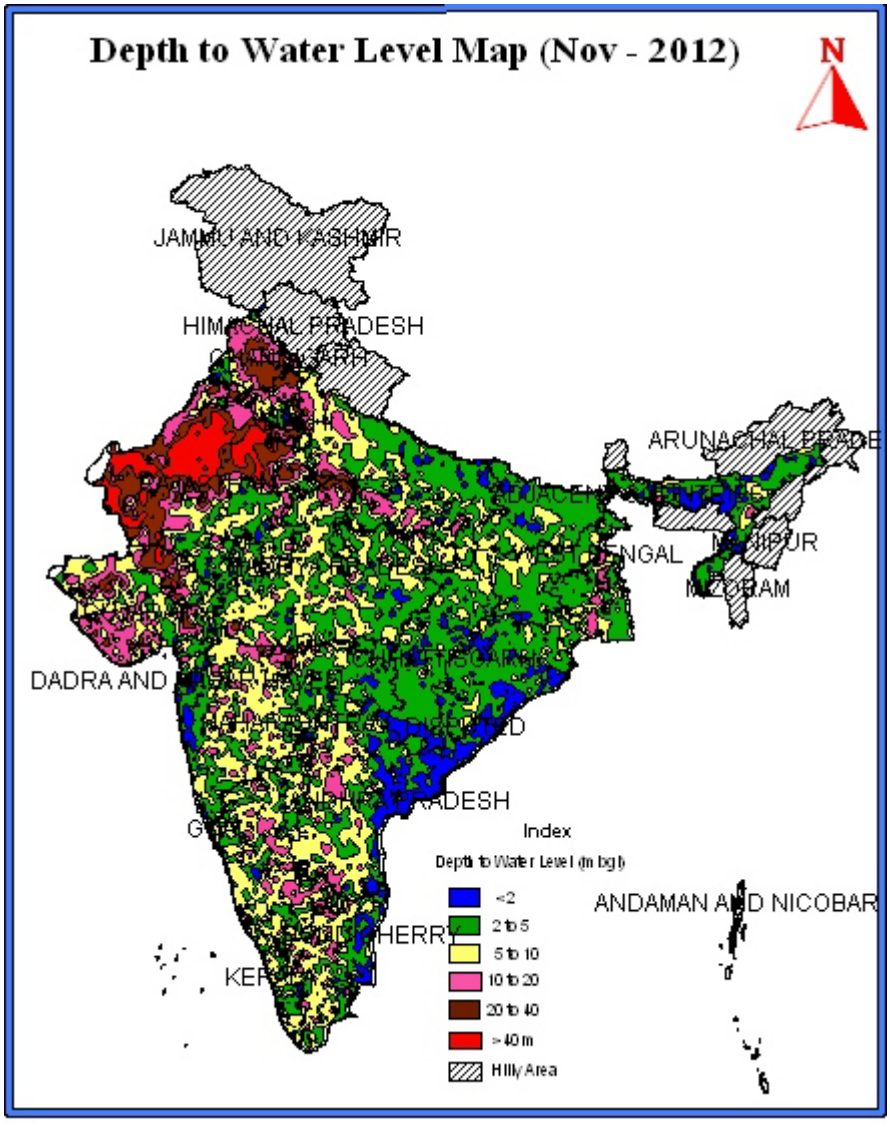
GROUND WATER LEVEL SCENARIO

IN INDIA

(NOVEMBER - 2012)



CENTRAL GROUND WATER BOARD

MINISTRY OF WATER RESOURCES

GOVT OF INDIA

Contents

1.0 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 plumage 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, November and November. The ground water regime monitoring was started in the year 1969 by Central Ground Water Board. At present a network of 15653 observation wells located all over the country is being monitored. Ground water samples are being 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.

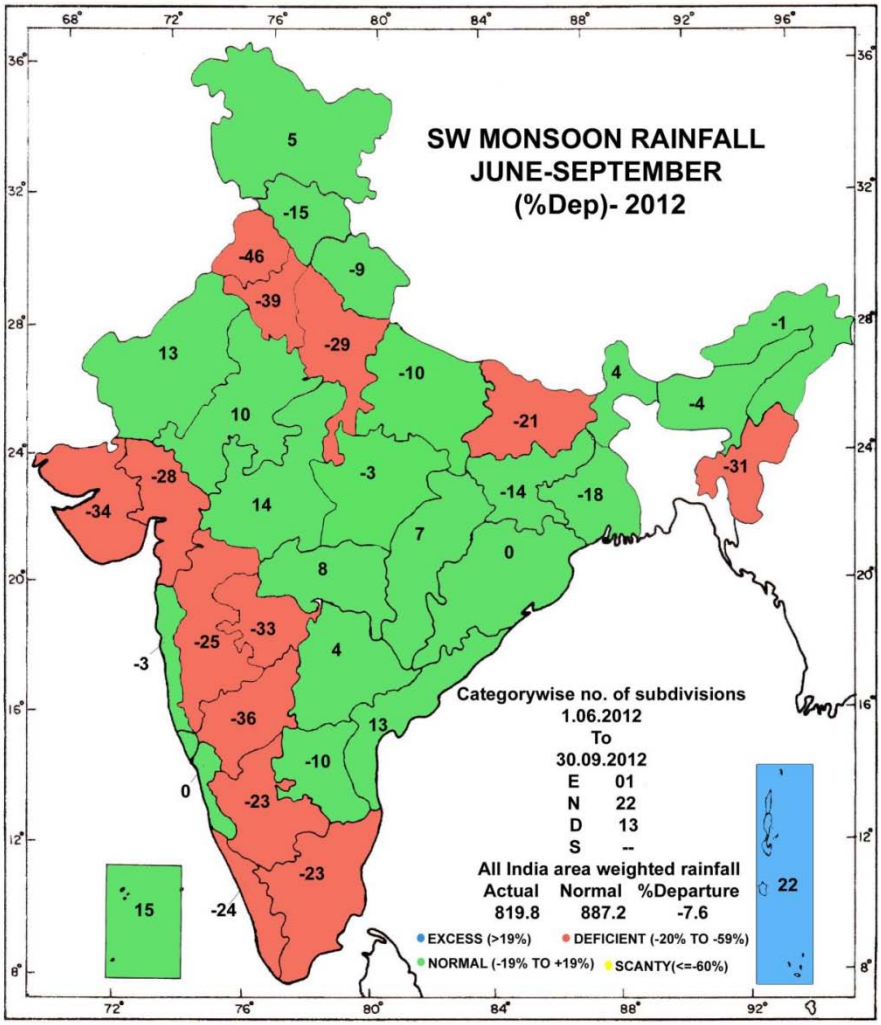
2.0 Rainfall Pattern

The actual season (June to September) rainfall over the country as a whole and four broad geographical regions during the 2012 SW monsoon season are given in the table below along with respective long period average (LPA) values. The rainfall during the 4 monsoon months and the second of the monsoon season, August + September) over the country as whole are also given.

Season (June to September) rainfall			
Region	**LPA (mm)**	**Actual Rainfall for 2012 SW Monsoon Season**	
		Rainfall (mm)	**Rainfall (% of LPA)**
All India	887.5	819.8	92
Northwest India	615.0	569.3	93
Central India	975.5	935.5	96
Northeast India	1438.3	1275.3	89
South Peninsula	715.5	643.9	90
Monthly & second half of the monsoon season rainfall over the country as a whole (All India)			
Month	**LPA (mm)**	**Actual Rainfall for 2012 SW Monsoon Season**	
		Rainfall (mm)	**Rainfall (% of LPA)**
June	163.6	117.8	72
July	289.2	250.4	87
August	261.3	264.7	101
September	173.4	192.0	111
August + September	434.7	453.7	104

As seen in the table above the season rainfall over the country as whole and four geographical regions of the country were less than the respective LPAs. Month wise the rainfall during the first two months (June and July) was below its LPA values. However, monthly rainfall for August and September as well as total rainfall during the second half monsoon season was higher than its LPA values

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT



Source: IMD

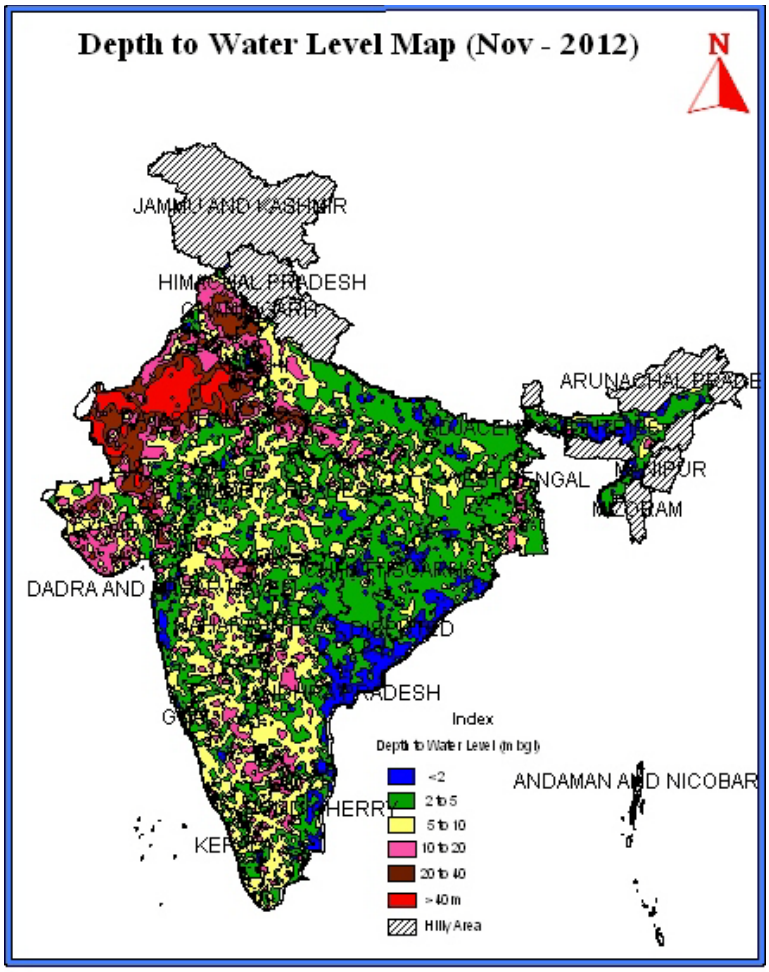
Sub-division wise rainfall distribution over India during southwest monsoon season (June to September) – 2012

3.0 Ground Water Level Scenario in India

Depth to Water Level (November- 2012)

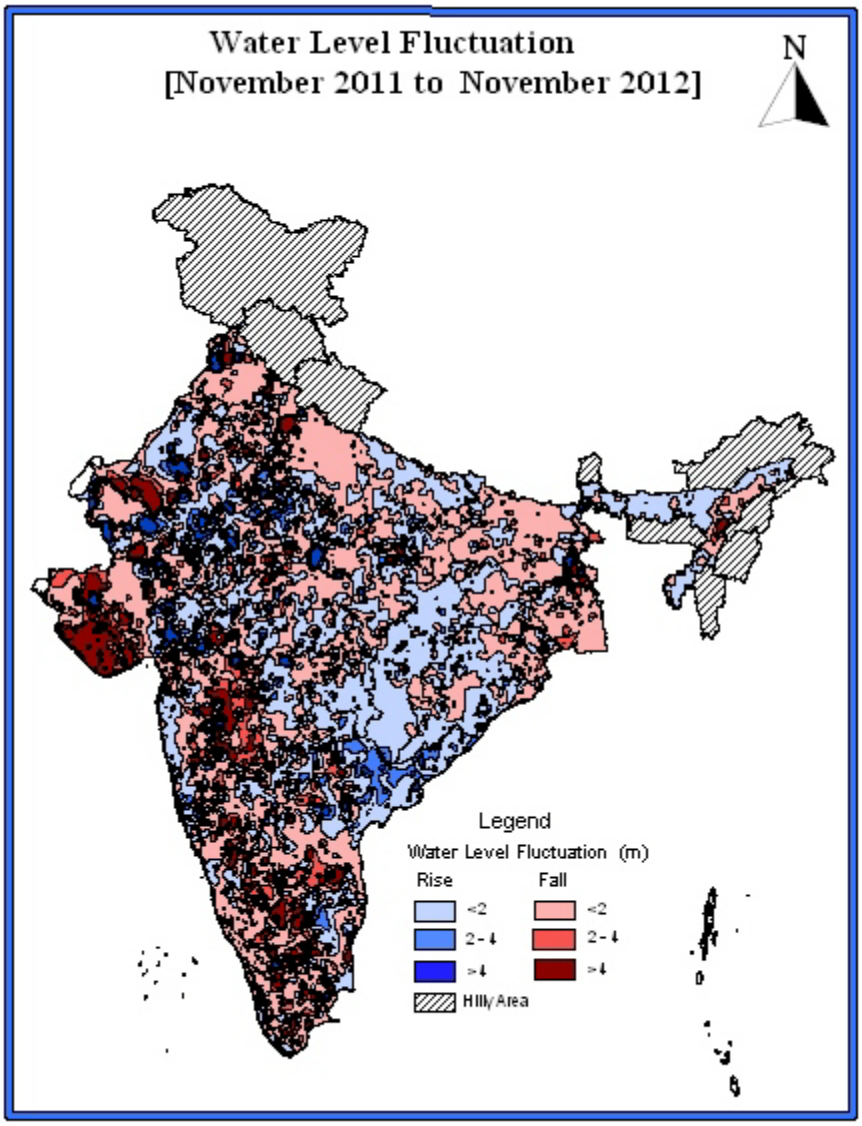
Perusal of the ground water level data for the November 2012 indicates that in Sub-Himalayan area, north of river Ganges, eastern coast of Orissa, Andhra Pradesh, Kerala, Gujarat, Maharastra, Chhattisgarh, Madhya Pradesh, Bihar, Jharkhand, entire northeast and Coastal Tamil Nadu states generally the depth to water level varies from 2-5 meter below ground level. About 37 % 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 Maharastra, Assam, North Bihar, Orissa and coastal area of Andhra Pradesh and Tamil Nadu states. 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% wells are showing water level less than 2 m bgl, 36 % wells are showing water in the depth range of 2-5 m bgl, 27% wells are showing water level in the depth range of 5-10 m bgl, 14% wells are showing water level in the depth range of 10-20 m bgl, 3% wells are showing water level in the depth range of 20-40 m and remaining wells are showing water level more than 40 m bgl.



