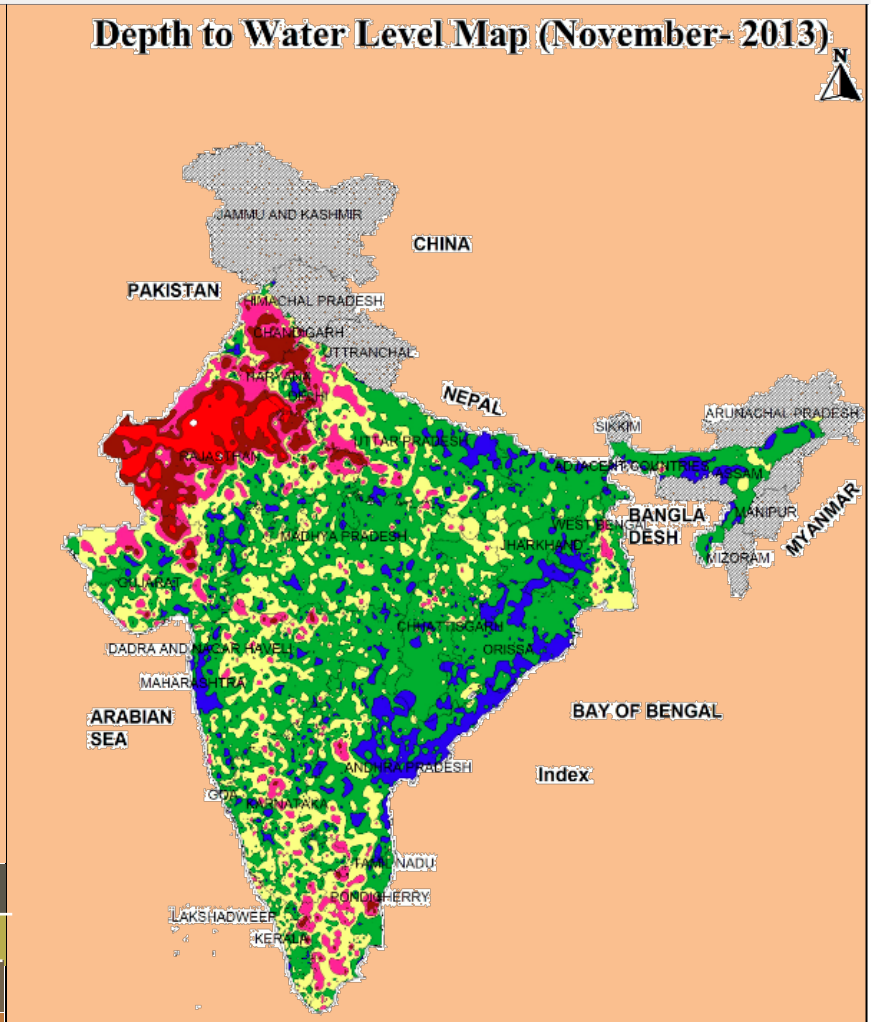
GROUND WATER SCENARIO IN INDIA

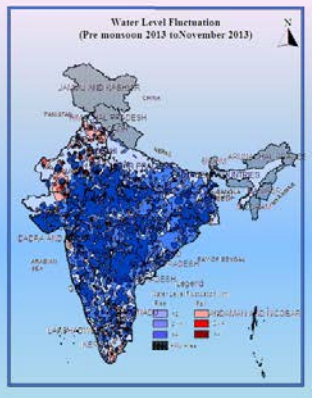
NOVEMBER, 2013

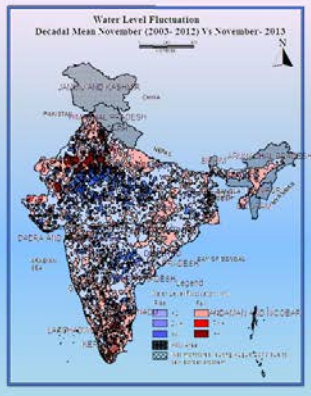
CENTRAL GROUND WATER BOARD

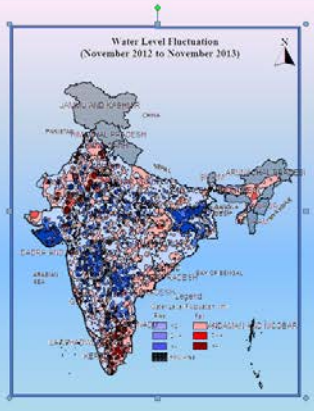
MINISTRY OF WATER RESOURCES

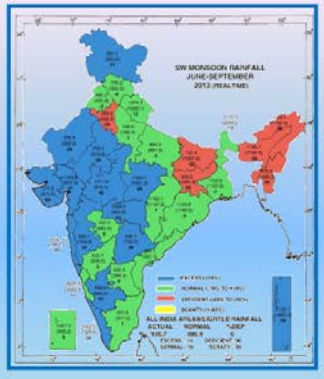
GOVT OF INDIA











GROUND WATER LEVEL SCENARIO IN INDIA (NOVEMBER -2013)

Contents

1.0 Introduction

Monitoring of ground water regime is an effort to obtain information on ground water levels 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 four times a year during Pre Monsoon, March/April/May, August, November 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 19427 ground water observation wells, out of which 13844 observation wells are dugwells and 5583 are piezometers, During November 2013, 14127 observation wells have been monitored and analysed. This has registered an increase of 3200 observation wells as compared to observation wells analysed during November 2012, which is part of an initiative of CGWB to expand the monitoring network in the entire country. The water level / piezometric heads data collected from these observation are analysed for obtaining background information of ground water regime changes on regional scale during the month of November, 2013 which also refers to post monsoon measurement, The Groundwater level data has been collected from all the states except for Mizoram & Sikkim and UTs of Daman & Diu and Lakshadweep where Water level monitoring is not being carried out. The groundwater level data for Andaman and Nicobar could not be included in present analysis due to incomplete validation.

Water level data of November, 2013 has been analysed to illustrate spatial distribution of different ranges of water level and its categorization. The November data has been compared with the previous year November data (annual fluctuation) and also with Premonsoon of 2013 data (seasonal fluctuation) and mean of last 10 years November monitoring data (decadal fluctuation), the fluctuation has been categorization tables and maps along with suitable explanations.. Database thus generated forms the basis for planning the ground water development and management programme. This data also used for assessment of ground water resources and changes in the regime consequent to various development and management activities.

2.0 Rainfall Pattern

Apart from annual draft of ground water for various purposes, quantum of monsoon and non-monsoon 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 experienced during monsoon season, winter season and pre-monsoon season rainfall and its pattern is very important for understanding spatial and temporal variations in water levels. As per the Climatic bulletins of IMD for monsoon period of 2013, the rainfall pattern has been studied and discussed in the following sections.

The actual rainfall for 2013 SW monsoon season received over the entire country as a

well as over four broad geographical regions are given in the table below along with respective long period average (LPA) values. The rainfall during the 4 monsoon months and the second half 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 2013 SW Monsoon Season**	
		Rainfall (mm)	**Rainfall (% of LPA)**
All India	886.9	936.7	106
Northwest India	615.0	671.8	109
Central India	974.2	1195.3	123
Northeast India	1437.8	1037.9	72
South Peninsula	715.7	825.6	115
Monthly & second half of the monsoon season rainfall over the country as a whole (All India)			
Month	**LPA (mm)**	**Actual Rainfall for 2013 SW Monsoon Season**	
		Rainfall (mm)	**Rainfall (% of LPA)**
June	163.5	216.3	132
July	288.9	307.5	106
August	261.0	257.0	98
September	173.5	149.5	86
August + September	434.5	406.5	94

As seen in the table above, the season rainfall over the country as whole and that over three of the four geographical regions of the country (except over northeast India) were more than the respective LPAs. The season rainfall over northeast India was less than its LPA. Month wise, the rainfall over the country as a whole during the first two months (June and July) were above its LPA values. On the other hand, the monthly rainfall during the last two months (August and September) of the monsoon season was less than respective LPA values.

The season rainfall from 1st June to 30 September 2013 was excess in 14 subdivisions, which constitutes 48% of the total area of the country, normal in 16 meteorological subdivisions (38% of the total area of the country) and deficient in 6 meteorological subdivisions (14% the total area of the country).

