.19	111	57.81
5	Chandigarh	16	0.06	1.12	0.08	2.05	10	62.50	0	0.00	0	0.00	5	31.25	1	6.25	0	0.00	10	62.50	6	37.50
6	Chhattisgarh	306	0.01	11.58	0.02	7.35	141	46.08	30	9.80	20	6.54	91	29.74	18	5.88	6	1.96	191	62.42	115	37.58
7	Dadra & Nagar Haveli	5	0.50	2.45	-	-	4	80.00	1	20.00	0	0.00	0	0.00	0	0.00	0	0.00	5	100.00	0	0.00
8	Delhi	138	0.01	6.76	0.02	5.70	71	51.45	25	18.12	12	8.70	23	16.67	6	4.35	1	0.72	108	78.26	30	21.74
9	Goa	41	0.01	3.97	0.08	6.89	23	56.10	4	9.76	0	0.00	12	29.27	1	2.44	1	2.44	27	65.85	14	34.15
10	Gujarat	613	0.03	10.82	0.05	6.60	290	47.31	101	16.48	88	14.36	100	16.31	21	3.43	13	2.12	479	78.14	134	21.86
11	Haryana	179	0.03	10.82	0.05	6.60	120	67.04	17	9.50	10	5.59	28	15.64	0	0.00	4	2.23	147	82.12	32	17.88
12	Himachal Pradesh	69	0.02	10.46	0.02	1.61	42	60.87	5	7.25	2	2.90	20	28.99	0	0.00	0	0.00	49	71.01	20	28.99
13	Jammu & Kashmir	97	0.03	9.45	0.03	2.15	53	54.64	18	18.56	9	9.28	16	16.49	1	1.03	0	0.00	80	82.47	17	17.53
14	Jharkhand	141	0.09	6.42	0.03	5.25	45	31.91	4	2.84	4	2.84	73	51.77	14	9.93	1	0.71	53	37.59	88	62.41
15	Karnataka	747	0.01	13.75	0.01	14.32	308	41.23	62	8.30	50	6.69	237	31.73	52	6.96	38	5.09	420	56.22	327	43.78
16	Kerala	564	0.01	11.56	0.01	7.40	314	55.67	21	3.72	12	2.13	197	34.93	16	2.84	4	0.71	347	61.52	217	38.48
17	Madhya Pradesh	516	0.02	8.00	0.02	9.43	160	31.01	31	6.01	14	2.71	219	42.44	57	11.05	35	6.78	205	39.73	311	60.27
18	Maharashtra	729	0.03	23.53	0.02	11.23	292	40.05	109	14.95	100	13.72	192	26.34	23	3.16	13	1.78	501	68.72	228	31.28
19	Meghalaya	26	0.02	1.27	0.11	3.11	13	50.00	0	0.00	0	0.00	11	42.31	2	7.69	0	0.00	13	50.00	13	50.00
20	Orissa	738	0.01	8.18	0.01	7.84	433	58.67	83	11.25	24	3.25	174	23.58	20	2.71	4	0.54	540	73.17	198	26.83
21	Pondicherry	6	0.17	0.80	0.31	0.52	3	50.00	0	0.00	0	0.00	3	50.00	0	0.00	0	0.00	3	50.00	3	50.00
22	Punjab	143	0.03	9.10	0.02	7.99	66	46.15	10	6.99	2	1.40	57	39.86	7	4.90	1	0.70	78	54.55	65	45.45
23	Rajasthan	693	0.02	30.60	0.01	22.67	229	33.04	79	11.40	111	16.02	188	27.13	58	8.37	28	4.04	419	60.46	274	39.54
24	Tamil Nadu	590	0.01	21.24	0.01	18.70	227	38.47	100	16.95	100	16.95	122	20.68	17	2.88	24	4.07	427	72.37	163	27.63
25	Tripura	27	0.03	1.84	0.06	1.48	16	59.26	0	0.00	0	0.00	11	40.74	0	0.00	0	0.00	16	59.26	11	40.74
26	Uttar Pradesh	622	0.01	5.84	0.01	7.14	294	47.27	21	3.38	6	0.96	284	45.66	16	2.57	1	0.16	321	51.61	301	48.39
27	Uttaranchal	40	0.01	8.17	0.02	0.87	20	50.00	2	5.00	6	15.00	12	30.00	0	0.00	0	0.00	28	70.00	12	30.00
28	West Bengal	413	0.01	6.57	0.02	16.50	157	38.01	30	7.26	12	2.91	174	42.13	27	6.54	13	3.15	199	48.18	214	51.82
	Total	8401					3767	44.84	864	10.28	629	7.49	2548	30.33	388	4.62	205	2.44	5260	62.61	3141	37.39

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from Aug 2010 to Aug 2011

Annexure - VI

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall	
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	585	0.01	11.60	0.01	10.06	155	26.50	42	7.18	31	5.30	255	43.59	72	12.31	30	5.13	228	38.97	357	61.03
2	Arunachal Pradesh	5	0.12	1.60	0.34	1.69	2	40.00	0	0.00	0	0.00	3	60.00	0	0.00	0	0.00	2	40.00	3	60.00
3	Assam	187	0.01	3.37	0.01	13.92	46	24.60	1	0.53	0	0.00	128	68.45	8	4.28	4	2.14	47	25.13	140	74.87
4	Bihar	241	0.03	8.14	0.01	4.11	124	51.45	44	18.26	6	2.49	61	25.31	5	2.07	1	0.41	174	72.20	67	27.80
5	Chandigarh	20	0.01	2.10	0.05	4.45	7	35.00	1	5.00	0	0.00	8	40.00	3	15.00	1	5.00	8	40.00	12	60.00
6	Chhattisgarh	256	0.02	9.56	0.01	10.22	130	50.78	37	14.45	25	9.77	46	17.97	14	5.47	4	1.56	192	75.00	64	25.00
7	Dadra & Nagar Haveli	5	0.20	0.20	0.30	1.55	1	20.00	0	0.00	0	0.00	4	80.00	0	0.00	0	0.00	1	20.00	4	80.00
8	Delhi	83	0.01	7.50	0.03	6.02	43	51.81	11	13.25	5	6.02	18	21.69	4	4.82	2	2.41	59	71.08	24	28.92
9	Goa	41	0.19	2.76	0.04	1.59	29	70.73	3	7.32	0	0.00	9	21.95	0	0.00	0	0.00	32	78.05	9	21.95
10	Gujarat	655	0.01	34.41	0.01	12.83	257	39.24	80	12.21	39	5.95	222	33.89	29	4.43	28	4.27	376	57.40	279	42.60
11	Haryana	252	0.03	4.53	0.02	11.82	120	47.62	12	4.76	2	0.79	97	38.49	16	6.35	5	1.98	134	53.17	118	46.83
12	Himachal Pradesh	73	0.01	7.55	0.02	3.47	35	47.95	6	8.22	2	2.74	26	35.62	4	5.48	0	0.00	43	58.90	30	41.10
13	Jammu & Kashmir	121	0.07	13.92	0.01	7.10	32	26.45	6	4.96	5	4.13	70	57.85	3	2.48	5	4.13	43	35.54	78	64.46
14	Jharkhand	162	0.10	13.75	0.02	4.65	43	26.54	55	33.95	44	27.16	16	9.88	3	1.85	1	0.62	142	87.65	20	12.35
15	Karnataka	652	0.01	11.02	0.01	14.15	243	37.27	47	7.21	21	3.22	254	38.96	58	8.90	29	4.45	311	47.70	341	52.30
16	Kerala	592	0.01	6.52	0.01	9.78	272	45.95	23	3.89	13	2.20	257	43.41	21	3.55	6	1.01	308	52.03	284	47.97
17	Madhya Pradesh	695	0.01	18.13	0.01	20.14	292	42.01	143	20.58	151	21.73	80	11.51	19	2.73	10	1.44	586	84.32	109	15.68
18	Maharashtra	902	0.02	13.80	0.01	37.75	263	29.16	37	4.10	23	2.55	404	44.79	109	12.08	66	7.32	323	35.81	579	64.19
19	Meghalaya	26	0.02	0.58	0.01	0.76	15	57.69	0	0.00	0	0.00	11	42.31	0	0.00	0	0.00	15	57.69	11	42.31
20	Orissa	770	0.01	8.54	0.01	6.58	395	51.30	61	7.92	21	2.73	246	31.95	39	5.06	8	1.04	477	61.95	293	38.05
21	Pondicherry	5	0.83	7.76	0.55	1.88	1	20.00	0	0.00	1	20.00	3	60.00	0	0.00	0	0.00	2	40.00	3	60.00
22	Punjab	138	0.01	5.92	0.02	3.98	54	39.13	5	3.62	3	2.17	67	48.55	9	6.52	0	0.00	62	44.93	76	55.07
23	Rajasthan	738	0.01	45.93	0.02	29.36	241	32.66	118	15.99	119	16.12	161	21.82	52	7.05	47	6.37	478	64.77	260	35.23
24	Tamil Nadu	723	0.01	37.09	0.01	30.60	243	33.61	126	17.43	111	15.35	170	23.51	36	4.98	37	5.12	480	66.39	243	33.61
25	Tripura	28	0.03	1.78	0.10	0.59	21	75.00	0	0.00	0	0.00	7	25.00	0	0.00	0	0.00	21	75.00	7	25.00
26	Uttar Pradesh	706	0.01	11.92	0.01	6.63	376	53.26	124	17.56	36	5.10	158	22.38	10	1.42	2	0.28	536	75.92	170	24.08
27	Uttaranchal	48	0.02	6.30	0.01	2.34	15	31.25	8	16.67	3	6.25	21	43.75	1	2.08	0	0.00	26	54.17	22	45.83
28	West Bengal	639	0.01	13.17	0.01	8.34	246	38.50	162	25.35	99	15.49	116	18.15	12	1.88	4	0.63	507	79.34	132	20.66
	Total	9348					3701	39.59	1152	12.32	760	8.13	2918	31.22	527	5.64	290	3.10	5613	60.04	3735	39.96

