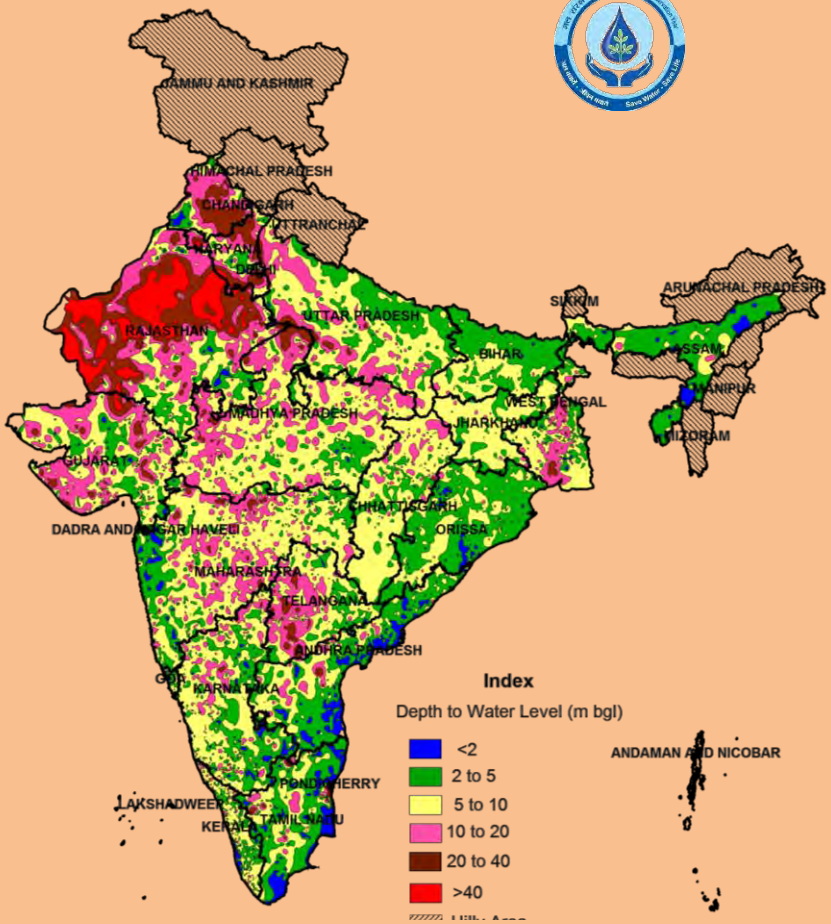
GROUND WATER SCENARIO IN INDIA

JANUARY, 2016



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MINISTRY OF WATER RESOURCES

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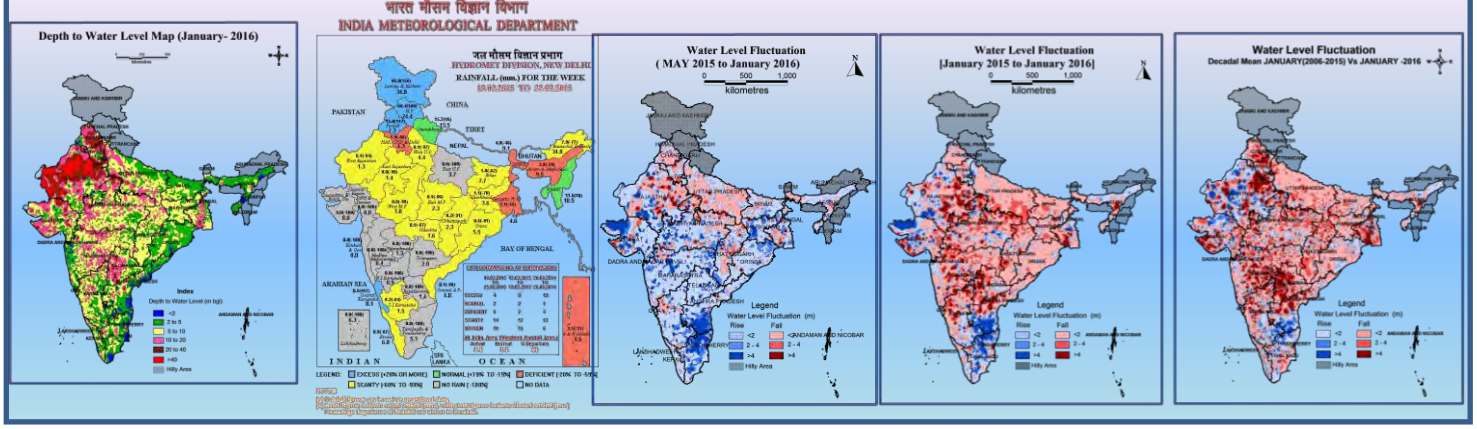

GROUND WATER LEVEL SCENARIO IN INDIA
(JANUARY - 2016)

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1.0 Introduction

Ground water regime monitoring is one of the key activities of CGWB to generate information on ground water level/ quality through representative sampling. The primary objective of establishing the ground water monitoring network stations is to record the response of ground water regime to the natural and anthropogenic stresses of recharge and discharge parameters with reference to geology, climate, physiography, land use pattern and hydrologic characteristics.

Ground water levels are being monitored throughout the Country four times in a year by Central Ground Water Board through a network of **22339** monitoring wells during the months of January, Premonsoon (March/April/ May), August and January.

The ground water regime monitoring was started in the year 1969 by Central Ground Water Board. At present CGWB has a network of 22339 ground water observation wells, out of which 16190 observation wells are dugwells and 6149 are piezometers. The water level / piezometric head data collected from these observations were entered into the National database and are analysed for obtaining background information of ground water regime and changes on regional scale. The Groundwater level data has been collected from all the states except for Mizoram & Sikkim and UT of Lakshadweep where water level monitoring is not being carried out.

Water level data of January 2016 has been analysed to illustrate spatial distribution of water level and its categorization under different ranges. The January data has been compared with the previous year January data (annual fluctuation), with Premonsoon data (Seasonal Fluctuation) and mean of last 10 years January monitoring data (decadal fluctuation); the analytical results are represented through tables and maps along with suitable explanations. Database thus generated forms the basis for planning the ground water development and management programme. This data is also used for assessment of ground water resources and establishing changes in the regime consequent to various development and management activities.

2.0 Rainfall Pattern

Water level / Piezometric heads are resultant of all input/ output from the aquifer. Apart from draft of ground water for various purposes, quantum of rainfall and its component being recharged to the ground water is major controlling factor of the depth to water levels and it's annual, seasonal or decadal fluctuations. Thus, study of rainfall pattern is very important for understanding spatial and temporal variations in water levels. As per the Climatic bulletins of IMD for monsoon period of 2015, the rainfall pattern has been studied and discussed below.

For the country as a whole, cumulative rainfall during the year's monsoon has been 12% below the Long Period Average (LPA).

Regions	Actual Rainfall (mm)	Normal Rainfall (mm)	% Departure from LPA
Country as a whole	777.5	886.9	-12%
Northwest India	483.1	615.0	-21%
Central India	879.7	974.2	-10%
South Peninsula	665.4	715.7	-7%
East & northeast India	1267.7	1437.8	-12%

Out of 36 meteorological subdivisions, the rainfall has been excess over 1, normal over 23, deficient over 12 sub-divisions and no sub-division under scanty rainfall. Haryana, Chandigarh & Delhi, Punjab and West Uttar Pradesh received deficient rainfall by more the 50% of LPA. In area-wise distribution, 3% area of the country received excess, 67% normal and remaining 30% area received deficient rainfall.

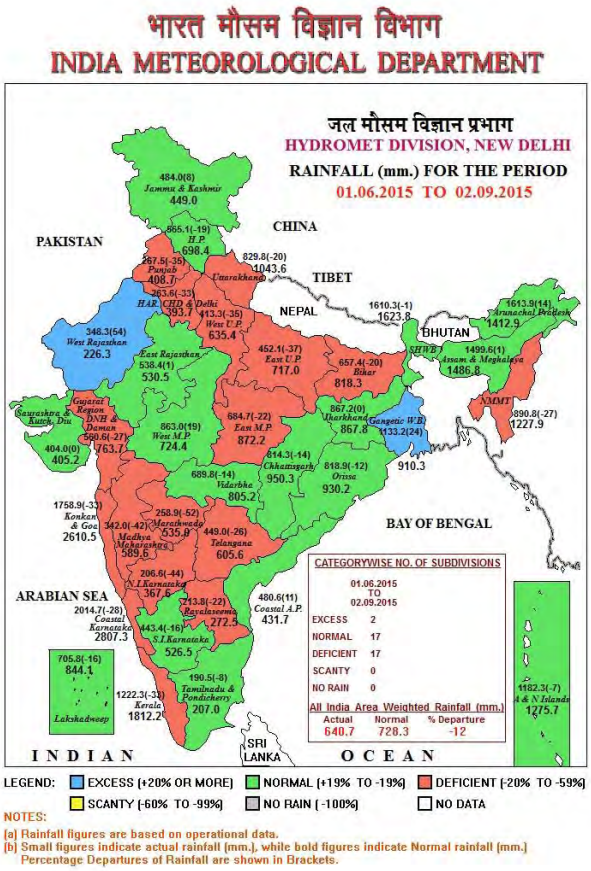
Main Features of Southwest Monsoon, 2015

- Southwest monsoon set in over Kerala on June 2015, as against forecast date of 5 June ± 4 days

- Observed rainfall for the country as a whole during the month of July & January was 90% & 91% of the LPA against the forecast of 93%± 9% & 96%±9% of LPA respectively

- The seasonal rainfall for the country as a whole has been 88% of the LPA as against updated Long Range Forecast of 87%± 4% of LPA.

Source: www.imd.gov.in



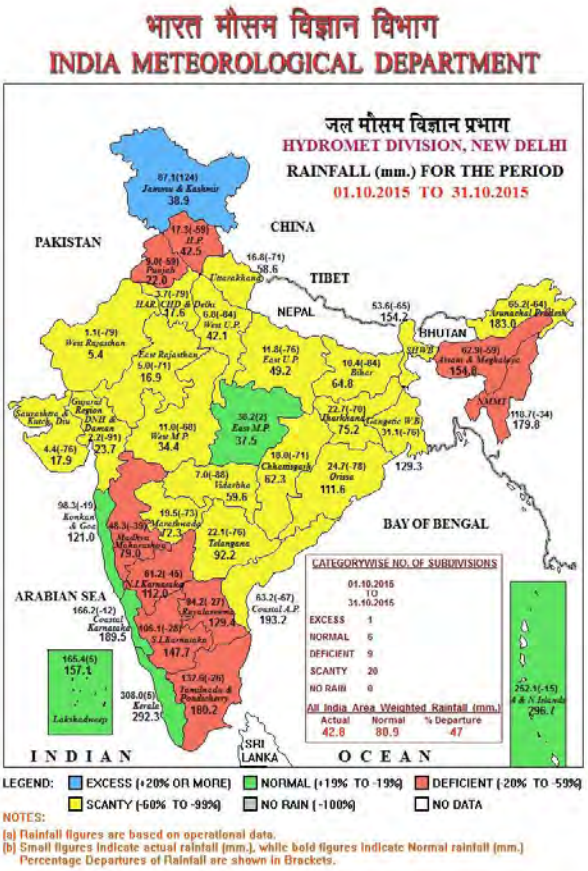
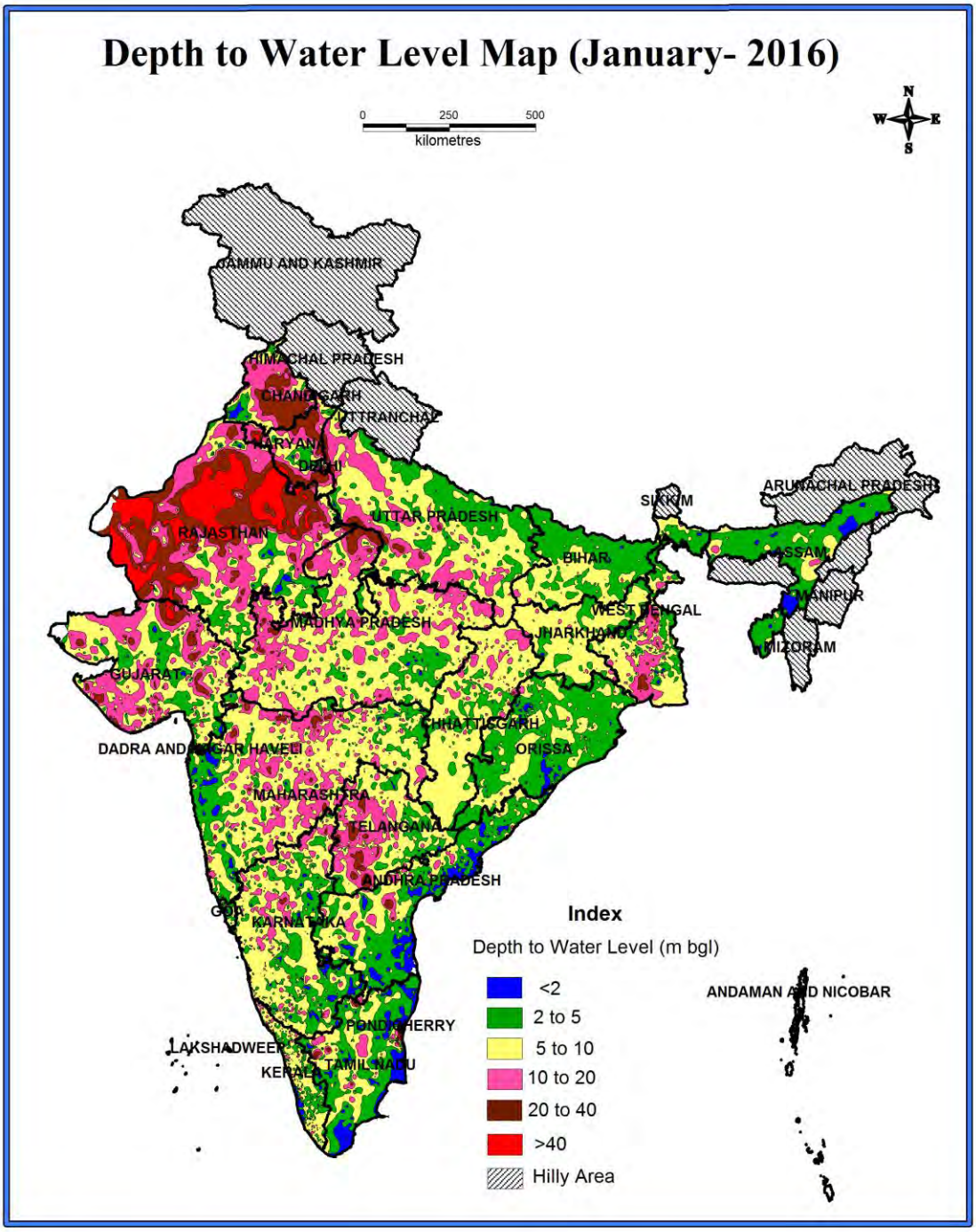


Plate-II

Source: National Data Centre, CGWB, Faridabad



3.0 Ground Water Level Scenario in India

3.1 Ground Water Level Scenario - January 2016

The ground water level data for January 2016 indicate that out of the total 14974 wells analysed, 1371(9 %) wells are showing water level less than 2 m bgl (metres below ground level), 4958 (33%) wells are showing water level in the depth range of 2-5 m bgl, 5342 (36 %) wells are showing water level in the depth range of 5-10 m bgl, 2498 (17%) wells are showing water level in the depth range of 10-20 m bgl, 607(4%) wells are showing water level in the depth range of 20-40 m bgl and the remaining 198 (1 %) wells are showing water level more than 40 m bgl. The distribution of number of wells under different depth ranges is presented in the histogram (**Fig-1**) and statistical distribution is given in **Annexure-I**. The maximum depth to water level of 119.06 m bgl is observed in Bikaner district of Rajasthan whereas the minimum is less than 1 m bgl.

The depth to water level map of January 2016 (**Plate II**) for the country indicates that in general depth to water level ranges from 2 to 10 m bgl as observed at about more than 65% of the monitoring stations. Sub-Himalayan area, north of river Ganges, northern parts of Uttar Pradesh, northern parts of Bihar, Odisha, Assam, Andhra Pradesh, coastal parts of Maharashtra, and Tripura generally the depth to water level varies from 2-5 meter below ground level. Shallow water level of less than 2 m bgl is observed in the states of Assam and isolated pockets in Andhra Pradesh, Maharashtra, Odisha and Tamil Nadu. In West Bengal water level generally varies from 2 to 10 m bgl and central parts of the state shows water level of 10 m and above and deeper water level of more than 20 m bgl in small pockets.

In major parts of north-western states depth to water level generally ranges from 10-40 m bgl. Water level of more than 40 m bgl is also prevalent in the north western part of the country. 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 some parts of Haryana, and Delhi and almost major parts of Rajasthan, water level of more than 40 m bgl is recorded. Along the eastern coast water level is generally upto 5 m bgl whereas in the western coast water level of 10 m bgl is prevalent. In Central India water level generally varies between 5 m bgl to 20 m bgl, except in isolated pockets where water level of less than 5 m bgl has been observed. The peninsular part of country generally recorded a water level in the range of 2 to 20 m bgl depth range.