As seen in Plate –I and II, during June, except for 3 subdivisions from extreme northeast India (Arunachal Pradesh, Assam and Meghalaya, and Nagaland, Manipur Mizoram & Tripura), which received deficient rainfall, all the other subdivisions (33 out of 36) received excess (25

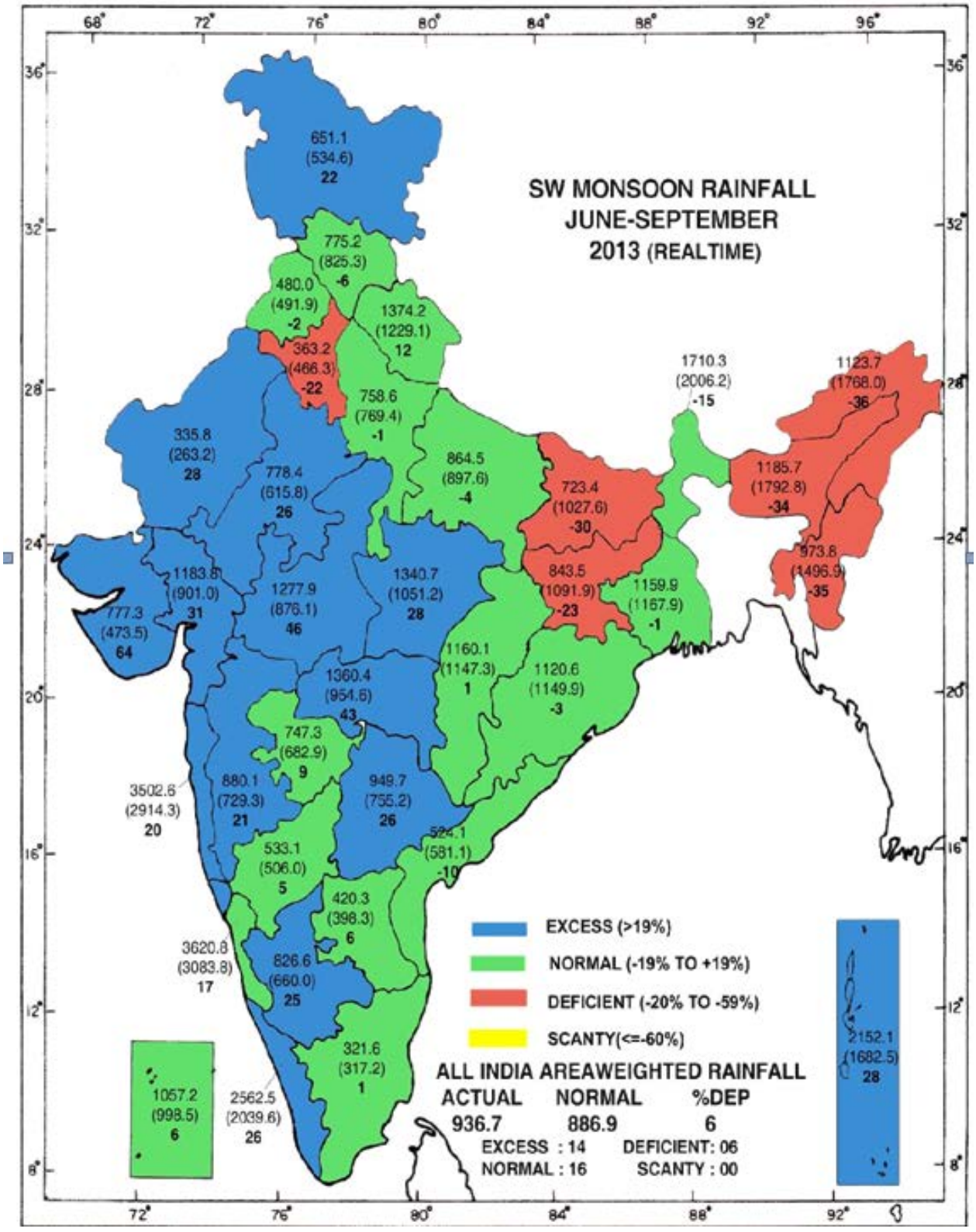
subdivisions) or normal (8 subdivisions) rainfall. In July, 10 subdivisions from northern, eastern and northeastern parts of the country and one in the extreme southeast (Tamil Nadu and Pondicherry) received deficient rainfall. Out of the 25 remaining subdivisions, 12 subdivisions received normal and 13 subdivisions, majority of which are from central India and along the west coast, received excess rainfall. In August, rainfall activity weakened compared to the first two months but was close to normal. During August, 8 subdivisions received excess rainfall, 18 subdivisions received normal rainfall and remaining 10 subdivisions received deficient rainfall. The excess subdivisions were Jammu &Kahsmir, Punjab, west and east Rajasthan, west and east Madhya Pradesh, Gangetic West Bengal and Tamil Nadu. The deficient subdivisions were 3 of the 4 subdivisions of Maharashtra (except Vidarbha), north interior Karnataka, Lakshadweep, Odisha, Bihar, and 3 subdivisions from extreme northeast India.

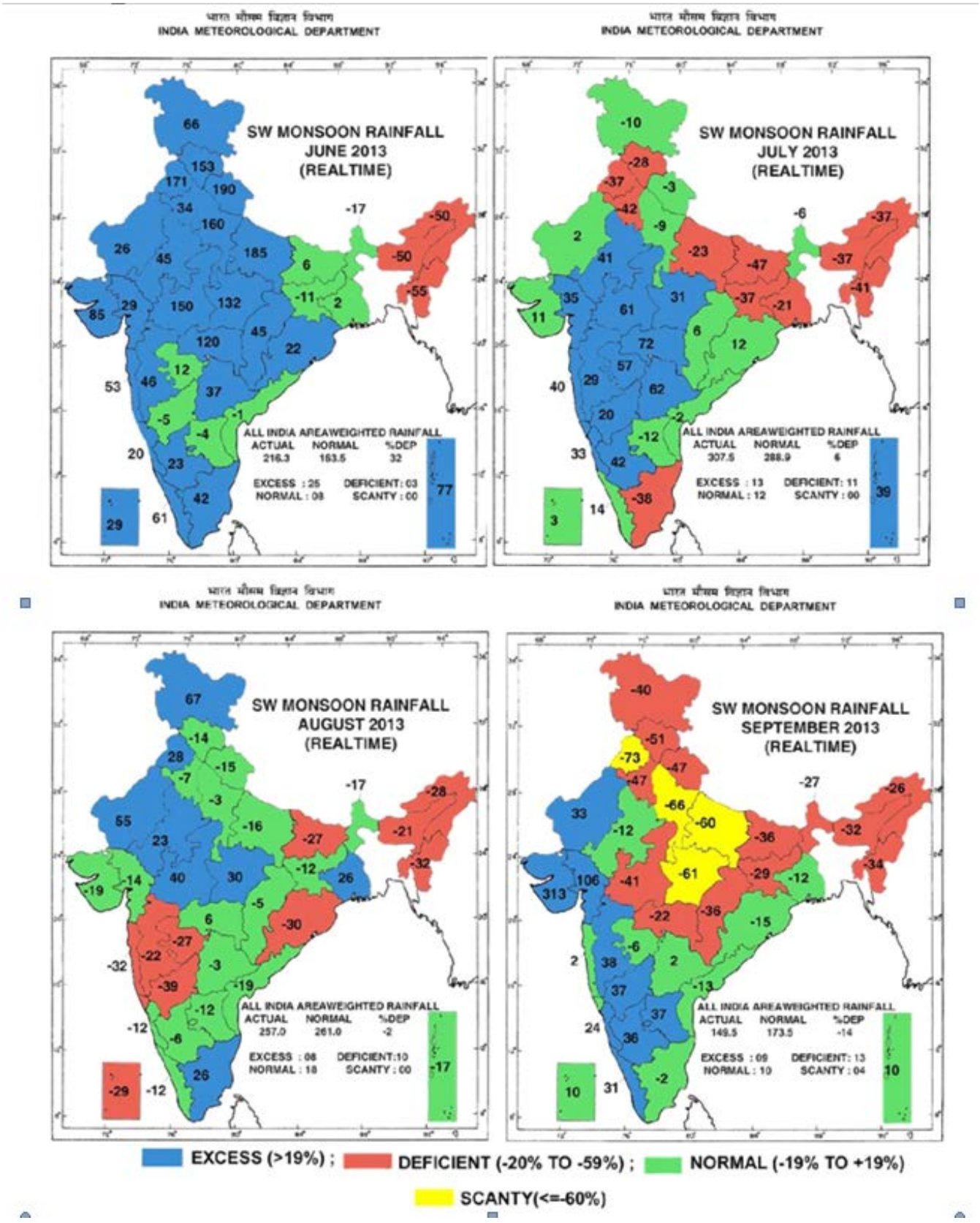
In September, the rainfall activity reduced further and 17 subdivisions from north, east, northeast and central India received deficient or scantly rainfall. The 4 scantly subdivisions were Punjab, west and east Uttar Pradesh and east Madhya Pradesh. Out of the remaining 19 subdivisions, 9 subdivisions were excess and 10 subdivisions were normal. The excess subdivisions were, west Rajasthan, 2 subdivisions of Gujarat, Madhya Maharashtra, 3 subdivisions of Karnataka, Kerala and Rayalaseema.