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from Nov 2010 to Nov 2011

Annexure - VII

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall	
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	589	0.02	5.33	0.01	15.34	62	10.53	12	2.04	4	0.68	327	55.52	118	20.03	66	11.21	78	13.24	511	86.76
2	Arunachal Pradesh	11	0.22	0.50	0.03	0.47	2	18.18	0	0.00	0	0.00	9	81.82	0	0.00	0	0.00	2	18.18	9	81.82
3	Assam	201	0.01	11.63	0.02	5.90	71	35.32	4	1.99	3	1.49	114	56.72	7	3.48	2	1.00	78	38.81	123	61.19
4	Bihar	229	0.02	9.62	0.03	3.81	154	67.25	39	17.03	8	3.49	25	10.92	3	1.31	0	0.00	201	87.77	28	12.23
5	Chandigarh	23	0.06	0.85	0.10	3.24	4	17.39	0	0.00	0	0.00	13	56.52	6	26.09	0	0.00	4	17.39	19	82.61
6	Chhattisgarh	283	0.01	7.85	0.01	7.12	85	30.04	24	8.48	8	2.83	145	51.24	16	5.65	5	1.77	117	41.34	166	58.66
7	Dadra & Nagar Haveli	6	0.05	0.05	0.12	1.01	1	16.67	0	0.00	0	0.00	5	83.33	0	0.00	0	0.00	1	16.67	5	83.33
8	Delhi	130	0.01	8.95	0.02	8.12	22	16.92	6	4.62	2	1.54	79	60.77	12	9.23	9	6.92	30	23.08	100	76.92
9	Goa	39	0.03	7.21	0.05	2.32	9	23.08	0	0.00	1	2.56	28	71.79	1	2.56	0	0.00	10	25.64	29	74.36
10	Gujarat	702	0.01	14.99	0.01	25.20	247	35.19	50	7.12	22	3.13	277	39.46	65	9.26	41	5.84	319	45.44	383	54.56
11	Haryana	268	0.01	6.72	0.01	12.87	111	41.42	8	2.99	3	1.12	124	46.27	17	6.34	5	1.87	122	45.52	146	54.48
12	Himachal Pradesh	74	0.01	3.61	0.01	9.25	24	32.43	3	4.05	0	0.00	43	58.11	2	2.70	2	2.70	27	36.49	47	63.51
13	Jammu & Kashmir	120	0.01	4.63	0.04	2.82	62	51.67	1	0.83	2	1.67	51	42.50	4	3.33	0	0.00	65	54.17	55	45.83
14	Jharkhand	136	0.02	8.08	0.03	1.76	53	38.97	46	33.82	24	17.65	13	9.56	0	0.00	0	0.00	123	90.44	13	9.56
15	Karnataka	762	0.01	11.74	0.01	14.96	113	14.83	14	1.84	23	3.02	397	52.10	132	17.32	83	10.89	150	19.69	612	80.31
16	Kerala	564	0.02	9.20	0.01	11.36	192	34.04	17	3.01	6	1.06	311	55.14	27	4.79	11	1.95	215	38.12	349	61.88
17	Madhya Pradesh	774	0.02	21.50	0.01	20.70	309	39.92	127	16.41	102	13.18	192	24.81	28	3.62	16	2.07	538	69.51	236	30.49
18	Maharastra	938	0.01	11.37	0.01	13.25	293	31.24	39	4.16	21	2.24	438	46.70	101	10.77	46	4.90	353	37.63	585	62.37
19	Meghalaya	26	0.07	2.62	0.06	2.55	10	38.46	1	3.85	0	0.00	13	50.00	2	7.69	0	0.00	11	42.31	15	57.69
20	Orissa	780	0.01	6.43	0.01	8.35	232	29.74	40	5.13	12	1.54	422	54.10	65	8.33	9	1.15	284	36.41	496	63.59
21	Pondicherry	6	0.53	0.82	0.04	0.04	5	83.33	0	0.00	0	0.00	1	16.67	0	0.00	0	0.00	5	83.33	1	16.67
22	Punjab	175	0.01	5.83	0.01	24.60	73	41.71	6	3.43	3	1.71	82	46.86	7	4.00	4	2.29	82	46.86	93	53.14
23	Rajasthan	740	0.01	19.95	0.03	22.76	254	34.32	87	11.76	112	15.14	185	25.00	46	6.22	56	7.57	453	61.22	287	38.78
24	Tamil Nadu	660	0.02	29.30	0.01	23.29	274	41.52	116	17.58	94	14.24	131	19.85	27	4.09	18	2.73	484	73.33	176	26.67
25	Tripura	21	0.01	0.90	0.02	0.90	8	38.10	0	0.00	0	0.00	13	61.90	0	0.00	0	0.00	8	38.10	13	61.90
26	Uttar Pradesh	746	0.01	22.40	0.01	13.37	320	42.90	59	7.91	18	2.41	326	43.70	13	1.74	10	1.34	397	53.22	349	46.78
27	Uttaranchal	41	0.03	3.19	0.01	20.96	13	31.71	4	9.76	0	0.00	21	51.22	1	2.44	2	4.88	17	41.46	24	58.54
28	West Bengal	692	0.01	14.30	0.01	14.29	300	43.35	95	13.73	49	7.08	202	29.19	21	3.03	25	3.61	444	64.16	248	35.84
	Total	9736					3303	33.93	798	8.20	517	5.31	3987	40.95	721	7.41	410	4.21	4618	47.43	5118	52.57