Fig 1

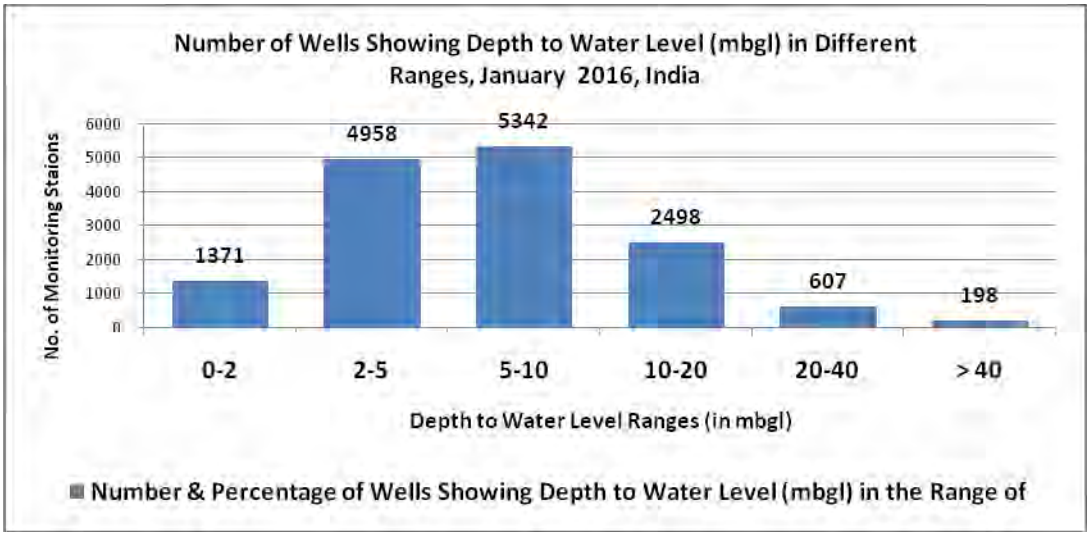
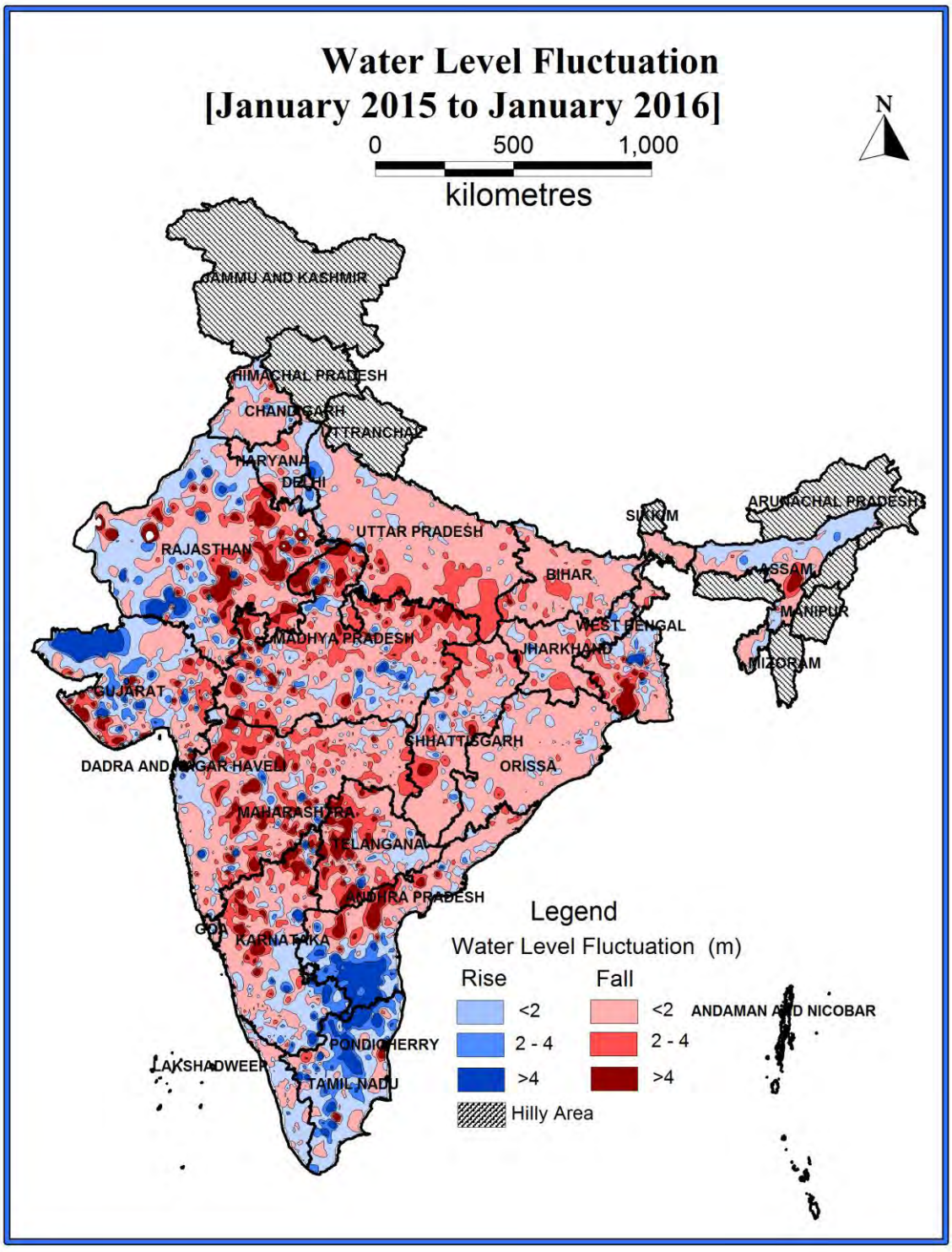


Plate III

Source: National Data Centre, CGWB, Faridabad

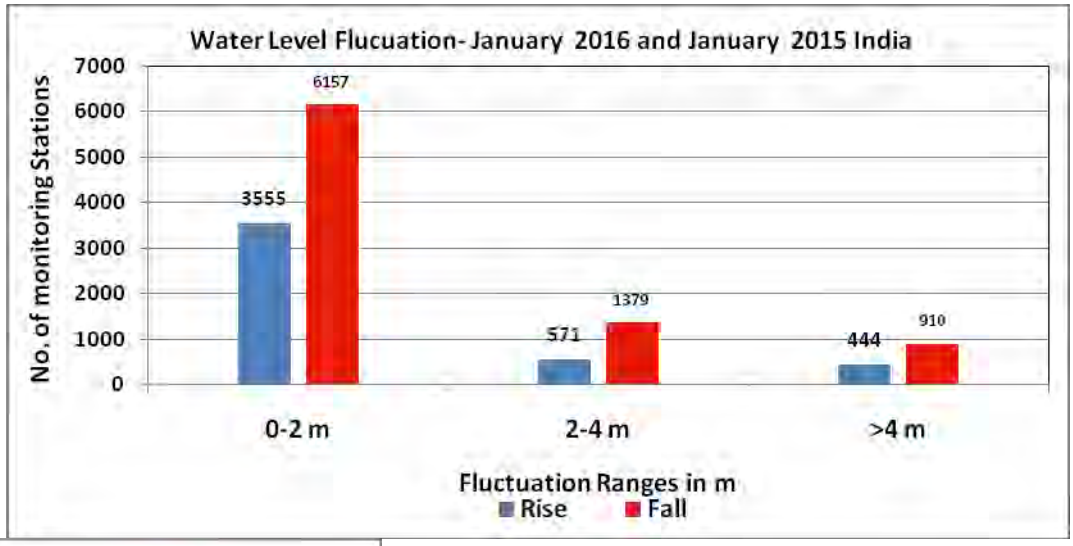


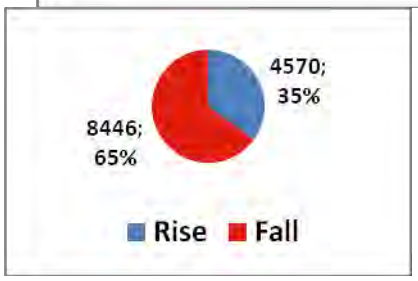
3.2 Water Level Fluctuation (January 2016 to January 2015)

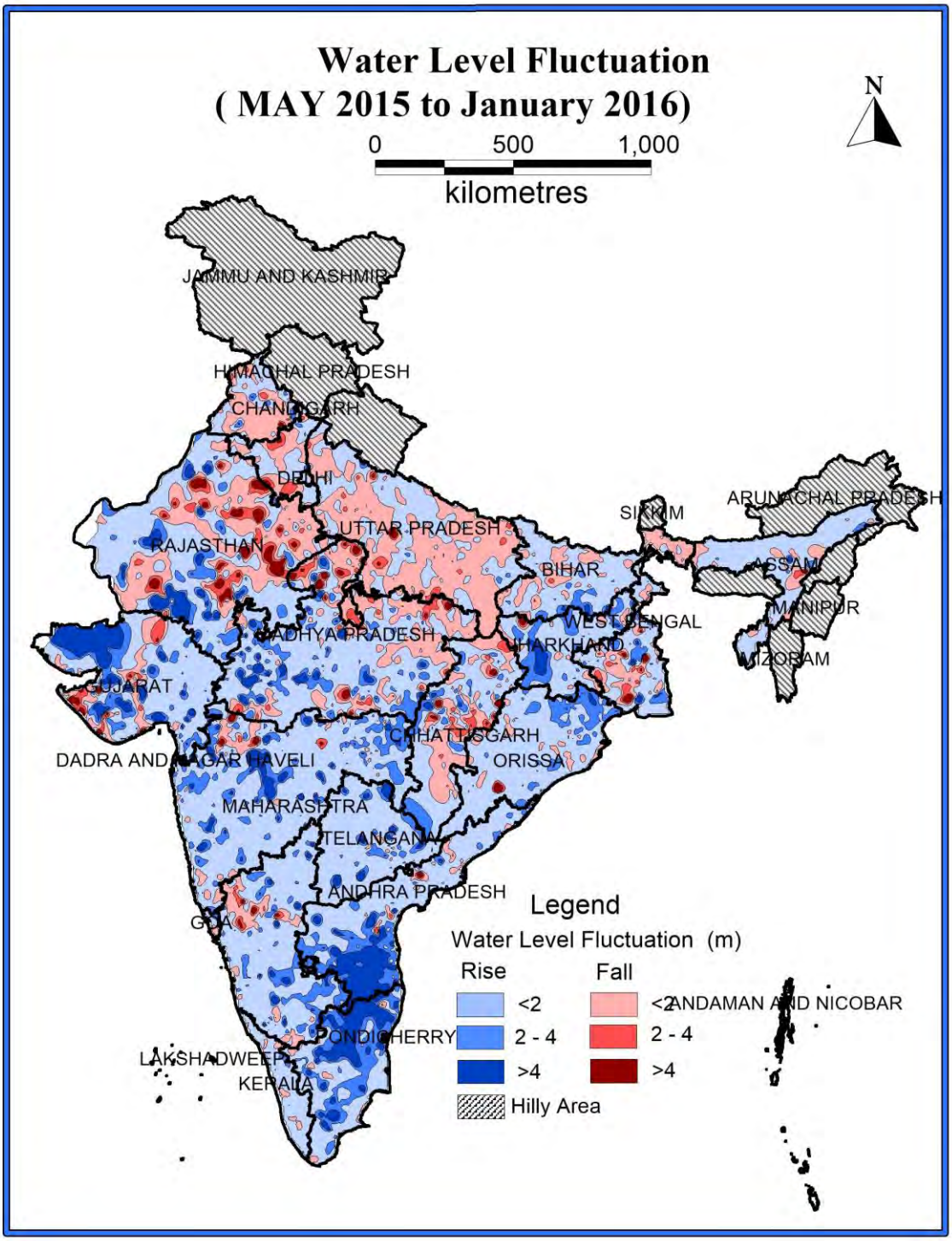
The water level fluctuation of **January 2016 to January 2015** shows that out of 13244 wells analysed, 4570 (35%) are showing rise and 8446 (64%) are showing fall in water level. Remaining 228 (2%) stations analysed do not show any change in water level. About 27% wells are showing rise in the water level in the range of less than 2 m. About 4% wells are showing rise in water level in 2-4 m range and 3 % wells showing rise in water level more than 4 m range. About 64% wells are showing decline in water level, out of which 47% wells are showing decline in water level in less than 2 m range. About 10 % wells are showing decline in water level in 2-4 m range and 7% wells are showing decline in water level more than 4 m range (**Fig-2** and **Annexure-II**). Majority of the wells showing rise/decline falls in the range of 0-2 m.

A comparison of depth to water level of January 2015 to January 2014 is presented in the form of water level fluctuation map (**Plate III**) reveals that in general, there is fall in water level in almost the entire country, except in few states such as Assam, Andhra Pradesh, Gujarat, Kerala, Karnataka, Rajasthan and Tamil Nadu. Rise in water level in isolated pockets is observed in the states of Madhya Pradesh, West Bengal, Haryana, and Maharashtra. Fall is mostly in the range of 0-2 m, although fall in the range of more than 2 m is also prevalent in all the states in small patches. Fall of more than 4 m is prominent in the states of Andhra Prdesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Telangana and West Bengal.

Fig 2





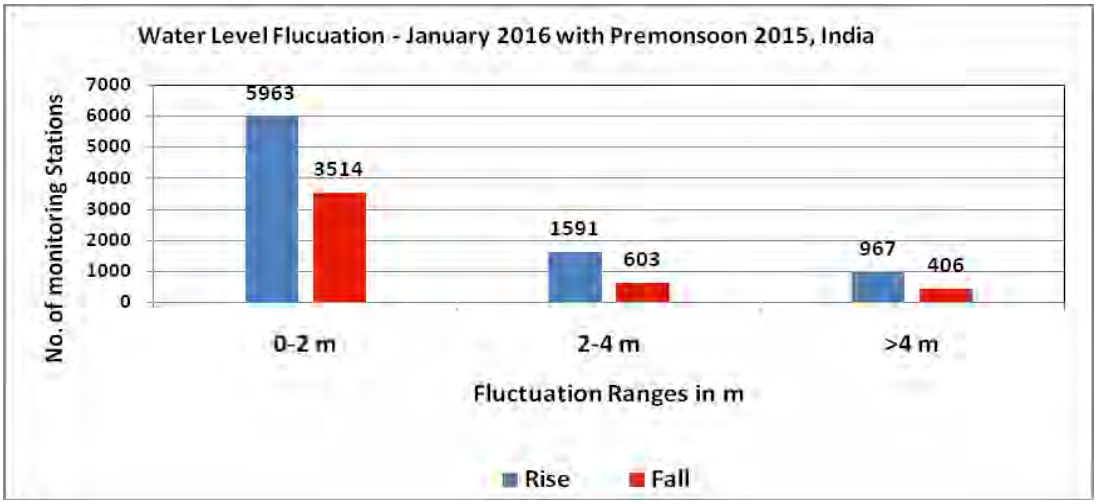

Water Level Fluctuation
(MAY 2015 to January 2016)
N
0
500
1,000
kilometres
JAMMU AND KASHMIR
HIMACHAL PRADESH
CHANDIGARH
DELHI
SIKKIM
ARUNACHAL PRADESH
UTTAR PRADESH
RAJASTHAN
BIHAR
ASSAM
MANIPUR
WEST BENGAL
MADHYA PRADESH
JHARKHAND
MIZORAM
GUJARAT
CHHATTISGARH
DADRA AND NAGAR HAVELI
ORISSA
MAHARASHTRA
TELANGANA
ANDHRA PRADESH
GOA
ANDAMAN AND NICOBAR
PONDICHERRY
LAKSHADWEEP
KERALA
Legend
Water Level Fluctuation (m)
Rise
Fall
<2
<2
2 - 4
2 - 4
>4
>4
Hilly Area

3.3 Water Level Fluctuation (January 2016 to Premonsoon 2015)

The water level fluctuation of **January 2016 to Premonsoon 2015** indicates that out of 13341 wells analysed, 8521 (64%) are showing rise and 4523 (34%) are showing fall in water level. Remaining 297 (2%) wells analysed do not show any change in water level. About 45% wells are showing rise in the water level in the range of less than 2 m. About 12% wells are showing rise in water level in 2-4 m range and 7 % wells showing rise in water level more than 4 m range. About 34% wells are showing decline in water level, out of which 26% wells are showing decline in water level in less than 2 m range. About 5 % wells are showing decline in water level in 2-4 m range and 3% wells are showing decline in water level more than 4 m range (**Fig-3** and **Annexure-IV**). Majority of the wells showing rise/decline falls in the range of 0-2 m.

A comparison of depth to water level of January 2016 with Premonsoon 2015 is presented in the form of water level fluctuation map (**Plate III**) reveals that in general, there is rise in water level in almost the entire country, except in few states. Rise in water level is prominent in all the states of the country except Punjab and Uttar Pradesh and to some extent in Rajasthan. Rise in water level of more than 4 m is prominent in the most of the states such as Andhra Pradesh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Tamil Nadu. Decline in water level is prominent in Uttar Pradesh, Rajasthan and Punjab and in isolated pockets of Bihar, West Bengal, Madhya Pradesh, Karnataka, Chhatishgarh and Gujarat.