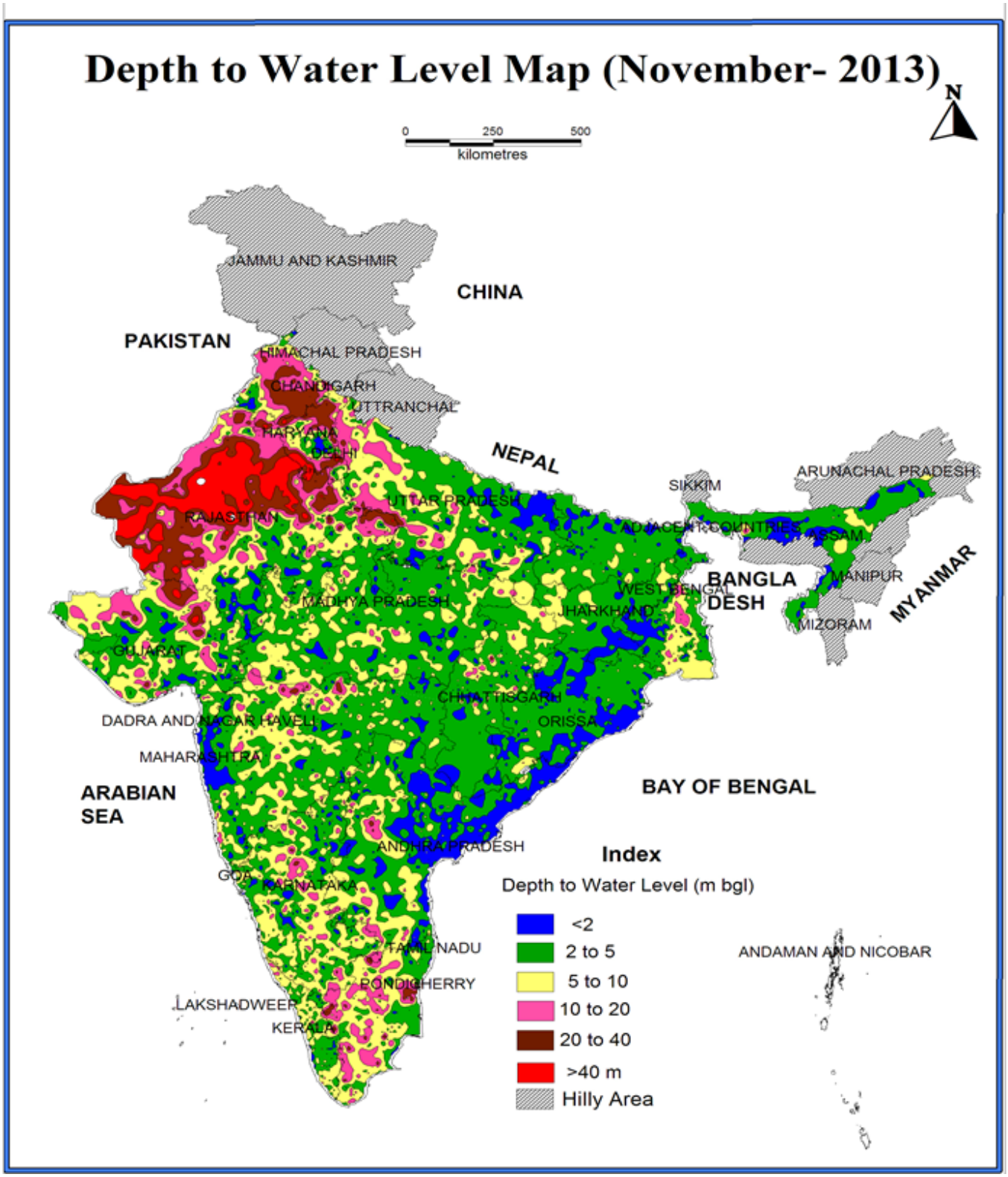
From the monthly distribution, it can be clearly seen that during most part of the season, the 3 subdivisions from the extreme northeast received deficient rainfall. On the other hand, most of the subdivisions from the central India and neighboring northwest India and south Peninsula received excess rainfall during the first 3 months of the season. However no subdivisions experienced scantly rainfall during first 3 months of the season. Only in September that 4 subdivisions received scantly rainfall. Overall, there was noticeable disparity in the spatial distribution of the rainfall with below normal or deficient rainfall over east and northeast India and above normal or excess rainfall over most of the other regions.

Plate-I

भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT




भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT
SW MONSOON RAINFALL
JUNE 2013
(REALTIME)
ALL INDIA AREAWEIGHTED RAINFALL
ACTUAL NORMAL %DEP
216.3 163.5 32
EXCESS : 25 DEFICIENT: 03
NORMAL : 08 SCANTY : 00
भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT
SW MONSOON RAINFALL
JULY 2013
(REALTIME)
ALL INDIA AREAWEIGHTED RAINFALL
ACTUAL NORMAL %DEP
307.5 288.9 6
EXCESS : 13 DEFICIENT: 11
NORMAL : 12 SCANTY : 00
भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT
SW MONSOON RAINFALL
AUGUST 2013
(REALTIME)
ALL INDIA AREAWEIGHTED RAINFALL
ACTUAL NORMAL %DEP
257.0 261.0 -2
EXCESS : 08 DEFICIENT:10
NORMAL : 18 SCANTY : 00
भारत मौसम विज्ञान विभाग
INDIA METEOROLOGICAL DEPARTMENT
SW MONSOON RAINFALL
SEPTEMBER 2013
(REALTIME)
ALL INDIA AREAWEIGHTED RAINFALL
ACTUAL NORMAL %DEP
149.5 173.5 -14
EXCESS : 09 DEFICIENT: 13
NORMAL : 10 SCANTY : 04
EXCESS (>19%) ; DEFICIENT (-20% TO -59%) ; NORMAL (-19% TO +19%)
SCANTY(<=-60%)


Depth to Water Level Map (November- 2013)
N
0
250
500
kilometres
JAMMU AND KASHMIR
CHINA
PAKISTAN
HIMACHAL PRADESH
CHANDIGARH
UTTRANCHAL
HARYANA
DELHI
NEPAL
SIKKIM
ARUNACHAL PRADESH
UTTAR PRADESH
RAJASTHAN
ADJACENT COUNTRIES
ASSAM
BANGLA DESH
MANIPUR
WEST BENGAL
MADHYA PRADESH
JHARKHAND
MYANMAR
MIZORAM
GUJARAT
CHHATTISGARH
DADRA AND NAGAR HAVELI
ORISSA
MAHARASHTRA
ARABIAN SEA
BAY OF BENGAL
ANDHRA PRADESH
Index
Depth to Water Level (m bgl)
GOA
KARNATAKA
<2
2 to 5
5 to 10
10 to 20
20 to 40
>40 m
Hilly Area
TAMIL NADU
ANDAMAN AND NICOBAR
PONDICHERRY
LAKSHADWEEP
KERALA

3.0 Ground Water Level Scenario in India

3.1 Ground Water Level Scenario-November 2013

The ground water level data for November 2013 indicate that out of the total 14127 wells analysed, 3545 (25 %) wells are showing water level less than 2 m bgl, 5384 (38%) wells are showing water level in the depth range of 2-5 m bgl, 3149 (22 %) wells are showing water level in the depth range of 5-10 m bgl, 1348 (10%) wells are showing water level in the depth range of 10-20 m bgl, 469 (3%) wells are showing water level in the depth range of 20-40 mbgl and the remaining 225 (2 %) wells are showing water level more than 40 m bgl (Fig-1 and Annexure-I). The maximum depth to water level of 145.09 m bgl is observed in Rajasthan whereas the minimum is less than 1 m bgl.