Annual Water Level Fluctuation (November 2011 to November 2012)

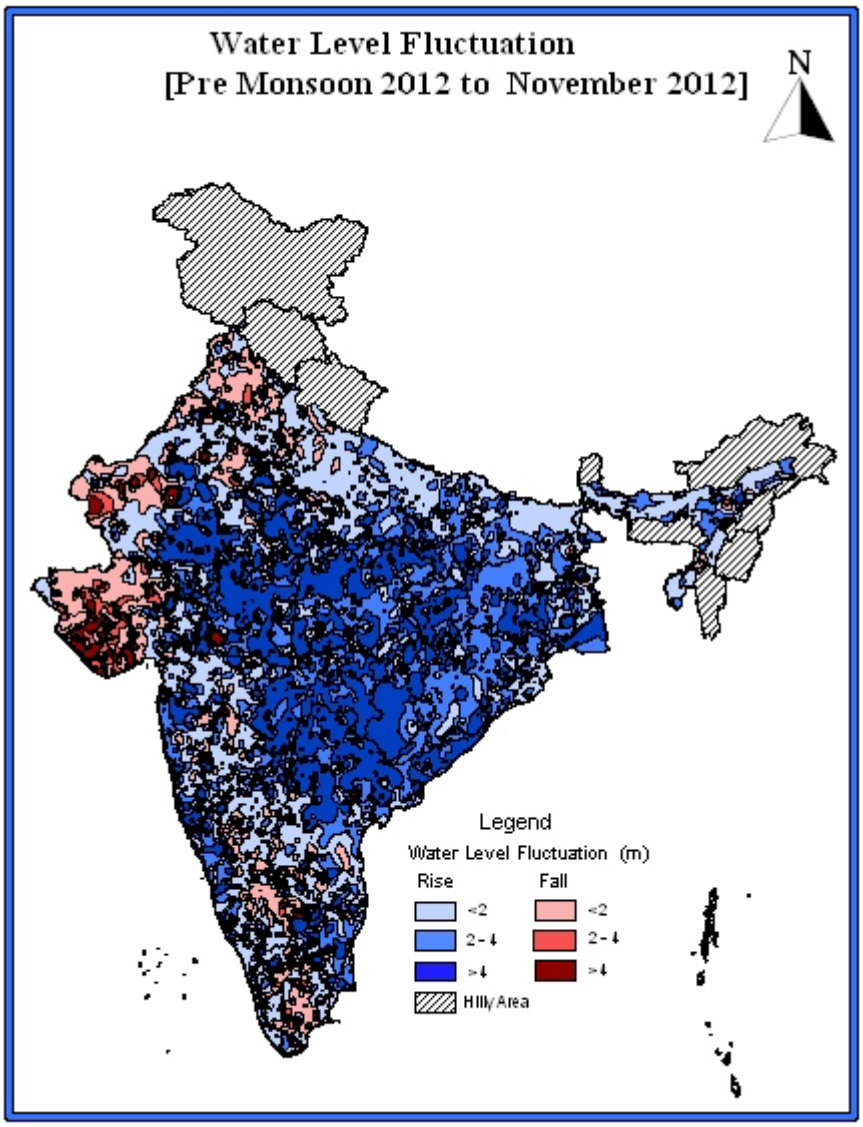
A comparison of depth to water level of November 2011 with November 2012 reveals that in general, there is decline in the water level in Maharastra, Rajasthan, Haryana, Punjab, Karnataka, Andhra Pradesh, Orissa, south Gujarat and Assam states. Most of the wells have been showing fall of water level in 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, Gujarat, Rajasthan, Punjab, Haryana, state. Rise in water level in the range of 0-2 m and 2-4 m is observed in Madhya Pradesh, Tamil Nadu and Andhra pradesh.



About 46% wells are showing rise in water level. Out of which 37% wells are shoring rise in the range of water level less than 2 m. About 5% wells are showing rise in water level in 2-4 m range and 4% wells showing rise in water level more than 4 m range. About 54 % wells are showing decline in water level, out of which 40% wells are showing decline in water level in less than 2 m range. About 8% wells are showing decline in water level in 2-4 m range. Only 6% wells are showing decline in water level more than 4 m range.

Seasonal Water Level Fluctuation (Pre Monsoon 2012 to November 2012)

A comparison of depth to water level during Pre Monsoon 2012 with November 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, Karnataka and Tamil Nadu states. Most of the wells have been showing rise of water level in the range of less 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 4 m is observed in pockets in Punjab, Haryana, Western Rajasthan and Karnataka states.

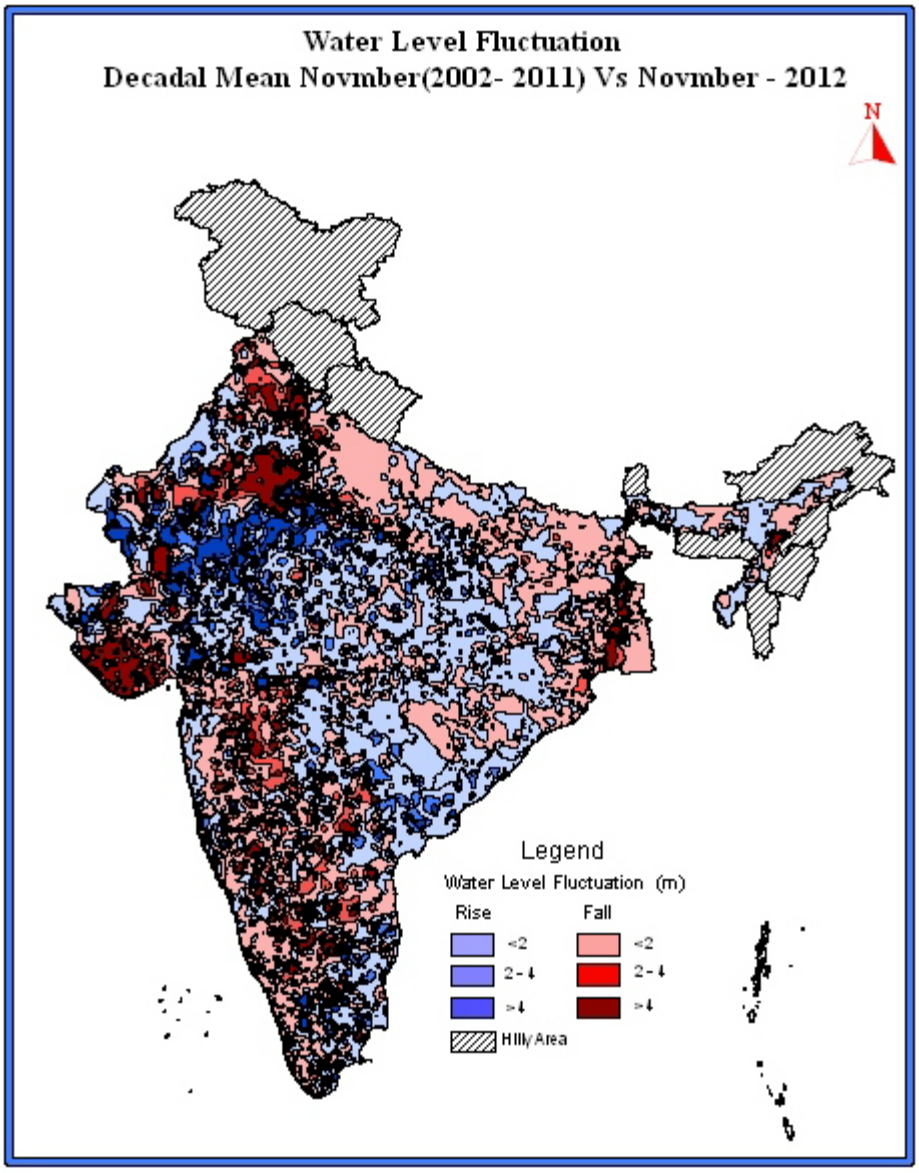


About 82% wells are showing rise in water level. Out of which 34% wells are shoring rise in water level less than 2 m range. About 24% wells are showing rise in water level in 2-4 m range and 23% wells showing rise in water level more than 4 m. About 16% wells are showing decline in water level, out of which 12% wells are showing decline in water level in less than 2 m range. About 3% wells are showing decline in water level in 2-4 m range. Only 1% wells are showing decline in water level more than 4 m range.

Annual water level fluctuation (November 2011 to November 2012) and seasonal water level fluctuation (Pre Monsoon 2012 to November 2012) maps depicts that rise in water level is more prominent, which is a indication of extremely good rainfall.

Water Level Fluctuation with Decadal Mean [Nov (2002- 2011) to Nov – 2012]

A comparison of depth to water level of November 2012 with decadal mean November (2002-2011) reveals that in general, there is decline as well as rise 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 states. About 54% of wells showing rise in water level. Out of which 40.00% wells are showing rise in water level less than 2 m range. About 8% wells are showing rise in water in range of 2-4 m. About 6% wells are showing rise in water in range of more than 4 m. About 46% wells are showing decline in water level, out of which 36% wells are showing decline in water in the range of 0-2 m, 9% wells are showing decline in water level in depth range 2-4 m bgl and remaining 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 the Gujarat, southern Rajasthan, western Madhya Pradesh and Tamil Nadu state.


Water Level Fluctuation
Decadal Mean Novmber(2002- 2011) Vs Novmber - 2012
N
Legend
Water Level Fluctuation (m)
Rise
Fall
<2
2-4
>4
<2
2-4
>4
Hill/Area

4.0 The State wise ground water level scenario

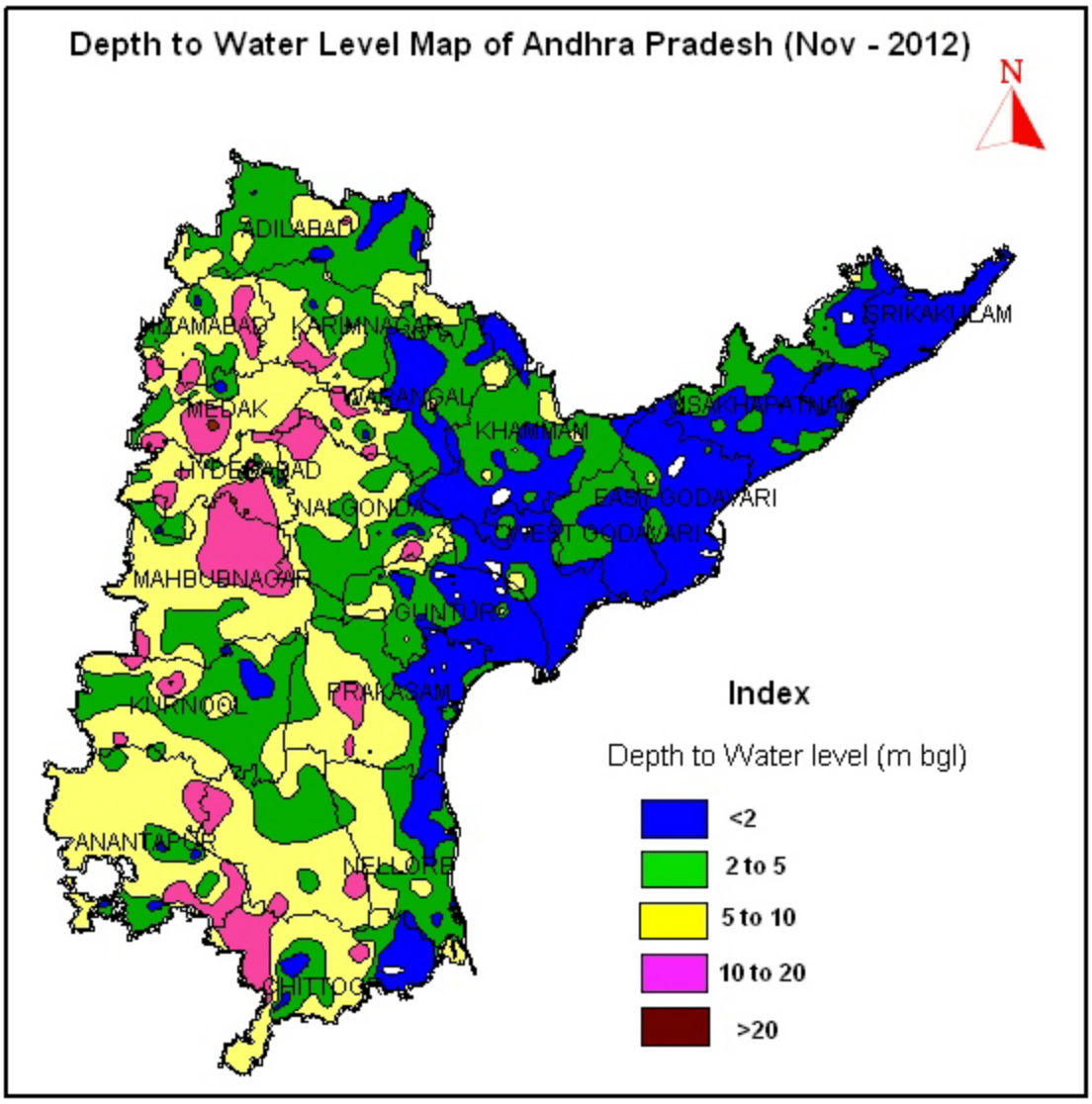
The state wise scenario of ground water level and comparison with previous year water level as well as change with decadal average has been discussed in the following paragraphs.

4.01 Andhra Pradesh

The depth to water level map of November 2012 shows that the depth to water level of 2-5 m bgl is more prevalent in the entire state. Shallow water level less than 2 m bgl are noticed in Srikakulam, Visakhapatnam, East Godavari, west Godavari, Krishna, Guntur and small parts of Prakasam and in Nellore districts of Coastal region. Depth to water level ranging from 2-5 m bgl is noticed mostly in in Adilabad, Khammam, Karimnagar, Warangal, Medak, Nizamabad, Nizamabad, Mahbubnagar, Kurnool and small isolated parts of Chittoor districts.

Depth to water level ranging between 5-10 m bgl is observed in major parts of Telangana and Rayalaseema regions. Depth to water level ranging between 10 to 20 m bgl is noticed in small area in Mahbubnagar, Karimnagar, Medak, Warangal districts of Telangana region and major parts of Kurnool, Cuddapah districts small isolated parts of Anantpur and Chittoor districts of Rayalaseema.

Analysis of depth to water level data of 982 wells shows that water level varies between ground level in Ranga from 0.37 to 15.26 in Anantpur district and 0.87 to 28.33 m bgl in Ranga Reddy district. Water level less than 2 m bgl is noticed in 37% of wells, between 2-5 m bgl in 28 % wells, between 5-10 m bgl 23 % wells and 10-20 m bgl in 10 % wells and rest in 2 % wells depth to water level is between 20-40 bgl is registered.