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from Jan 2011 to Jan 2012

Annexure - VIII

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall	
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	586	0.01	5.14	0.01	13.38	66	11.26	10	1.71	2	0.34	300	51.19	138	23.55	70	11.95	78	13.31	508	86.69
2	Arunachal Pradesh	7	0.15	1.32	0.13	2.81	2	28.57	0	0.00	0	0.00	4	57.14	1	14.29	0	0.00	2	28.57	5	71.43
3	Assam	161	0.01	5.00	0.01	6.94	49	30.43	9	5.59	1	0.62	92	57.14	8	4.97	2	1.24	59	36.65	102	63.35
4	Bihar	237	0.04	6.86	0.01	6.83	153	64.56	43	18.14	8	3.38	30	12.66	1	0.42	2	0.84	204	86.08	33	13.92
5	Chandigarh	14	0.05	2.27	0.09	3.12	5	35.71	1	7.14	0	0.00	7	50.00	1	7.14	0	0.00	6	42.86	8	57.14
6	Chhattisgarh	331	0.03	7.97	0.02	5.65	209	63.14	31	9.37	15	4.53	71	21.45	2	0.60	3	0.91	255	77.04	76	22.96
7	Dadra & Nagar Haveli	6	-	-	0.18	3.80	0	0.00	0	0.00	0	0.00	4	66.67	2	33.33	0	0.00	0	0.00	6	100.00
8	Delhi	126	0.03	6.60	0.02	7.04	17	13.49	3	2.38	2	1.59	85	67.46	17	13.49	2	1.59	22	17.46	104	82.54
9	Goa	33	0.13	0.66	0.02	1.84	7	21.21	0	0.00	0	0.00	26	78.79	0	0.00	0	0.00	7	21.21	26	78.79
10	Gujarat	692	0.02	42.86	0.01	30.34	206	29.77	49	7.08	29	4.19	299	43.21	48	6.94	61	8.82	284	41.04	408	58.96
11	Haryana	148	0.03	8.28	0.01	20.09	28	18.92	7	4.73	3	2.03	69	46.62	32	21.62	9	6.08	38	25.68	110	74.32
12	Himachal Pradesh	71	0.08	3.79	0.01	9.75	25	35.21	2	2.82	0	0.00	37	52.11	3	4.23	4	5.63	27	38.03	44	61.97
13	Jammu & Kashmir	122	0.01	9.63	0.01	4.68	42	34.43	3	2.46	1	0.82	70	57.38	5	4.10	1	0.82	46	37.70	76	62.30
14	Jharkhand	154	0.07	8.60	0.01	2.54	74	48.05	41	26.62	14	9.09	24	15.58	1	0.65	0	0.00	129	83.77	25	16.23
15	Karnataka	750	0.01	8.48	0.01	15.49	118	15.73	14	1.87	18	2.40	382	50.93	123	16.40	95	12.67	150	20.00	600	80.00
16	Kerala	637	0.01	33.86	0.01	20.01	225	35.32	14	2.20	6	0.94	347	54.47	29	4.55	16	2.51	245	38.46	392	61.54
17	Madhya Pradesh	840	0.02	26.10	0.01	18.32	325	38.69	130	15.48	110	13.10	202	24.05	46	5.48	27	3.21	565	67.26	275	32.74
18	Maharashtra	908	0.01	8.80	0.03	19.90	205	22.58	32	3.52	18	1.98	470	51.76	122	13.44	61	6.72	255	28.08	653	71.92
19	Meghalaya	7	0.03	3.74	0.14	0.17	4	57.14	1	14.29	0	0.00	1	14.29	1	14.29	0	0.00	0	71.43	2	28.57
20	Orissa	749	0.01	6.25	0.01	6.72	269	35.91	39	5.21	7	0.93	375	50.07	46	6.14	13	1.74	315	42.06	434	57.94
21	Pondicherry	8	0.42	2.85	0.17	2.27	4	50.00	2	25.00	0	0.00	1	12.50	1	12.50	0	0.00	6	75.00	2	25.00
22	Punjab	175	0.03	9.82	0.02	12.40	86	49.14	6	3.43	2	1.14	70	40.00	8	4.57	3	1.71	94	53.71	81	46.29
23	Rajasthan	745	0.02	33.55	0.01	80.00	233	31.28	93	12.48	94	12.62	243	32.62	39	5.23	43	5.77	420	56.38	325	43.62
24	Tamil Nadu	674	0.01	24.05	0.01	37.73	296	43.92	41	6.08	38	5.64	225	33.38	48	7.12	26	3.86	375	55.64	299	44.36
25	Tripura	28	0.04	1.74	0.07	3.98	6	21.43	0	0.00	0	0.00	21	75.00	1	3.57	0	0.00	6	21.43	22	78.57
26	Uttar Pradesh	730	0.01	10.31	0.01	9.90	411	56.30	76	10.41	13	1.78	214	29.32	13	1.78	3	0.41	500	68.49	230	31.51
27	Uttaranchal	38	0.17	3.24	0.09	2.51	18	47.37	1	2.63	0	0.00	17	44.74	2	5.26	0	0.00	19	50.00	19	50.00
28	West Bengal	666	0.01	11.58	0.01	13.37	291	43.69	77	11.56	31	4.65	228	34.23	27	4.05	12	1.80	399	59.91	267	40.09
	Total	9643					3374	34.99	725	7.52	412	4.27	3914	40.59	765	7.93	453	4.70	4506	46.73	5132	53.22

State-wise Sesimal Fluctuation & Frequency Distribution of Different Ranges from Pre Monsoon 2011 to Aug 2011