The depth to water level map of November 2013 (Plate III) indicates that in Sub-Himalayan area, north of river Ganges, Assam, Bihar, Chhattisgarh, Maharashtra, Jharkhand, Madhya Pradesh Odisha, Bihar, Gujarat, Tripura and Coastal Tamil Nadu generally the depth to water level varies from 2-5 meter below ground level. Shallow water level less than 2 m bgl have also been observed as patches in Maharashtra, Andhra Pradesh, Assam, Northern Uttar Pradesh, Jharkhand, Chhattisgarh and Odisha. In major parts of north-western states depth to water level generally ranges from 10-40 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 some parts of Delhi and Rajasthan water level of more than 40 m bgl is recorded. Along the eastern & western coast water level is generally less than 10 m. Central part of West Bengal state recorded water level in the range of 5-10 m bgl. In Central India water level generally varies between less than 2 m bgl to 5 m bgl, except in isolated pockets where water level less than 10 m bgl has been observed. The peninsular part of country generally recorded a water level in the range of 5 to 20 m bgl depth range. (Plate-III)

Fig- 1

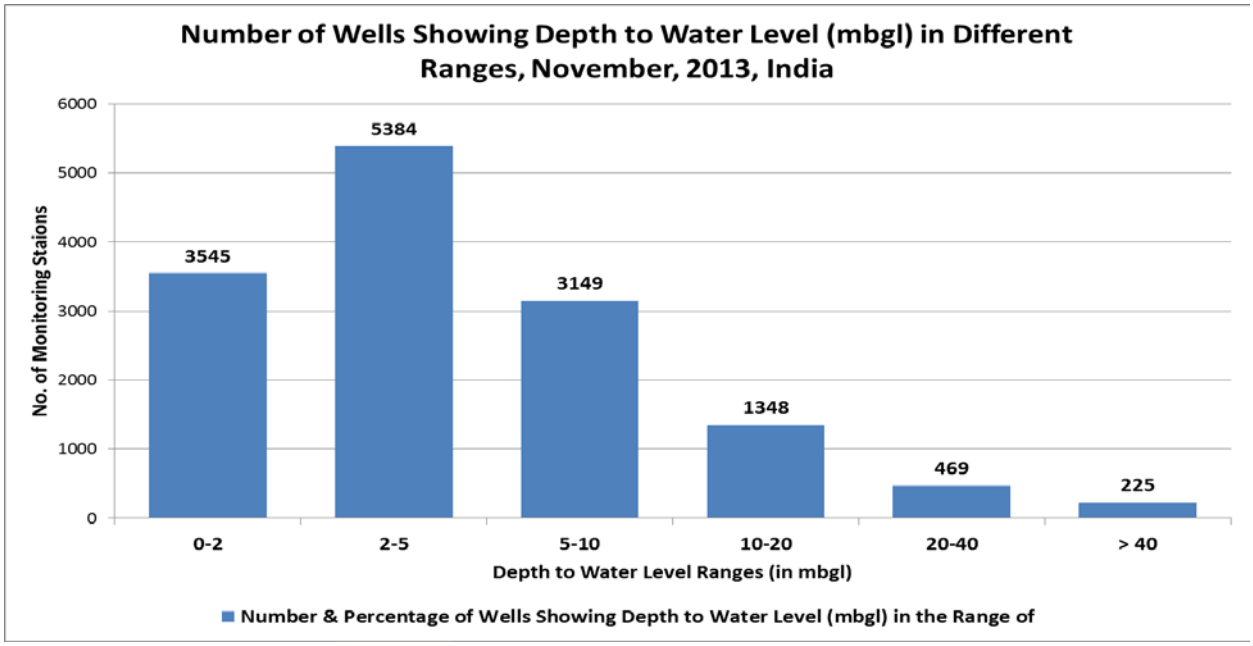
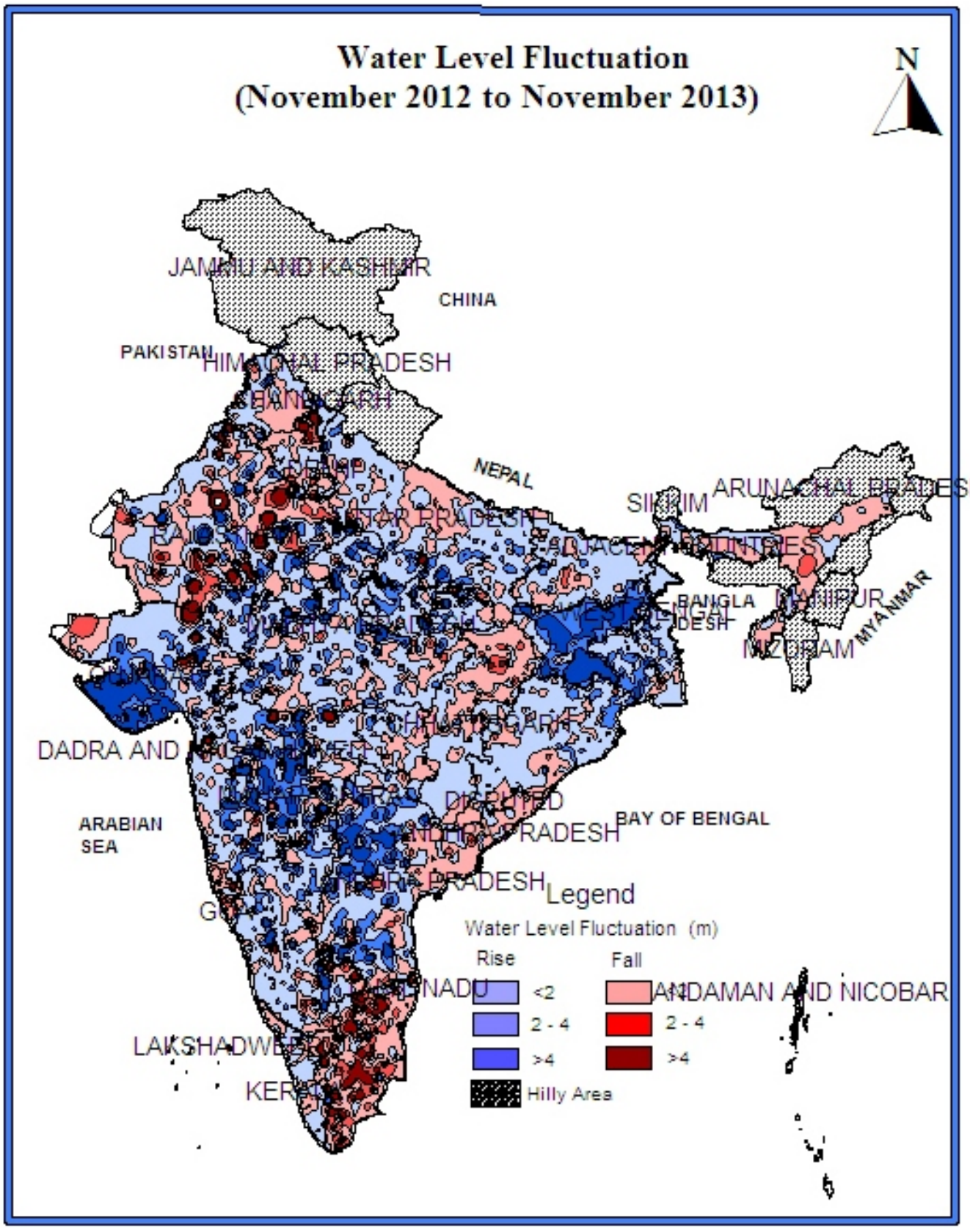


Plate IV


Water Level Fluctuation
(November 2012 to November 2013)
N
JAMMU AND KASHMIR
CHINA
PAKISTAN
NEPAL
SIKKIM
MYANMAR
DADRA AND
ARABIAN
SEA
BAY OF BENGAL
LAKSHADWEEP
ANDAMAN AND NICOBAR
Legend
Water Level Fluctuation (m)
Rise
Fall
<2
2 - 4
>4
Hilly Area

3.2 Water Level Fluctuation (November 2012 to November 2013)

The water level fluctuation for **November 2012 to November 2013** shows that out of 10396 wells analysed 3712 (36%) are showing fall and 6480 (62%) are showing rise in water level. Remaining 204 (2%) stations 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 10% 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 36% wells are showing decline in water level, out of which 29% wells are showing decline in water level in less than 2 m range. About 4 % wells are showing decline in water level in 2-4 m range. Only 3% wells are showing decline in water level more than 4 m range. (Fig-2 and Annexure-II)