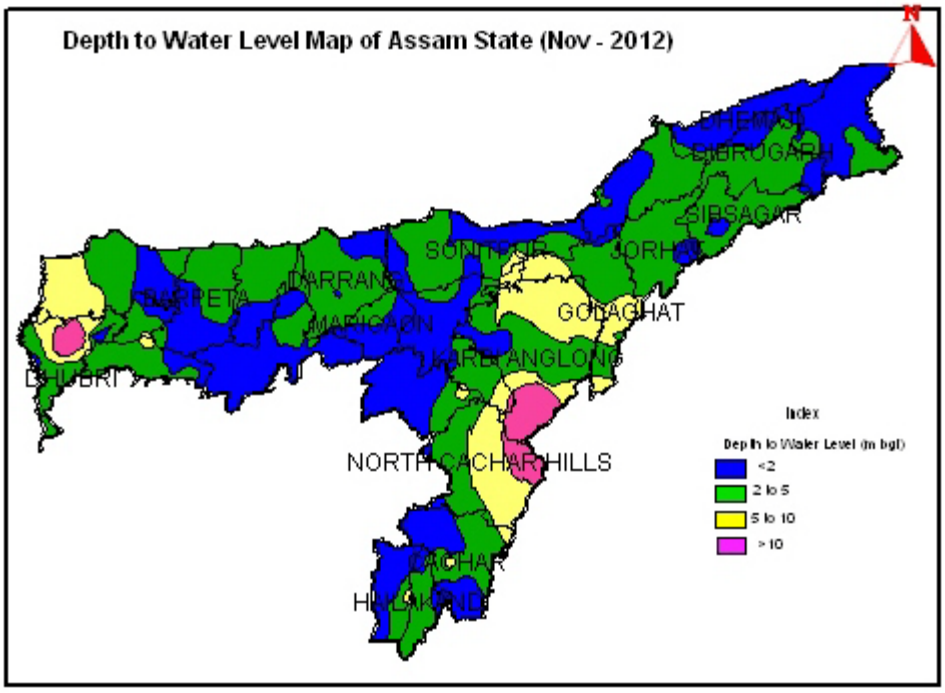
The fluctuation of water level between November 2012 and the average water levels of past decade (Decadal mean November 2002-2011) indicate in general there is decline and rise of water level in different parts of the state. About 34% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 23 % of the wells analyzed. About 7% of wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 4% of monitored wells. About 65% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been

recorded in 46% of monitored wells; Water level rise in order of 2-4m has been recorded 14% of wells analyzed. About 5% of wells shows rise in water level in more than 4 m range.

4.02 Assam

In general depth to water level scenario in the state depicted a water level within 5 m bgl. Around 51% stations recorded water level within 2 m bgl and around 45% wells recorded water level between 2-5 m bgl. Around 4% wells recorded water level between 5-10 m bgl. Only three wells shows water level between 10-20 m bgl.

Shallow water level within 2 m bgl was mostly recorded in Dhemaji, Tinsukia, parts of Dibrugarh, Sonitpur, Marigaon, Barpeta and Kamrup districts in Brahamputra valley and in Cachar, Karimganj and Hilakandi district in Barak valley. In general, in Brahmputra valley water level are recorded mostly within 5 m bgl. The minimum depth to water level in the state has recorded as 0.01m bgl in Dhemaji district and maximum depth to water level has been recorded as 18.96 m bgl in Karbi Anglong district.

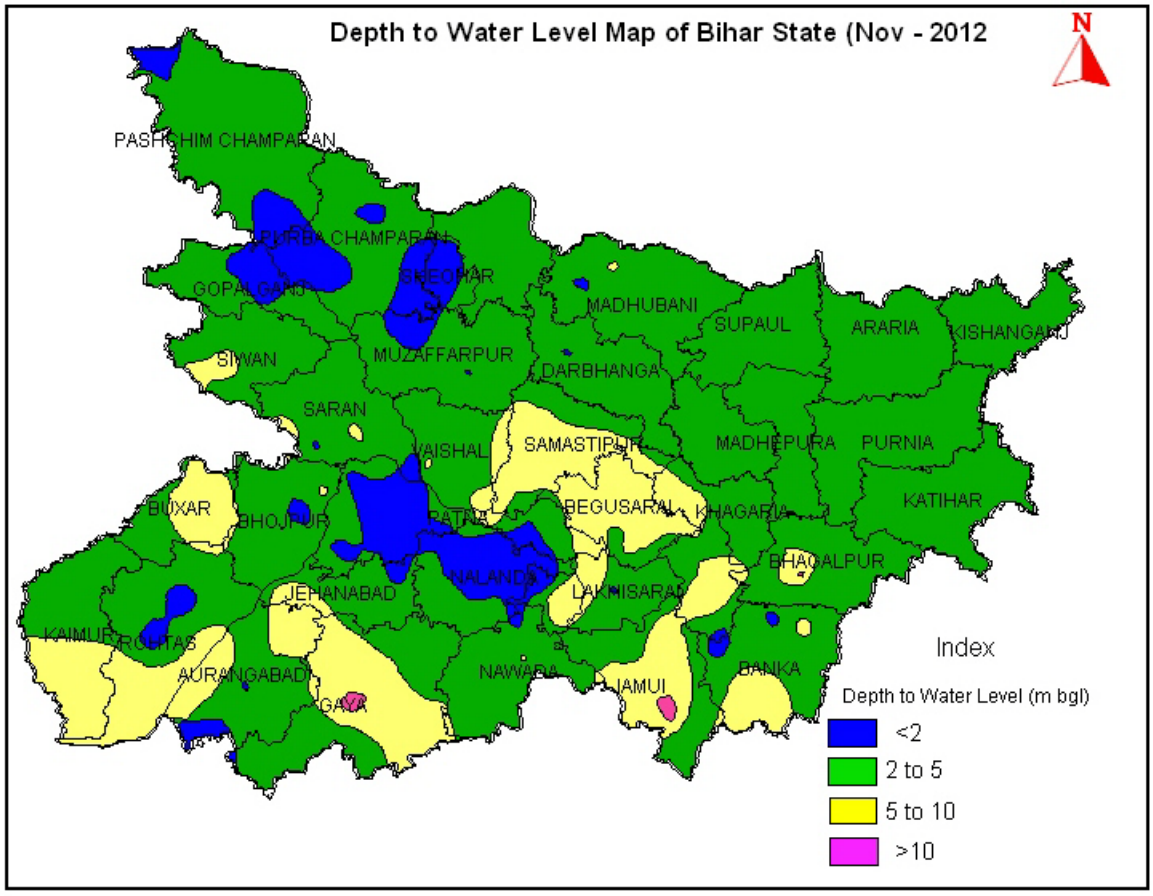


Water level of November 2011 when compared to that of November 2012 shows that about 66 % of the wells analyzed showings rise in water level and 33% of fall in the state. Out of this, 30% of the wells showing fall in water level less than 2 m. A fall of 2-4 m is observed in 2% of the wells analyzed and fall of >4 m is noticed in less than 1.0% of the wells. About 66% of wells analyzed have shown rise in water level with majority of wells (65%) showing fall in the range of 0-2 m.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in different parts of the state. About 57% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 50 % of the wells analyzed. About 5% of wells reported decline in water level between 2-4 m. A decline of more than 4m has not been recorded in of monitored wells. About 43% of wells analysed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 39% of monitored wells; Water level rise in order of 2-4m has been recorded 4% of wells analyzed. No well shows rise in water level in more than 4 m range.

4.03 Bihar

During the month of November 2012 a total of 189 wells have been monitored. Water level ranges from 0.35 m bgl in Rohtas district to 11.75 in Jamui district. About 17 % of the wells shows water level in between 0 to 2 m bgl depth range. About 61% of the wells are showing water level in the range 2-5 m bgl and 20% of the wells analyzed are showing water level in the range of 5-10 m bgl. Only three numbers of wells is showing water level more than 10 m bgl.



Water level data of November 2011 compared to November 2012 shows that in general there is decline in water level in entire state. About 29% of the wells analyzed showing rise in the water level. Out of this 27% wells have shown a rise in 0-2 m range. About 2% of the wells have shown rise in 2-4 m range. About 54 of the wells analyzed showing falls in the water level. Out of this 49% of the total wells have shown a fall within 0-2 m range. Only 3% of monitoring wells shows fall in water level in the range of 2-4 m. Maximum 0.03 m rise in water level has been recorded in the State. Maximum 4.41m fall in water level has been recorded in the State.

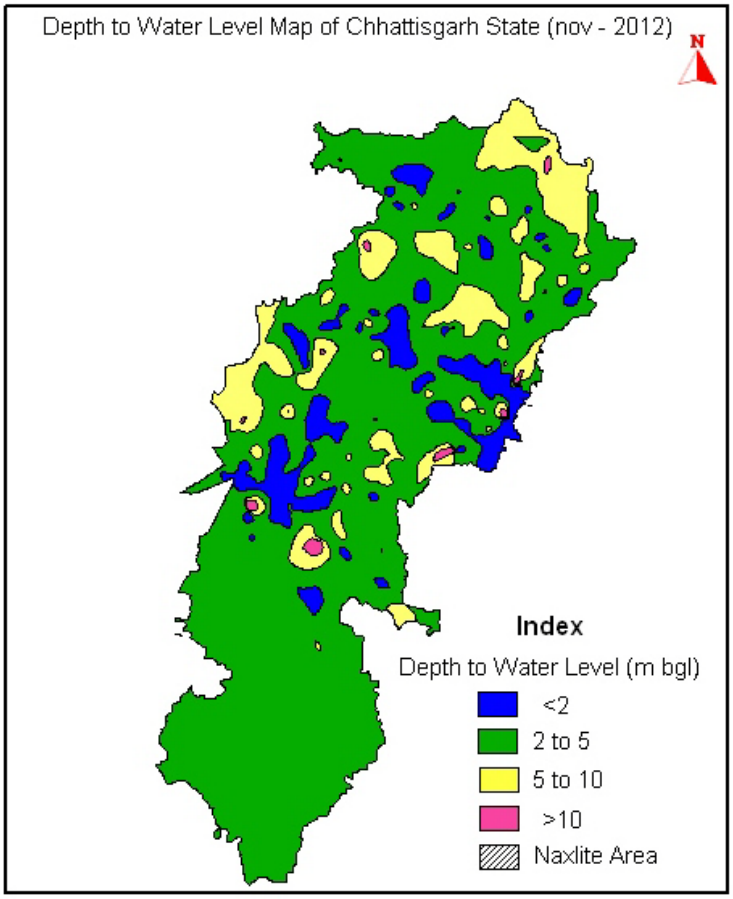
The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in entire state. About 61% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 55 % of the wells analyzed. About 5% of wells reported

decline in water level between 2-4 m. A decline of more than 4m has been recorded in 1% of monitored wells. About 37% of wells analysed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 35% of monitored wells; Water level rise in order of 2-4m has been recorded 2% of wells analyzed. About 0% of wells shows rise in water level in more than 4 m range.

4.04 Chhattisgarh

In general, the depth to water level ranges from 2-5 m bgl in approximately 82% of the observation wells in the state. Deeper water levels ranging between 10 and 20 m bgl occur approximately in 6% of the observation wells and mostly in parts of Kanker and Mahasamund, districts. The deepest water level of 24.90 m bgl was monitored in Durg observation well of the Durg district

Around 36% of the monitored wells are showing water levels between 0-2 m bgl covering all the districts of the state. Water levels in the range of 2-5 m bgl are recorded in about 82% of the observation wells monitored. The highest percentages of wells in this range are in Bastar, Jaspur, Kawardha, Raipur and Rajnandgaon districts. Nearly 223% of observation wells are exhibiting water level in the range of 5-10 m bgl mostly in Kanker, Mahasamund and Sarguja districts.



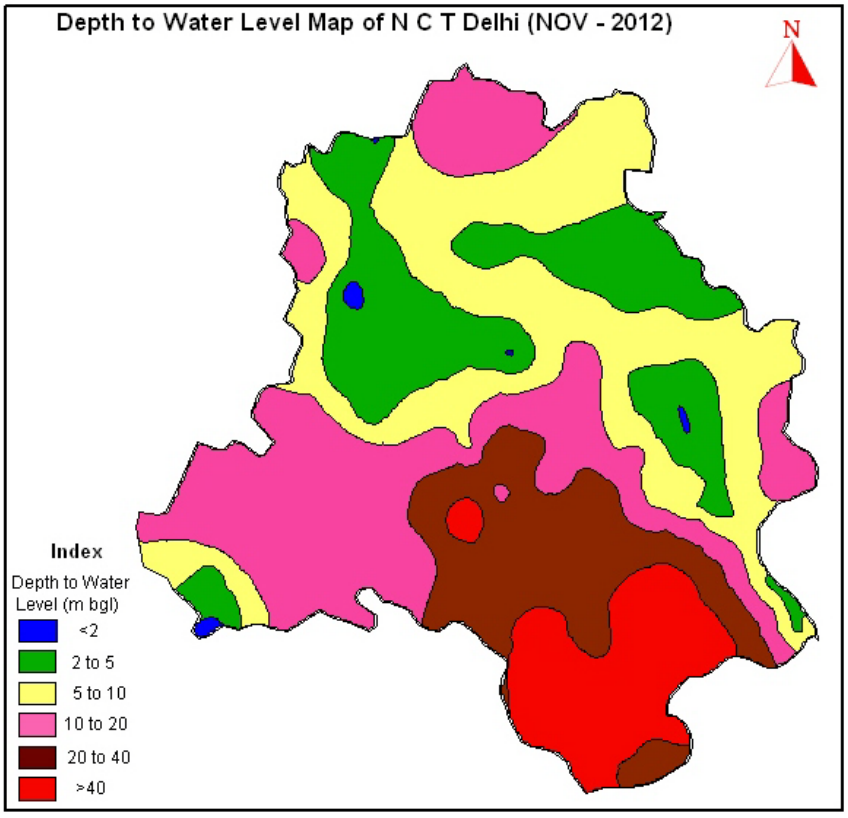
When compared to water level in November 2011, about 19% of the observation wells are showing fall in water level in November 2012, mostly in the range of 0-2m. Fall of water level in the range of 0-2m is observed in 17% (approx.) of the observation wells and are distributed in almost all the districts. Fall of water level in the range of 2-4 m is observed in about 1% of the wells monitored mostly in Bilaspur, Mahasamund, Raigarh, Raipur and Rajnandgaon districts. Rise of water level is recorded in about 80 % of the monitored wells the state. Rise of water level in the range of 0- 2 m. is observed in about 72% of the monitored wells. Rise in the range of 2 to 4 m has been observed in 7% and >4 m in 1% monitoring wells. Maximum fall of water level by 7.80 m as compared to November'11 is noted in Durg observation well Durg district. Maximum rise of water level by 7.10 m is noted at Durg observation well.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in different parts of the state. About 33% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 31 % of the wells analyzed. About 1% of

wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 1% of monitored wells. About 66% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 59% of monitored wells; Water level rise in order of 2-4m has been recorded 6% of wells analyzed. About 1% of wells shows rise in water level in more than 4 m range.