Fig 3



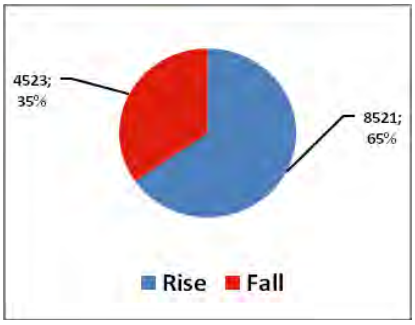
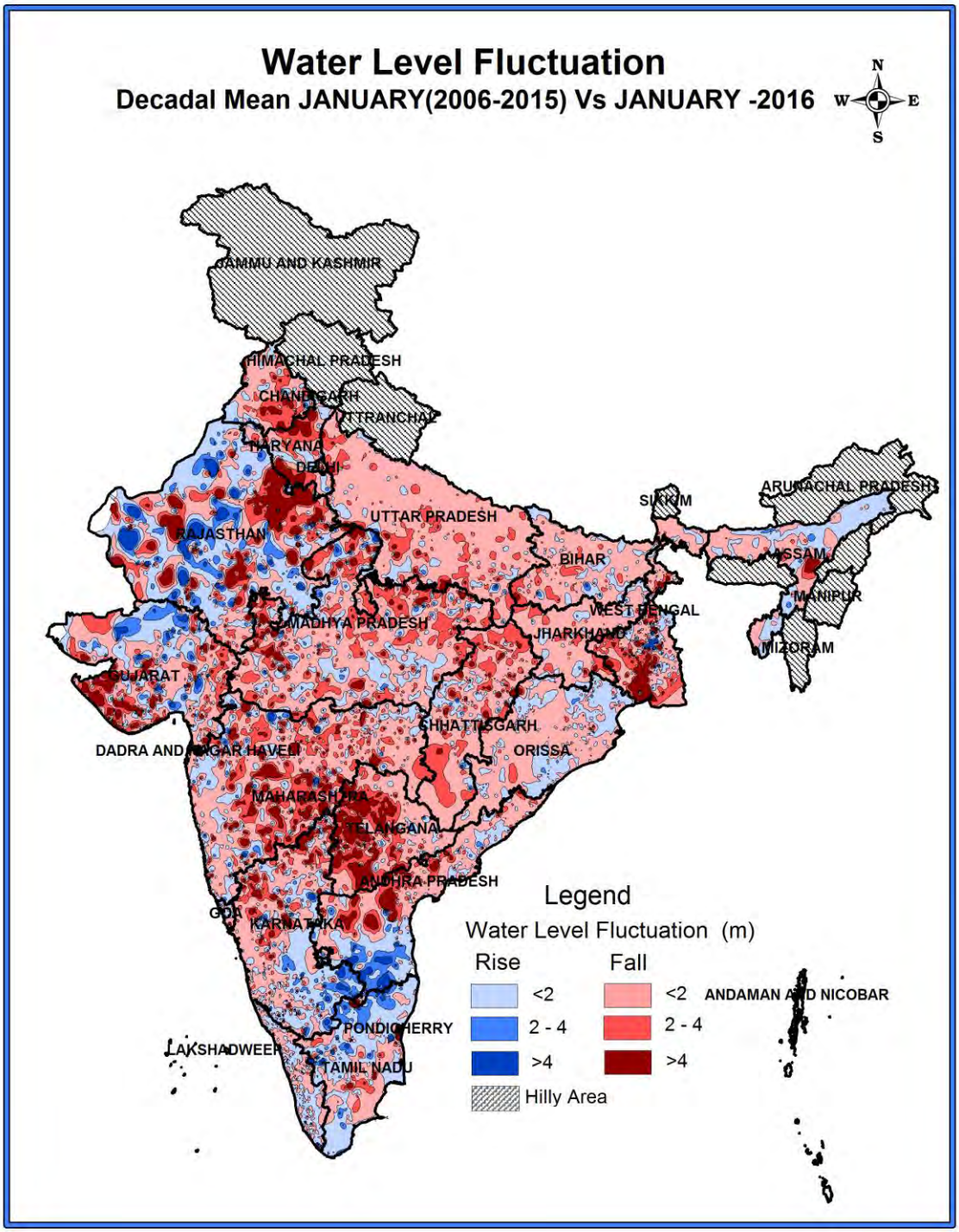


Plate V

Source: National Data Centre, CGWB, Faridabad

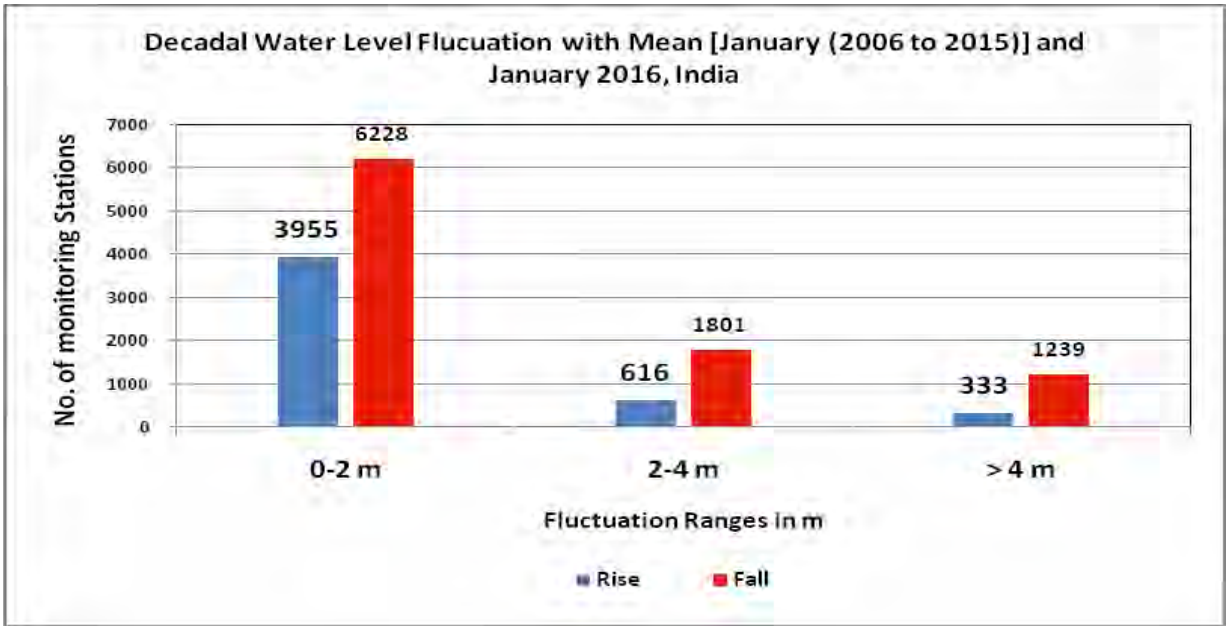


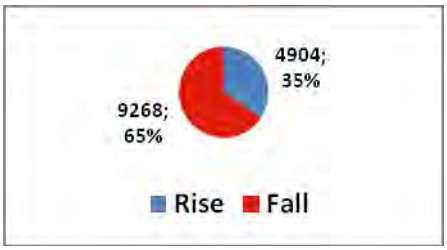
3.4 Water Level Fluctuation (January – 2016 with Mean of January (2006 - 2015)

A comparison of depth to water level of January 2016 with decadal mean of January (2006-2015) indicates that 4904 (about 35%) of wells are showing rise in water level, out of which 28% wells are showing rise of less than 2 m (**Annexure-IV**). About 4% wells are showing rise in water level in the range of 2-4 m and only 2% wells are showing rise in the range of more than 4 m. 9268 (about 65%) wells are showing decline in water level, out of which 44% wells are showing decline in water in the range of 0-2 m. 13% wells are showing decline in water level in 2-4 m range and remaining 9% are in the range of more than 4 m. Decline in water level of more than 4 m is mostly prominent in the states of Andhra Pradesh, Chhatishgarh, Delhi, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Telangana and West Bengal. Rise in water level of more than 4 m is also observed in few states in isolated pockets such as Gujarat, Himachal Pradesh, Rajasthan and Tamil Nadu.

The decadal water level fluctuation map of India for January, 2016 with the mean of January (2006-2015) is shown in **Plate-V** and frequency distribution of fluctuation ranges is shown in **Fig. 4.** As observed in Plate-IV, almost whole country is showing decline in water level, maximum fall is observed in and around parts of Rajasthan, Haryana, Punjab, Gujarat, Telangana, Maharashtra, Uttar Pradesh, Bihar, Chhatishgarh, Jahrkhand and West Bengal. A rise in water level is observed in few states but occurs sporadically.

Fig 4

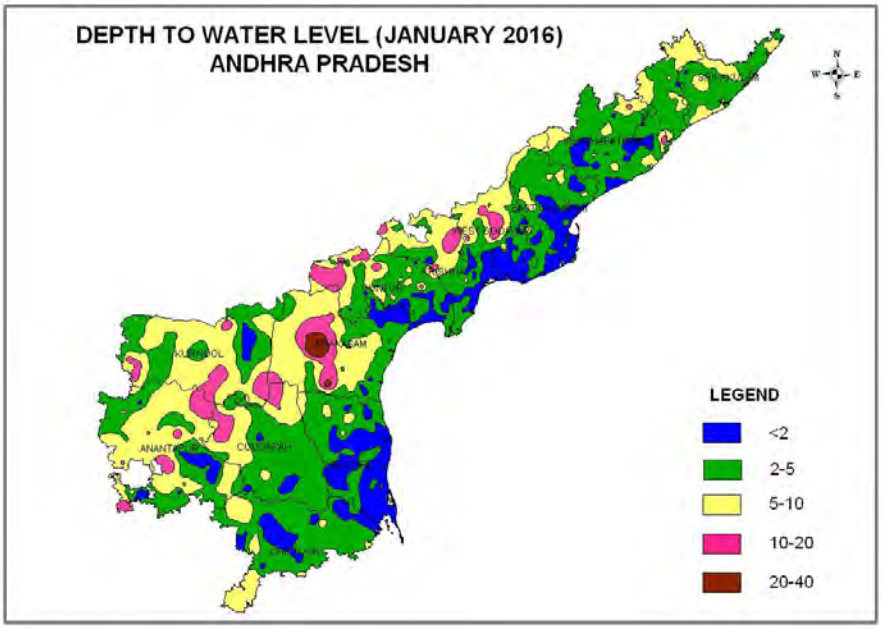




4.0 State-wise scenario of ground water level and comparison with previous year water level as well as change with respect to decadal average has been discussed in the following section.

4.01 Andhra Pradesh

Depth to Water Level - January 2016



In the state of Andhra Pradesh very shallow water level ranging between 0-5 m bgl was observed in about 70% of the wells monitored. Shallow water level range is observed along the coastal tract, northeastern parts of the state. The depth to water level between 5-10 meters has been observed in 22 % wells mainly in the southern, central and western parts of the state. Depth to water level ranging between 10-20 meters has been observed in 6% wells mainly in the southern parts. Water level of more than 20 m bgl has been observed in less than 1% well. The depth to water level in the state ranges upto 43.05 m bgl (in Prakasham district).

Water Level Fluctuation (January 2016 to January 2015)

Water level data of January 2016 was compared to January 2015 and the analysis shows that about 56% of the wells analysed are showing fall in water level and only 41% wells are showing rise in water level. 3% wells show no change in water level. Out of this 41% rise, 26% wells have shown a rise in 0-2 m range. In the fall category, about 44% of the wells show fall in 0-2 m range. Rise and fall is in the range of 0-2 m.

Fluctuation - January 2016 to Premonsoon 2015

Water level data of January 2016 was compared to Premonsoon 2015 and the analysis shows that about 73% of the wells analysed are showing rise in the water level and only 22% wells are showing fall in water level. 5 % wells show no change in water level. Out of this, 47% wells have shown a rise in 0-2 m range,13% of the wells have shown rise in the range of 2-4 m and another 14% of the wells show rise in the range of >4m. About 16% of the wells show fall in 0-2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The water level data of January 2016 has been compared with decadal mean (January 2006 2015) to assess the rise/fall in water level during current year with respect to long term average of the corresponding period. About 39 % of analysed wells have shown a rise in water level. Out of this 30% of the wells have shown rise in the range of 0 to 2 m. About 60% wells have shown a fall in water level, out of which 42% wells have shown fall in the range of 0 to 2 m and 11 % wells have shown fall in 2- 4 m and 8% wells shows fall of more than 4 m.

4.02 Arunachal Pradesh

Depth to Water Level – January 2016

In general depth to water level scenario in the state depicted water level in the range of 2 to 10 m bgl at about more than 80 % of the wells monitored.

Water Level Fluctuation - January 2016 to January 2015

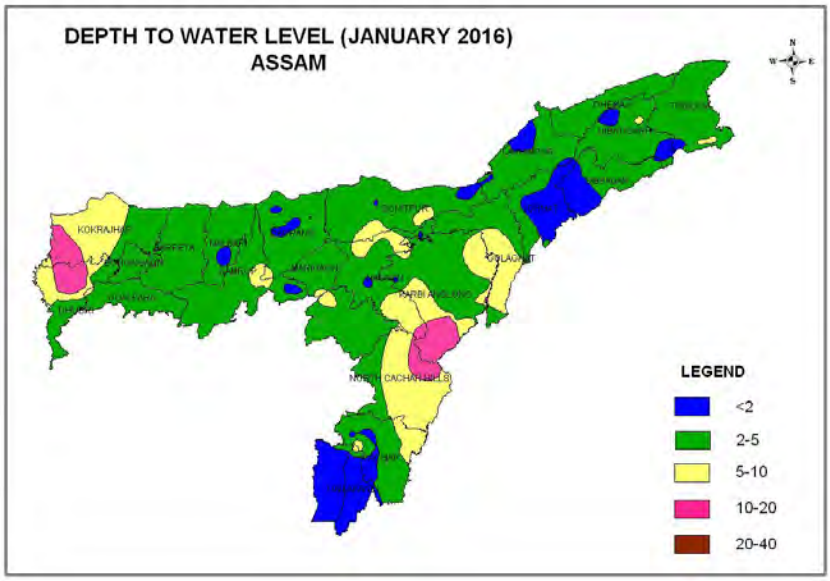
Water level of January 2016 when compared to that of January 2015 shows that there is dominantly rise in water level in the entire state. About 64 % of the wells analysed show a rise in water level and all the wells fall in 0-2 m range. 36% wells show decline in water level and all the wells lies in 0-2 m range.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Water level of January 2016 when compared to that of Premonsoon 2015 shows that there is dominantly rise in water level in the entire state. About 75 % of the wells analysed show a rise in water level and only 25% shows fall. 58% wells show rise in 0-2 m range, 17% shows rise in 2-4 m range. All the wells in the decline category falls in 0-2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The water level data of January 2016 has been compared with decadal mean (January 2006-2015) and it is observed that 69% of the wells analysed show rise in water level whereas only 31% shows fall in water level. Both rise and decline are in the range of 0-2 m.



4.03 Assam

Depth to Water Level-January 2016

In general depth to water level scenario in the state depicted a water level in the range of 0 to 5 m bgl at almost 85 % of the wells

monitored. Only 11 % wells recorded water level between 5-10 m bgl and only 3% wells show water level between 10-20 m bgl.

A shallow water level within 2 m bgl is recorded in districts such as Hailakandi, Jorhat and and Dibrugarh, and small pockets in Lakhimpur, Darang and Nalbari districts. The maximum depth to water level has been recorded as 19.00 m bgl in Dhubri district.

Water Level Fluctuation - January 2016 to January 2015

Water level of January 2016 when compared to that of January 2015 shows that there is rise in water level in the state. About 61 % of the wells analysed show a rise in water level. Out of this, 56% of the wells showing rise in water level in less than 2 m range. A rise of 2-4 m is observed in 4 % of the wells analyzed. About 37 % of wells analysed have shown fall in water level where 30 % of the wells shows fall in the range of 0-2 m.

Water Level Fluctuation – January 2016 to Premonsoon 2015

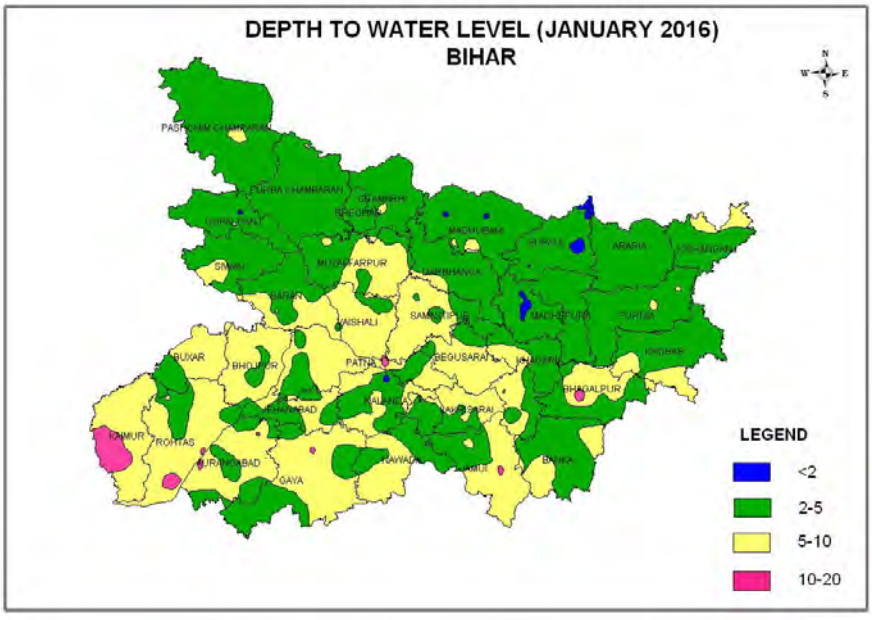
Water level of January 2016 when compared to that of Premonsoon 2015 shows that there is predominantly rise in water level in the state. About 72 % of the wells analysed show a rise in water level. Out of this, 59 % of the wells showing rise in water level in less than 2 m range. A rise of 2-4 m is observed in 8 % of the wells analyzed and 6% wells show rise of more than 4 m. About 26 % of wells analysed have shown fall in water level and out of this, 24% falls in 0-2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The water level data of January 2016 has been compared with decadal mean (January 2006-2015) and it is observed that out of 195 wells analyzed 64 % show a rise in water level whereas 36% show a fall in water level. 60% wells show rise in the range of 0-2 m and 30% wells show fall in the range of 0-2 m.

4.04 Bihar

Depth to Water Level – January 2016



During January 2016 water level measurement, a total of 604 wells have been monitored. About 4 % of the wells are showing water level in the range 0-2 m bgl in isolated patches. 55 % of the wells are showing water level in the range 2-5 m bgl, especially in the whole of northern part of the state. 39 % of the wells analysed

are showing water level in the range of 5-10 m bgl. 2% of the wells are showing water level in the range 10-20 m bgl. The maximum depth to water level has been recorded as 19.00 m bgl in Jamui district.

Water Level Fluctuation - January 2016 to January 2015

Water level data of January 2016 was compared to January 2015 and the analysis shows that in general there is fall in water level in the state. About 82 % of the wells analysed are showing fall in the water level. Out of this, 63 % wells have shown a fall in 0-2 m range. 17% wells shows fall in water level in the range of 2-4 m. Only 17% wells show rise in water level , out of which about 16% of the wells analysed are showing rise in the water level mostly in the range of 0 -2 m.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Water level of January 2016 when compared to that of Premonsoon 2015 shows that there is predominantly rise in water level in the entire state. About 78% of the wells analysed show a rise in water level. Out of this, 58 % of the wells showing rise in water level in less than 2 m range. A rise of 2-4 m is observed in 16% of the wells analyzed and 4% wells show rise of more than 4 m. About 17% of wells analysed have shown fall in water level and mostly in the range of 0-2 m.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The water level data of January 2016 has been compared with decadal mean (January 2006 to 2014) and it indicates that out of 471 wells analyzed, only 20% wells show a rise in water level whereas 80% show a fall in water level. Out of 20 % rise, all the wells fall in 0-2 m range, whereas, out of 80 % fall, 61% wells show fall in 0-2 m range.

4.05 Chandigarh

Depth to Water Level – January 2016

In general depth to water level scenario in the UT of Chandigarh depicted around 22% monitoring stations recorded water level between 2-5 m bgl. Another 29 % wells recorded water level between 5-10 m bgl, 21% wells show water level between 10-20 m bgl and maximum 29% in 20-40 m bgl. The maximum depth to water level has been recorded as 39.70 m bgl.