Annexure - IX

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall	
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	630	0.02	14.74	0.02	5.33	303	48.10	122	19.37	71	11.27	121	19.21	11	1.75	2	0.32	496	78.73	134	21.27
2	Arunachal Pradesh	6	0.35	3.88	1.26	1.26	3	50.00	2	33.33	0	0.00	1	16.67	0	0.00	0	0.00	5	83.33	1	16.67
3	Assam	181	0.01	7.77	0.02	2.44	96	53.04	49	27.07	11	6.08	23	12.71	2	1.10	0	0.00	156	86.19	25	13.81
4	Bihar	235	0.03	8.60	0.04	0.15	61	25.96	102	43.40	67	28.51	5	2.13	0	0.00	0	0.00	230	97.87	5	2.13
5	Chandigarh	22	0.10	1.84	0.09	2.10	11	50.00	0	0.00	0	0.00	10	45.45	1	4.55	0	0.00	11	50.00	11	50.00
6	Chhattisgarh	270	0.11	19.05	0.16	4.48	38	14.07	67	24.81	160	59.26	2	0.74	1	0.37	2	0.74	265	98.15	5	1.85
7	Dadra & Nagar Haveli	5	1.10	11.20	0.15	0.15	2	40.00	0	0.00	2	40.00	1	20.00	0	0.00	0	0.00	4	80.00	1	20.00
8	Delhi	130	0.02	9.19	0.02	3.37	90	69.23	7	5.38	1	0.77	27	20.77	5	3.85	0	0.00	98	75.38	32	24.62
9	Goa	41	0.07	12.91	0.45	0.45	15	36.59	17	41.46	8	19.51	1	2.44	0	0.00	0	0.00	40	97.56	1	2.44
10	Gujarat	608	0.10	32.20	0.02	4.96	142	23.36	138	22.70	291	47.86	32	5.26	4	0.66	1	0.16	571	93.91	37	6.09
11	Haryana	288	0.01	7.70	0.01	6.85	145	50.35	13	4.51	2	0.69	92	31.94	28	9.72	8	2.78	160	55.56	128	44.44
12	Himachal Pradesh	71	0.02	11.02	0.94	0.94	35	49.30	17	23.94	18	25.35	1	1.41	0	0.00	0	0.00	70	98.59	1	1.41
13	Jammu & Kashmir	120	0.03	16.27	0.07	4.97	55	45.83	37	30.83	21	17.50	6	5.00	0	0.00	1	0.83	113	94.17	7	5.83
14	Jharkhand	169	0.43	14.56	0.01	2.40	9	5.33	37	21.89	118	69.82	4	2.37	1	0.59	0	0.00	164	97.04	5	2.96
15	Karnataka	706	0.01	15.16	0.01	13.85	276	39.09	116	16.43	131	18.56	156	22.10	20	2.83	7	0.99	523	74.08	183	25.92
16	Kerala	595	0.04	12.23	0.02	11.15	315	52.94	175	29.41	61	10.25	35	5.88	6	1.01	3	0.50	551	92.61	44	7.39
17	Madhya Pradesh	846	0.10	33.50	0.36	3.30	53	6.26	146	17.26	631	74.59	11	1.30	5	0.59	0	0.00	830	98.11	16	1.89
18	Maharashtra	788	0.05	35.20	0.04	8.00	208	26.40	217	27.54	282	35.79	67	8.50	6	0.76	8	1.02	707	89.72	81	10.28
19	Meghalaya	26	0.28	6.07	0.14	0.14	21	80.77	3	11.54	1	3.85	1	3.85	0	0.00	0	0.00	25	96.15	1	3.85
20	Orissa	803	0.03	11.00	0.01	4.53	293	36.49	261	32.50	207	25.78	37	4.61	4	0.50	1	0.12	761	94.77	42	5.23
21	Pondicherry	9	0.05	5.88	0.15	0.89	3	33.33	0	0.00	2	22.22	4	44.44	0	0.00	0	0.00	5	55.56	4	44.44
22	Punjab	155	0.07	4.45	0.02	5.04	75	48.39	10	6.45	2	1.29	52	33.55	11	7.10	5	3.23	87	56.13	68	43.87
23	Rajasthan	752	0.01	45.92	0.01	19.66	307	40.82	115	15.29	181	24.07	111	14.76	12	1.60	26	3.46	603	80.19	149	19.81
24	Tamil Nadu	889	0.02	38.80	0.01	17.37	255	28.68	36	4.05	34	3.82	367	41.28	128	14.40	69	7.76	325	36.56	564	63.44
25	Tripura	26	0.25	5.36	-	-	18	69.23	7	26.92	1	3.85	0	0.00	0	0.00	0	0.00	26	100.00	0	0.00
26	Uttar Pradesh	627	0.01	13.41	0.03	5.95	215	34.29	274	43.70	113	18.02	22	3.51	2	0.32	1	0.16	602	96.01	25	3.99
27	Uttaranchal	45	0.49	14.42	1.24	5.65	10	22.22	16	35.56	17	37.78	1	2.22	0	0.00	1	2.22	43	95.56	2	4.44
28	West Bengal	668	0.03	20.18	0.02	5.67	152	22.75	238	35.63	261	39.07	14	2.10	2	0.30	1	0.15	651	97.46	17	2.54
	Total	9711					3206	33.01	2222	22.88	2694	27.74	1204	12.40	249	2.56	136	1.40	8122	83.64	1589	16.36

State-wise Sesional Fluctuation & Frequency Distribution of Different Ranges from Pre Monsoon 2011 to Nov 2011

Annexure - X

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall	
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	630	0.01	13.77	0.01	6.21	346	54.92	111	17.62	51	8.10	107	16.98	13	2.06	2	0.32	508	80.63	122	19.37
2	Arunachal Pradesh	11	0.22	7.56	0.10	2.23	6	54.55	0	0.00	1	9.09	3	27.27	1	9.09	0	0.00	7	63.64	4	36.36
3	Assam	194	0.04	12.30	0.01	2.67	135	69.59	19	9.79	10	5.15	25	12.89	5	2.58	0	0.00	164	84.54	30	15.46
4	Bihar	227	0.10	10.63	0.05	0.64	75	33.04	91	40.09	54	23.79	7	3.08	0	0.00	0	0.00	220	96.92	7	3.08
5	Chandigarh	23	0.07	0.35	0.01	3.40	3	13.04	0	0.00	0	0.00	16	69.57	4	17.39	0	0.00	3	13.04	20	86.96
6	Chhattisgarh	281	0.11	14.62	0.12	3.67	73	25.98	94	33.45	101	35.94	10	3.56	3	1.07	0	0.00	268	95.37	13	4.63
7	Dadra & Nagar Haveli	5	1.27	1.98	0.35	0.35	4	80.00	0	0.00	0	0.00	1	20.00	0	0.00	0	0.00	4	80.00	1	20.00
8	Delhi	127	0.01	10.30	0.01	27.83	73	57.48	3	2.36	2	1.57	41	32.28	6	4.72	2	1.57	78	61.42	49	38.58
9	Goa	40	0.04	11.82	0.27	1.94	29	72.50	3	7.50	3	7.50	5	12.50	0	0.00	0	0.00	35	87.50	5	12.50
10	Gujarat	622	0.04	23.00	0.04	10.09	197	31.67	147	23.63	221	35.53	41	6.59	11	1.77	5	0.80	565	90.84	57	9.16
11	Haryana	292	0.01	5.61	0.02	14.77	171	58.56	21	7.19	5	1.71	67	22.95	22	7.53	6	2.05	197	67.47	95	32.53
12	Himachal Pradesh	72	0.07	10.21	0.03	3.87	37	51.39	13	18.06	14	19.44	6	8.33	2	2.78	0	0.00	64	88.89	8	11.11
13	Jammu & Kashmir	123	0.01	11.84	0.05	1.75	76	61.79	30	24.39	7	5.69	10	8.13	0	0.00	0	0.00	113	91.87	10	8.13
14	Jharkhand	159	0.12	10.82	0.20	0.49	17	10.69	51	32.08	88	55.35	3	1.89	0	0.00	0	0.00	156	98.11	3	1.89
15	Karnataka	790	0.02	13.72	0.01	9.18	355	44.94	156	19.75	81	10.25	169	21.39	21	2.66	8	1.01	592	74.94	198	25.06
16	Kerala	589	0.02	9.10	0.01	11.21	367	62.31	133	22.58	32	5.43	44	7.47	8	1.36	5	0.85	532	90.32	57	9.68
17	Madhya Pradesh	770	0.03	31.40	0.05	4.65	108	14.03	224	29.09	410	53.25	20	2.60	4	0.52	4	0.52	742	96.36	28	3.64
18	Maharastra	831	0.05	16.35	0.02	9.75	266	32.01	274	32.97	201	24.19	76	9.15	8	0.96	6	0.72	741	89.17	90	10.83
19	Meghalaya	26	0.04	3.38	0.08	1.38	17	65.38	3	11.54	0	0.00	6	23.08	0	0.00	0	0.00	20	76.92	6	23.08
20	Orissa	826	0.01	9.44	0.01	6.49	364	44.07	256	30.99	113	13.68	81	9.81	10	1.21	2	0.24	733	88.74	93	11.26
21	Pondicherry	7	0.65	1.83	-	-	7	100.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	7	100.00	0	0.00
22	Punjab	179	0.01	9.53	0.06	11.31	94	52.51	17	9.50	6	3.35	52	29.05	7	3.91	3	1.68	117	65.36	62	34.64
23	Rajasthan	740	0.01	46.93	0.01	18.42	267	36.08	115	15.54	193	26.08	113	15.27	18	2.43	34	4.59	575	77.70	165	22.30
24	Tamil Nadu	793	0.01	37.00	0.01	16.05	331	41.74	155	19.55	89	11.22	149	18.79	34	4.29	35	4.41	575	72.51	218	27.49
25	Tripura	20	0.23	2.73	0.18	0.18	17	85.00	2	10.00	0	0.00	1	5.00	0	0.00	0	0.00	19	95.00	1	5.00
26	Uttar Pradesh	658	0.01	12.20	0.10	8.87	354	53.80	184	27.96	74	11.25	37	5.62	3	0.46	6	0.91	612	93.01	46	6.99
27	Uttaranchal	43	0.40	10.60	1.95	6.35	23	53.49	12	27.91	6	13.95	1	2.33	0	0.00	1	2.33	41	95.35	2	4.65
28	West Bengal	664	0.06	12.35	0.03	5.33	224	33.73	203	30.57	190	28.61	37	5.57	5	0.75	5	0.75	617	92.92	47	7.08
	Total	9742					4036	41.43	2317	23.78	1952	20.04	1128	11.58	185	1.90	124	1.27	8305	85.25	1437	14.75