4.05 Delhi

The depth to water level recorded in the state of Delhi during November 2012 ranged from 0.69 m bgl to 66.40. m bgl. It is observed that 6% of the wells analyzed have shown water level in the range of 0-2 m bgl, 24% of the wells have shown water level in the range of 2-5 m bgl. About 27% of the wells analyzed have shown water level in the range of 5-10 m bgl and 26% of the wells have shown water level in the range of 10-20 m bgl. Deeper water level in the range of 20-40 m bgl and > 40 m bgl are shown by 8% and 9% of the wells analyzed.



Water levels of November 2011 when compared to water level of November 2012 in the state indicates that about 80% of the wells analyzed have recorded a fall in water level, out of which 65% of analyzed wells have recorded a fall in the range of 0 to 2 m, 13% of analyzed wells have shown fall in the range of 2 to 4 m and 2% of the wells have shown fall > 4 m. About 20% of the wells have shown rise in water level, out of this 1% have recorded rise in the range of 0 to 2m. About 2% of the wells have shown rise in water level in the range of 2 to 4m and remaining 0% wells shows rise in water level more than 4 m range.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in entire state. About 55% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in all 27% monitoring wells analyzed. About 35% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 27% of monitored

wells; Water level rise in order of 2-4m has been recorded 3% of wells analyzed. About 1% of wells shows rise in water level in more than 4 m range.

4.06 Goa

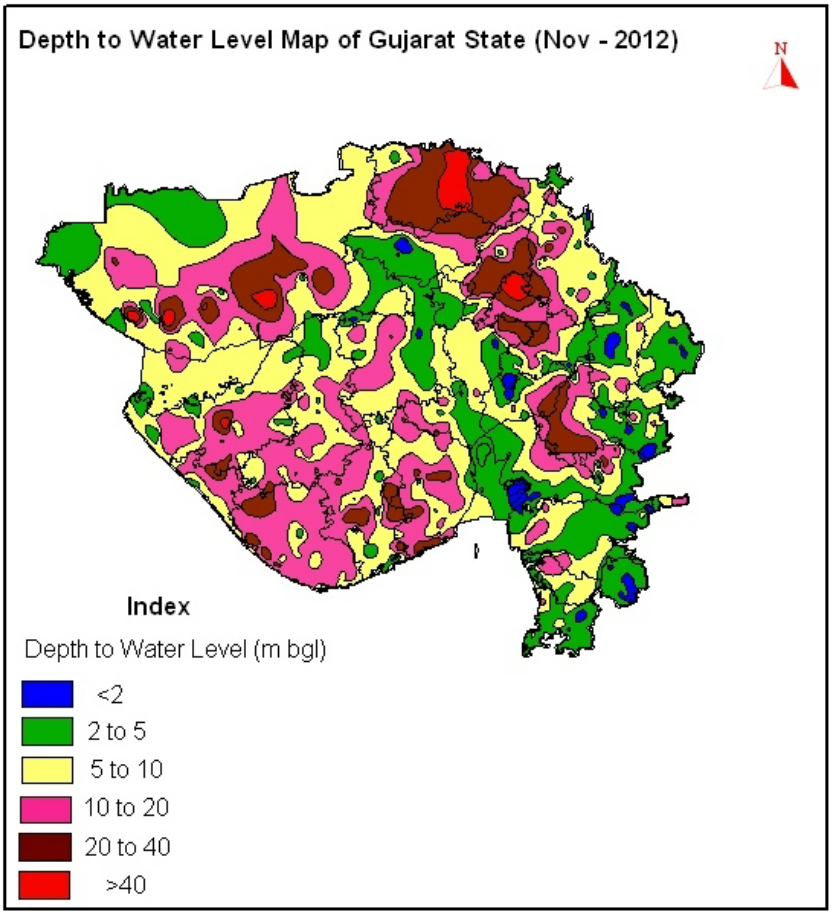
The depth to water level recorded in the state of Goa during November 2012 ranged from 0.21 m bgl in North Goa to 14.65 m bgl in South Goa. It is observed that out of 40 stations monitored during the month, 22% wells have less than 2 m bgl water level, 45% wells have 2 to 5 m bgl water level, 25% wells have 5 to 10 m bgl water level and 8% wells have 10 to 20 m bgl water level.

Water levels of November 2012 when compared to water level of November 2011 in the state of Goa indicate that about 46% of the wells analyzed have recorded a fall in water level and all these wells are in the range of 0 to 2 m. The remaining 54% wells have shown rise in water level, out of this 51% wells have recorded rise in the range of 0 to 2m.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in entire state. About 42% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in all 42% monitoring wells analyzed. About 58% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 51% of monitored wells; Water level rise in order of 2-4m has been recorded 5% of wells analyzed. About 3% of wells shows rise in water level in more than 4 m range.

4.07 Gujarat

The depth to water level recorded in the state of Gujarat during November 2012 ranged from 0.15 m bgl in Mehsana district to 99.83 m bgl in Kutch district. It is observed that 8% of the wells analyzed have shown water level in the range of 0-2 m bgl, 27% of the wells have shown water level in the range of 2-5 m bgl. About 31% of the wells analyzed have shown water level in the range of 5-10 m bgl and 23% of the wells have shown water level in the range of 10-20 m bgl. Deeper water level in the range of 20-40 m bgl and > 40 m bgl are shown 10% and 1% of the wells analyzed.

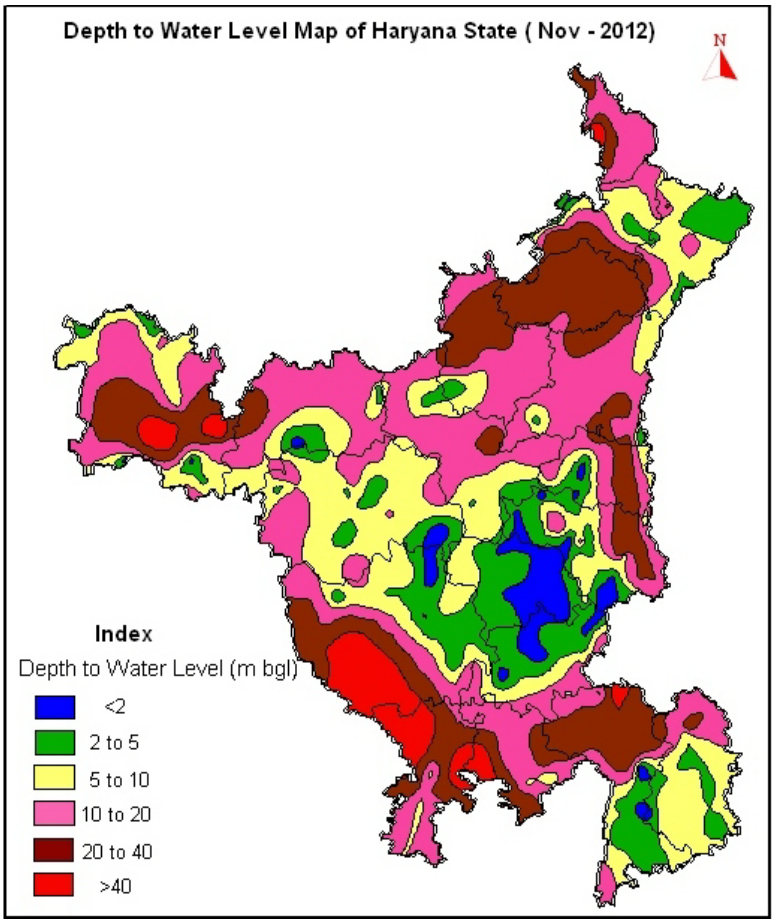


Water level data of November 2011 compared to November 2012 shows that in general there is rise and fall in water level in different parts of the state. About 42% of the wells analyzed shows rise in the water level. Out of this 28% wells have shown a rise in 0-2 m range. About 9% of the wells have shown rise in 2-4 m range and about 5% wells has shown rise in water in more than 4 m. About 58% of the total wells have shown a fall in water level. Out of this 28% wells have shown a fall in 0-2 m range. About 12% of the wells have shown fall in 2-4 m range and about 18% wells has shown fall in water level in more than 4 m.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in entire state. About 58% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 28 % of the wells analyzed. About 12% of wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 18% of monitored wells. About 42% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 28% of monitored wells; Water level rise in order of 2-4m has been recorded 9% of wells analyzed. About 5% of wells shows rise in water level in more than 4 m range.

4.08 Haryana

The depth to water level during November 2012 varies from 0.14 m bgl in Gurgaon district to 70.90 m bgl in Rewari district. Very shallow water levels of < 2 m bgl is observed in the central part of the State covering parts of Rohtak, Jhajjar, and Sonipat districts and in isolated patches in Gurgaon district. About 9 % of wells monitored have reported water level up to 2 m bgl, 20 % of wells monitored have reported water level from 2 to 5 m bgl, 20 % of wells monitored have reported water level from 5 to 10 m bgl, 31 % of wells monitored have reported water level from 20 to 40 m bgl 20 % of wells monitored have reported water level more than 40 m bgl.



The water level data of November 2012 when compared with November 2011 indicates that there is rise in water levels in about 35% of the wells monitored. In most of the area the rise is in the range of 0-2 m. About 31 % of the wells monitored show rise in the range between 0-2 m. The water level rise in the range between 2-4 m and >4 m have been observed in 2% and 2% of the wells monitored respectively. Decline in water level has been recorded in 65% of the wells. Fall in range of 0-2m has been recorded in 53 % wells. The 6% of wells in the wells shows fall in water level more than 2 m and 4% of wells shows fall more than 4 m bgl.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2001-2012) indicates in general there is decline and rise of water level in different parts of the state. About 57% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 29 % of the wells analyzed. About 14% of wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 4% of monitored wells. About 43% of wells analyzed have shown rise in water levels. Rise in the range

of 0-2 m has been recorded in 36% of monitored wells; Water level rise in order of 2-4m has been recorded 4% of wells analyzed. About 2% of wells shows rise in water level in more than 4 m range.

4.09 Himachal Pradesh

The depth to water level during November 2012 varies from 0.37 m bgl in Mandi district to 27.54 m bgl in Solan district of the state. About 18% of the wells showing water level in range 0-2 m bgl and 40% of the wells showing water level of less than 5 m bgl and occurs in Balh Valley of Mandi District, parts of Kangra, Una, & Sirmaur districts and also in other localised areas of other districts. About 24% of the wells are showing water level in the range of 5-10 m bgl while 13% of the wells are showing water level in the range of 10-20 m bgl. Deep water levels of more than 20 m are shown by 5 % wells.

The water level data of November 2012 when compared with November 2011 indicates that there is rise and fall in water levels in the state. About 44% of the wells are showing rise in water level monitored. About 40 % of the wells monitored show rise in the range between 0-2 m. The water level rise in the range between 2-4 m and >4 m have been observed in 0% and 4% of the wells monitored respectively. Decline in water level has been recorded in 56% of the wells. Fall in range of 0-2m has been recorded in 52 % wells. The 3% of wells in the wells shows fall in water level more than 2 m and 1% of wells shows fall more than 4 m bgl.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2001-2012) indicates in general there is decline and rise of water level in entire state. About 34% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 30% of the wells analyzed. About 4% of wells reported decline in water level between 2-4 m. About 66% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 56% of monitored wells; Water level rise in order of 2-4m has been recorded 6% of wells analyzed. About 4% of wells shows rise in water level in more than 4 m range.

4.10 Jammu & Kashmir

The depth to water level recorded in the state of Jammu & Kashmir during November 2012 ranged from 0.31m bgl in Udhampur district to 32.52 m bgl in Jammu district. It is observed that about 35% wells have less than 2 m bgl water level, mainly in outer plain areas. About 39% of the wells analyzed have

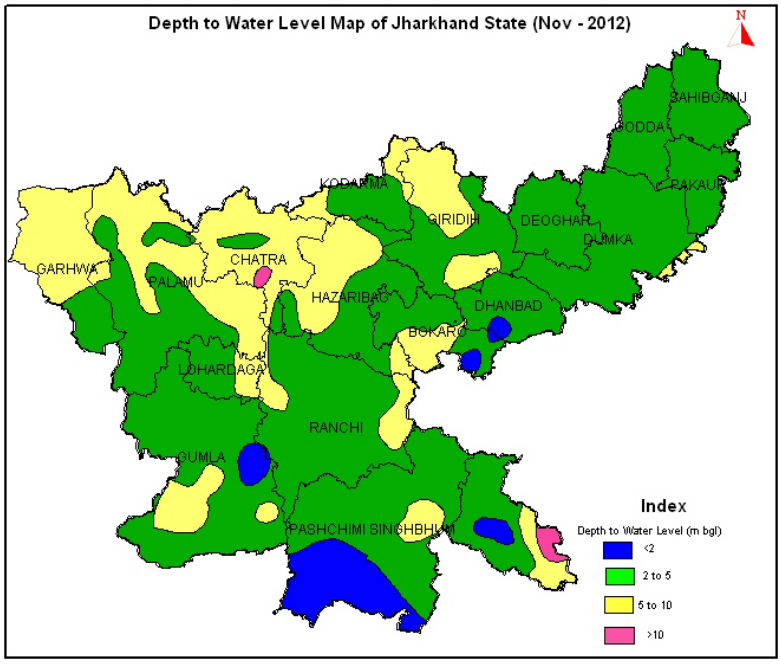
shown water level in the range of 2-5 m bgl. About 14% wells have shown water level in the range of 5-10 m bgl. About 6% wells have 10 to 20 m bgl water level and the remaining 4% wells have > 20 m bgl water level. All the areas of valley in Udhampur and Rajouri districts shows water level between 0-2 m and 2-5 m bgl. In outer plain areas most of the water level records are less than 2 m bgl. Some parts of Jammu and Kathua districts water level are recorded between 2-5 m bgl and 5-10 m bgl.