A comparison of depth to water level of November 2012 to November 2013 **presented in the form of water level fluctuation map (Plate IV)** reveals that in general, there is rise in the water level in north-west, west, east, central and southern parts of the country especially in the states of Delhi, Gujarat, Jammu & Kashmir, Jharkhand, Madhya Pradesh and West Bengal. There is a fall in water level mostly in the range of 0-2 m. Fall in water level of more than 2 m has been observed in north western, western, southern and west coastal parts of the country covering states such as Gujarat, Haryana, Chhattisgarh, Madhya Pradesh, Maharashtra, Karnataka, Odisha, Rajasthan and Tamil Nadu etc. Fall of more than 4 m observed in parts of states of Andhra Pradesh, Gujarat, Haryana, Chhattisgarh, Karnataka, Madhya Pradesh, Maharashtra, Punjab, Rajasthan, Uttar Pradesh, Tamil Nadu and West Bengal. (Plate-IV)

Fig- 2

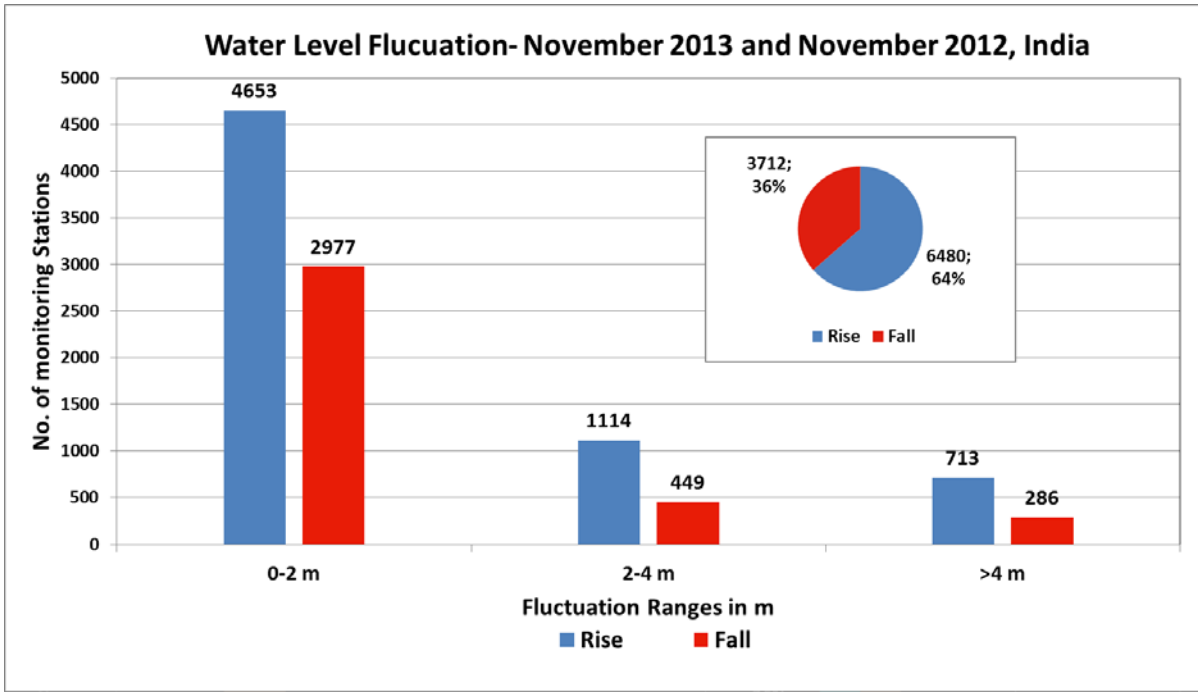
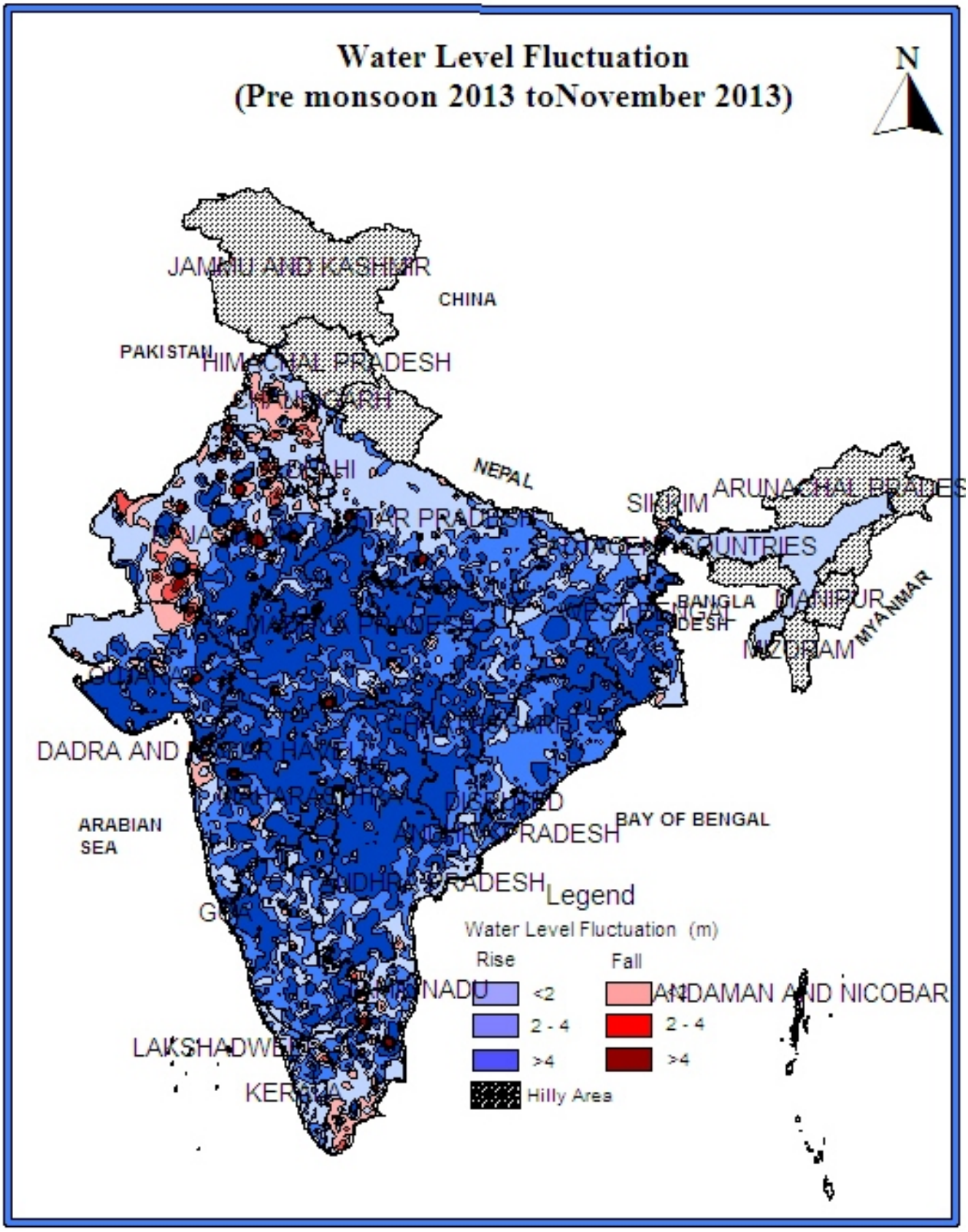