State-wise Sesional Fluctuation & Frequency Distribution of Different Ranges from Pre Monsoon 2011 to Jan 2012

Annexure - XI

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total			
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		Rise		Fall	
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	623	0.01	11.57	0.01	9.20	298	47.83	59	9.47	33	5.30	202	32.42	23	3.69	8	1.28	390	62.60	233	37.40
2	Arunachal Pradesh	7	0.22	1.02	0.05	2.57	3	42.86	0	0.00	0	0.00	3	42.86	1	14.29	0	0.00	3	42.86	4	57.14
3	Assam	167	0.01	9.99	0.02	5.94	89	53.29	6	3.59	5	2.99	57	34.13	7	4.19	3	1.80	100	59.88	67	40.12
4	Bihar	220	0.05	13.07	0.05	2.18	92	41.82	91	41.36	27	12.27	9	4.09	1	0.45	0	0.00	210	95.45	10	4.55
5	Chandigarh	14	0.15	2.23	0.23	2.95	5	35.71	2	14.29	0	0.00	6	42.86	1	7.14	0	0.00	7	50.00	7	50.00
6	Chhattisgarh	325	0.02	14.24	0.01	4.53	117	36.00	118	36.31	78	24.00	8	2.46	3	0.92	1	0.31	313	96.31	12	3.69
7	Dadra & Nagar Haveli	5	1.27	1.64	0.45	1.28	2	40.00	0	0.00	0	0.00	3	60.00	0	0.00	0	0.00	2	40.00	3	60.00
8	Delhi	127	0.01	9.90	0.03	5.34	73	57.48	1	0.79	2	1.57	44	34.65	6	4.72	1	0.79	76	59.84	51	40.16
9	Goa	35	0.02	3.17	0.01	2.20	22	62.86	2	5.71	0	0.00	10	28.57	1	2.86	0	0.00	24	68.57	11	31.43
10	Gujarat	624	0.03	18.52	0.03	10.03	284	45.51	140	22.44	121	19.39	49	7.85	17	2.72	13	2.08	545	87.34	79	12.66
11	Haryana	154	0.05	9.25	0.01	13.49	50	32.47	11	7.14	2	1.30	58	37.66	26	16.88	7	4.55	63	40.91	91	59.09
12	Himachal Pradesh	72	0.03	6.03	0.06	4.40	39	54.17	16	22.22	4	5.56	10	13.89	2	2.78	1	1.39	59	81.94	13	18.06
13	Jammu & Kashmir	123	0.01	7.45	0.02	3.18	74	60.16	17	13.82	5	4.07	23	18.70	4	3.25	0	0.00	96	78.05	27	21.95
14	Jharkhand	166	0.28	9.12	0.25	2.32	31	18.67	68	40.96	61	36.75	5	3.01	1	0.60	0	0.00	160	96.39	6	3.61
15	Karnataka	789	0.01	12.70	0.01	13.65	306	38.78	93	11.79	36	4.56	257	32.57	65	8.24	32	4.06	435	55.13	354	44.87
16	Kerala	608	0.01	9.30	0.01	12.50	380	62.50	41	6.74	16	2.63	154	25.33	13	2.14	4	0.66	437	71.88	171	28.13
17	Madhya Pradesh	829	0.05	23.72	0.04	9.53	222	26.78	235	28.35	300	36.19	52	6.27	11	1.33	9	1.09	757	91.31	72	8.69
18	Maharastra	829	0.03	21.10	0.01	13.27	368	44.39	185	22.32	89	10.74	148	17.85	27	3.26	12	1.45	642	77.44	187	22.56
19	Meghalaya	24	0.01	2.73	0.04	3.54	15	62.50	1	4.17	0	0.00	7	29.17	1	4.17	0	0.00	16	66.67	8	33.33
20	Orissa	808	0.01	9.43	0.01	7.10	429	53.09	132	16.34	40	4.95	165	20.42	37	4.58	5	0.62	601	74.38	207	25.62
21	Pondicherry	7	0.53	2.25	-	-	5	71.43	2	28.57	0	0.00	0	0.00	0	0.00	0	0.00	7	100.00	0	0.00
22	Punjab	172	0.01	10.83	0.02	12.75	102	59.30	18	10.47	6	3.49	39	22.67	5	2.91	2	1.16	126	73.26	46	26.74
23	Rajasthan	720	0.01	38.10	0.02	55.53	255	35.42	113	15.69	159	22.08	124	17.22	34	4.72	35	4.86	527	73.19	193	26.81
24	Tamil Nadu	841	0.05	43.10	0.03	24.80	333	39.60	212	25.21	149	17.72	102	12.13	28	3.33	17	2.02	694	82.52	147	17.48
25	Tripura	22	0.02	2.08	0.05	1.39	12	54.55	2	9.09	0	0.00	8	36.36	0	0.00	0	0.00	14	63.64	8	36.36
26	Uttar Pradesh	662	0.01	11.18	0.01	10.80	396	59.82	163	24.62	64	9.67	35	5.29	2	0.30	2	0.30	623	94.11	39	5.89
27	Uttaranchal	37	0.06	5.90	0.01	6.01	22	59.46	6	16.22	2	5.41	5	13.51	0	0.00	2	5.41	30	81.08	7	18.92
28	West Bengal	662	0.01	11.60	0.02	6.63	289	43.66	176	26.59	111	16.77	76	11.48	7	1.06	3	0.45	576	87.01	86	12.99
	Total	9672					4313	44.59	1910	19.75	1310	13.54	1659	17.15	323	3.34	157	1.62	7533	77.88	2139	22.12