Water levels of November 2012 when compared with water level of November 2011 in the state indicates that about 41% of the wells analyzed have recorded a rise in water level, out of which 38% of analyzed wells have recorded a rise in the range of 0 to 2 m, 2% of analyzed wells have shown rise in the range of 2 to 4 m and 1% of the wells have shown rise > 4 m. About 59% of the wells have shown fall in water level. Out of which 55% of analyzed wells have recorded a fall in the range of 0 to 2 m, 3% of analyzed wells have shown fall in the range of 2 to 4 m.

The fluctuation of water level during November 2012 when compared with the decadal means (November 2002-2011) indicates that about 43% of analyzed wells have shown a decline in water level. Out of this 37% of the wells have shown decline in the range of 0 to 2 m, 5% have shown decline in the range of 2 to 4 m and 1% have shown > 4 m decline. About 57% wells have shown a rise in water level, out of which 54% have shown rise in the range of 0 to 2 m, 2% have shown rise in the range of 2to 4 m and only 1% have shown rise in the range of more than 4 m bgl.

3.11 Jharkhand

During the month of November 2012 water level ranges from 0.55 m bgl in Paschimi Singh district to 13.85 m bgl in Purbi Singhbhu district. Out of the total wells, about 6% of wells have shown depth to water level in the range of 0 to 2 m. About 55% of the wells water level was found between 2 to 5 m depth ranges. About 37% of the wells analyzed are showing water level in the range of 5-10 m bgl. Deeper water levels (> 10 m bgl) are observed in 2% wells.

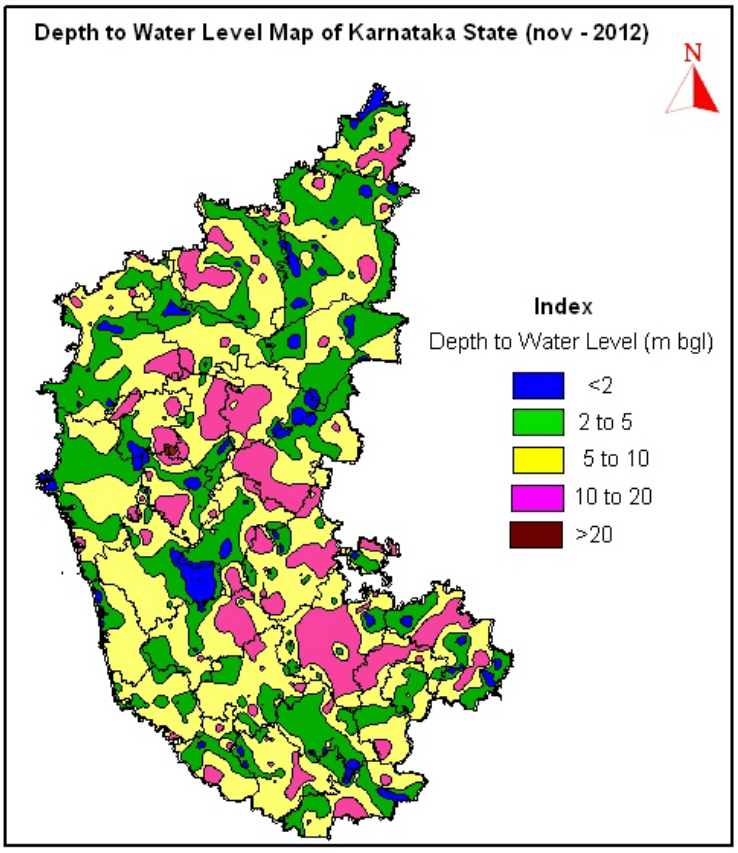


In the state of Jharkhand there is an overall fall in water level in November 2012 in comparison to that of November 2011. About 62% of the wells analyzed showings fall in the water level. Out of this 54% wells have shown a rise in 0-2 m range. About 7% of the wells have shown fall in 2-4 m range. About 32% of the wells have shown rise in water level 0-2 m. About 5% of the total wells have shown a decline in water level within 2-4 m range.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in entire state. About 51% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 41 % of the wells analyzed. About 8% of wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 3% of monitored wells. About 49% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 43% of monitored wells; Water level rise in order of 2-4m has been recorded 5% of wells analyzed. About 1% of wells shows rise in water level in more than 4 m range.

4.12 Karnataka

The depth to water level recorded in the state during November 20120 ranged from 0.03 m bgl in Gulbarga district to 23.56 m bgl in Dharwad district. The analysis of monitored wells shows that 15% wells have less than 2m bgl water level, 30% wells have 2 to 5 m bgl water level and 33% wells have 5 to 10 m bgl water level. Moderately deep water level of 10 to 20 m bgl are seen in 21% wells and deep water level of > 20 m bgl found in about 1% of the analyzed wells.



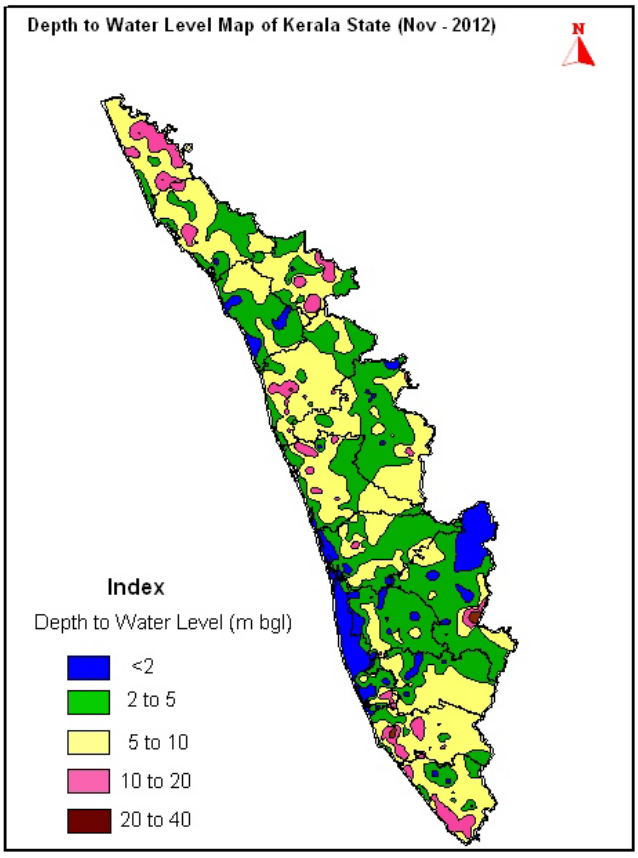
Water levels of November 2012 when compared to that of November 2011 have shown that about 32% of the analyzed wells have recorded a rise in water level. The remaining wells about 58% have recorded a fall in water level. In the rise category, the rise of water level in the range 0-2m is observed in 30% of the analyzed wells. Rise in water level in the range of 2-4 m and >4 m is recorded in 2% and 1% wells respectively. In the fall category the fall in water level in the range of 0-2 m is observed in 36% of

analyzed wells. Fall of water level in the range of 2-4 m and >4 m are seen in 11% and 11% wells respectively.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in entire state. About 51% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 41% of the wells analyzed. About 8% of wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 2% of monitored wells. About 49% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 42% of monitored wells; Water level rise in order of 2-4m has been recorded 5% of wells analyzed. About 2% of wells shows rise in water level in more than 4 m range.

4.13 Kerala

The depth to water level recorded in the state of Kerala during November 2012 ranged from 0.10 m bgl in Alappuzha district to 38.28 m bgl in Idukki district. It is observed 18% of the wells have less than 2 m bgl water level, mainly in coastal areas. About 32% of the wells analyzed have shown water level in the range of 2-5 m bgl. About 37% wells have shown water level in the range of 5-10 m bgl, 11% wells have shown 10 to 20 m bgl water level and the remaining 1% wells have > 20 m bgl water level. Deeper water level > 20 m bgl are observed in Idukki district.

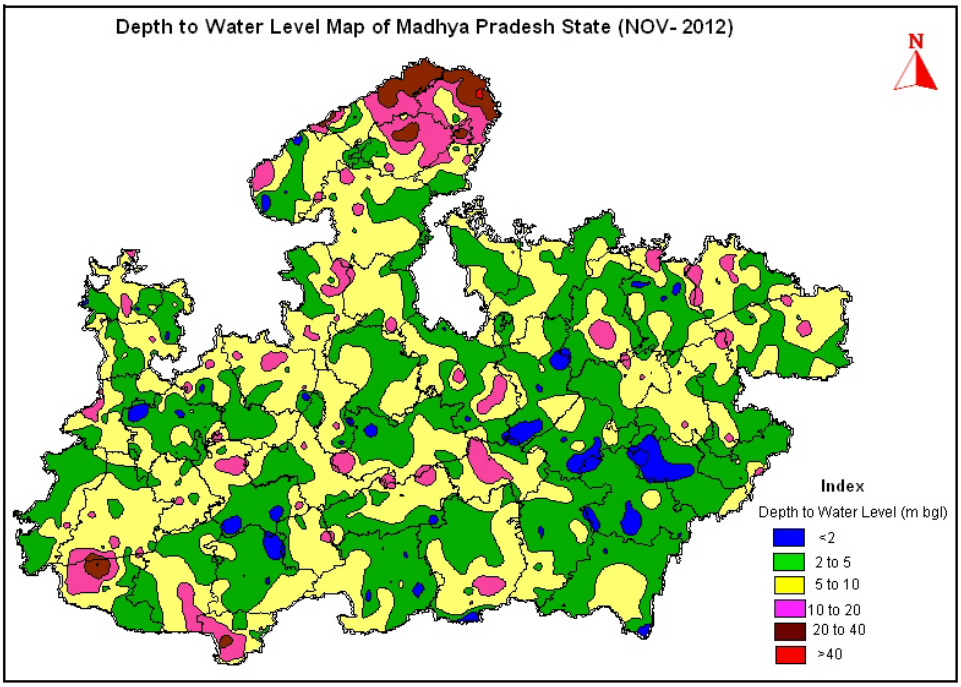


Water levels of November 2012 when compared to water level of November 2011 in the state indicates that about 31% of the wells analyzed have recorded a rise in water level, out of which 27% of analyzed wells have recorded a rise in the range of 0 to 2 m, 3% of analyzed wells have shown rise in the range of 2 to 4 m and 1% of the wells have shown rise > 4 m. About 69% of the wells have shown fall in water level, out of this 59% wells have recorded fall in the range of 0 to 2m and 8.% have shown fall in the range of 2-4 m and 2% recorded fall in water level > 4 m.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in entire state. About 43% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 34 % of the wells analyzed. About 6% of wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 3% of monitored wells. About 57% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 48% of monitored wells; Water level rise in order of 2-4m has been recorded 5% of wells analyzed. About 4% of wells shows rise in water level in more than 4 m range.

4.14 Madhya Pradesh

The depth to water level during November 2012 varies from 0.37 m bgl to 47.0 m bgl. In general the depth to water level ranges between 2-5 m bgl and 5-10 m bgl in most parts Madhya Pradesh state. About 9% monitoring wells are showing water level in 0-2 m bgl range. Depth to water level ranging between 2-5 m bgl was observed in all most in all districts of the state. About 43 % of monitoring wells are showing water level in 2-5 m bgl range. The Depth to water level ranging between 5-10 m was observed almost in western Madhya Pradesh. About 34 % of monitoring wells are showing water level in 5-10 m bgl range. The Depth to water level ranging between 10-20 m bgl was observed almost in pockets only. About 11 % of monitoring wells are showing water level in 10-20 m bgl range. Deep water level more than 20 m bgl has been seen in Burhanpur, Gwalior, Bhind and Morena districts. Very deep water level more than 40 m bgl has been observed in Bhind District.



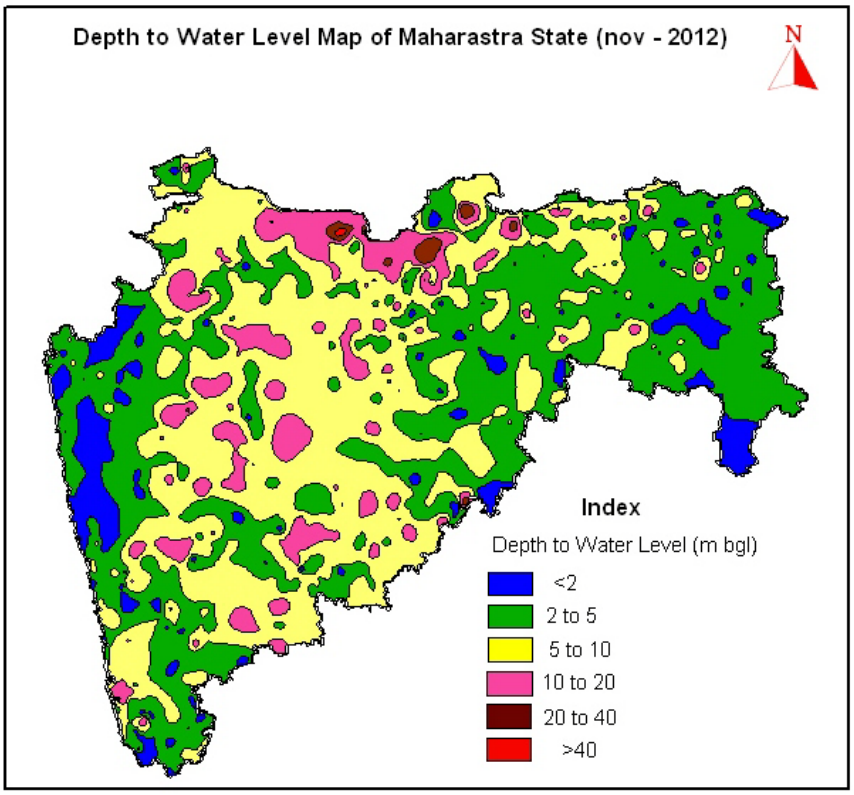
Water levels of November 2012 when compared to water level of November 2011 in the state indicates that about 45% of the wells analyzed have recorded a rise in water level, out of which 35% of analyzed wells have recorded a rise in the range of 0 to 2 m, 6% of analyzed wells have shown rise in the range of 2 to 4 m and 4% of the wells have shown rise > 4 m. About 55% of the wells have shown fall in water

level, out of this 44% have recorded fall in the range of 0 to 2m and 7% have shown fall in the range of 2-4 m and 4% recorded fall in water level > 4 m.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in different parts of the state. About 23% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 15% of the wells analyzed. About 4% of wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 4% of monitored wells. About 77% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 42% of monitored wells; Water level rise in order of 2-4m has been recorded 21% of wells analyzed. About 14% of wells shows rise in water level in more than 4 m range.