Water Level Fluctuation - January 2016 to January 2015

Water level data of January 2016 was compared to January 2015 and the analysis shows that in general there is both rise and fall in water level in the UT. About 42 % of the wells analysed are showing rise in water level. Out of this, 33% wells have shown a rise in 0-2 m range. 58% wells show fall in water level mostly in the range of 0-2 m. 8 % wells show decline in more than 4 m range.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Water level of January 2016 when compared to that of Premonsoon 2015 shows that there is predominantly rise in water level in the state. About 64% of the wells analysed show a rise in water level. Out of this, 45% of the wells showing rise in water level in less than 2 m range and 9% wells show rise in 2-4 m range. Another 9% show rise of more than 4 m range. About 36% of wells analysed have shown decline in water level, out of which 27% wells show fall in 0-2 m range.

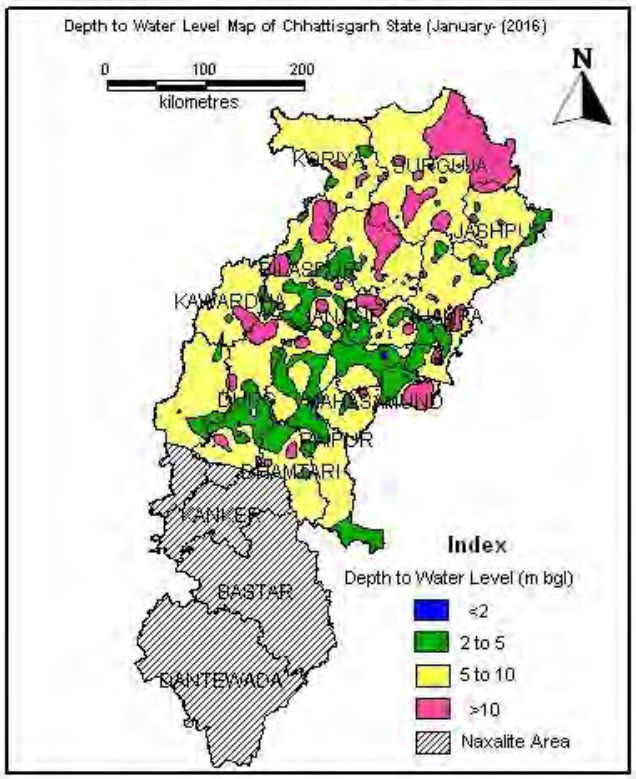
Fluctuation - January 2016 to January Decadal mean (2006-15)

The water level data of January 2016 has been compared with decadal mean (January 2006-2015) and it shows that there is predominantly fall in water level in the UT. Only 31 % of the wells analysed show rise in water level and 69% shows decline in water level. Out of 69 % in the fall category, 54% wells fall in the 0-2 m range and 8% each in 2-4 and more than 4 m range.

4.06 Chhattisgarh

Depth to Water Level – January 2016

During January 2016, water level measurement, a total of 586 wells has been monitored. More than 80% of the wells analysed fall in the range of 2-10 m bgl. About 2% of the wells monitored show water level in the range of 0-2 m bgl, 31% wells show water level in 2-5 m bgl and about 52 % wells fall under the category of 5- 10 m bgl. About 14% wells show water levels in the range of 10-20 m bgl. The maximum water level measured is 50 m bgl in Raigarh District.



Water Level Fluctuation - January 2016 to January 2015

Water level data of January 2016 was compared to January 2015 and the analysis shows that in general there is fall in water level in the state. About 68 % of the wells analysed are showing fall in water level. Out of this, 47 % wells have shown a decline in 0-2 m range and 15% wells show decline 2-4 m range. 32% wells shows rise in water level, out of which about 22 % of the wells analysed are showing rise in the water level mostly in the range of 0-2 m.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Water level of January 2016 when compared to that of Premonsoon 2015 shows that there is both rise and fall in water level in the entire state. About 56 % of the wells analysed show a rise in water level. Out of this, 35 % of the wells showing rise in water level in less than 2 m range. A rise of 2- 4

m is observed in another 14 % wells. A rise of more than 4 m is observed in 7 % wells. 43% wells show decline in water level, mostly in 0-2 m range.

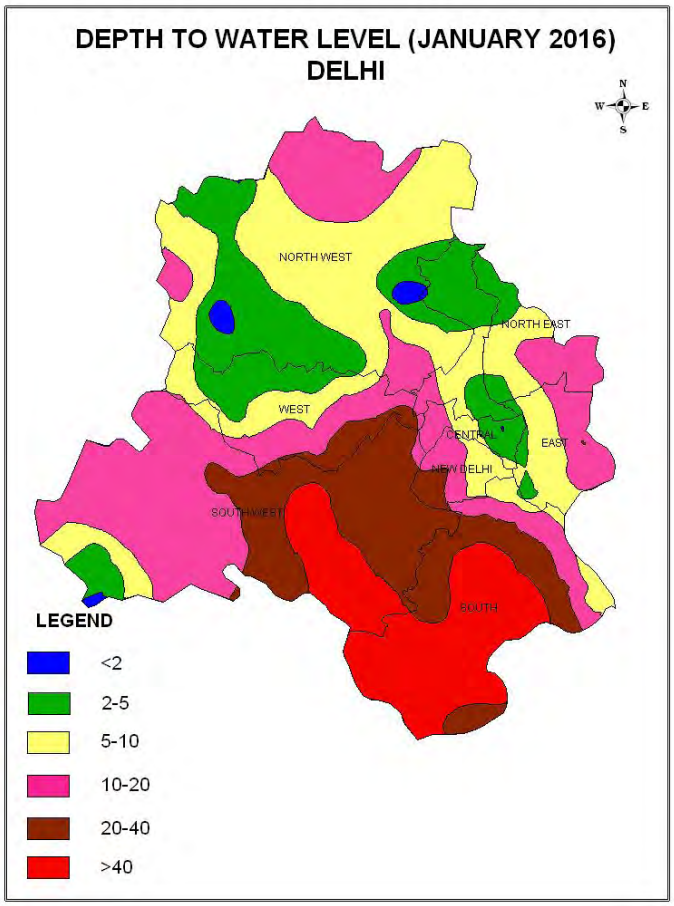
Fluctuation - January 2016 to January Decadal mean (2006-15)

When compared the decadal mean water level (January 2006 to 2015) with January 2016, it has been observed that entire state shows decline in water level. About 21% of observation wells are showing a rise in water level,out of which 16% wells showing rise in less than 2 m range.Fall of water level as compared to the decadal mean is observed in 79 % of the monitored wells. Almost 50% of the monitored wells are showing a fall in the range of 0-2 m, 20 % in 2-4 m range and 9% wells show fall in more than 4 m range.

4.07 Delhi

Depth to Water Level – January 2016

The depth to water level recorded in the state of Delhi during January 2016 ranges from 0.74 m bgl to 59.51 m bgl (South District). It is observed that only 6% of the wells have shown water level in the range of 0-2 m bgl. About 18 % of the wells analysed have shown water level in the range of 2-5 m bgl, about 25% of the wells have shown water level in the range of 5-10 m bgl and 27 % wells show water level in the range of 10-20 m bgl. Deeper water level in the range of 20-40 m bgl and more than 40 m bgl are shown by 16% & 8% of the wells analysed respectively. It is observed that Southern parts of Delhi show deeper water levels of more than 20 m bgl.



Water Level Fluctuation - January 2016 to January 2015

Water level of January 2016 when compared to water level of January 2015 in the state indicates there is both rise and fall in water level in the entire state. About 51 % of the wells analysed have recorded a rise in water level, out of which 44 % of analysed wells have recorded a rise in the range of 0 to 2 m. About 49% of the wells have shown fall in water level, out of which 44% fall in the range of 0 to 2 m.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Water level of January, 2016when compared to water level of Premonsoon 2015 in the state indicates that about 60 % of the wells analysed have recorded a rise in water level, out of which

50% of analysed wells have recorded a rise in the range of 0 to 2 m. About 40% of the wells have shown fall in water level, out of which 38 % fall in the range of 0 to 2 m.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuation analyses of water level during January 2016 when compared with the Decadal mean (January 2006-2015) indicate that in general there is fall in water level. 34 % of analysed wells have shown rise in water level. Out of this, 28 % of the wells have shown rise in the range of 0-2 m. About 66% wells have shown a decline in water level. Out of this 38% of the wells have shown decline in water level in the range of 0-2 m, 16% of the wells have shown decline in water level in the range of 2 - 4 m, 12 % of the wells have shown decline in water level in the range of more than 4 m.

4.08 Goa

Depth to Water Level - January 2016

The depth to water level recorded in the state of Goa during January 2016 ranges from 0.72 m bgl to 15.47 m bgl in North Goa. It is observed that out of 68 monitored wells, 13 % wells show less than 2 m bgl water level, another 44% wells show 2 to 5 m bgl water level, 31% wells show 5 to 10 m bgl water level and 12% wells show 10 to 20 m bgl water level.

Water Level Fluctuation - January 2016 to January 2015

Water level of January 2016 when compared to water level of January 2015 in the state indicates that about 71 % of the wells analysed have recorded a fall in water level, out of which 61 % of analysed wells have recorded a decline in the range of 0 to 2 m. About 29 % of the wells have shown fall in water level, out of which 21% fall in the range of 0 to 2 m.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Water level of January 2016 when compared to water level of Premonsoon 2015 in the state indicates rise in water level in the state. About 77 % of the wells analysed have recorded a rise in water level, out of which 64 % of the analysed wells have recorded a rise in the range of 0 to 2 m. 21% wells shows fall in water level and mostly in the range of 0-2 m.

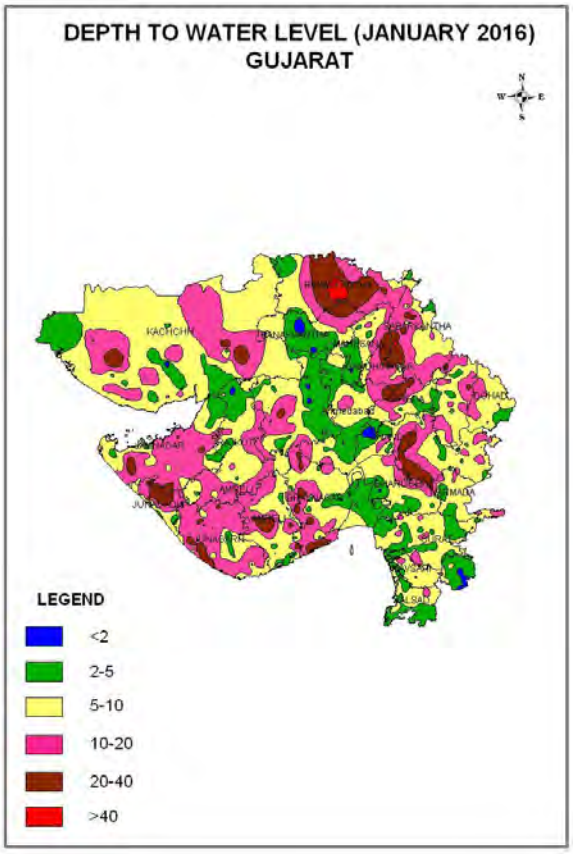
Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuation of water level during January 2016 when compared with the Decadal mean (January 2006-2015) indicates fall in water level in the state. About 63% of analysed wells have shown a fall in water level. Out of this 55% of the wells have shown fall in the range of 0 to 2 m. About 38 % wells have shown a rise in water level and almost 30% wells fall in the range of 0-2 m.

4.09 Gujarat

Depth to Water Level - January 2016

The depth to water level recorded in the state of Gujarat during January 2016 ranges up to 59.38 m bgl in Banaskantha district. The depth to water level for 5 % of the wells analysed have shown water level in the range of 0-2 m bgl, 25 % of the wells have shown water level in the range of 2-5 m bgl. About 35 % of the wells analysed have shown water level in the range of 5-10 m bgl and 27 % 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 more than 40 m bgl are shown by about 9% of the wells analysed.



Water Level Fluctuation - January 2016 to January 2015

Water level data of January 2016 when compared to January 2015 shows that in general there is fall in water level in the state. About 38 % of the wells analysed shows rise in the water level. Out of this, 22% wells have shown a rise in the range of 0-2 m. About 8% of the wells have shown rise in 2- 4 m range and about 7 % wells have shown rise in water in more than 4 m. About 61 % of the total wells have shown a fall in water level, out of which 37% wells have shown a fall in 0-2 m range. 13% wells show fall in 2-4 m range and 10% wells in more than 4 m range. 2% of the wells show no change in water level.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Water level data of January 2016 when compared to Premonsoon 2015 shows that in general there is rise in water level in the entire state. About 67 % of the wells analysed show rise in water level. Out of this, 38% wells have shown a rise in the range of 0-2 m. About 13% of the wells have shown rise in 2-4 m range and about 16 % wells have shown rise in water in more than 4 m. Only 30% of the total wells have shown a fall in water level, out of which 20% wells have shown a fall in 0-2 m range. 2% of the wells show no change in water level.

Fluctuation - January 2016 to January Decadal mean (2006-15)

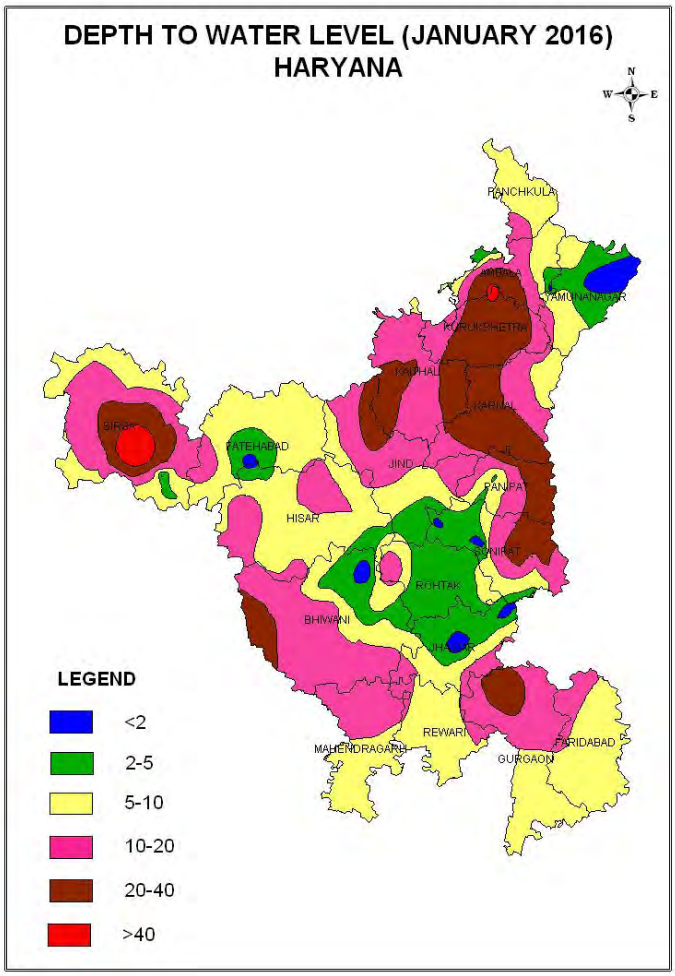
The water level data of January 2016 has been compared with decadal mean (January 2006 to 2015) to assess the rise/fall in water level of this year with respect to long term average of the corresponding period. 33% of monitoring wells shows rise in water level and 67 % wells are showing fall in water level. About 21% of wells show rise in 0-2 m range, 7% wells shows rise in

the 2-4 m range and 5% wells are showing rise in the range of more than 4 m. 36 % of the wells have shown fall in water level in the range of 0-2 m. Another 17 % wells show fall in 2-4 m range and almost 14% wells show fall in more than 4 m range.

4.10 Haryana

Depth to Water Level - January 2016

During January 2016, the depth to water level in the state of Haryana varies from 0.16 to 65.30 m bgl in Sirsa district. In Haryana, water level generally varies in the range of 2 - 20 m bgl in which maximum wells falls. About 9% of wells monitored have reported water level up to 2 m bgl. About 23% of the wells monitored falls within the range of 2-5 m bgl. Another 30% of the wells monitored falls within the range of 5-10 m bgl. Moderately deep water level i.e. 10-20 m bgl occurs in major parts of the State, observed in almost 25% of the monitored wells. Deep water level i.e. 20-40 m bgl is observed in 11% of the monitored wells. Very deep water levels more than 40 m bgl are also observed in almost 2% of the monitored wells. Deeper water levels of more than 20 m bgl are observed mostly in Kurukshetra , Karnal and Gurgaon districts



Water Level Fluctuation - January 2016 to January 2015

The water level data of January 2016 when compared with January 2015 indicates that there is rise in water level in about 61 % of the wells monitored, out of which 55% of the wells monitored show rise in the range between 0-2 m. Decline in water level has been recorded in 38 % of the wells, mostly in 0-2 m range. Rise and fall is mainly restricted to 0-2 m range.

Water Level Fluctuation – January 2016 to Premonsoon 2015

The water level data of January 2016 when compared with Premonsoon 2015 indicates that there is rise in water level in about 64 % of the wells monitored, out of which 53 % of the wells monitored show rise in the range between 0-2 m. Decline in water level has been recorded in 36% of the

wells. Fall in range of 0-2 m has been recorded in 30 % wells. Rise and fall is mainly restricted to 0-2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuation of water level during January 2016 when compared with the average water level of past decade (Decadal mean January 2006-2015) indicates in general there is both rise and decline in water level in the entire state. About 44% of monitored wells have shown rise in water level. The rise of 0-2 m has been observed in about 34 % of the wells analysed. About 56% of wells analysed have shown fall in water level. Fall in the range of 0-2 m has been recorded in 34% of monitored wells, 12 % wells in 2-4 m range and 9% wells in more than 4 m range.

4.11 Himachal Pradesh

Depth to Water Level - January 2016

The depth to water level in the state of Himachal Pradesh during January 2016 varies from 0.44 m bgl in Kullu district to 28.72 m bgl in Una district. About 50% of the wells show water level of less than 5 m bgl. Out of these almost 9% of the wells are showing water level in the range of 0-2 m bgl, another 46 % of the wells show water level in the range of 2-5 m bgl. About 21% of the wells are showing water level in the range of 5 -10 m bgl while another 19% of the wells are showing water level in the range of 10-20 m bgl. Deep water levels of more than 20 m are observed only at 4% monitoring stations.