State-wise Decadal Water Level Fluctuation With Mean [Pre Monsoon(2001 to 2010)] and Pre Monsoon 2011

Annexure - XII

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	676	0.02	9.32	0.01	17.69	360	53.25	145	21.45	45	6.66	96	14.20	14	2.07	16	2.37	550	81.36	126	18.64
2	Arunachal Pradesh	12	0.25	1.58	0.03	4.14	5	41.67	0	0.00	0	0.00	6	50.00	0	0.00	1	8.33	5	41.67	7	58.33
3	Assam	204	0.01	5.67	0.02	7.85	103	50.49	20	9.80	3	1.47	70	34.31	5	2.45	3	1.47	126	61.76	78	38.24
4	Bihar	267	0.02	2.44	0.01	6.43	60	22.47	5	1.87	0	0.00	153	57.30	39	14.61	10	3.75	65	24.34	202	75.66
5	Chandigarh	17	0.24	5.02	0.03	8.91	4	23.53	2	11.76	1	5.88	5	29.41	3	17.65	2	11.76	7	41.18	10	58.82
6	Chhattisgarh	357	0.01	9.97	0.01	7.92	127	35.57	35	9.80	14	3.92	152	42.58	24	6.72	5	1.40	176	49.30	181	50.70
7	Dadra & Nagar Haveli	6	0.08	2.45	-	-	6	100.00	0	0.00	0	0.00	0	0.00	0	0.00	0	0.00	6	100.00	0	0.00
8	Delhi	142	0.04	5.67	0.02	14.07	67	47.18	15	10.56	4	2.82	33	23.24	6	4.23	17	11.97	86	60.56	56	39.44
9	Goa	44	0.07	3.58	0.03	7.51	24	54.55	3	6.82	0	0.00	14	31.82	2	4.55	1	2.27	27	61.36	17	38.64
10	Gujarat	656	0.02	25.47	0.01	17.66	259	39.48	125	19.05	99	15.09	132	20.12	21	3.20	20	3.05	483	73.63	173	26.37
11	Haryana	302	0.04	10.24	0.05	14.12	135	44.70	24	7.95	6	1.99	73	24.17	34	11.26	30	9.93	165	54.64	137	45.36
12	Himachal Pradesh	77	0.01	2.45	0.01	2.56	40	51.95	2	2.60	0	0.00	33	42.86	2	2.60	0	0.00	42	54.55	35	45.45
13	Jammu & Kashmir	127	0.01	5.17	0.02	5.07	52	40.94	6	4.72	2	1.57	59	46.46	7	5.51	1	0.79	60	47.24	67	52.76
14	Jharkhand	178	0.02	6.73	0.05	10.40	39	21.91	5	2.81	2	1.12	97	54.49	29	16.29	6	3.37	46	25.84	132	74.16
15	Karnataka	855	0.01	13.85	0.01	9.29	384	44.91	164	19.18	76	8.89	180	21.05	40	4.68	11	1.29	624	72.98	231	27.02
16	Kerala	698	0.01	10.47	0.01	14.23	403	57.74	39	5.59	16	2.29	221	31.66	11	1.58	8	1.15	458	65.62	240	34.38
17	Madhya Pradesh	844	0.02	8.29	0.01	13.58	239	28.32	69	8.18	26	3.08	346	41.00	111	13.15	53	6.28	334	39.57	510	60.43
18	Maharashtra	807	0.02	22.66	0.01	11.10	371	45.97	140	17.35	77	9.54	180	22.30	27	3.35	12	1.49	588	72.86	219	27.14
19	Meghalaya	27	0.06	1.06	0.04	2.80	14	51.85	0	0.00	0	0.00	12	44.44	1	3.70	0	0.00	14	51.85	13	48.15
20	Orissa	816	0.01	9.10	0.01	10.21	440	53.92	86	10.54	19	2.33	233	28.55	31	3.80	7	0.86	545	66.79	271	33.21
21	Pondicherry	7	0.05	1.87	0.21	0.33	5	71.43	0	0.00	0	0.00	2	28.57	0	0.00	0	0.00	5	71.43	2	28.57
22	Punjab	190	0.03	13.07	0.01	7.53	57	30.00	4	2.11	4	2.11	69	36.32	28	14.74	28	14.74	65	34.21	125	65.79
23	Rajasthan	818	0.03	30.05	0.03	27.38	238	29.10	92	11.25	95	11.61	169	20.66	92	11.25	132	16.14	425	51.96	393	48.04
24	Tamil Nadu	653	0.01	27.33	0.01	20.41	245	37.52	150	22.97	101	15.47	103	15.77	24	3.68	30	4.59	496	75.96	157	24.04
25	Tripura	27	0.01	1.63	0.09	1.59	17	62.96	0	0.00	0	0.00	10	37.04	0	0.00	0	0.00	17	62.96	10	37.04
26	Uttar Pradesh	704	0.01	4.21	0.01	9.00	245	34.80	22	3.13	4	0.57	349	49.57	65	9.23	19	2.70	271	38.49	433	61.51
27	Uttaranchal	46	0.72	5.59	0.02	14.08	23	50.00	3	6.52	2	4.35	17	36.96	0	0.00	1	2.17	28	60.87	18	39.13
28	West Bengal	671	0.01	8.36	0.01	11.82	205	30.55	29	4.32	9	1.34	272	40.54	109	16.24	47	7.00	243	36.21	428	63.79
	Total	10228					4167	40.74	1185	11.59	605	5.92	3086	30.17	725	7.09	460	4.50	5957	58.24	4271	41.76

State-wise Decadal Water Level Fluctuation With Mean [Aug(2001 to 2010)] and Aug 2011