4.15 Maharashtra

The depth to water level during November 2012 in the state varies from 0.20 m bgl in Dhule districts to 55.20 m bgl in Jalgaon district. Water level less than 2 m bgl are shown by about 15% wells. Depth to water level of 2 to 5 m bgl occurs in entire state with 42% of the wells falling in this range. About 32% of the wells analyzed showing water level in the range of 5-10 m bgl. About 10% of the wells analyzed showing water level in the range of 10-20 m bgl. About 1% of the wells analyzed showing water level in the range of 20-40 m bgl.

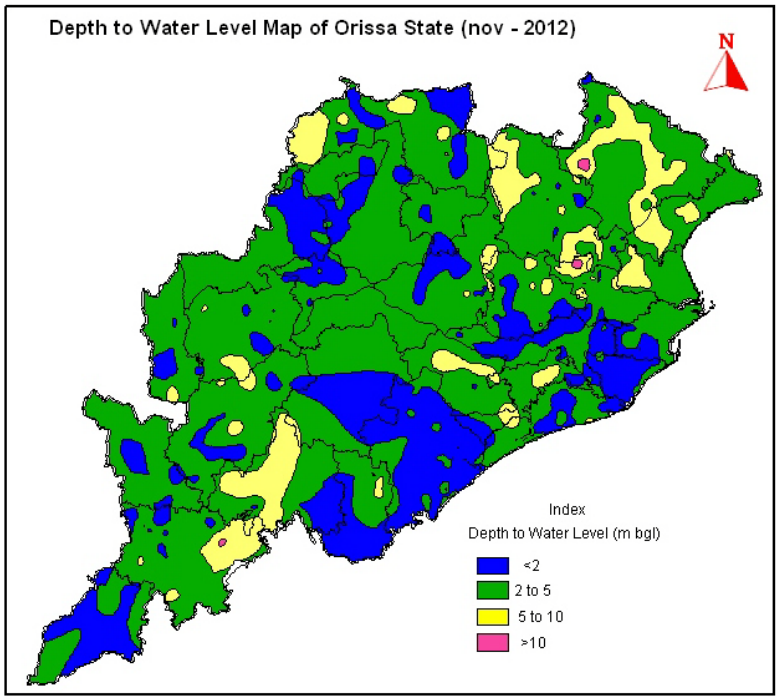


Water levels of November 2012 when compared to water level of November 2011 in the state indicates that about 60% of the wells analyzed have recorded a rise in water level, out of which 52% of analyzed wells have recorded a rise in the range of 0 to 2 m, 8% of analyzed wells have shown rise in the range of 2 to 4 m and 0% of the wells have shown rise > 4 m. About 40% of the wells have shown fall in water level, out of this 32% have recorded fall in the range of 0 to 2m and 12% have shown fall in the range of 2-4 m and 0% recorded fall in water level > 4 m.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in different parts of the state. About 52% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 37 % of the wells analyzed. About 10% of wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 5% of monitored wells. About 48% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 38% of monitored wells; Water level rise in order of 2-4m has been recorded 6% of wells analyzed. About 4% of wells shows rise in water level in more than 4 m range.

4.16 Orissa

The depth to water level recorded in the state of Orissa during November 2012 ranged from 0.02 m bgl in Sundergarh to 13.97 m bgl in Koraput district. Most of the wells falls in the range of 0-2 m bgl as shown by 37% of the wells analyzed and is in the coastal districts and command areas of the state. It is observed 49% of the wells have 2-5 m bgl water levels range. About 13% of the wells analyzed have shown water level in the range of 5-10 m bgl. About 1% wells analyzed have water level in the range of 10-20 m bgl.



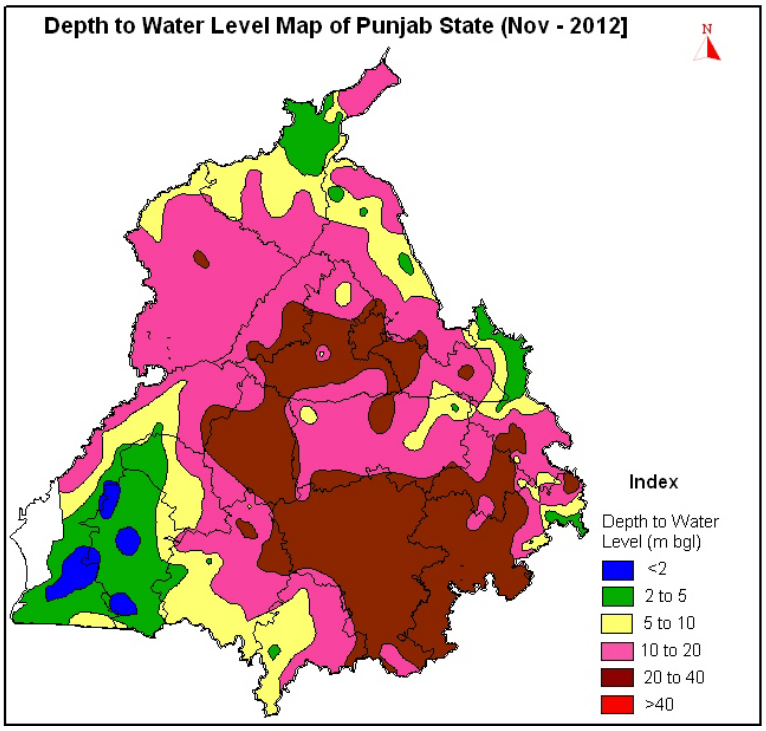
Water levels of November 2012 when compared to water level of November 2011 in the state indicates that about 53% of the wells analyzed have recorded a rise in water level, out of which 47% of analyzed wells have recorded a rise in the range of 0 to 2 m, 5% of analyzed wells have shown rise in the range of 2 to 4 m and 1% of the wells have shown rise > 4 m. About 47% of the wells have shown fall in water level, out of this 40% have recorded fall in the range of 0 to 2m and 4% have shown rise in the range of 2-4 m and 3% recorded fall in water level > 4 m.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in different parts of the state. About 50% of monitored wells have registered decline in

water level. The decline of 0-2 m has been observed in about 43% of the wells analyzed. About 6% of wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 1% of monitored wells. About 50% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 46% of monitored wells; Water level rise in order of 2-4m has been recorded 3% of wells analyzed. About 1% of wells shows rise in water level in more than 4 m range.

3.17 Punjab

The depth to water level during November 2012 varies from 0.30 m bgl to 52.50 m bgl. In general the depth to water level ranges between 2-5 m bgl and 5-10 m bgl in most parts Punjab state. About 3 % of monitoring wells are showing water level in 0-2 m bgl range, about 17% monitoring wells are showing water level in 2-5 m bgl range, about 20% monitoring wells are showing water level in the range of 5-10 m bgl. About 34% monitoring wells are showing water level in 10-20 m bgl in range, about 25% monitoring wells are showing water level in 20-40 m bgl range and only 1% monitoring wells are showing water level in 10-20 m bgl range.



The water level of November 2012 when compared with November 2011 indicates that there is decline and rise in water level in entire state. About 79% of the wells analyzed showing a decline in water level. The water level decline between 0-2 m has been observed in 63 % of the wells analyzed and 12% of

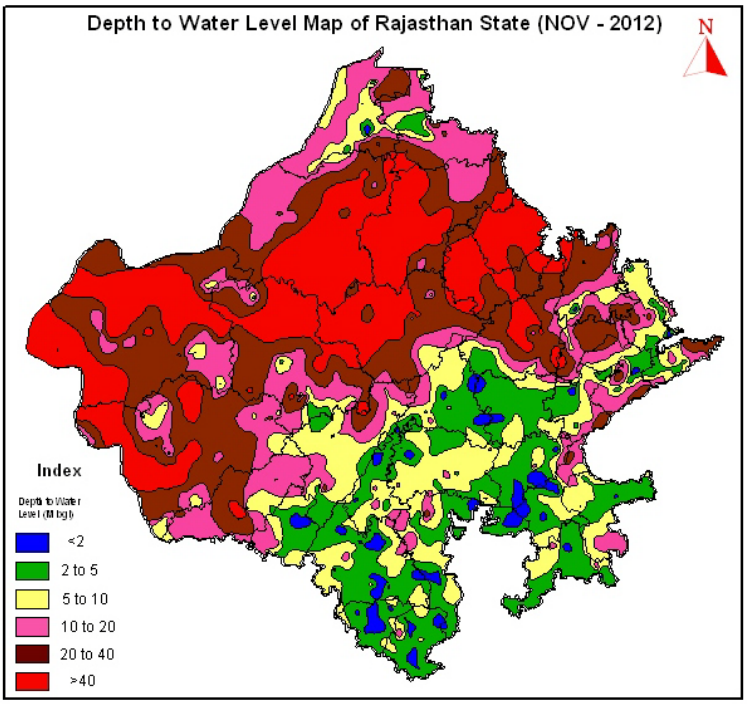
wells showing fall >2 m. Rise in water levels is observed in 21% of the wells analyzed. The rise of 0-2 m has been observed in 15% of the wells monitored. About 2% of the wells shows rise > 2 m. In general most of the area has decline as well as rise is in the range of 0-2 m.

The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in different parts of the state. About 76% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 41 % of the wells analyzed. About 19% of wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 16% of monitored wells. About 24% of wells analysed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 18% of monitored wells; Water level rise in order of 2-4m has been recorded 4% of wells analyzed. About 2% of wells shows rise in water level in more than 4 m range.

4.18 Rajasthan

The depth to water level recorded in the state of Rajasthan during November 2012ranged from 0.01 in Ajmer district to 113.53 m bgl in Bikaner district. It is observed that 9% of the wells analyzed have shown water level in the range of 0-2 m bgl, 19% of the wells have shown water level in the range of 2-5 m bgl. About 20% of the wells analyzed have shown water level in the range of 5-10 m bgl and 17% of the wells have shown water level in the range of 10-20 m bgl. Deeper water level in the range of 20-40 m bgl is shown by 17% of the wells analyzed and water level more than 40 m bgl is shown by 18% of the wells analyzed.

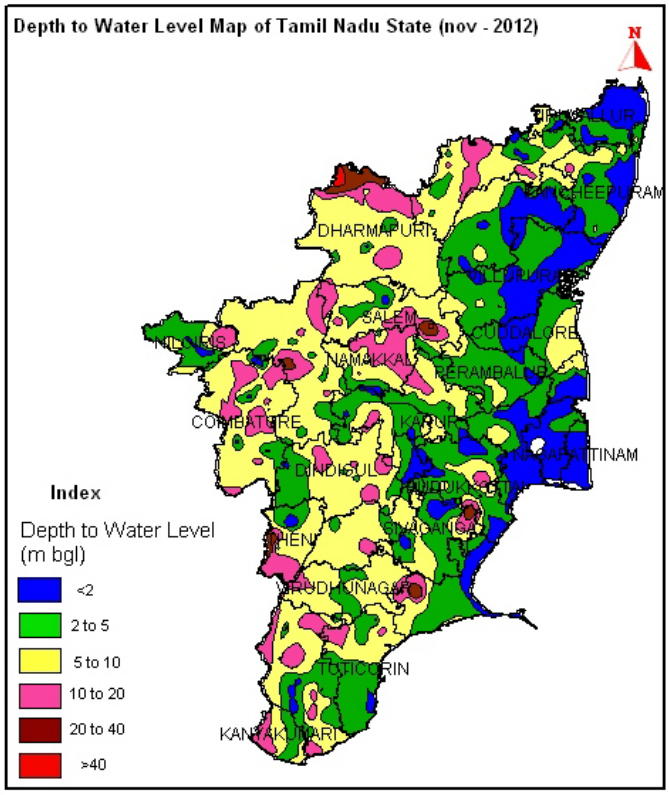
Water levels of November 2012 when compared to water level of November 2011 in the state indicates that about 52% of the wells analyzed have recorded a fall in water level, out of which 35% of analyzed wells have recorded a fall in the range of 0 to 2 m, 8% of analyzed wells have shown fall in the range of 2 to 4 m and 10% of the wells have shown fall > 4 m. About 48% of the wells have shown rise in water level, out of this 32% have recorded rise in the range of 0 to 2m, 8% have shown rise in the range of 2 to 4 m and 8% have shown rise > 4 m.



The fluctuation of water level during November 2012 when compared with the average water levels of past decade (Decadal mean November 2002-2011) indicates in general there is decline and rise of water level in entire state. About 35% of monitored wells have registered decline in water level. The decline of 0-2 m has been observed in about 15 % of the wells analyzed. About 8% of wells reported decline in water level between 2-4 m. A decline of more than 4m has been recorded in 12% of monitored wells. About 65% of wells analyzed have shown rise in water levels. Rise in the range of 0-2 m has been recorded in 31% of monitored wells; Water level rise in order of 2-4m has been recorded 17% of wells analyzed. About 13% of wells shows rise in water level in more than 4 m range.

4.19 Tamil Nadu

The depth to water level during November 2012 varies from 0.02 m bgl at Theni to 50.40 m bgl in Salem district. Water level in the range of 0 to2 m bgl has been recorded in 23% of wells analyzed, Water level in the range of 2 to 5 m bgl has been recorded in 28% of wells analyzed and noted in most of the districts except in few patches. Depth to water level in the range of 5 to 10 m bgl has been recorded in 32% of wells analyzed and noted in most of the districts. Depth to water level in the range of 10 to 20 m bgl has been observed in 16% of wells analyzed and 1% of wells showing more than 20 m bgl.

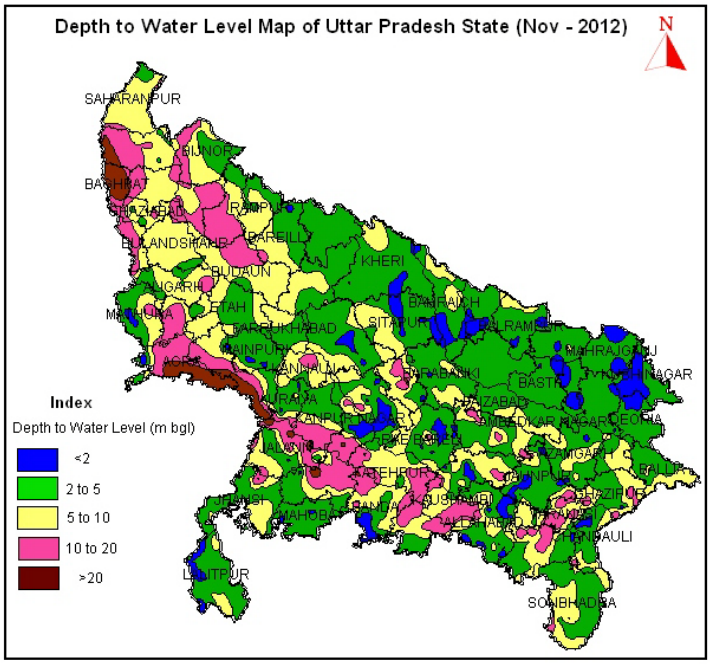


Water levels of November 2012 when compared to water level of November 2011 in the state indicates that about 49% of the wells analyzed have recorded a fall in water level, out of which 30% of analyzed wells have recorded a fall in the range of 0 to 2 m, 11% of analyzed wells have shown fall in the range of 2 to 4 m and 8% of the wells have shown fall > 4 m. About 51% of the wells have shown rise in water level, out of this 31% have recorded rise in the range of 0 to 2m, 20% have shown rise in the range of 2 to 4 m and 7.21% have shown rise > 4 m.