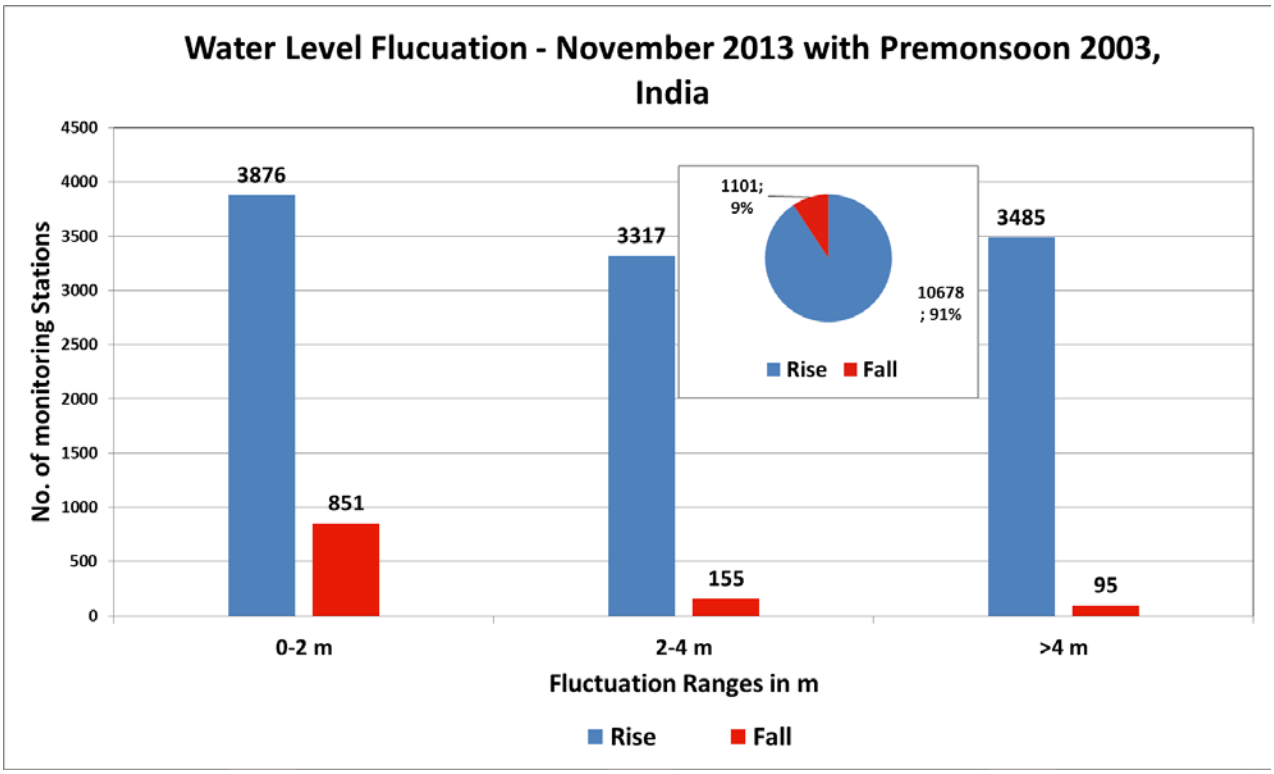
Plate V

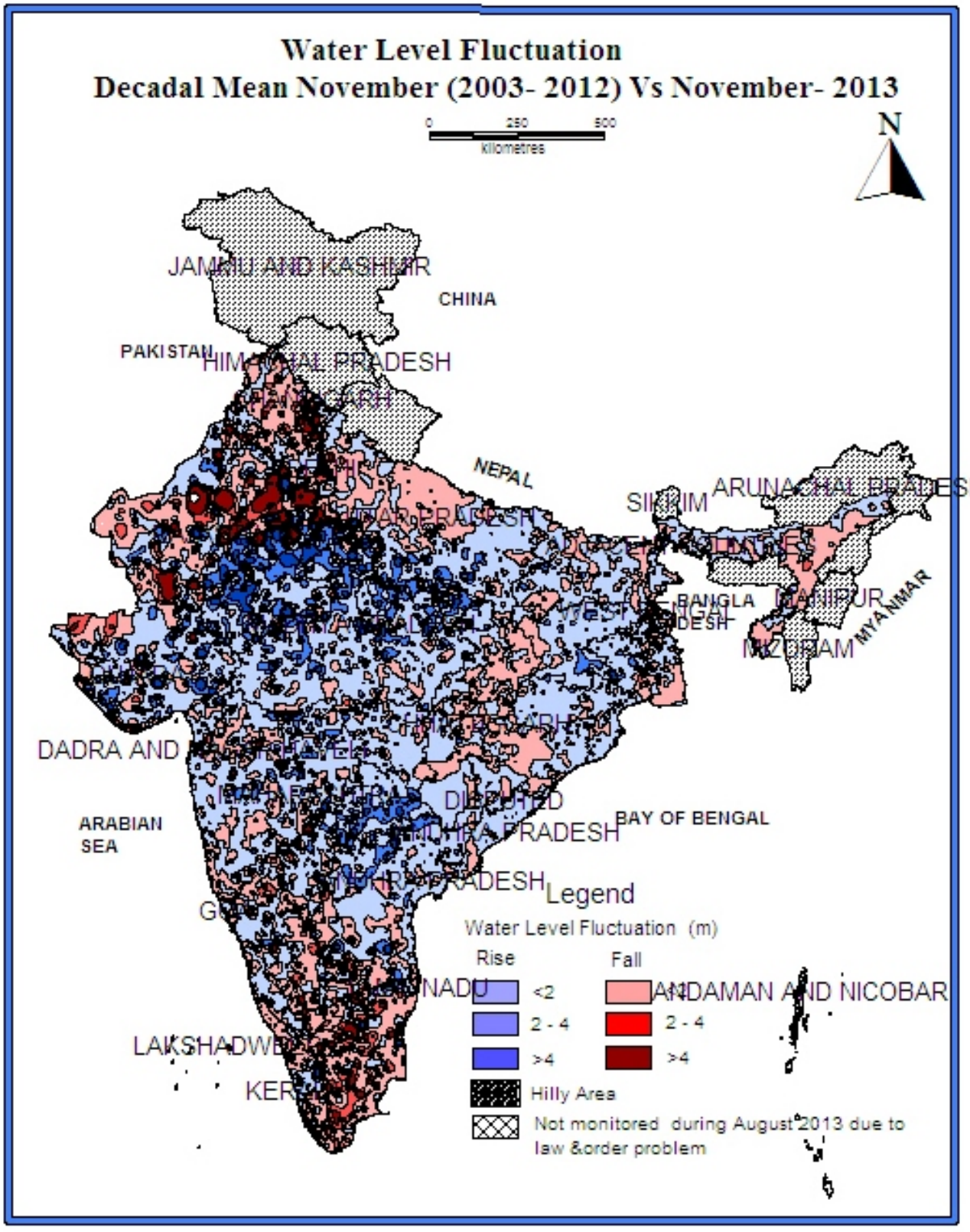

Water Level Fluctuation
(Pre monsoon 2013 toNovember 2013)
N
JAMMU AND KASHMIR
CHINA
PAKISTAN
NEPAL
SIKKIM
COUNTRIES
BANGLA DESH
MANIPUR
MYANMAR
MIZORAM
DADRA AND
ARABIAN SEA
BAY OF BENGAL
RADESH
Legend
Water Level Fluctuation (m)
Rise
Fall
<2
2 - 4
>4
Hilly Area
ANDAMAN AND NICOBAR
LAKSHADWEEP
KERALA

3.3 Seasonal Water Level Fluctuation (Pre Monsoon 2013 to November 2013)

A comparison of depth to water level during **November 2013 with Pre Monsoon 2013** reveals that in general, there is rise in the water level in 10678 (89%) wells, out of which 32% are showing rise in range of 2-4m, 28% and 29 % show rise in the range of 2-4m and >4m respectively. The seasonal water level fluctuation map of India is shown in Plate-V and Fig-3 shows frequency distribution of wells showing fluctuation in different ranges. There is a fall in 1101 (9%) wells. Out of which 7% of the wells are showing fall in the range of 0-2m. Most of the wells have been showing rise of water level in the range of less than 4 m range. Only 1% wells are showing fall in water level in 2-4 m and >4m range. Rise in water level in the range of 0-2m and 2-4 m range is observed mainly in Bihar, Chhattisgarh, Goa, Maharashtra, Himachal Pradesh, Jammu & Kashmir, Kerala, Odisha, Uttar Pradesh and West Bengal. Decline in water level in the range of 0-2 m and 2-4 m is observed mainly in Punjab, Haryana, Gujarat, Chandigarh, Rajasthan, Tamil Nadu, and Karnataka states. Decline in water level in the range of 4 m is observed in pockets in Punjab, Haryana, Gujarat and Rajasthan states. The state wise fluctuation is given in Annexure-III.