Annexure - XIII

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	632	0.01	11.06	0.01	5.66	325	51.42	100	15.82	39	6.17	144	22.78	18	2.85	6	0.95	464	73.42	168	26.58
2	Arunachal Pradesh	6	0.71	0.96	0.22	1.26	2	33.33	0	0.00	0	0.00	4	66.67	0	0.00	0	0.00	2	33.33	4	66.67
3	Assam	208	0.01	3.75	0.01	3.59	78	37.50	4	1.92	0	0.00	111	53.37	13	6.25	2	0.96	82	39.42	126	60.58
4	Bihar	275	0.01	3.50	0.04	6.81	107	38.91	6	2.18	0	0.00	134	48.73	22	8.00	6	2.18	113	41.09	162	58.91
5	Chandigarh	22	0.06	4.59	0.02	11.24	5	22.73	1	4.55	1	4.55	8	36.36	4	18.18	3	13.64	7	31.82	15	68.18
6	Chhattisgarh	289	0.01	9.21	0.01	8.49	157	54.33	28	9.69	7	2.42	71	24.57	20	6.92	6	2.08	192	66.44	97	33.56
7	Dadra & Nagar Haveli	6	0.14	0.14	0.66	2.41	1	16.67	0	0.00	0	0.00	4	66.67	1	16.67	0	0.00	1	16.67	5	83.33
8	Delhi	133	0.04	4.94	0.01	10.16	59	44.36	15	11.28	3	2.26	34	25.56	11	8.27	11	8.27	77	57.89	56	42.11
9	Goa	40	0.01	5.40	0.09	1.82	32	80.00	2	5.00	1	2.50	5	12.50	0	0.00	0	0.00	35	87.50	5	12.50
10	Gujarat	721	0.01	18.65	0.01	9.41	327	45.35	138	19.14	102	14.15	111	15.40	20	2.77	23	3.19	567	78.64	154	21.36
11	Haryana	297	0.02	13.23	0.01	18.68	120	40.40	20	6.73	5	1.68	76	25.59	37	12.46	39	13.13	145	48.82	152	51.18
12	Himachal Pradesh	74	0.02	4.21	0.02	2.42	40	54.05	11	14.86	4	5.41	17	22.97	2	2.70	0	0.00	55	74.32	19	25.68
13	Jammu & Kashmir	125	0.02	4.77	0.01	8.39	67	53.60	1	0.80	4	3.20	44	35.20	3	2.40	6	4.80	72	57.60	53	42.40
14	Jharkhand	176	0.02	8.18	0.03	4.60	96	54.55	29	16.48	4	2.27	36	20.45	10	5.68	1	0.57	129	73.30	47	26.70
15	Karnataka	750	0.01	11.90	0.01	8.36	351	46.80	108	14.40	53	7.07	195	26.00	29	3.87	14	1.87	512	68.27	238	31.73
16	Kerala	645	0.01	7.42	0.01	9.70	397	61.55	27	4.19	6	0.93	200	31.01	11	1.71	4	0.62	430	66.67	215	33.33
17	Madhya Pradesh	962	0.02	16.02	0.01	13.63	422	43.87	182	18.92	121	12.58	160	16.63	49	5.09	28	2.91	725	75.36	237	24.64
18	Maharashtra	971	0.01	17.71	0.01	16.33	387	39.86	100	10.30	59	6.08	330	33.99	73	7.52	22	2.27	546	56.23	425	43.77
19	Meghalaya	28	0.08	0.08	0.04	1.16	14	50.00	0	0.00	0	0.00	14	50.00	0	0.00	0	0.00	14	50.00	14	50.00
20	Orissa	810	0.01	4.73	0.01	7.37	355	43.83	15	1.85	2	0.25	336	41.48	88	10.86	14	1.73	372	45.93	438	54.07
21	Pondicherry	8	0.16	3.72	0.53	0.53	5	62.50	2	25.00	0	0.00	1	12.50	0	0.00	0	0.00	7	87.50	1	12.50
22	Punjab	162	0.02	9.83	0.02	9.61	50	30.86	6	3.70	4	2.47	51	31.48	20	12.35	31	19.14	60	37.04	102	62.96
23	Rajasthan	855	0.01	16.68	0.01	16.69	245	28.65	120	14.04	129	15.09	152	17.78	76	8.89	133	15.56	494	57.78	361	42.22
24	Tamil Nadu	620	0.02	10.56	0.11	9.83	252	40.65	166	26.77	96	15.48	72	11.61	16	2.58	18	2.90	514	82.90	106	17.10
25	Tripura	29	0.04	1.97	0.27	1.37	22	75.86	0	0.00	0	0.00	7	24.14	0	0.00	0	0.00	22	75.86	7	24.14
26	Uttar Pradesh	756	0.01	10.66	0.01	7.89	368	48.68	80	10.58	15	1.98	220	29.10	51	6.75	22	2.91	463	61.24	293	38.76
27	Uttaranchal	50	0.08	8.32	0.08	0.90	28	56.00	12	24.00	3	6.00	7	14.00	0	0.00	0	0.00	43	86.00	7	14.00
28	West Bengal	549	0.01	7.58	0.01	9.66	297	54.10	35	6.38	6	1.09	151	27.50	48	8.74	12	2.19	338	61.57	211	38.43
	Total	10199					4609	45.19	1208	11.84	664	6.51	2695	26.42	622	6.10	401	3.93	6481	63.55	3718	36.45

State-wise Decadal Water Level Fluctuation With Mean [Nov(2001 to 2010)] and Nov 2011

Annexure - XIV

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	622	0.02	8.63	0.01	15.34	240	38.59	33	5.31	10	1.61	268	43.09	53	8.52	18	2.89	283	45.50	339	54.50
2	Arunachal Pradesh	11	0.40	2.63	0.19	1.36	1	9.09	1	9.09	0	0.00	9	81.82	0	0.00	0	0.00	2	18.18	9	81.82
3	Assam	235	0.02	4.01	0.01	8.11	89	37.87	8	3.40	1	0.43	129	54.89	6	2.55	2	0.85	98	41.70	137	58.30
4	Bihar	264	0.01	4.42	0.01	6.01	134	50.76	8	3.03	1	0.38	111	42.05	8	3.03	2	0.76	143	54.17	121	45.83
5	Chandigarh	25	0.23	4.77	0.01	11.67	3	12.00	0	0.00	1	4.00	12	48.00	6	24.00	3	12.00	4	16.00	21	84.00
6	Chhattisgarh	303	0.02	6.66	0.01	5.21	109	35.97	11	3.63	3	0.99	158	52.15	19	6.27	3	0.99	123	40.59	180	59.41
7	Dadra & Nagar Haveli	6	0.34	0.34	0.20	1.37	1	16.67	0	0.00	0	0.00	5	83.33	0	0.00	0	0.00	1	16.67	5	83.33
8	Delhi	131	0.02	3.31	0.01	12.28	52	39.69	7	5.34	0	0.00	48	36.64	10	7.63	14	10.69	59	45.04	72	54.96
9	Goa	40	0.04	8.24	0.02	1.49	15	37.50	2	5.00	1	2.50	22	55.00	0	0.00	0	0.00	18	45.00	22	55.00
10	Gujarat	739	0.01	11.50	0.02	12.68	303	41.00	144	19.49	89	12.04	134	18.13	41	5.55	28	3.79	536	72.53	203	27.47
11	Haryana	306	0.01	10.06	0.03	17.41	135	44.12	18	5.88	7	2.29	75	24.51	29	9.48	42	13.73	160	52.29	146	47.71
12	Himachal Pradesh	78	0.05	16.40	0.03	8.44	33	42.31	7	8.97	4	5.13	30	38.46	1	1.28	3	3.85	44	56.41	34	43.59
13	Jammu & Kashmir	124	0.01	2.79	0.02	5.41	75	60.48	1	0.81	0	0.00	46	37.10	1	0.81	1	0.81	76	61.29	48	38.71
14	Jharkhand	166	0.01	5.37	0.02	5.56	94	56.63	7	4.22	1	0.60	56	33.73	6	3.61	2	1.20	102	61.45	64	38.55
15	Karnataka	853	0.01	11.34	0.01	9.53	343	40.21	62	7.27	25	2.93	298	34.94	91	10.67	34	3.99	430	50.41	423	49.59
16	Kerala	645	0.01	7.39	0.01	9.45	283	43.88	23	3.57	6	0.93	299	46.36	26	4.03	8	1.24	312	48.37	333	51.63
17	Madhya Pradesh	868	0.01	16.59	0.01	12.91	410	47.24	145	16.71	59	6.80	195	22.47	32	3.69	27	3.11	614	70.74	254	29.26
18	Maharastra	1028	0.01	27.11	0.01	8.50	440	42.80	106	10.31	31	3.02	376	36.58	56	5.45	19	1.85	577	56.13	451	43.87
19	Meghalaya	26	0.39	2.62	0.03	2.33	8	30.77	1	3.85	0	0.00	16	61.54	1	3.85	0	0.00	9	34.62	17	65.38
20	Orissa	832	0.01	4.79	0.01	7.06	328	39.42	20	2.40	1	0.12	425	51.08	52	6.25	6	0.72	349	41.95	483	58.05
21	Pondicherry	7	0.02	8.11	0.04	11.42	5	71.43	1	14.29	0	0.00	1	14.29	0	0.00	0	0.00	6	85.71	1	14.29
22	Punjab	186	0.02	8.11	0.04	11.42	60	32.26	10	5.38	2	1.08	57	30.65	23	12.37	34	18.28	72	38.71	114	61.29
23	Rajasthan	843	0.01	21.36	0.02	37.48	234	27.76	151	17.91	145	17.20	122	14.47	60	7.12	131	15.54	530	62.87	313	37.13
24	Tamil Nadu	593	0.01	14.48	0.01	12.22	262	44.18	127	21.42	83	14.00	85	14.33	22	3.71	14	2.36	472	79.60	121	20.40
25	Tripura	22	0.03	1.70	0.01	0.99	9	40.91	0	0.00	0	0.00	13	59.09	0	0.00	0	0.00	9	40.91	13	59.09
26	Uttar Pradesh	796	0.01	16.82	0.01	12.10	321	40.33	38	4.77	12	1.51	350	43.97	59	7.41	16	2.01	371	46.61	425	53.39
27	Uttaranchal	47	0.01	5.26	0.02	2.62	24	51.06	6	12.77	1	2.13	13	27.66	3	6.38	0	0.00	31	65.96	16	34.04
28	West Bengal	568	0.01	7.39	0.02	13.94	172	30.28	18	3.17	7	1.23	287	50.53	55	9.68	29	5.11	197	34.68	371	65.32
	Total	10364					4183	40.36	955	9.21	490	4.73	3640	35.12	660	6.37	436	4.21	5628	54.30	4736	45.70