The fluctuations of water level during November 2012 when compared with the Decadal mean (November 2002 -2011) indicates that there is in general rise in water level. About 42% of analyzed wells have shown decline in water level. Out of this 29% of the wells have shown decline in the range of 0-2 m, 8% of analyzed wells have shown fall in the range of 2 - 4 m and 5% of the wells have shown fall > 4 m. About 58% of the wells have shown a rise in water level. Out of this 36% of the wells have shown rise in the range of 0-2 m while 14% of the wells have shown rise in the range of 2-4 m and 8% of wells analyzed have shown rise > 4 m.

4.20 Uttar Pradesh

The depth to water level in the state ranges between less than 0.52 m bgl in Hardoi district to 36.50 m bgl in Etawah district. Very Shallow water level ranging between 0-2 m bgl was observed in 16% of wells. Shallow water level ranging between 2-5 m bgl was observed in 42% of wells. The depth to water level between 5-10 meters has been observed 26% wells. Depth to water level ranging between 10-20 meters has been observed 14% wells. Water level more than 20 m bgl has been observed in 2% wells.



Water levels of November 2012 when compared to water level of November 2011 in the state indicates that about 56% of the wells analyzed have recorded a fall in water level, out of which 51% of analyzed wells have recorded a fall in the range of 0 to 2 m, 4% of analyzed wells have shown fall in the range of 2 to 4 m and 2% of the wells have shown fall > 4 m. About 44% of the wells have shown rise in water level, out of this 38% have recorded rise in the range of 0 to 2m, 3% have shown rise in the range of 2 to 4 m and 3% have shown rise > 4 m.

The fluctuations of water level during November 2012 when compared with the Decadal mean (November 2002-2011) indicates that there is in general rise and fall in water level. About 57% of analyzed wells have shown decline in water level. Out of this 48% of the wells have shown decline in the range of 0-2 m, 7% of analyzed wells have shown fall in the range of 2 - 4 m and 2% of the wells have

shown fall > 4 m. About 43% of the wells have shown a rise in water level. Out of this 36% of the wells have shown rise in the range of 0-2 m while 6% of the wells have shown rise in the range of 2-4 m and 1% of wells analyzed have shown rise > 4 m.

4.21 Uttaranchal

Uttarakhand state is mainly covered by hilly/ mountainous areas. About 85% of the area is hilly and has no appreciable ground water potential whereas about 15% of the State comprising 5263 Km^2 is plain where ground water is developed. In general depth to water in November 2012 varies from 0.70 m bgl in Udhamsingh Nagar to 10.89 m bgl in Hardwar district.

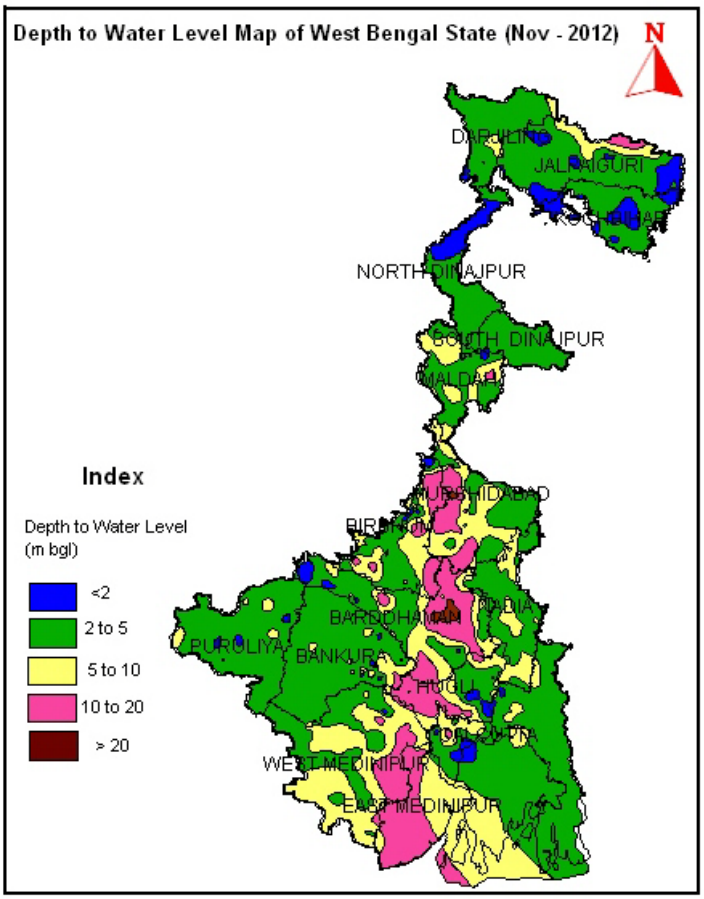
The depth to water level in the state ranging between 0-2 m bgl was observed in 26% of wells. Shallow water level ranging between 2-5 m bgl was observed in 31% of wells. The depth to water level between 5-10 meters has been observed 39% wells. Depth to water level ranging between 10-20 meters has been observed 4% wells. Water level more than 20 m bgl has been observed.

The comparison of November 2012 water levels with November 2011 reveals that there is general rise and fall in water level. About 33% of the well analyzed have shown fall in water level. Out of this the fall in water level for 0-2 m has been observed for 24% of wells whereas the fall in water levels for 2-4 m has been observed for 9 % wells. The rise in water level is observed in 66% of the wells analyzed. Out of this the rise in water level for 0-2 m has been observed for 43% of wells whereas the fall in water levels for 2-4 m has been observed for 19% wells and 4% has been observed in depth range more than 4 m bgl.

The fluctuations of water level during November 2012 when compared with the Decadal mean (November 2002-2011) indicates that there is in general rise and fall in water level. About 68% of analyzed wells have shown decline in water level. Out of this 57% of the wells have shown decline in the range of 0-2 m, 11% of analyzed wells have shown fall in the range of 2 - 4 m and 1% of the wells have shown fall > 4 m. About 32% of the wells have shown a rise in water level. Out of this 28% of the wells have shown rise in the range of 0-2 m while 2% of the wells have shown rise in the range of 2-4 m and 1% of wells analyzed have shown rise > 4 m.

4.22 West Bengal

Depth to ground water level during November 2012 ranged from 0.02 meters below ground level (m bgl) at Haora to 23.86 m bgl in Baraddman district. Depth to water level in the range of 0-2 m bgl In 15 % of wells analyzed, 2-5 m bgl in 51 % of wells analyzed, 5-10 m bgl in 21 % of wells analyzed and 10-20 m bgl in 12% of wells analyzed. Only eight wells (1%) are showing water level >20 m bgl.



The comparison of November 2012water levels with November 2011 reveals that there is general Rise and fall in water level. About 33% of the well analyzed have shown rise in water level. Out of this the rise in water level for 0-2 m has been observed for 27% of wells whereas the rise in water levels for 2-4 m and >4 m has been observed for 4% and 2% of wells respectively. The fall in water level is observed in 66% of the wells analyzed. Out of this the fall in water level for 0-2 m has been observed for 49% of wells whereas the fall in water levels for 2-4 m and >4 m has been observed for 11% and 6 % of wells respectively.

The comparison of November 2012 water levels with decadal mean of (November 2002-2011) reveals that about 72% of the analyzed have shown decline in water level. Out of this 49% of the wells shown decline in the range of 0-2 m, 11% of the wells shown decline in the range of 2-4 m and about 12% of the wells shown decline in the range of more than 4 m of the analyzed wells.

About 28 % of the analyzed have shown Rise in water level. Out of this 25% of the wells shown rise in the range of 0-2 m, 2% of the wells shown rise in the range of 2-4 m and about 1% of the wells shown rise in the range of more than 4 m of the analyzed wells.

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

S. No.	Name of State	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (m bgl) 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	760	0.37	28.32	284	37.37	215	28.29	177	23.29	78	10.26	6	0.79	0	0.00
2	Arunachal Pradesh	11	1.44	8.00	1	9.09	8	72.73	2	18.18	0	0.00	0	0.00	0	0.00
3	Assam	204	0.01	18.96	98	48.04	87	42.65	16	7.84	3	1.47	0	0.00	0	0.00
4	Bihar	223	0.35	11.75	38	17.04	137	61.43	45	20.18	3	1.35	0	0.00	0	0.00
5	Chandigarh	19	2.03	47.78	0	0.00	4	21.05	5	26.32	5	26.32	4	21.05	1	5.26
6	Chhattisgarh	438	0.19	24.90	106	24.20	242	55.25	70	15.98	17	3.88	3	0.68	0	0.00
7	Dadra & Nagar Haveli	6	1.75	7.96	1	16.67	4	66.67	1	16.67	0	0.00	0	0.00	0	0.00
8	Delhi	127	0.69	66.40	7	5.51	30	23.62	34	26.77	32	25.20	10	7.87	14	11.02
9	Goa	40	0.21	14.65	9	22.50	18	45.00	10	25.00	3	7.50	0	0.00	0	0.00
10	Gujarat	760	0.13	99.83	59	7.76	207	27.24	239	31.45	170	22.37	77	10.13	8	1.05
11	Haryana	404	0.14	70.90	38	9.41	79	19.55	78	19.31	125	30.94	72	17.82	12	2.97
12	Himachal Pradesh	73	0.37	27.54	13	17.81	29	39.73	18	24.66	9	12.33	4	5.48	0	0.00
13	Jammu & Kashmir	139	0.31	32.52	48	34.53	55	39.57	20	14.39	8	5.76	8	5.76	0	0.00
14	Jharkhand	122	0.55	13.85	7	5.74	68	55.74	45	36.89	2	1.64	0	0.00	0	0.00

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

S. No.	Name of State	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (m bgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
15	Karnataka	872	0.03	23.56	129	14.79	271	31.08	291	33.37	180	20.64	1	0.11	0	0.00
16	Kerala	663	0.10	38.28	120	18.10	211	31.83	251	37.86	73	11.01	8	1.21	0	0.00
17	Madhya Pradesh	965	0.37	47.00	82	8.50	417	43.21	336	34.82	107	11.09	21	2.18	2	0.21
18	Maharastra	1107	0.20	55.20	166	15.00	459	41.46	350	31.62	118	10.66	13	1.17	1	0.09
19	Manipur	1	5.89	5.89	0	0.00	0	0.00	1	100.00	0	0.00	0	0.00	0	0.00
20	Meghalaya	27	0.15	7.13	11	40.74	15	55.56	1	3.70	0	0.00	0	0.00	0	0.00
21	Orissa	829	0.02	13.97	309	37.27	408	49.22	107	12.91	5	0.60	0	0.00	0	0.00
22	Pondicherry	4	1.83	3.85	1	25.00	3	75.00	0	0.00	0	0.00	0	0.00	0	0.00
23	Punjab	247	0.30	52.50	8	3.24	42	17.00	50	20.24	84	34.01	62	25.10	1	0.40
24	Rajasthan	826	0.01	113.53	73	8.84	158	19.13	166	20.10	145	17.55	141	17.07	143	17.31
25	Tamil Nadu	587	0.02	50.40	132	22.49	165	28.11	188	32.03	94	16.01	6	1.02	2	0.34
26	Tripura	27	1.43	6.40	3	11.11	16	59.26	8	29.63	0	0.00	0	0.00	0	0.00
27	Uttar Pradesh	850	0.63	36.50	133	15.65	352	41.41	222	26.12	121	14.24	22	2.59	0	0.00
28	Uttaranchal	23	0.70	10.89	6	26.09	7	30.43	9	39.13	1	4.35	0	0.00	0	0.00

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

S. No.	Name of State	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (m bgl) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
29	West Bengal	591	0.19	23.86	87	14.72	303	51.27	126	21.32	67	11.34	8	1.35	0	0.00
	Total	**10945**			**1969**	**17.99**	**4010**	**36.64**	**2866**	**26.19**	**1450**	**13.25**	**466**	**4.26**	**184**	**1.68**

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

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	693	0.02	12.63	0.03	13.39	322	46.46	99	14.29	33	4.76	158	22.80	47	6.78	34	4.91	454	65.51	239	34.49
2	Arunachal Pradesh	10	0.96	1.40	0.03	0.79	6	60.00	1	10.00	0	0.00	2	20.00	1	10.00	0	0.00	7	70.00	3	30.00
3	Assam	191	0.04	1.22	0.04	11.68	125	65.45	2	1.05	0	0.00	58	30.37	5	2.62	1	0.52	127	66.49	64	33.51
4	Bihar	186	0.02	6.26	0.03	3.75	61	32.80	3	1.61	1	0.54	111	59.68	7	3.76	3	1.61	65	34.95	121	65.05
5	Chandigarh	19	0.02	4.05	0.50	0.89	14	73.68	2	10.53	1	5.26	2	10.53	0	0.00	0	0.00	17	89.47	2	10.53
6	Chhattisgarh	293	0.05	7.10	0.03	7.80	212	72.35	20	6.83	5	1.71	52	17.75	1	0.34	3	1.02	237	80.89	56	19.11
7	Dadra & Nagar Haveli	6	0.72	1.06	0.00	0.00	5	83.33	0	0.00	0	0.00	1	16.67	0	0.00	0	0.00	5	83.33	1	16.67
8	Delhi	119	0.04	3.85	0.02	4.26	21	17.65	1	0.84	1	0.84	78	65.55	15	12.61	3	2.52	23	19.33	96	80.67
9	Goa	39	0.01	2.13	0.02	1.68	20	51.28	1	2.56	0	0.00	18	46.15	0	0.00	0	0.00	21	53.85	18	46.15