Fig- 3



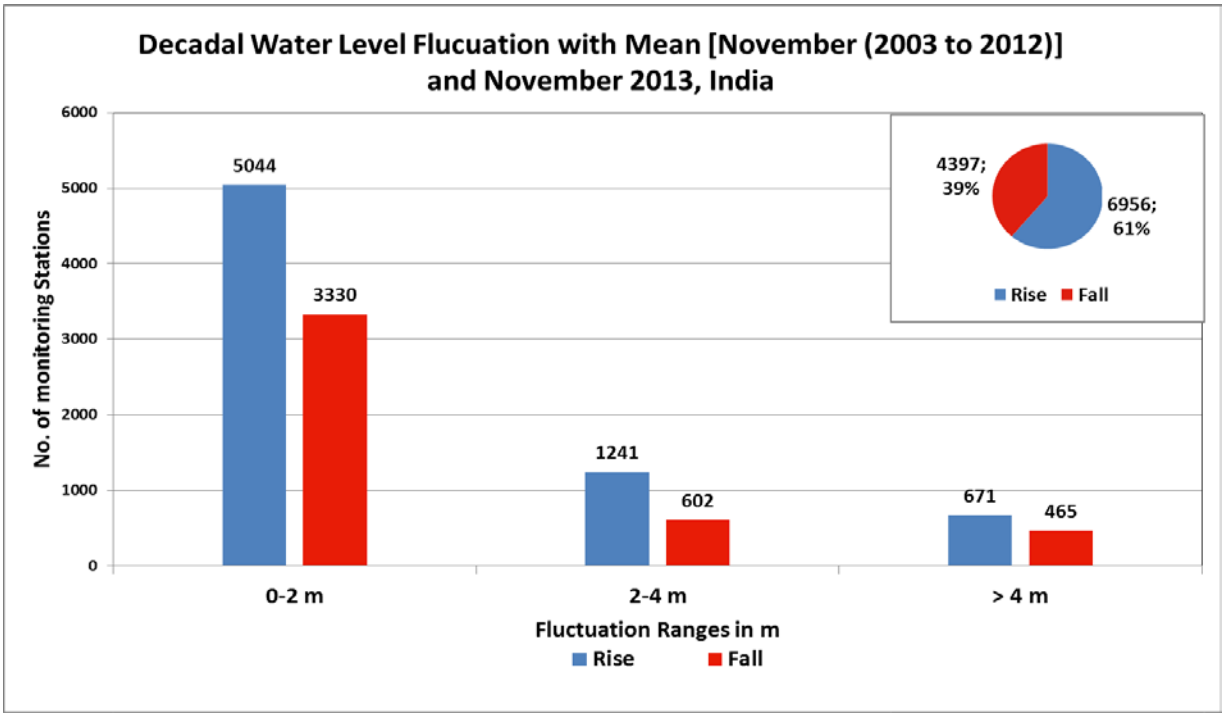

Water Level Fluctuation
Decadal Mean November (2003- 2012) Vs November- 2013
0 250 500
kilometres
N
CHINA
PAKISTAN
NEPAL
SIKKIM
BANGLA DESH
MYANMAR
DADRA AND
ARABIAN SEA
BAY OF BENGAL
LAKSHADWE
Legend
Water Level Fluctuation (m)
Rise
Fall
<2
2 - 4
>4
2 - 4
>4
Hilly Area
Not monitored during August 2013 due to law &order problem

3.4 Water Level Fluctuation (November – 2013 with Mean of November (2003 - 2012)

A comparison of depth to water level of November 2013 with decadal mean of November (2003-2012) indicate that 6956 (about 61%) of wells are showing rise in water levels, out of which 44% wells are showing rise of less than 2 m (Annexure-IV). About 11% wells are showing rise in water in the range of 2-4 m and about 6 % wells are showing rise in water level in the range of more than 4 m. 4397 (About 39%) wells are showing decline in water level, out of which 29% wells are showing decline in water in the range of 0-2 m. 6% wells are showing decline in water level in 2-4 m range and remaining 4% 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 Delhi, Haryana, Karnataka, Punjab, Rajasthan and Tamil Nadu. Rise in water level of more than 4 m is observed mostly in the states of Andhra Pradesh, Gujarat, Himachal Pradesh, Madhya Pradesh, and Maharashtra and Rajasthan.

As observed in Plate-VI maximum fall is observed in and around parts of Punjab, Rajasthan and Tamil Nadu. A rise in water level is observed in almost all parts of the country. In states of Punjab, Kerala and Tamil Nadu rise in water level is observed as patches. The decadal water level fluctuation map of India for November, 2013 with the mean of November (2003-2012) is shown in Plate-VI and frequency distribution of fluctuation ranges is shown in Fig. 4.

Fig- 4

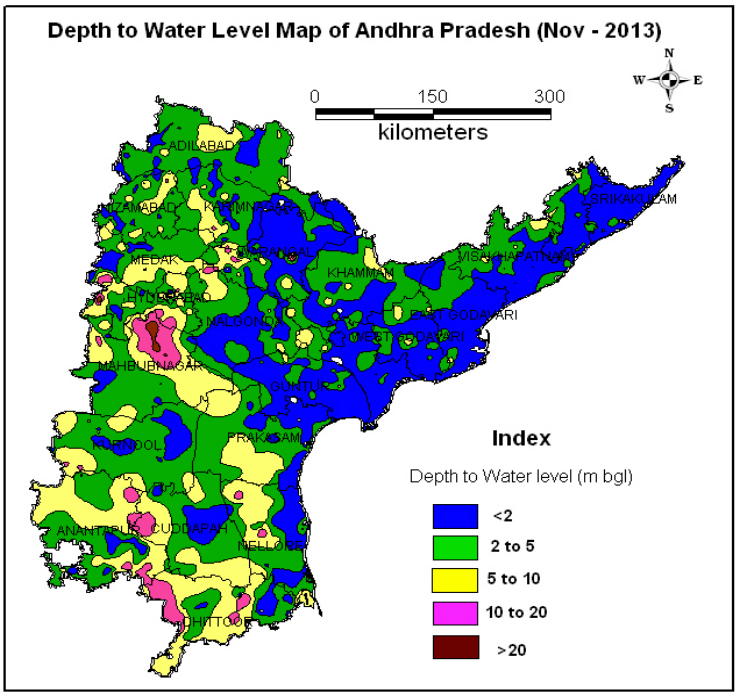


4.0 Statewise scenario of ground water level and comparison with previous year and premonsoon period water level as well as change with respect to decadal average has been discussed in the following sections.

4.01 Andhra Pradesh

Depth to Water Level – November - 2013

Very Shallow water level ranging between 0-2 m bgl was observed in 50 % of the wells monitored. Shallow water level ranging between 2-5 m bgl was observed in 29% of wells. The depth to water level between 5-10 meters has been observed 16 % wells. Depth to water level ranging between 10-20 meters has been observed 4% wells. Water level of more than 20 m bgl has been observed in only 1% wells. The depth to water level in the state ranges upto 36.21 m bgl (in Mahbubnagar district).



Fluctuation-November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that about 61 % of the wells analysed are showing rise in the water level and 38% wells are showing fall in water level. 1% wells show no change in water level. Out of this, 38% wells have shown a rise in 0-2 m range,12% of the wells have shown rise in the range of 2-4m and another 12% of the wells show rise in the range of >4m. About 33% of the wells show fall in 0-2m range. Maximum rise in water level has been recorded as 15.64 m and maximum fall in water level has been recorded as 9.31 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

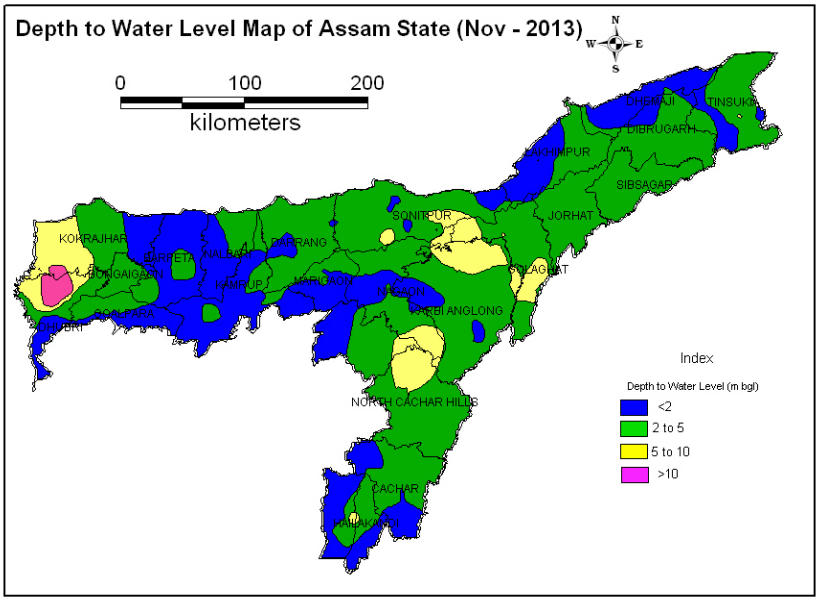
Water level of November 2013 when compared to that of Pre Monsoon 2013 shows that there is dominantly rise in water level in the entire state. Water level rise is seen in almost all the districts of the state. About 96% of the wells analysed show rise in water level. Out of this, 26% of the wells show rise in water level in the range of less than 2 m. A rise of 2-4 m is observed in 29% of the wells analysed and rise of more than 4 m is noticed in 41 % of the wells. Only 4 % of wells analysed have shown fall in water level and 3% of the wells shows fall in the range of 0-2 m. Less than 1% wells show no change in water level.