State-wise Decadal Water Level Fluctuation With Mean [Jan(2002 to 2011)] and Jan 2012

Annexure - XV

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Rise		Fall	
			Rise		Fall		0-2 m		2-4 m		>4 m		0-2 m		2-4 m		>4 m		No	%	No	%
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	622	0.01	7.77	0.01	13.38	258	41.48	38	6.11	8	1.29	259	41.64	43	6.91	16	2.57	304	48.87	318	51.13
2	Arunachal Pradesh	7	0.11	1.31	0.30	2.28	4	57.14	0	0.00	0	0.00	2	28.57	1	14.29	0	0.00	4	57.14	3	42.86
3	Assam	202	0.03	5.89	0.04	7.95	84	41.58	8	3.96	3	1.49	98	48.51	6	2.97	3	1.49	95	47.03	107	52.97
4	Bihar	263	0.01	4.98	0.01	5.59	152	57.79	10	3.80	1	0.38	92	34.98	6	2.28	2	0.76	163	61.98	100	38.02
5	Chandigarh	16	0.21	0.90	0.30	10.94	4	25.00	0	0.00	0	0.00	8	50.00	0	0.00	4	25.00	4	25.00	12	75.00
6	Chhattisgarh	346	0.02	6.35	0.01	4.27	235	67.92	28	8.09	2	0.58	71	20.52	9	2.60	1	0.29	265	76.59	81	23.41
7	Dadra & Nagar Haveli	6	-	-	0.27	2.33	0	0.00	0	0.00	0	0.00	5	83.33	1	16.67	0	0.00	0	0.00	6	100.00
8	Delhi	131	0.06	3.90	0.01	11.49	57	43.51	8	6.11	0	0.00	41	31.30	14	10.69	11	8.40	65	49.62	66	50.38
9	Goa	35	0.01	4.13	0.09	1.35	15	42.86	0	0.00	1	2.86	19	54.29	0	0.00	0	0.00	16	45.71	19	54.29
10	Gujarat	749	0.01	21.40	0.01	21.95	289	38.58	140	18.69	97	12.95	161	21.50	34	4.54	28	3.74	526	70.23	223	29.77
11	Haryana	165	0.01	7.06	0.05	23.15	45	27.27	9	5.45	5	3.03	37	22.42	24	14.55	45	27.27	59	35.76	106	64.24
12	Himachal Pradesh	74	0.02	14.71	0.02	5.63	39	52.70	7	9.46	2	2.70	23	31.08	1	1.35	2	2.70	48	64.86	26	35.14
13	Jammu & Kashmir	125	0.02	3.39	0.01	2.38	57	45.60	7	5.60	0	0.00	58	46.40	3	2.40	0	0.00	64	51.20	61	48.80
14	Jharkhand	174	0.07	6.98	0.01	5.29	97	55.75	16	9.20	2	1.15	51	29.31	7	4.02	1	0.57	115	66.09	59	33.91
15	Karnataka	849	0.01	9.98	0.01	9.28	332	39.10	49	5.77	25	2.94	315	37.10	87	10.25	41	4.83	406	47.82	443	52.18
16	Kerala	677	0.01	14.81	0.01	9.05	371	54.80	14	2.07	12	1.77	255	37.67	16	2.36	9	1.33	397	58.64	280	41.36
17	Madhya Pradesh	931	0.03	24.74	0.01	13.43	406	43.61	161	17.29	66	7.09	227	24.38	42	4.51	29	3.11	633	67.99	298	32.01
18	Maharastra	1056	0.01	20.69	0.01	12.37	416	39.39	97	9.19	49	4.64	389	36.84	73	6.91	32	3.03	562	53.22	494	46.78
19	Meghalaya	28	0.04	2.81	0.01	3.92	12	42.86	1	3.57	0	0.00	14	50.00	1	3.57	0	0.00	13	46.43	15	53.57
20	Orissa	809	0.01	7.00	0.01	6.37	366	45.24	45	5.56	6	0.74	343	42.40	43	5.32	6	0.74	417	51.55	392	48.45
21	Pondicherry	7	0.11	2.91	0.21	0.21	4	57.14	2	28.57	0	0.00	1	14.29	0	0.00	0	0.00	6	85.71	1	14.29
22	Punjab	182	0.01	8.06	0.01	8.49	65	35.71	5	2.75	3	1.65	60	32.97	33	18.13	16	8.79	73	40.11	109	59.89
23	Rajasthan	878	0.01	54.59	0.01	27.19	248	28.25	144	16.40	146	16.63	134	15.26	74	8.43	132	15.03	538	61.28	340	38.72
24	Tamil Nadu	617	0.01	15.68	0.02	11.94	320	51.86	121	19.61	66	10.70	80	12.97	16	2.59	14	2.27	507	82.17	110	17.83
25	Tripura	24	0.03	1.37	0.02	3.94	13	54.17	0	0.00	0	0.00	10	41.67	1	4.17	0	0.00	13	54.17	11	45.83
26	Uttar Pradesh	788	0.01	8.09	0.01	8.65	404	51.27	46	5.84	14	1.78	271	34.39	45	5.71	8	1.02	464	58.88	324	41.12
27	Uttaranchal	40	0.13	4.23	0.05	5.10	24	60.00	2	5.00	1	2.50	11	27.50	1	2.50	1	2.50	27	67.50	13	32.50
28	West Bengal	576	0.01	8.44	0.01	9.72	207	35.94	30	5.21	6	1.04	278	48.26	40	6.94	15	2.60	243	42.19	333	57.81
	Total	10377					4524	43.60	988	9.52	515	4.96	3313	31.93	621	5.98	416	4.01	6027	58.08	4350	41.92

**Central Ground Water Board
Ministry of Water Resources
Government of India
Faridabad**

May 2012