Water Level Fluctuation - January 2016 to January 2015

Water level data of January 2016 compared to January 2015 shows that there is both rise and fall in water level in entire state. About 41% of the wells analysed shows rise in water level. Out of this, 36% wells have shown a rise in 0-2 m range. About 58 % of the total wells have shown a fall in water level and almost all the wells shows declinein the range of 0-2 m (53%). About 1% wells shows no change in water level.

Water Level Fluctuation – January 2016 to Premonsoon 2015

The water level data of January 2016 when compared with Premonsoon 2015 indicates that there is rise in water level at about 56 % of the wells monitored, out of which 48% of the wells monitored show rise in the range between 0-2 m. Decline in water level has been recorded in 43% of the wells and all the wells fall in range of 0-2 m.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The water level data of January 2016 has been compared with decadal mean (January 2006 to 2015) to assess the rise/fall in water level of this year with respect to long term average of the corresponding period. About 45% of monitoring wells show rise in water level and rest 55% wells show fall in water level. Out of 45 % wells in the rise category, about 35 % of the monitored wells

show rise in the 0-2 m range. 46 % of the wells have shown decline in water level, out of which 41% falls in the range of 0-2 m.

4.12 Jammu & Kashmir

Depth to Water Level - January 2016

It is observed that out of the total 205 wells monitored, water level mainly varies from 0-5 m bgl in which more than 70% of the wells fall. About 21% wells have less than 2 m bgl water level, mainly in outer plain areas. About 51% of the wells analysed have shown water level in the range of 2-5 m bgl. About 19% 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 3% wells have more than 20 m bgl water level. The depth to water level recorded in the state ranges upto 33.49 m bgl in Jammu district.

Water Level Fluctuation - January 2016 to January 2015

Water level of January 2016 when compared with water level of January 2015 in the state indicates that there is both rise and fall in water level. 59% of the wells analysed have recorded a rise in water level, out of which 55% of analysed wells have recorded a rise in the range of 0 to 2 m. 40% wells show decline in water level, out of which 37% of the wells have shown fall in water level mostly in 0-2 m range. 1% wells show no change.

Water Level Fluctuation – January 2016 to Premonsoon 2015

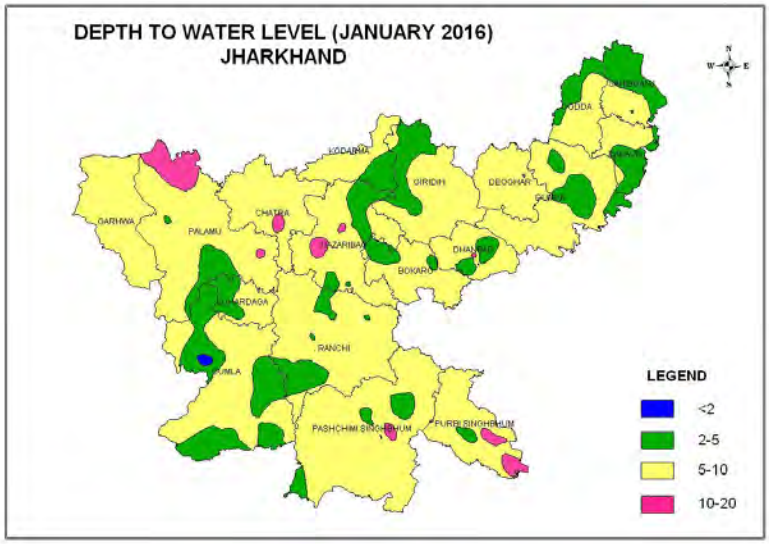
The water level data of January 2016 when compared with Premonsoon 2015 indicates that there is both rise and fall in water level in the state. About 42 % of the wells monitored show rise in water level, out of which 37% of the wells monitored show rise in the range between 0-2 m. Decline in water level has been recorded in 57% of the wells, out of which 49% shows decline in 0-2 m range. Rise and decline of water level in mainly restricted upto 2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuation analyses of water level of January 2016 with the decadal mean (January 2006-2015) indicates that there is rise in water level in the state and about 61% of analysed wells have shown a rise in water level. Out of this 56% of the wells have shown rise in the range of 0 to 2 m. About 39% wells have shown a decline in water level, out of which 37% of the wells have shown fall in the range of 0 to 2 m.

4.13 Jharkhand

Depth to Water Level - January 2016



Water Level in the state varies generally in the range of 2-10 m bgl. Out of the total 219 wells analysed, less than 1% of wells have shown depth to water level in the range of 0 to 2 m. Water level in about 30 % of the wells was found between 2 to 5 m bgl and about 63% of the wells analysed are showing water level in the range of 5-10 m bgl. Deeper water levels of 10-20 m are observed in about 7% wells. The water level ranges from 0.50 m bgl to 18.94 m bgl in Paschimi Singbhum District.

Water Level Fluctuation - January 2016 to January 2015

In the state of Jharkhand there is fall in water level in January 2016 as compared to January 2015. About 73 % of the wells analysed shows fall in the water level. Out of this 54% wells have shown a fall in 0-2 m range. Only 26% of the wells analysed show rise in water level, out of which 20% show fall in the range of 0-2 m.

Water Level Fluctuation – January 2016 to Premonsoon 2015

The water level data of January 2016 when compared with Premonsoon 2015 indicates that there is rise in water level in the entire state and 75 % of the wells monitored shows rise, out of which 50 % of the wells monitored show rise in the range of 0-2 m, another 15 % in the range of 2-4 m and 11% in the range of more than 4 m. Decline in water level has been recorded in only 24% of the wells, out of which 19% shows decline in 0-2 m range.

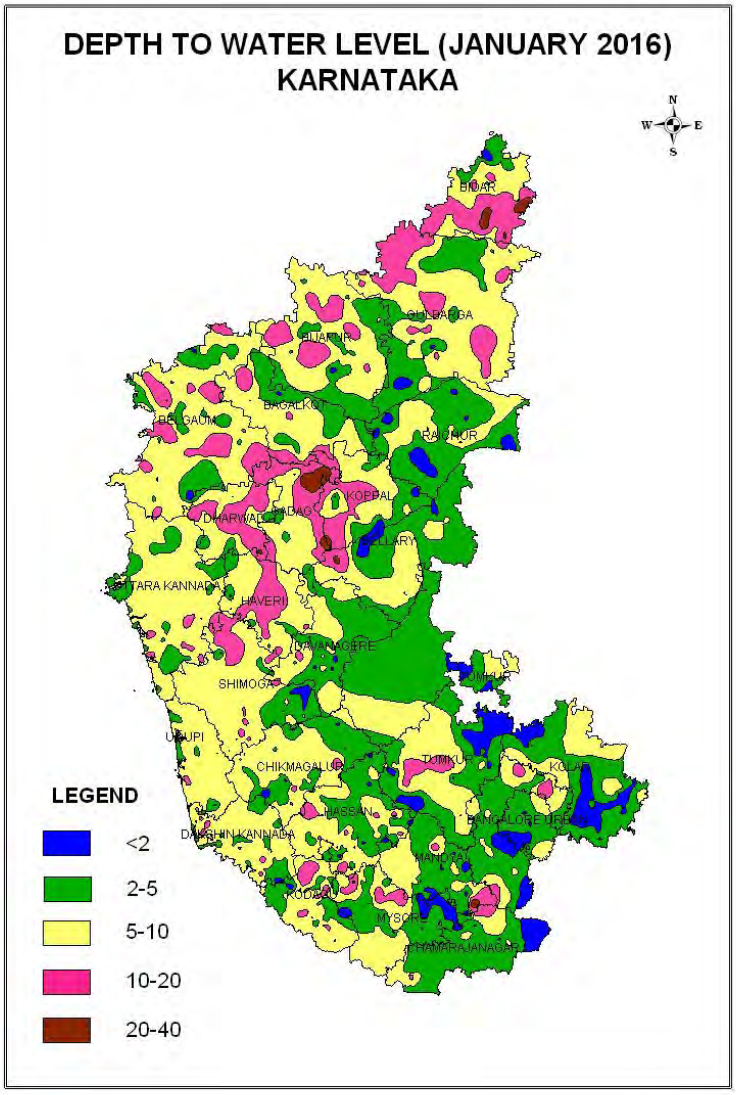
Fluctuation - January 2016 to January Decadal mean (2006-15)

The water level data of January 2015 has been compared with decadal mean (January 2005- 2016 to assess the rise/fall in water level during current year with respect to long term average of the corresponding period. About 24% of analysed wells have shown a rise in water level. Out of this 19% of the wells have shown rise in the range of 0 to 2 m, 5% wells have shown rise in the range of 2 to 4 m. About 76% wells have shown a fall in water level, out of which 53% wells have shown fall in the range of 0 to 2 m and 19 % in 2-4 m range.

4.14 Karnataka

Depth to Water Level-January 2016

The analysis of 1392 wells show that 12% wells have less than 2 m bgl water level, 34% wells show 2 to 5 m bgl water level and 40% wells show 5 to 10 mbgl water level. Moderately deep water level of 10 to 20 m bgl is seen in 14% wells and more than 20 m bgl is observed in less than 1% wells.



The depth to water level recorded in the state during January 2016 ranges from 0.05 m bgl to 29.15 m bgl in Gadag District.

Water Level Fluctuation - January 2016 to January 2015

Water level data of January 2016 was compared to January 2015 and the analysis shows that there is rise in water level in about 35% of the wells and fall in about 63% of the wells. 25% wells have shown a rise in 0-2 m range, 5% of the wells have shown a rise in 2-4 m range and 4% wells show a rise of more than 4 m range. 44% wells have shown a fall in the range of 0 - 2 m.

Water Level Fluctuation – January 2016 to Premonsoon 2015

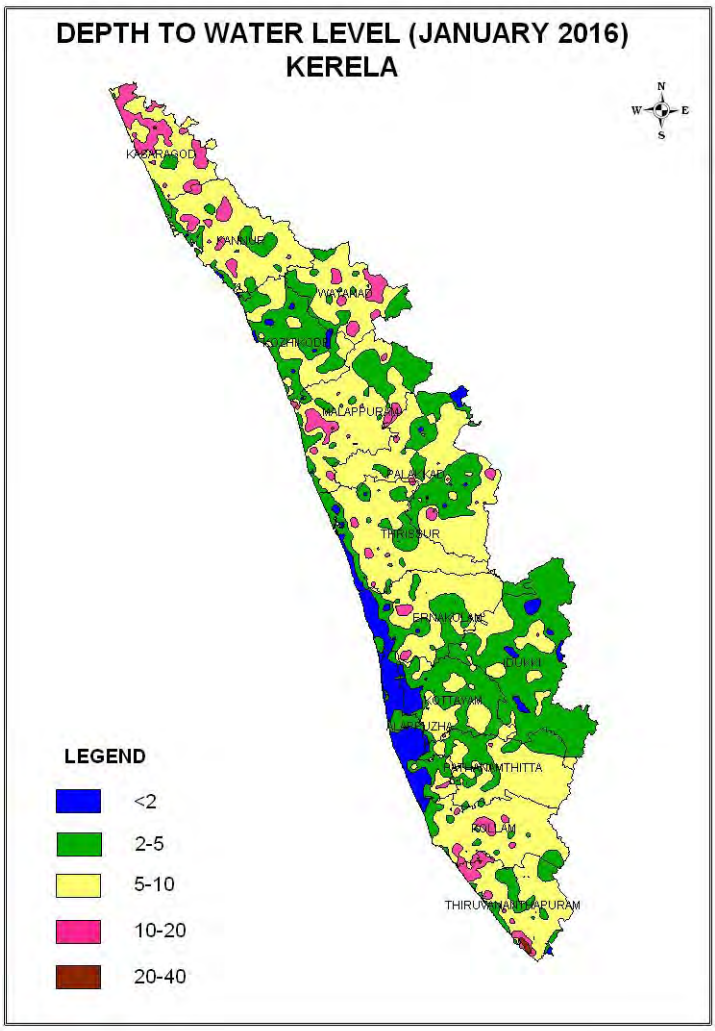
The water level data of January 2016 when compared with Premonsoon 2015 indicates that there is rise in water level in most parts of the state and 57 % of the wells monitored show rise, out of which 37 % of the wells monitored show rise in the range of 0-2 m, 13% in 2-4 m and 7 % in more than 4 m. Decline in water level has been recorded in 38% of the wells, out of which 30% shows decline in 0-2 m range. 4% wells show no change in water level.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuation of water level during January 2016 when compared with the average water levels of past decade (Decadal mean January 2006 -2015) indicates that about 40% of the wells analysed show a rise in water level and 60% wells show fall. A rise of 0-2 m is recorded in 30% of analysed wells. A rise in the range of 2-4 m and more than 4 m is recorded in 6 % & 4 % of wells for each

range respectively. In the fall category, a fall of 0-2 m is prominent and is recorded in 42% of analysed wells.

4.15 Kerala



Depth to Water Level - January 2016

During January 2016, it is observed that in the state of Kerala, 13% of the wells have less than 2 m bgl water level, mainly in coastal areas. About 30% of the wells analysed have shown water level in the range of 2-5 m bgl and 45% wells have shown water level in the range of 5-10 m bgl, 12% wells have shown 10 to 20 m bgl water level. Less than 1% well show water level in 20-40 m bgl.

The depth to water level recorded in the state of Kerala during January 2016 ranges from ground level to 34.13 m bgl (Thiruvananthapuram District).

Water Level Fluctuation - January 2016 to January 2015

Water level data of January 2016 was compared to January 2015 and the analysis shows that there is both rise and fall in water level in the state. About 54% of the wells show rise in water level and 44 % wells show decline. 2% of the well shows no change in water level. 50% wells have shown a rise in 0-2 m range. Out of 44 % wells showing fall, 41% shows fall in 0-2 m range. Maximum rise in water level has been recorded as 16.24 m and maximum fall in water level has been recorded as 7.35 m in the State.

Water Level Fluctuation – January 2016 to Premonsoon 2015

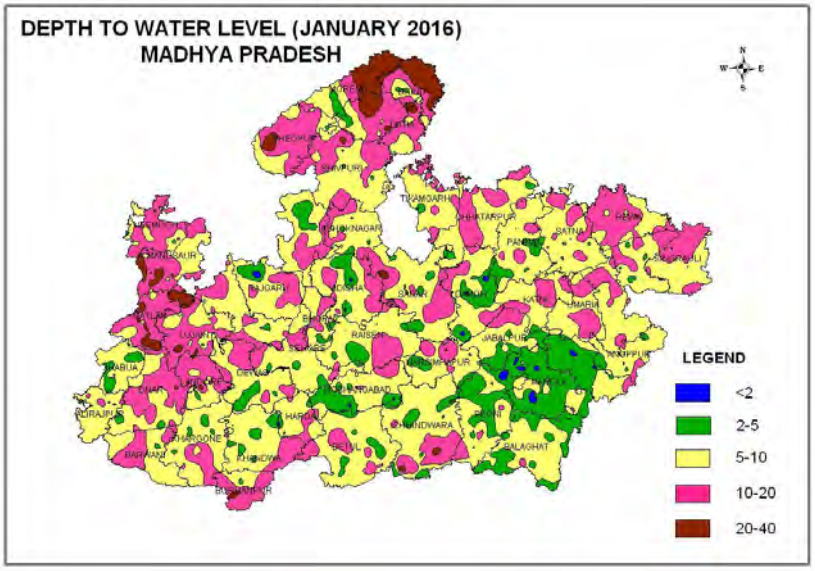
The water level data of January 2016 when compared with Premonsoon 2015 indicates that there is rise in water level in the entire state and 75 % of the wells monitored shows rise, out of which 64% of the wells monitored show rise in the range of 0-2 m, another 10% in the range of 2-4 m and 2% in more than 4 m range. Decline in water level has been recorded in only 24% of the wells, out of which 22% shows decline in 0-2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuation of water level during January 2016 when compared with the decadal mean (January 2006 -2015) indicates that there is both rise and fall in water level in the state. About 55% of analysed wells have shown a rise in water level, of which 52% of the wells show rise in the range of 0 to 2 m. About 44% wells have shown a fall in water level out of which 41% wells shows fall in the range of 0-2 m. Rise and fall is mainly restricted to 0-2 m only.

4.16 Madhya Pradesh

Depth to Water Level - January 2016



The depth to water level during January 2016 in Madhya Pradesh varies from 0.57 to 39.40 m bgl in Ujjain district. In general the depth to water level ranges from 2 m to 20 m bgl in most parts of Madhya Pradesh. About 3 % monitoring wells are showing water level in 0-2 m bgl range. About 20 % of monitoring wells are showing water level in 2-5 m bgl range. Depth to water level ranging between 5-10 m bgl was observed in 44% wells and about 29% wells show water level ranging more than 10 m bgl located mostly in pockets in the entire state. Water levels of more than 20 m bgl are observed at 5% wells in northernmost parts of the state in Bundelkhand region.

Water Level Fluctuation - January 2016 to January 2015

Water level data of January 2016 was compared to January 2015 and the analysis shows that there is fall in water level in the entire state. About 73% of the wells show fall in water level and rise in about 25% of the wells. 2% well shows no change in water level. 18% wells have shown a rise in 0-2 m range. About 42% wells show fall in the range of 0-2 m, 18% in 2-4 m range and 13% in more than 4 m range.

Water Level Fluctuation – January 2016 to Premonsoon 2015

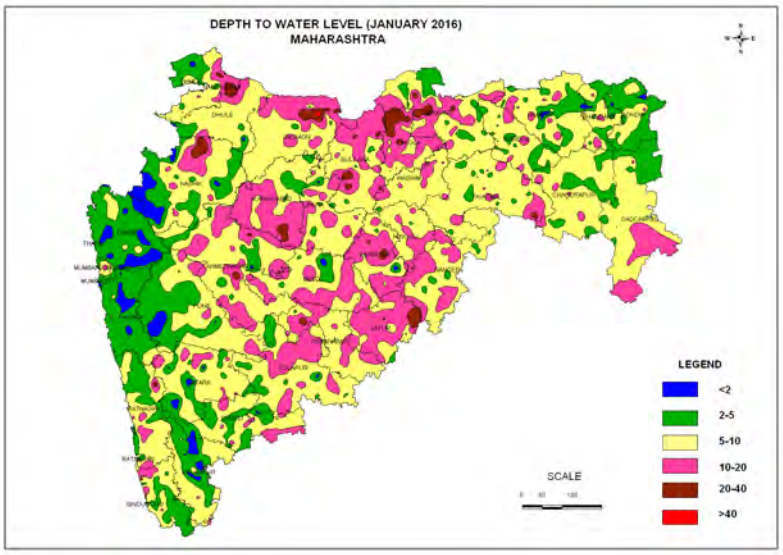
The water level data of January 2016 when compared with Premonsoon 2015 indicates that there is rise in water level in most parts of the state and 60 % of the wells monitored shows rise, out of which 40% of the wells monitored show rise in the range of 0-2 m, another 11% in the range of 2-4 m and 8% in more than 4 m range. Decline in water level has been recorded in 38% of the wells, out of which 27% shows decline in 0-2 m range. 2% wells show no change in water level.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuation of water level during January 2016 when compared with the Decadal mean (January 2006 -2015) indicates that about only 29% of analysed wells have shown a rise in water level, of which 22% of the wells show rise in the range of 0 to 2 m. About 4% wells have shown a rise in water level in the range of 2-4 m and 2% wells have shown a rise in water level in the range of more than 4 m. About 71% wells have shown a decline in water level, out of which 40% falls in the range of 0-2 m. Rise and fall is in the range of 0-2 m.