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

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	%
10	Gujarat	728	0.03	42.73	0.01	30.26	202	27.75	62	8.52	44	6.04	204	28.02	86	11.81	130	17.86	308	42.31	420	57.69
11	Haryana	288	0.01	11.36	0.02	25.95	89	30.90	6	2.08	5	1.74	155	53.82	20	6.94	13	4.51	100	34.72	188	65.28
12	Himachal Pradesh	73	0.02	8.89	0.02	4.37	29	39.73	0	0.00	3	4.11	38	52.05	2	2.74	1	1.37	32	43.84	41	56.16
13	Jammu & Kashmir	123	0.02	7.36	0.01	4.90	47	38.21	3	2.44	1	0.81	68	55.28	3	2.44	1	0.81	51	41.46	72	58.54
14	Jharkhand	97	0.10	3.34	0.07	2.80	31	31.96	5	5.15	0	0.00	54	55.67	7	7.22	0	0.00	36	37.11	61	62.89
15	Karnataka	753	0.01	8.38	0.09	16.58	243	32.27	26	3.45	10	1.33	293	38.91	91	12.08	90	11.95	279	37.05	474	62.95
16	Kerala	580	0.01	4.80	0.01	8.40	159	27.41	17	2.93	3	0.52	341	58.79	47	8.10	13	2.24	179	30.86	401	69.14
17	Madhya Pradesh	859	0.02	38.45	0.05	34.48	308	35.86	48	5.59	33	3.84	376	43.77	62	7.22	32	3.73	389	45.29	470	54.71
18	Maharastra	932	0.02	20.49	0.05	17.75	331	35.52	53	5.69	27	2.90	334	35.84	115	12.34	72	7.73	411	44.10	521	55.90

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

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	%
19	Meghalaya	26	0.06	2.49	0.03	2.67	13	50.00	2	7.69	0	0.00	8	30.77	3	11.54	0	0.00	15	57.69	11	42.31
20	Orissa	788	0.01	7.71	0.01	8.23	377	47.84	41	5.20	10	1.27	321	40.74	35	4.44	4	0.51	428	54.31	360	45.69
21	Pondicherry	6	0.39	0.77	-	-	3	50.00	0	0.00	0	0.00	2	33.33	1	16.67	0	0.00	3	50.00	3	50.00
22	Punjab	154	0.07	24.65	0.01	11.49	23	14.94	4	2.60	5	3.25	97	62.99	19	12.34	6	3.90	32	20.78	122	79.22
23	Rajasthan	716	0.01	35.87	0.01	19.40	229	31.98	55	7.68	58	8.10	253	35.34	59	8.24	62	8.66	342	47.77	374	52.23
24	Tamil Nadu	527	0.02	26.62	0.03	27.36	169	32.07	63	11.95	38	7.21	158	29.98	57	10.82	42	7.97	270	51.23	257	48.77
25	Tripura	6	0.02	2.25	0.02	0.66	2	33.33	1	16.67	0	0.00	3	50.00	0	0.00	0	0.00	3	50.00	3	50.00
26	Uttar Pradesh	726	0.03	17.28	0.03	21.84	276	38.02	23	3.17	14	1.93	371	51.10	34	4.68	8	1.10	313	43.11	413	56.89
27	Uttaranchal	21	0.24	5.99	0.11	2.73	9	42.86	1	4.76	4	19.05	5	23.81	2	9.52	0	0.00	14	66.67	7	33.33

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

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	%
28	West Bengal	346	0.01	15.62	16.99	20.13	94	27.17	13	3.76	7	2.02	171	49.42	38	10.98	23	6.65	114	32.95	232	67.05
	Total	**9305**					**3420**	**36.75**	**552**	**5.93**	**303**	**3.26**	**3732**	**40.11**	**757**	**8.14**	**541**	**5.81**	**4275**	**45.94**	**5030**	**54.06**

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

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					
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
1	Andhra Pradesh	693	0.02	12.63	0.02	13.39	322	46.46	99	14.29	33	4.76	158	22.80	47	6.78	34	4.91	454	65.51	239	34.49
2	Arunachal Pradesh	11	0.23	0.92	0.34	1.89	8	72.73	0	0.00	0	0.00	3	27.27	0	0.00	0	0.00	8	72.73	3	27.27
3	Assam	121	0.05	2.08	0.01	2.28	48	39.67	4	3.31	0	0.00	61	50.41	6	4.96	2	1.65	52	42.98	69	57.02
4	Bihar	219	0.04	3.66	0.10	4.77	77	35.16	5	2.27	1	0.46	123	56.16	10	4.57	3	1.37	83	37.90	136	62.10
5	Chandigarh	19	0.14	4.83	0.22	4.28	6	31.58	1	5.26	1	5.26	10	52.63	0	0.00	1	5.26	8	42.11	11	57.89
6	Chhattisgarh	373	0.01	8.00	0.00	2.61	220	58.98	23	6.17	6	1.61	117	31.37	4	1.07	3	0.80	249	66.76	124	33.24
7	Dadra & Nagar Haveli	5	0.39	0.69	0.00	0.63	3	60.00	0	0.00	0	0.00	2	40.00	0	0.00	0	0.00	3	60.00	2	40.00
8	Delhi	127	0.01	4.04	0.02	6.08	33	25.98	3	2.36	1	0.79	55	43.31	17	13.39	18	14.17	37	29.13	90	70.87
9	Goa	35	0.06	6.81	0.00	1.30	18	51.43	2	5.71	0	0.00	15	42.86	0	0.00	0	0.00	20	57.14	15	42.86

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

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					
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
10	Gujarat	728	0.00	16.07	0.01	29.21	202	27.75	62	8.52	44	6.04	204	28.02	86	11.81	130	17.86	308	42.31	420	57.69
11	Haryana	317	0.01	10.18	0.03	18.52	115	36.28	12	3.79	8	2.52	92	29.02	44	13.88	46	14.51	135	42.59	182	57.41
12	Himachal Pradesh	73	0.00	13.25	0.01	2.76	41	56.16	4	5.48	3	4.11	22	30.14	3	4.11	0	0.00	48	65.75	25	34.25
13	Jammu & Kashmir	129	0.01	4.91	0.01	4.45	69	53.49	3	2.33	1	0.78	48	37.21	6	4.65	2	1.55	73	56.59	56	43.41
14	Jharkhand	118	0.08	9.39	0.11	5.52	51	43.22	6	5.08	1	0.85	49	41.53	10	8.47	1	0.85	58	49.15	60	50.85
15	Karnataka	868	0.01	5.72	0.01	15.85	264	30.41	47	5.41	19	2.19	332	38.25	131	15.09	75	8.64	330	38.02	538	61.98
16	Kerala	677	0.01	6.70	0.02	10.56	331	48.89	34	5.02	23	3.40	231	34.12	42	6.20	16	2.36	388	57.31	289	42.69
17	Madhya Pradesh	945	0.03	14.44	0.05	33.53	422	44.66	155	16.40	74	7.83	231	24.44	41	4.34	22	2.33	651	68.89	294	31.11
18	Maharastra	1042	0.03	19.64	0.10	10.87	398	38.20	65	6.24	29	2.78	387	37.14	102	9.79	61	5.85	492	47.22	550	52.78

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

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					
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
19	Meghalaya	26	0.02	1.58	0.04	2.67	17	65.38	0	0.00	0	0.00	7	26.92	2	7.69	0	0.00	17	65.38	9	34.62
20	Orissa	827	0.01	5.35	0.10	8.23	379	45.83	32	3.87	1	0.12	359	43.41	50	6.05	6	0.73	412	49.82	415	50.18
21	Pondicherry	7	0.79	1.30	0.23	2.44	2	28.57	0	0.00	0	0.00	4	57.14	1	14.29	0	0.00	2	28.57	5	71.43
22	Punjab	176	0.03	15.05	0.01	11.72	32	18.18	7	3.98	3	1.70	72	40.91	34	19.32	28	15.91	42	23.86	134	76.14
23	Rajasthan	809	0.00	59.49	0.01	24.26	248	30.66	135	16.69	136	16.81	123	15.20	67	8.28	100	12.36	519	64.15	290	35.85
24	Tamil Nadu	581	0.01	29.99	0.00	32.57	210	36.14	83	14.29	39	6.71	167	28.74	51	8.78	31	5.34	332	57.14	249	42.86
25	Tripura	6	0.07	2.04	0.02	1.46	4	66.67	1	16.67	0	0.00	1	16.67	0	0.00	0	0.00	5	83.33	1	16.67
26	Uttar Pradesh	815	0.01	5.25	0.01	8.73	296	36.32	45	5.52	10	1.23	388	47.61	56	6.87	20	2.45	351	43.07	464	56.93
27	Uttaranchal	35	0.03	7.91	0.03	2.61	10	28.57	1	2.86	0	0.00	20	57.14	4	11.43	0	0.00	11	31.43	24	68.57

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

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					
			Min	Max	Min	Max	No	%	No	%	No	%	No	%	No	%	No	%	No	%	No	%
28	West Bengal	574	0.01	4.33	0.01	18.21	140	24.39	13	2.26	3	0.52	283	49.30	65	11.32	70	12.20	156	27.18	418	72.82
	Total	**10356**					**3966**	**38.30**	**842**	**8.13**	**436**	**4.21**	**3564**	**34.41**	**879**	**8.49**	**669**	**6.46**	**5244**	**50.64**	**5112**	**49.36**

State-wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from Pre monsoon 2012 to Nov 2012

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	647	1.69	3.52	0.01	20.84	292	45.13	107	16.54	32	32.00	151	23.34	40	6.18	25	3.86	431	66.62	216	33.38
2	Arunachal Pradesh	5	0.96	1.40	0.03	0.79	3	60.00		0.00		0.00	2	40.00		0.00		0.00	3	60.00	2	40.00
3	Assam	203	1.89	3.52	0.03	2.53	123	60.59	5	2.46	0	0.00	70	34.48	3	1.48	2	0.99	128	63.05	75	36.95
4	Bihar	202	0.39	10.55	0.02	9.00	101	50.00	64	31.68	29	14.36	8	3.96	0	0.00	0	0.00	194	96.04	8	3.96
5	Chandigarh	33	0.20	1.87	0.01	3.18	8	24.24	0	0.00	0	0.00	24	72.73	1	3.03	0	0.00	8	24.24	25	75.76
6	Chhattisgarh	342		12.40	0.02	7.20	65	19.01	127	37.13	144	42.11	4	1.17	2	0.58	0	0.00	336	98.25	6	1.75
7	Dadra & Nagar Haveli	5	0.30	2.90	0.30	0.30	3	60.00	1	20.00	0	0.00	1	20.00	0	0.00	0	0.00	4	80.00	1	20.00
8	Delhi	123	0.02	4.06	0.02	8.01	52	42.28	1	0.81	3	2.44	66	53.66	1	0.81	0	0.00	56	45.53	67	54.47
9	Goa	39	0.20	1.79	0.01	3.18	21	53.85	10	25.64	3	7.69	4	10.26	1	2.56	0	0.00	34	87.18	5	12.82

State-wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from Pre monsoon 2012 to Nov 2012

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	%
10	Gujarat	728	0.03	15.03	0.01	44.40	202	27.75	62	8.52	44	6.04	204	28.02	86	11.81	130	17.86	308	42.31	420	57.69
11	Haryana	251	0.11	4.20	0.02	8.61	113	45.02	27	10.76	10	3.98	80	31.87	17	6.77	4	1.59	150	59.76	101	40.24
12	Himachal Pradesh	72	0.31	8.89	0.02	4.37	37	51.39	16	22.22	12	16.67	6	8.33	0	0.00	1	1.39	65	90.28	6	8.33
13	Jammu & Kashmir	135	0.09	14.00	0.10	2.23	77	57.04	27	20.00	18	13.33	12	8.89	1	0.74	0	0.00	122	90.37	13	9.63
14	Jharkhand	99	0.56	12.45	0.11	1.27	11	11.11	39	39.39	39	39.39	8	8.08	2	2.02	0	0.00	89	89.90	10	10.10
15	Karnataka	841	0.07	7.35	0.10	16.33	255	30.32	31	3.69	13	1.55	324	38.53	128	15.22	90	10.70	299	35.55	542	64.45
16	Kerala	574	0.09	14.76	0.01	9.57	354	61.67	109	18.99	39	6.79	61	10.63	8	1.39	3	0.52	502	87.46	72	12.54
17	Madhya Pradesh	857	0.31	31.40	0.22	9.08	159	18.55	259	30.22	403	47.02	21	2.45	9	1.05	6	0.70	821	95.80	36	4.20
18	Maharastra	819	0.60	23.50	0.10	7.60	202	24.66	249	30.40	277	33.82	71	8.67	11	1.34	9	1.10	728	88.89	91	11.11

State-wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from Pre monsoon 2012 to Nov 2012

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	%
19	Meghalaya	23	0.51	3.86	0.11	1.62	17	73.91	4	17.39	0	0.00	2	8.70	0	0.00	0	0.00	21	91.30	2	8.70
20	Orissa	707	0.11	9.34	0.07	2.37	202	28.57	303	42.86	159	22.49	42	5.94	1	0.14	0	0.00	664	93.92	43	6.08
21	Pondicherry	6	0.39	0.77	-	-	3	50.00	0	0.00	0	0.00	2	33.33	1	16.67	0	0.00	3	50.00	3	50.00
22	Punjab	162	0.01	13.03	0.02	9.30	55	33.95	4	2.47	5	3.09	78	48.15	15	9.26	5	3.09	64	39.51	98	60.49
23	Rajasthan	698	0.08	36.85	0.00	36.00	229	32.81	102	14.61	172	24.64	142	20.34	27	3.87	26	3.72	503	72.06	195	27.94
24	Tamil Nadu	483	0.09	25.89	0.04	18.90	176	36.44	101	20.91	56	11.59	92	19.05	29	6.00	29	6.00	333	68.94	150	31.06
25	Tripura	6	0.01	2.79	0.23	0.96	2	33.33	1	16.67	0	0.00	3	50.00	0	0.00	0	0.00	3	50.00	3	50.00
26	Uttar Pradesh	784	0.20	19.28	0.05	11.92	388	49.49	220	28.06	85	10.84	80	10.20	9	1.15	2	0.26	693	88.39	91	11.61
27	Uttaranchal	19	1.00	11.31	0.16	4.85	9	47.37	3	15.79	7	36.84	0	0.00	0	0.00	0	0.00	19	100.00	0	0.00

State-wise Seasonal Fluctuation & Frequency Distribution of Different Ranges from Pre monsoon 2012 to Nov 2012

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	%
28	West Bengal	331	0.07	12.21	0.03	10.09	159	48.04	84	25.38	52	15.71	28	8.46	3	0.91	5	1.51	295	89.12	36	10.88
	Total	**9194**					**3318**	**36.09**	**1956**	**21.27**	**1602**	**17.42**	**1586**	**17.25**	**395**	**4.30**	**337**	**3.67**	**6876**	**74.79**	**2317**	**25.20**