4.17 Maharashtra

Depth to Water Level - January 2016



During January 2016, in the state of Maharashtra, water level less than 2 m bgl are observed in about 6% wells. Depth to water level of 2 to 5 m bgl is observed in about 27% wells. About 41% of the wells analysed shows water level in the range of 5-10 m bgl whereas about 23% of the wells analysed shows water level in the range of 10-20 m bgl and only 3% of the wells analysed show water level in the range of 20-40 m bgl or more. The depth to water level during January 2016 in the state varies from 0.10 m bgl to 53.54 m bgl in Jalgaon.

Water Level Fluctuation - January 2016 to January 2015

Water level data of January 2016 was compared to January 2015 and the analysis shows that there is rise in water level in about 25% of the wells and fall in about 72% of the wells. 3% wells show no change. 20% wells have shown a rise in the range of 0-2 m, about 4% of the wells have shown rise in the range of 2-4 m and 2% wells show rise of more than 4 m. 70% of the wells have shown fall in water level, out of which 46% wells show in in 0-2 m range, 14% in 2-4 m range and 11% in more than 4 m range.

Water Level Fluctuation – January 2016 to Premonsoon 2015

The water level data of January 2016 when compared with Premonsoon 2015 indicates that there is both rise and fall in water level in the entire state. About 63% of the wells monitored shows rise, out of which 40% of the wells monitored show rise in the range of 0-2 m, 14% in the range of 2-4 m and 9% in more than 4 m range. Rest 35% wells show decline in water level, mostly in 0-2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuations of water level during January 2016 when compared with the Decadal mean (January 2005-2014) show that about 39% of analysed wells have shown a rise in water level, out of which, 32% of the wells show rise in the range of 0 to 2 m and 5% wells have shown rise in the range of 2-4 m. About 61% wells have shown a decline in water level, 39% of which fall in the range of 0-2 m.

4.18 Meghalaya

Depth to Water Level – January 2016

In general depth to water level scenario in the state depicted a water level in the range of 0 to 5 m bgl. About 33% monitoring stations recorded water level within 2 m bgl and another 50% wells recorded water level between 2-5 m bgl. 17 % wells shows water level in 5-10m bgl. Water level varies from 0.53 to 8.00 m bgl.

Water Level Fluctuation - January 2016 to January 2015

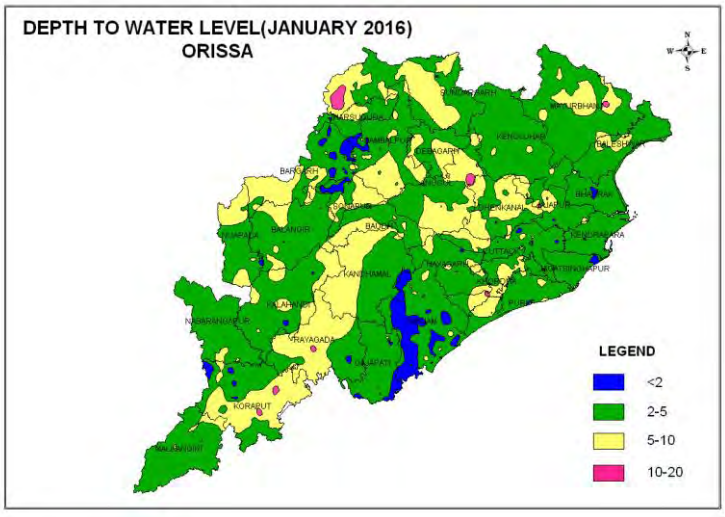
Water level data of January 2016 was compared to January 2015 and the analysis shows that in general there is both rise and fall in water level in the state. About 46 % of the wells analysed are showing rise in the water level and 54% wells are showing fall in water level. Out of 46% wells showing rise, all the wells lies in the range of 0-2 m. Out of 54% wells showing fall, all wells have shown fall in 0-2 m range.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Water level data of January 2016 was compared to Premonsoon 2015 and the analysis shows that 83% wels show rise in water level and only 17% show decline. Out of 83% wells showing rise, 75% wells show rise in 0-2 m range. All the 17% wells in fall category lies in 0-2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuations of water level during January 2016 when compared with the Decadal mean (January 2006-2015) show that about 39% of analysed wells have shown a rise in water level, and 56% wells show fall. Out of 39% of the wells showing rise, all the wells falls in the range of 0 to 2 m. 44 % wells show fall in 0-2 m range and 11& in 2-4 m range.



4.19 Odisha

Depth to Water Level - January 2015

During January 2016, it is observed that in 14% of the wells, water level ranges in 0-2 m bgl. About 61% of the wells analysed have shown water level in the range of 2-5 m bgl. Another 25% of

monitoring stations show depth to water level range of 5-10 m bgl. The depth to water level recorded in the state of Odisha during January 2015 ranges upto 15.86 m bgl in Anugul district.

Water Level Fluctuation - January 2016 to January 2015

Water level data of January 2016 was compared with that of January 2015. The analysis shows that there is fall in water level in the entire state. About 74% of the wells shows fall in water level, out of which about 70% wells have shown a fall in 0-2 m range. Only 25% wells show rise in water level, out of which 24 % is in 0-2 m range. 1% well show no change.

Water Level Fluctuation – January 2016 to Premonsoon 2015

The water level data of January 2016 when compared with Premonsoon 2015 indicates that there is rise in water level in the entire state and 80% of the wells monitored shows rise, out of which 61% of the wells monitored show rise in the range of 0-2 m, 18% in the range of 2-4 m. Decline in water level has been recorded in only 19% of the well and all the wells lies in 0-2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuation of water level during January 2016 when compared with the Decadal mean (January 2006-2015) indicates that there is predominantly fall in water level in the state. About 63% of analysed wells have shown a decline in water level and 37% wells have shown a rise in water level. Out of the wells showing rise, 34% is in the category of 0-2 m and similarly in the decline category 59% wells lies in the 0-2 m range.

4.20 Pondicherry

Depth to Water Level – January 2016

During January 2016, a total of 7 wells have been monitored. All the wells show water level upto 5 m bgl.

Water Level Fluctuation - January 2016 to January 2015

Water level of January 2016 is compared to January 2015 and the analysis shows that 100 % of the observation wells are showing rise in water level in the range of 0-2 m.

Water Level Fluctuation – January 2016 to Premonsoon 2015

The water level data of January 2016 when compared with Premonsoon 2015 indicates that there is rise in water level in 100% of the wells monitored, all in 0-2 range.

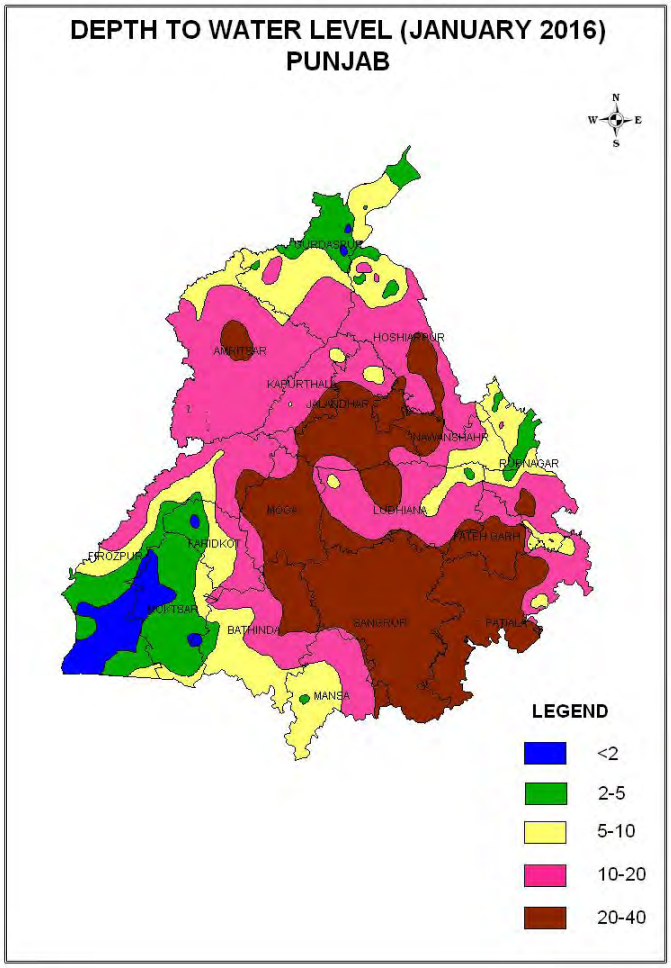
Fluctuation - January 2016 to January Decadal mean (2006-15)

When compared the decadal mean water level (January 2006 to 2015) with January 2016, 71% of observation wells are showing rise in water level , all in the range of 0-2 m. 29% show decline in water level and all in 0-2 m range.

4.21 Punjab

Depth to Water Level - January 2016

During January 2016, in Punjab, it is observed that in only 5% of the wells, water level ranges in 0-2 m depth range. About 18% of the wells analysed have shown water level in the range of 2-5 m bgl, 22% wells in the range of 5-10 m bgl and a majority of wells i.e. 29% show water levels in the range of 10-20 m bgl and 26% wells have shown water level in the range of 20-40 m bgl. Deeper water level is mostly recorded in districts of Moga, Sangrur, Patiala, Jalandhar. The depth to water level recorded in the state during January 2016 ranges upto 38.57 m bgl.



Water Level Fluctuation - January 2016 to January 2015

The comparison of water level data of January 2016 and January 2015 shows that there is rise in water level in only 36% of the wells and fall in about 62% of the wells. Out of all the wells showing rise, about 33% wells have shown a rise in 0-2 m range. About 56% of the wells show fall in 0-2 m range. Rise and fall is in 0-2 m range.

Water Level Fluctuation – January 2016 to Premonsoon 2015

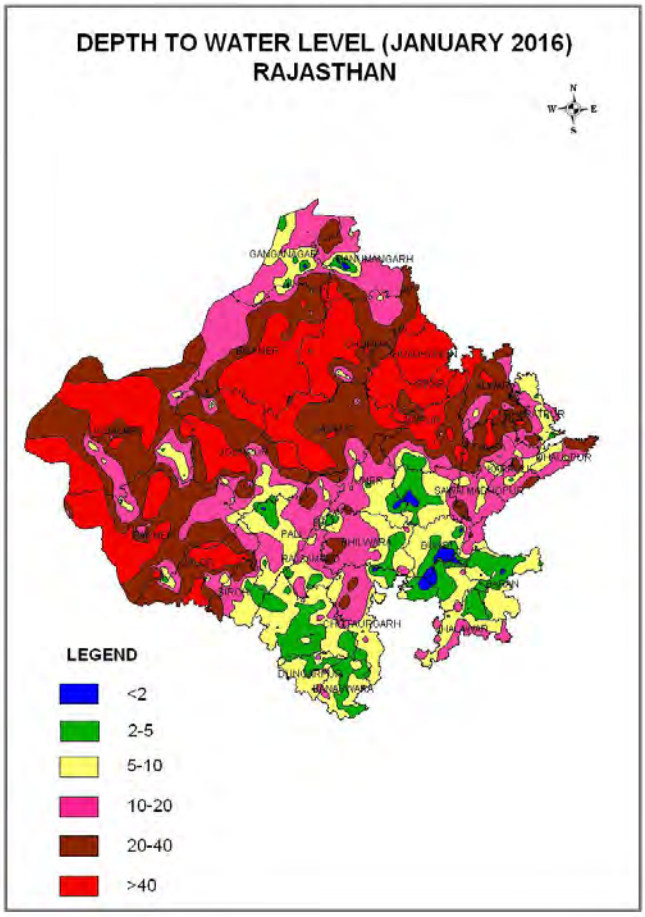
The water level data of January 2016 when compared with Premonsoon 2015 indicates that there is rise in water level in 47% of the wells monitored, out of which 40 % of the wells monitored show rise in the range of 0-2 m. Decline in water level has been recorded in 52% of the wells, out of which 45% falls in the range of 0-2 m and 4% in 2-4 m range. Rise and fall is in the range of 0-2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuation of water level during January 2016 with respect to average water level of past decade (Decadal mean January 2006-2015) indicates decline in water level in major parts of Punjab State. About 30% of the wells have shown rise, of which 26% wells show water level rise in the range of 0-2 m. Fall in water level is observed in 70% of the wells. Out of this, 42% of the wells analysed is showing fall in the range of 0-2 m, 18% of the wells showing fall of 2-4 m and 10% falls in more than 4 m range.

4.22 Rajasthan

Depth to Water Level - January 2016



During January 2016, it is observed that only 4% wells in Rajasthan have shown water level in the range of 0-2 m bgl, 14% of the wells have shown water level in the range of 2-5 m bgl. About 22% of the wells analysed have shown water level in the range of 5-10 m bgl, 24% of the wells have shown water level in the range of 10-20 m bgl. Deeper water level in the range of 20-40m bgl is observed at 17% of the wells analysed and water level more than 40 m bgl is observed at 19% of the wells analysed. Shallow water levels are recorded in the southwestern parts of the state. Deepest water level is recorded in Bikaner district (119.06).

Water Level Fluctuation - January 2016 to January 2015

Comparison of water level of January 2016 and January 2015 in the state indicates that about 37% of the wells analysed have recorded a rise in water level, out of which 25% of analysed wells have recorded a rise in the range of 0 to 2 m, 6% of analysed wells have shown rise in the range of 2 to 4 m and 6% of the wells have shown rise more than 4 m. 62% of the wells have shown fall in water level, out of this, 37% have recorded fall in the range of 0 to 2 m, 12% in 2-4 m range and 13% in more than 4 m range.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Comparison of water level of January 2016 and Premonsoon 2015 in the state indicates that about 51% of the wells analysed have recorded a rise in water level, out of which 33% of analysed wells have recorded a rise in the range of 0 to 2 m, 10% of analysed wells have shown rise in the range of 2 to 4 m and 8% of the wells have shown rise in more than 4 m range. Another 48% of the wells have shown fall in water level, out of this, 32% have recorded fall in the range of 0 to 2 m. 1 % wells show no change in water level.

Fluctuation - January 2016 to January Decadal mean (2006-15)

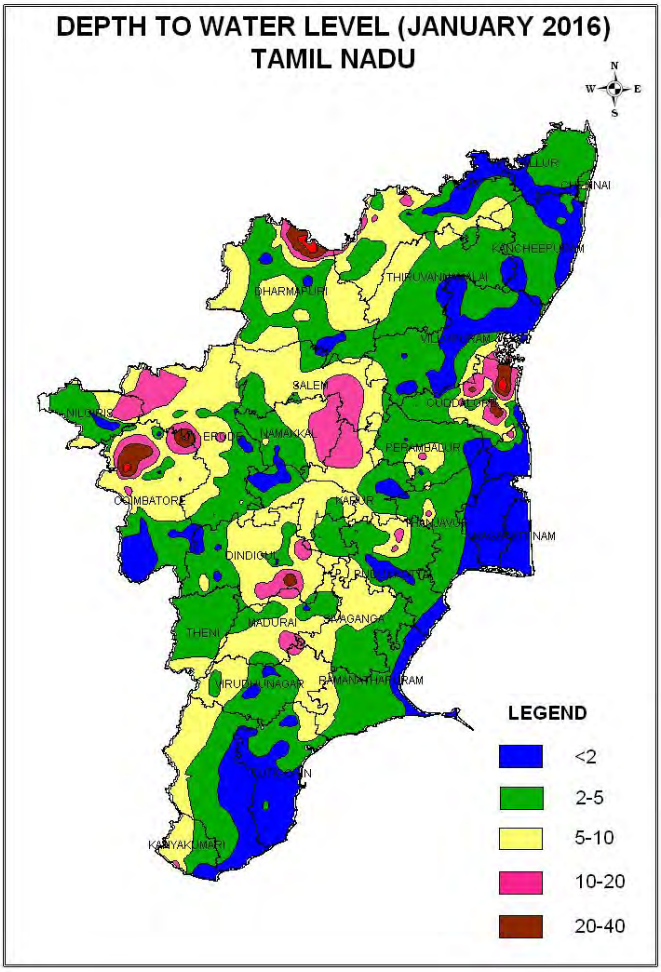
The fluctuation of water level during January 2016 with respect to Decadal mean (January 2006 - 2015) indicates that there is rise in water level in about 45% of the analysed wells. Out of this, 27% of the wells have shown rise in the range of 0-2 m, 11% in 2-4 m range and 7% in more than 4 m range. Another 55 % of the wells have shown a fall in water level. Out of this 26% of the wells have

shown fall in the range of 0-2 m while 11% of the wells have shown fall in the range of 2-4 m and 18% of wells analysed have shown fall of more than 4 m.

4.23 Tamil Nadu

Depth to Water Level - January 2016

The depth to water level during January 2016 varies from 0.09 to 61.26 m bgl. It is observed that about 31% wells show water level in the range of 0-2 m bgl, 33 % of the wells have shown water level in the range of 2-5 m bgl. About 26% of the wells analysed have shown water level in the range of 5-10 m bgl, 5% 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 only 3% of the wells analysed and water level more than 40 m bgl is shown by 1% of the wells analysed. Along the coastal areas water level varies from 2 to 5 m bgl, whereas towards west the water deepens to 10 m bgl or more.



Water Level Fluctuation - January 2016 to January 2015

Water level of January 2016 when compared to water level of January 2015 in the state indicated that there is rise in water level in the entire state. About 74% of the wells analysed have recorded a rise in water level, out of which 39% of analysed wells have recorded a rise in the range of 0 to 2 m, 17% of analysed wells have shown rise in the range of 2 to 4 m and 18% of the wells have shown rise of more than 4 m. About 25% of the wells have shown fall in water level, out of this 21% of wells have recorded fall in the range of 0 to 2 m range.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Comparison of water level of January 2016 and Premonsoon 2015 in the state indicates that there is rise in water level in the entire state. About 83% of the wells analysed have recorded a rise in water level, out of which 33% of analysed wells have recorded a rise in the range of 0 to 2 m, 19% of analysed wells have shown rise in the range of 2 to 4 m and another 30% of the wells have shown rise more than 4 m. About 16% of the wells have shown fall in water level, out of this, 14% have recorded fall in the range of 0 to 2 m. 1% well show no change in water level.

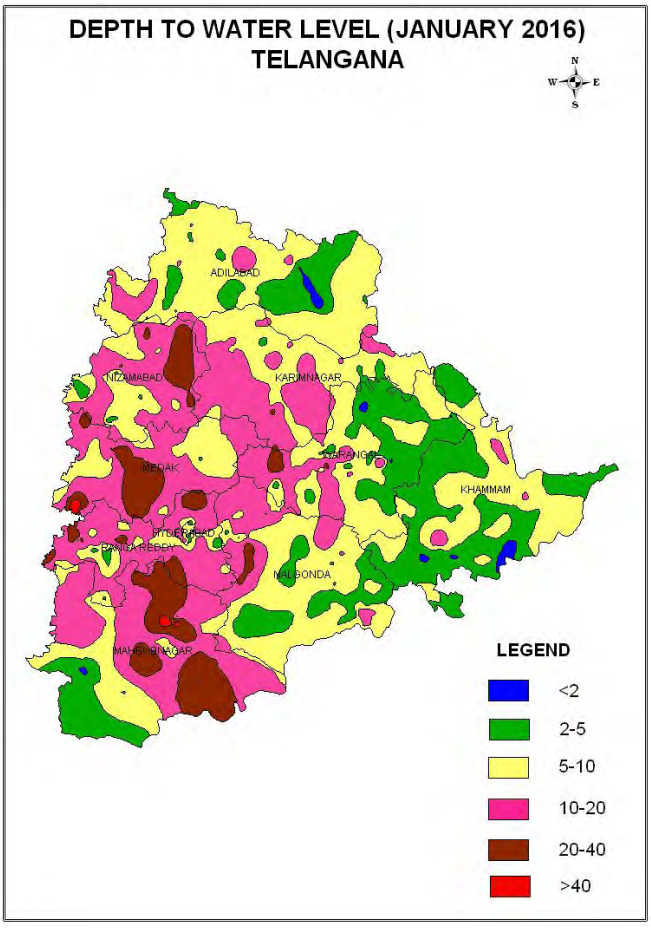
Fluctuation - January 2016 to January Decadal mean (2006-15)

The water level during January 2016 when compared with the Decadal mean (January 2006 - 2015) indicates that there is in general rise in water level in the entire state. About 65% of analysed wells have shown rise in water level. Out of this, 48% of the wells have shown rise in the range of 0-2 m, 11% of analysed wells have shown rise in the range of 2 - 4 m and 6% of the wells have shown rise of more than 4 m. About 35% of the wells have shown a decline in water level, out of which 26% of the wells have shown fall in the range of 0-2 m.

4.24 Telangana

Depth to Water Level - January 2016

Depth to water level in Telangana ranges from 0.30 to 69.50 m bgl. In general depth to water level scenario in the state depicted a water level in the range of 2 to 20 m bgl. About 3% monitoring stations recorded water level within 2 m bgl and around 20 % wells recorded water level between 2-5 m bgl. About 37% wells recorded water level between 5-10 m bgl whereas 31% wells recorded water level between 10-20 m bgl. Only 7% show water level more than 20 m bgl. Water levels of more than 10 m bgl are observed in the western parts of the state whereas water levels of less than 2 m bgl are seen in small patches only.



Water Level Fluctuation - January 2016 to January 2015

Water level of January 2016 when compared to that of January 2015 shows that there is dominantly fall in water level in the state. About 77% of the wells analysed have recorded a fall in water level, out of which 40% of analysed wells have recorded a fall in the range of 0 to 2 m, 20% of analysed wells have shown fall in the range of 2 to 4 m and 17% of the wells have shown fall of more than 4 m. About 20% of the wells have shown rise in water level, out of this 15% of wells have recorded rise in the range of 0 to 2 m.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Comparison of water level of January 2016 and Premonsoon 2015 in the state indicates that there is both rise anf fall in water level in the state. About 49% of the wells analysed have recorded a rise in water level, out of which 34% of analysed wells have recorded a rise in the range of 0 to 2 m. About 42% of the wells have shown fall in water level, out of this, 28% have recorded fall in the range of 0 to 2 m. 9 % wells show no change in water level.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The water level during January 2016 when compared with the Decadal mean (January 2006 - 2015) indicates that there is in general fall in water level in the entire state. About 88% of analysed wells have shown decline in water level. Out of this, 35% of the wells have shown decline in the range of 0-2 m, 24% of analysed wells have shown fall in the range of 2 - 4 m and 30% of the wells have shown fall of more than 4 m. Remaining 11% of the wells have shown a rise in water level, out of which 9% of the wells have shown rise in the range of 0-2 m.

4.25 Tripura

Depth to Water Level – January 2015

In general depth to water level scenario in the state depicted a water level in the range of 0 to 10 m bgl. 17% wells falls in less than 2 m bgl range, 61 % wells show 2-5 m bgl and 22% show water level og 5-10 m bgl.

Water Level Fluctuation - January 2016 to January 2015

Comparison of water level of January 2016 with January 2015 shows that there is both rise and fall in water level in the state. 50% of the wells analysed show rise and another 50 % show fall in water level and all in the range of 0-2 m.

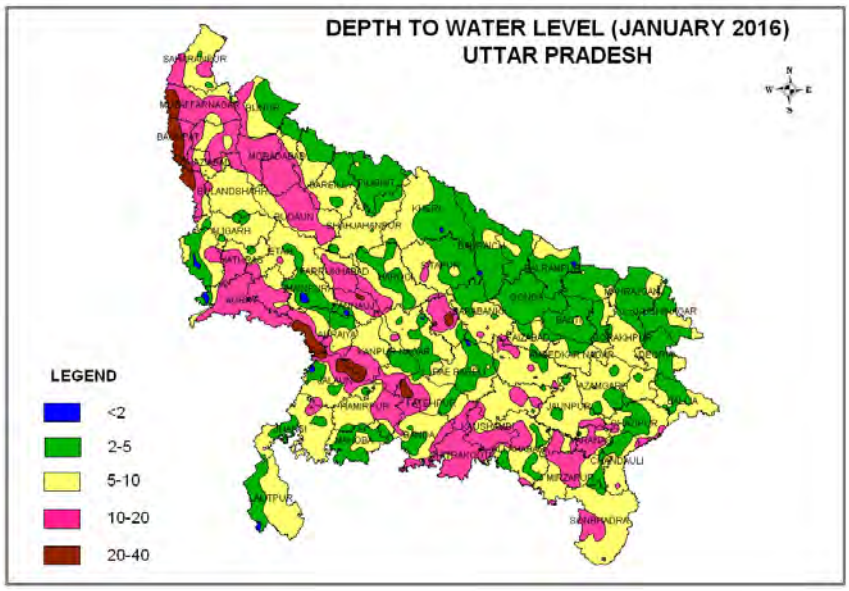
Water Level Fluctuation – January 2016 to Premonsoon 2015

The comparison of January 2016 water level with Premonsoon 2015 reveals that rise in water level is observed in the entire state, with 72% show rise in water level, and rest 28% show fall in water level. All rise and fall is in the 0-2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The water level data of January 2016 has been compared with decadal mean (January 2006-2015) and it is observed that 56% show a rise in water level whereas 44% show a fall in water level. Both rise and fall is in the range of 0-2 m.

4.26 Uttar Pradesh



Depth to Water Level - January - 2016

During January 2016, in Uttar Pradesh shallow water level ranging between 0 and 2 m bgl were observed at only 3% of the wells monitored mostly seen as small patches. Water level ranging between 2 and 5 m bgl was observed at 33% of wells, covering the entire northern and central part of the state. The depth to water level between 5 and 10 m bgl has been observed in 40 % wells and depth to water level between 10 and 20 meters is observed at 21% of wells. Deeper water levels of more than 20 m bgl are observed at 3% stations and occur as patches along western boundary of the state. The depth to water level in the state ranges upto 37.50 m bgl in Etawah district.

Water Level Fluctuation - January 2016 to January 2015

Water levels of January 2016 when compared to water level of January 2015 in the state indicates that the entire state shows a decline in water level. About 84% wells show fall in water level, out of which 70% wells have recorded a fall in the range of 0 to 2 m, 13% of analysed wells have shown fall in the range of 2 to 4 m and 2% wells have shown fall of more than 4 m. About 16% of the wells have shown rise in water level, and all in the range of 0-2 m.

Water Level Fluctuation – January 2016 to Premonsoon 2015

The comparison of January 2016 water level with Premonsoon 2015 reveals that rise in water level is observed in almost 39% of the wells analysed and fall is observed at 60% wells. The rise in water level in the range of 0-2 m has been observed in 38% wells. The fall in water level in the range of 0-2 m has been observed at 53 % wells.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The fluctuation of water level during January 2016 when compared with the Decadal mean (January 2006-2015), indicates that there is in general fall in water level in the state. About 89% of analysed wells have shown fall in water level. Out of this 66% of the wells have shown fall in the range of 0-2 m, 19% of analysed wells have shown fall in the range of 2 - 4 m and 4% of the wells have shown fall more than 4 m. About 11% of the wells have shown a rise in water level and mostly in 0-2 m range.

4.27 Uttarakhand

Depth to Water Level - January 2016

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 is plain where ground water is developed. Depth to water level in the range of 0-2 m is observed in 9 % wells, 2-5 m bgl in 36% of the wells analysed, 24% of the wells show water level in the range of 5-10 m bgl and 27% in the range of 10-20 m bgl. Deeper water level of more than 20 m bgl is seen in 5% wells.

Water Level Fluctuation - January 2016 to January 2015

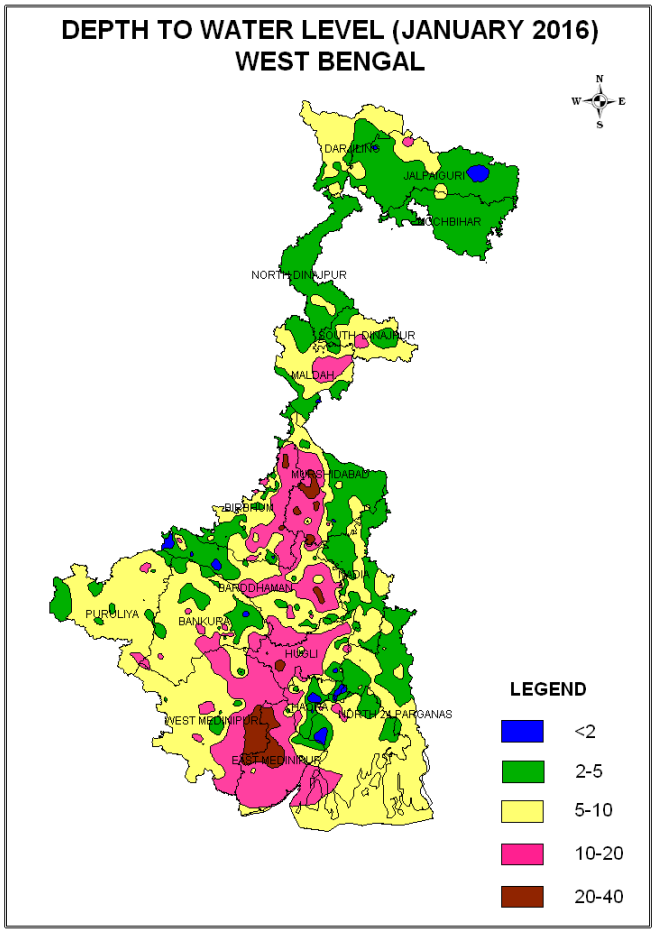
The comparison of January 2016 water level with January 2015 reveals that rise in water level is observed in only 35% of the wells analysed and fall is observed at 65% wells. The rise in water level in the range of 0-2 m has been observed in 30% wells. The fall in water level in the range of 0-2 m has been observed in 49 % of wells and fall in the range of 2-4 m is observed in 11% wells.

Water Level Fluctuation – January 2016 to Premonsoon 2015

The comparison of January 2016 water level with Premonsoon 2015 reveals that rise in water level is observed in almost whole of the state, in 85% of the wells analysed and fall is observed at only 15% wells. The rise in water level in the range of 0-2 m has been observed in 65% wells, 6% shows 2-4 m rise and 12% show more than 4 m range. The fall in water level in the range of 0-2 m has been observed in 12 % wells analysed.

Fluctuation - January 2016 to January Decadal mean (2006-15)

The comparison of January 2016 water level with decadal mean of (January 2006 -2015) reveals that about only 25% of the analysed wells have shown rise in water level. Out of this, rise in water level in the range of 0-2 m has been observed at 21% of wells. Rest 75% of the analysed wells have shown decline in water level and out of these 57% wells fall in the range of 0-2 m and 16% in 2-4 m range.



4.28 West Bengal

Depth to Water Level – January 2016

During January, 2016, depth to water level varies in the range of 0-2 m bgl at 5% of wells analysed, 2-5 m bgl at 36 % of wells analysed, 5-10 m bgl at 34% of wells analysed and 10-20 m bgl at 21% of wells analysed. Only 4 % wells

are showing water level of more than 20 m bgl. In general water level varies from ground level to 30.92 m bgl in East Medinipur district. Areas showing water levels of more than 10 m bgl are observed mainly in the central parts of the state. In the northern, eastern and western part of the state water level varies from 2 to 5 m bgl.

Water Level Fluctuation - January 2016 to January 2015

Water level data of January 2016 has been compared to January 2015 and the analysis shows that there is predominantly fall in water level in the state. About 64% of the wells show fall and 35% wells show rise. Out of 64 % wells showing decline, 47 % wells have shown a fall in the range of 0-2 m, 8% of the wells have shown fall in range of 2-4 m and 9% in more than 4 m range. 35% wells show rise in water level, out of which 27% lies in 0-2 m range.

Water Level Fluctuation – January 2016 to Premonsoon 2015

Water level data of January 2016 was compared to Premonsoon 2015 and the analysis shows that there is rise in water level in the entire state. About 61% of the wells shows rise and 39% wells shows fall in water level. 46 % wells have shown a rise in the range of 0-2 m, 9% of the wells have shown rise in the range of 2-4 m whereas 6% wells show rise in the range of more than 4 m. 29 % wells analysed show decline in 0-2 m range.

Fluctuation - January 2016 to January Decadal mean (2006-15)

When compared the decadal mean water level (January 2006 to 2015) with water level of January 2016, there is predominantly fall in water level in the state. About 74% of the analysed wells have shown decline in water level. Out of this, decline in the range of 0-2 m has been observed at 45% of wells. About 26% of the analysed wells have shown rise in water level, out of which 21% shows rise in the range of 0-2 m. This indicates rise and fall in water level is restricted to0-2mrange.

Annexure-I

State-wise Depth to water Level and Distribution of Percentage of Wells for the Period of January 2016

State-wise Depth to water Level and Distribution of Percentage of Wells for the Period of January, 2016

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**	775	0.02	43.05	219	28.26	334	43.10	172	22.19	47	6.06	2	0.26	1	0.13
2	**Arunachal Pradesh**	14	1.84	10.15	1	7.14	8	57.14	4	28.57	1	7.14	0	0.00	0	0.00
3	**Assam**	197	0.12	19.00	43	21.83	127	64.47	22	11.17	5	2.54	0	0.00	0	0.00
4	**Bihar**	604	0.77	12.30	21	3.48	333	55.13	237	39.24	13	2.15	0	0.00	0	0.00
5	**Chandigarh**	14	2.56	39.70	0	0.00	3	21.43	4	28.57	3	21.43	4	28.57	0	0.00
6	**Chhattisgarh**	586	1.35	50.00	10	1.71	183	31.23	307	52.39	81	13.82	4	0.68	1	0.17
7	**Dadra & Nagar Haveli**	16	2.10	9.70	0	0.00	10	62.50	6	37.50	0	0.00	0	0.00	0	0.00
8	**Daman & Diu**	13	2.75	6.70	0	0.00	6	46.15	7	53.85	0	0.00	0	0.00	0	0.00
9	**Delhi**	115	0.74	59.51	7	6.09	21	18.26	29	25.22	31	26.96	18	15.65	9	7.83
10	**Goa**	68	0.72	15.47	9	13.24	30	44.12	21	30.88	8	11.76	0	0.00	0	0.00
11	**Gujarat**	874	0.05	59.38	39	4.46	214	24.49	307	35.13	238	27.23	72	8.24	4	0.46
12	**Haryana**	106	0.16	65.30	10	9.43	24	22.64	32	30.19	26	24.53	12	11.32	2	1.89

13	**Himachal Pradesh**	95	0.42	28.72	9	9.47	44	46.32	20	21.05	18	18.95	4	4.21	0	0.00
14	**Jharkhand**	219	0.60	18.94	1	0.46	66	30.14	137	62.56	15	6.85	0	0.00	0	0.00
15	**Jammu & Kashmir**	205	0.24	33.49	43	20.98	105	51.22	38	18.54	12	5.85	7	3.41	0	0.00
16	**Karnataka**	1392	0.05	29.15	163	11.71	466	33.48	551	39.58	196	14.08	16	1.15	0	0.00
17	**Kerala**	1439	0.33	34.13	186	12.93	431	29.95	641	44.54	170	11.81	11	0.76	0	0.00
18	**Madhya Pradesh**	1348	0.57	39.40	38	2.82	265	19.66	588	43.62	386	28.64	71	5.27	0	0.00
19	**Maharashtra**	1633	0.10	53.54	100	6.12	441	27.01	669	40.97	373	22.84	48	2.94	2	0.12
20	**Meghalaya**	18	0.53	8.00	6	33.33	9	50.00	3	16.67	0	0.00	0	0.00	0	0.00
21	**Nagaland**	10	3.50	7.31	0	0.00	6	60.00	4	40.00	0	0.00	0	0.00	0	0.00
22	**Orissa**	1267	0.02	15.86	171	13.50	769	60.69	314	24.78	13	1.03	0	0.00	0	0.00
23	**Pondicherry**	7	0.90	4.38	4	57.14	3	42.86	0	0.00	0	0.00	0	0.00	0	0.00
24	**Punjab**	247	0.26	38.57	13	5.26	44	17.81	54	21.86	72	29.15	64	25.91	0	0.00
25	**Rajasthan**	892	0.20	119.06	35	3.92	128	14.35	195	21.86	209	23.43	156	17.49	169	18.95
26	**Tamil Nadu**	461	0.09	61.26	144	31.24	154	33.41	120	26.03	24	5.21	13	2.82	6	1.30
27	**Telangana**	590	0.30	69.50	20	3.39	119	20.17	220	37.29	185	31.36	42	7.12	4	0.68

28	**Tripura**	18	0.97	6.95	3	16.67	11	61.11	4	22.22	0	0.00	0	0.00	0	0.00
29	**Uttar Pradesh**	778	0.64	37.50	25	3.21	253	32.52	312	40.10	163	20.95	25	3.21	0	0.00
30	**Uttaranchal**	45	1.03	28.92	4	8.89	16	35.56	11	24.44	12	26.67	2	4.44	0	0.00
31	**West Bengal**	928	0.28	30.92	47	5.06	335	36.10	313	33.73	197	21.23	36	3.88	0	0.00
Total		**14974**			**1371**	**9.16**	**4958**	**33.11**	**5342**	**35.68**	**2498**	**16.68**	**607**	**4.05**	**198**	**1.3**

Annexure-II

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from January 2016 to January 2015

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	740	0.01	16.55	0.0	17.7	193	26.1	47	6.4	63	8.5	323	43.6	53	7.2	42	5.7	303	41	418	56
2	Arunachal Pradesh	11	0.05	0.93	0.1	0.8	7	63.6	0	0.0	0	0.0	4	36.4	0	0.0	0	0.0	7	64	4	36
3	Assam	171	0.02	4.66	0.1	8.5	96	56.1	7	4.1	2	1.2	52	30.4	9	5.3	3	1.8	105	61	64	37
4	Bihar	442	0.02	5.98	0.0	6.8	72	16.3	2	0.5	2	0.5	276	62.4	77	17.4	10	2.3	76	17	363	82
5	Chandigarh	12	0.12	10.63	0.1	14.9	4	33.3	0	0.0	1	8.3	6	50.0	0	0.0	1	8.3	5	42	7	58
6	Chhattisgarh	497	0.02	6.15	0.0	10.4	111	22.3	33	6.6	13	2.6	231	46.5	77	15.5	29	5.8	157	32	337	68
7	Dadra & Nagar Haveli	12	0.05	1.10	0.1	3.0	4	33.3	0	0.0	0	0.0	7	58.3	1	8.3	0	0.0	4	33	8	67
8	Daman & Diu	11	0.29	0.98	0.3	3.6	2	18.2	0	0.0	0	0.0	6	54.5	3	27.3	0	0.0	2	18	9	82
9	Delhi	113	0.02	8.03	0.0	4.3	50	44.2	5	4.4	3	2.7	50	44.2	4	3.5	1	0.9	58	51	55	49

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	**Goa**	38	0.01	6.36	0.0	6.8	8	21.1	2	5.3	1	2.6	23	60.5	2	5.3	2	5.3	11	29	27	71
11	**Gujarat**	753	0.02	12.95	0.0	14.2	169	22.4	62	8.2	53	7.0	278	36.9	101	13.4	78	10.4	284	38	457	61
12	**Haryana**	69	0.03	7.44	0.0	3.7	38	55.1	3	4.3	1	1.4	22	31.9	4	5.8	0	0.0	42	61	26	38
13	**Himachal Pradesh**	88	0.01	4.80	0.0	16.7	32	36.4	3	3.4	1	1.1	47	53.4	1	1.1	3	3.4	36	41	51	58
14	**Jammu & Kashmir**	188	0.01	11.24	0.0	5.0	104	55.3	3	1.6	4	2.1	70	37.2	4	2.1	1	0.5	111	59	75	40
15	**Jharkhand**	168	0.03	4.63	0.1	4.9	34	20.2	9	5.4	1	0.6	90	53.6	29	17.3	4	2.4	44	26	123	73
16	**Karnataka**	1324	0.01	13.85	0.0	12.8	337	25.5	73	5.5	47	3.5	581	43.9	144	10.9	106	8.0	457	35	831	63
17	**Kerala**	1274	0.01	16.24	0.0	7.4	640	50.2	37	2.9	13	1.0	517	40.6	30	2.4	11	0.9	690	54	558	44
18	**Madhya Pradesh**	1284	0.01	11.28	0.0	19.3	237	18.5	47	3.7	41	3.2	540	42.1	229	17.8	164	12.8	325	25	933	73
19	**Maharashtra**	1434	0.03	13.30	0.0	20.0	289	20.2	48	3.3	28	2.0	667	46.5	206	14.4	154	10.7	365	25	1027	72
20	**Meghalaya**	13	0.06	1.48	0.7	0.9	6	46.2	0	0.0	0	0.0	7	53.8	0	0.0	0	0.0	6	46	7	54
21	**Orissa**	1231	0.01	3.86	0.0	9.1	291	23.6	15	1.2	2	0.2	855	69.5	43	3.5	9	0.7	308	25	907	74

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	%
22	**Pondicherry**	3	0.32	1.25	0.3	0.0	0	0.0	3	100.0	0	0.0	0	0.0	0	0.0	0	0.0	3	100	0	0
23	**Punjab**	209	0.02	5.61	0.0	9.0	70	33.5	3	1.4	3	1.4	117	56.0	9	4.3	4	1.9	76	36	130	62
24	**Rajasthan**	770	0.01	15.20	0.0	19.3	195	25.3	45	5.8	47	6.1	283	36.8	92	11.9	101	13.1	287	37	476	62
25	**Tamil Nadu**	408	0.01	16.31	0.0	8.6	160	39.2	70	17.2	73	17.9	84	20.6	9	2.2	10	2.5	303	74	103	25
26	**Telangana**	545	0.01	16.33	0.0	13.6	79	14.5	17	3.1	13	2.4	217	39.8	110	20.2	92	16.9	109	20	419	77
27	**Tripura**	18	0.01	0.37	0.0	1.1	9	50.0	0	0.0	0	0.0	9	50.0	0	0.0	0	0.0	9	50	9	50
28	**Uttar Pradesh**	554	0.02	5.17	0.0	4.5	81	14.6	4	0.7	1	0.2	388	70.0	69	12.5	9	1.6	86	16	466	84
29	**Uttaranchal**	37	0.05	7.83	0.4	7.0	11	29.7	0	0.0	2	5.4	18	48.6	4	10.8	2	5.4	13	35	24	65
30	**West Bengal**	827	0.01	15.29	0.0	18.0	226	27.3	33	4.0	29	3.5	389	47.0	69	8.3	74	8.9	288	35	532	64
	Total	**13244**					**3555**	**27**	**571**	**4.3**	**444**	**3.4**	**6157**	**46.5**	**1379**	**10.4**	**910**	**6.9**	**4570**	**35**	**8446**	**64**

Annexure-III

State –wise Fluctuation &Frequency distribution of Different Ranges from January 2016 to Premonsoon 2015

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	748	0.01	16.6	0.01	17.2	348	47.0	96	13.0	105	14.0	123	16.0	28	4.0	10	1.0	549	73.0	161	22.0
2	Arunachal Pradesh	12	0.20	3.7	0.01	0.0	7	58.0	2	17.0	0	0.0	3	25.0	0	0.0	0	0.0	9	75.0	3	25.0
3	Assam	160	0.03	11.6	0.01	17.1	94	59.0	12	8.0	9	6.0	39	24.0	2	1.0	1	1.0	115	72.0	42	26.0
4	Bihar	539	0.01	10.0	0.01	6.3	310	58.0	87	16.0	22	4.0	85	16.0	5	1.0	2	0.0	419	78.0	92	17.0
5	Chandigarh	11	0.37	10.8	0.14	13.5	5	45.0	1	9.0	1	9.0	3	27.0	0	0.0	1	9.0	7	64.0	4	36.0
6	Chhattisgarh	484	0.02	13.1	0.01	10.1	167	35.0	69	14.0	35	7.0	148	31.0	38	8.0	24	5.0	271	56.0	210	43.0
7	Dadra & Nagar Haveli	12	0.15	8.8	0.05	0.1	5	42.0	1	8.0	5	42.0	1	8.0	0	0.0	0	0.0	11	92.0	1	8.0
8	Daman & Diu	10	0.23	3.9	0.48	0.5	4	40.0	5	50.0	0	0.0	1	10.0	0	0.0	0	0.0	9	90.0	1	10.0
9	Delhi	113	0.01	6.4	0.11	9.5	57	50.0	9	8.0	2	2.0	43	38.0	1	1.0	1	1.0	68	60.0	45	40.0
10	Goa	39	0.04	6.8	0.03	5.2	25	64.0	4	10.0	1	3.0	6	15.0	1	3.0	1	3.0	30	77.0	8	21.0

11	**Gujarat**	743	0.01	16.6	0.01	20.7	285	38.0	99	13.0	117	16.0	151	20.0	41	6.0	33	4.0	501	67.0	225	30.0
12	**Haryana**	94	0.01	7.5	0.01	3.8	50	53.0	8	9.0	2	2.0	28	30.0	5	5.0	1	1.0	60	64.0	34	36.0
13	**Himachal Pradesh**	80	0.01	8.6	0.01	2.1	38	48.0	5	6.0	2	3.0	33	41.0	1	1.0	0	0.0	45	56.0	34	43.0
14	**Jammu & Kashmir**	197	0.02	6.5	0.01	5.5	72	37.0	6	3.0	5	3.0	97	49.0	13	7.0	3	2.0	83	42.0	113	57.0
15	**Jharkhand**	110	0.05	5.6	0.04	6.2	55	50.0	16	15.0	12	11.0	21	19.0	2	2.0	3	3.0	83	75.0	26	24.0
16	**Karnataka**	1334	0.01	14.6	0.01	10.5	498	37.0	175	13.0	93	7.0	397	30.0	67	5.0	47	4.0	766	57.0	511	38.0
17	**Kerala**	1314	0.10	11.3	0.01	9.0	836	64.0	129	10.0	23	2.0	284	22.0	24	2.0	3	0.0	988	75.0	311	24.0
18	**Madhya Pradesh**	1325	0.01	15.4	0.01	16.7	532	40.0	152	11.0	108	8.0	361	27.0	89	7.0	56	4.0	792	60.0	506	38.0
19	**Maharashtra**	1470	0.01	14.4	0.03	15.2	581	40.0	210	14.0	138	9.0	360	24.0	92	6.0	60	4.0	929	63.0	512	35.0
20	**Meghalaya**	12	0.02	2.3	0.05	0.4	9	75.0	1	8.0	0	0.0	2	17.0	0	0.0	0	0.0	10	83.0	2	17.0
21	**Orissa**	1168	0.01	7.1	0.01	8.4	710	61.0	208	18.0	21	2.0	205	18.0	10	1.0	4	0.0	939	80.0	219	19.0
22	**Pondicherry**	4	0.77	1.4			4	100.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	4	100.0	0	0.0
23	**Punjab**	215	0.01	9.6	0.01	7.9	86	40.0	10	5.0	5	2.0	97	45.0	9	4.0	5	2.0	101	47.0	111	52.0
24	**Rajasthan**	763	0.01	15.8	0.01	19.4	248	33.0	77	10.0	62	8.0	245	32.0	62	8.0	62	8.0	387	51.0	369	48.0

25	**Tamil Nadu**	382	0.06	16.4	0.02	5.1	127	33.0	74	19.0	115	30.0	54	14.0	6	2.0	3	1.0	316	83.0	63	16.0
26	**Telangana**	534	0.01	19.7	0.01	15.4	179	34.0	49	9.0	36	7.0	148	28.0	41	8.0	35	7.0	264	49.0	224	42.0
27	**Tripura**	18	0.08	1.4	0.02	1.1	13	72.0	0	0.0	0	0.0	5	28.0	0	0.0	0	0.0	13	72.0	5	28.0
28	**Uttar Pradesh**	646	0.02	3.5	0.03	6.5	243	38.0	12	2.0	0	0.0	343	53.0	35	5.0	10	2.0	255	39.0	388	60.0
29	**Uttaranchal**	34	0.05	11.9	0.30	2.5	22	65.0	2	6.0	5	15.0	4	12.0	1	3.0	0	0.0	29	85.0	5	15.0
30	**West Bengal**	770	0.01	10.4	0.01	16.5	353	46.0	72	9.0	43	6.0	227	29.0	30	4.0	41	5.0	468	61.0	298	39.0
Total		**13341**					**5963**	**44.7**	**1591**	**11.9**	**967**	**7.2**	**3514**	**26.3**	**603**	**4.5**	**406**	**3.0**	**8521**	**63.9**	**4523**	**33.9**

Annexure-IV

State-wise Fluctuation & Frequency Distribution of Different Ranges from January 2016 to Decadal Mean [January(2006 to 2015)]

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	764	0.01	11.11	0.01	13.31	226	29.6	46	6.0	28	3.7	320	41.9	83	10.9	57	7.5	300	39	460	60
2	Arunachal Pradesh	13	0.08	1.67	0.14	0.82	9	69.2	0	0.0	0	0.0	4	30.8	0	0.0	0	0.0	9	69	4	31
3	Assam	195	0.03	4.19	0	8.34	117	60.0	5	2.6	3	1.5	58	29.7	9	4.6	3	1.5	125	64	70	36
4	Bihar	462	0.01	5.76	0.01	5.09	95	20.6	4	0.9	3	0.6	292	63.2	60	13.0	7	1.5	102	22	359	78
5	Chandigarh	13	0.03	8.53	0.33	12.15	3	23.1	0	0.0	1	7.7	7	53.8	1	7.7	1	7.7	4	31	9	69
6	Chhattisgarh	584	0.03	6.09	0.01	11.17	95	16.3	21	3.6	7	1.2	294	50.3	115	19.7	52	8.9	123	21	461	79
7	Dadra & Nagar Haveli	12	1.1	1.1	0.04	2.95	1	8.3	0	0.0	0	0.0	10	83.3	1	8.3	0	0.0	1	8	11	92
8	Daman & Diu	11	0.05	0.6	0.4	3.86	3	27.3	0	0.0	0	0.0	5	45.5	3	27.3	0	0.0	3	27	8	73
9	Delhi	114	0.02	5.8	0.09	7.65	32	28.1	4	3.5	3	2.6	43	37.7	18	15.8	14	12.3	39	34	75	66

10	**Goa**	40	0.03	5.97	0.02	6.86	12	30.0	2	5.0	1	2.5	22	55.0	2	5.0	1	2.5	15	38	25	63
11	**Gujarat**	798	0.01	11.28	0.01	16.65	168	21.1	56	7.0	37	4.6	286	35.8	139	17.4	111	13.9	261	33	536	67
12	**Haryana**	106	0.03	8.2	0	10.45	36	34.0	9	8.5	2	1.9	36	34.0	13	12.3	10	9.4	47	44	59	56
13	**Himachal Pradesh**	94	0.01	8.14	0.01	3.61	33	35.1	5	5.3	4	4.3	48	51.1	4	4.3	0	0.0	42	45	52	55
14	**Jammu & Kashmir**	205	0.01	5.98	0	4.87	114	55.6	7	3.4	4	2.0	75	36.6	4	2.0	1	0.5	125	61	80	39
15	**Jharkhand**	198	0.03	3.42	0.02	7.08	37	18.7	10	5.1	0	0.0	105	53.0	37	18.7	8	4.0	47	24	150	76
16	**Karnataka**	1351	0	11.85	0.01	12.15	408	30.2	87	6.4	47	3.5	566	41.9	148	11.0	94	7.0	542	40	808	60
17	**Kerala**	1302	0	15.31	0.01	7.37	676	51.9	27	2.1	14	1.1	531	40.8	29	2.2	12	0.9	717	55	572	44
18	**Madhya Pradesh**	1301	0.01	12.48	0.01	17	292	22.4	57	4.4	29	2.2	514	39.5	249	19.1	160	12.3	378	29	923	71
19	**Maharashtra**	1503	0	13.82	0.01	18.66	306	20.4	58	3.9	24	1.6	668	44.4	256	17.0	188	12.5	388	26	1112	74
20	**Meghalaya**	18	0	0.92	0.13	2.59	7	38.9	0	0.0	0	0.0	8	44.4	2	11.1	0	0.0	7	39	10	56
21	**Odhisha**	1257	0.01	5.13	0.01	8.11	426	33.9	34	2.7	2	0.2	737	58.6	44	3.5	6	0.5	462	37	787	63
22	**Pondicherry**	7	0.01	0.92	0.47	1.11	5	71.4	0	0.0	0	0.0	2	28.6	0	0.0	0	0.0	5	71	2	29
23	**Punjab**	236	0.01	4.89	0.02	8.73	61	25.8	7	3.0	2	0.8	99	41.9	43	18.2	23	9.7	70	30	165	70

24	**Rajasthan**	851	0	17.23	0.01	18.73	233	27.4	91	10.7	60	7.1	222	26.1	94	11.0	150	17.6	384	45	466	55
25	**Tamil Nadu**	459	0.01	18.57	0.01	17.01	222	48.4	49	10.7	29	6.3	120	26.1	22	4.8	17	3.7	300	65	159	35
26	**Telangana**	557	0.02	9.1	0.01	15.4	51	9.2	6	1.1	6	1.1	195	35.0	131	23.5	166	29.8	63	11	492	88
27	**Tripura**	18	0.03	1.17	0.02	0.96	10	55.6	0	0.0	0	0.0	8	44.4	0	0.0	0	0.0	10	56	8	44
28	**Uttar Pradesh**	773	0.01	5.82	0	8.02	77	10.0	7	0.9	3	0.4	509	65.8	147	19.0	30	3.9	87	11	686	89
29	**Uttarakhand**	44	0.24	7.68	0.1	6.41	9	20.5	1	2.3	1	2.3	25	56.8	7	15.9	1	2.3	11	25	33	75
Total		**14211**					**3955**	**27.8**	**616**	**4.3**	**333**	**2.3**	**6228**	**43.8**	**1801**	**12.7**	**1239**	**8.7**	**4904**	**35**	**9268**	**65**

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