Fluctuation - November 2013 to November Decadal mean (2003-12)

The water level data of November 2013 has been compared with decadal mean (November 2003- 2012) to assess the rise/fall in water level during current year with respect to long term average of the corresponding period. About 78 % of analysed wells have shown a rise in water level. Out of this 50% of the wells have shown rise in the range of 0 to 2 m, 18% wells have shown rise in the range of 2 to 4 m and 10% in the range of more than 4 m bgl. About 21% wells have shown a fall in water level, out of which 16% wells have shown fall in the range of 0 to 2 m and 5 % wells have shown fall of more than 2 m.

4.02 Assam

Depth to Water Level – November – 2013



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 90 % of the wells monitored. Around 40% monitoring stations recorded water level within 2 m bgl and around 50 % wells recorded water level between 2-5 m bgl. About 9 % wells recorded water level between 5-10 m bgl and only 1% wells show water level between 10-20 m bgl.

A shallow water level within 2 m bgl is recorded in almost all the districts and prevalent throughout the state except in few districts such as Hailakandi, Karbi Anglong, Kokrajhar etc. The maximum depth to water level has been recorded as 15.90 m bgl in Dhubri district.

Fluctuation-November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that in general there fall in water level in almost most parts of the state. About 32 % of the wells analysed are showing rise in the water level and 60% wells are showing fall in water level. 8% wells show no change in water level. Out of 32%, 30% wells have shown a rise in 0-2 m range. Out of 60 % wells in the fall category, about 56 % of the wells have shown fall in 0-2 m range. Maximum rise in water level has been recorded as 3.63 m and maximum fall in water level has been recorded as 7.35 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water level of Pre Monsoon 2013 when compared to that of November 2013 shows that there is dominantly rise in water level in the state. About 84 % of the wells analysed show a rise in water level. Out of this, 65 % of the wells showing rise in water level in less than 2 m range. A rise of 2-4 m is observed in 13% of the wells analyzed and a rise of more than 4 m is noticed at 6 % of the wells. About 16 % of wells analysed have shown fall in water level where 12 % of the wells shows fall in the range of 0-2 m.

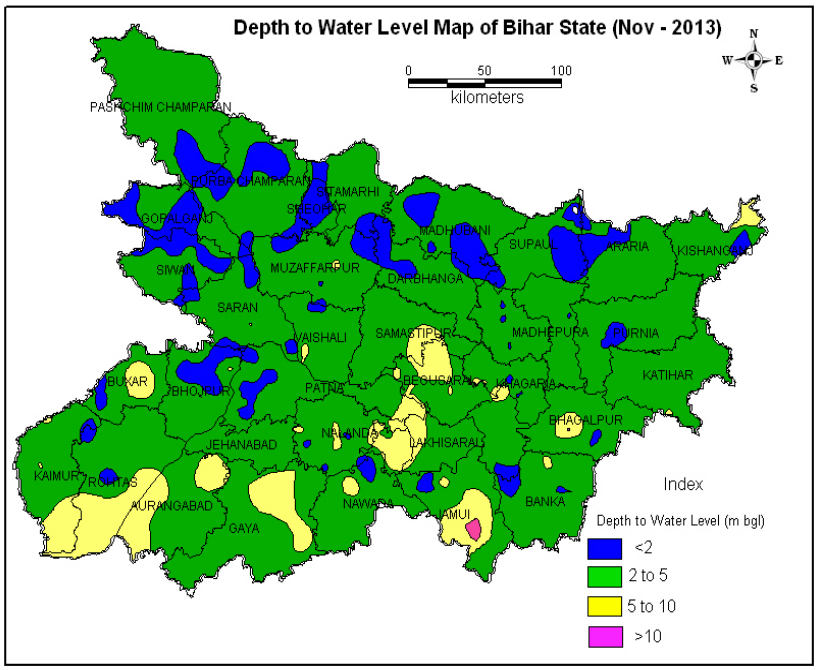
Fluctuation - November 2013 to November Decadal mean (2003-12)

The water level data of November 2013 has been compared with decadal mean (November 2003 -2012) and it is observed that out of 188 wells analyzed 49 % show a fall in water level where as 51% show a rise in water level. Out of 51 %, 48% shows rise in the range of 0-2 m and about 46 % wells show decline in the range of 0-2 m.

4.03 Bihar

Depth to Water Level– November – 2013

During November 2013 water level measurement, a total of 372 wells have been monitored. About 23 % of the wells are showing water level in the range 0-2 m bgl. 63 % of the wells are showing water level in the range 2-5 m bgl and 13 % of the wells analysed are showing water level in the range of 5-10 m bgl. Less than 1% of the wells are showing water level in the range 10-20 m bgl.



Fluctuation-November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that in general there is rise in water level in the entire state. About 64 % of the wells analysed are showing rise in the water level and 36 % wells are showing fall in water level. Out of this, 55% wells have shown a rise in 0-2 m range, 9% wells have shown rise in 2-4m range. About 33 % of the wells have shown fall in 0-2m range and 2% wells have shown fall in 2-4m range. Maximum rise in water level has been recorded as 3.89 m and maximum fall in water level has been recorded as 6.04 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water level data of Pre Monsoon 2013 was compared to November 2013 and the analysis shows that in general there is rise in water level in the entire state. About 93 % of the wells analysed are showing rise in the water level. Out of this, 37 % wells have shown a rise in 0-2 m range. About 41 % of the wells have shown rise in 2- 4 m range and about 15 % of the wells have shown rise of more than 4 m range. About 7 % of the wells analysed are showing fall in the water level mostly in the range of 0 -2 m. Maximum rise in water level has been recorded as 9.93 m and maximum fall in water level has been recorded as 3.42 m in the State.

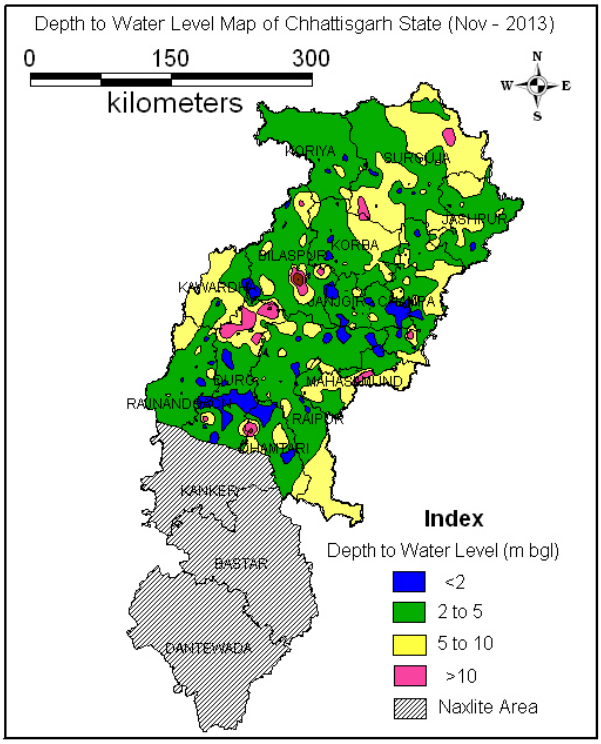
Fluctuation - November 2013 to November Decadal mean (2003-12)

The water level data of November 2013 has been compared with decadal mean (November 2003 to 2012) and it indicates that out of 277 wells analyzed 61% show a rise in water level whereas 39% show a fall in water level. Out of 61 % rise, about 56% wells show rise in the range of 0-2 m bgl.

4.04 Chhattisgarh

Depth to Water Level – November - 2013

During November 2013 Water Level Measurement, a total of 775 wells have been monitored. About 15 % of the wells monitored shows water level in the range of 0-2 m bgl, 54 % wells shows water level in 2-5 m bgl and about 23 % wells falls under the category of 5- 10 m bgl. About 7% wells show water levels in the range of 10 – 40 mbgl. The maximum water level measured is 41.00 m bgl.



Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is fall in water level in about 69% of the wells and rise in about 31% of the wells.25% wells have shown a rise in 0-2 m range, about 57% of the wells have shown fall in 0-2m range. Maximum rise in water level has been recorded as 11.86 m and maximum fall in water level has been recorded as 9.58 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water level of Pre Monsoon 2013 is compared to November 2013 and the analysis shows that the entire state of Chhattisgarh shows rise in water level. Almost 96 % of the observation wells

are showing rise in water level. Rise in the range of 0- 2 m is observed in about 25% of the monitored wells. Rise in the range of 2 to 4 m and more than 4 m is observed in 32% and 39 % of the monitored wells respectively.

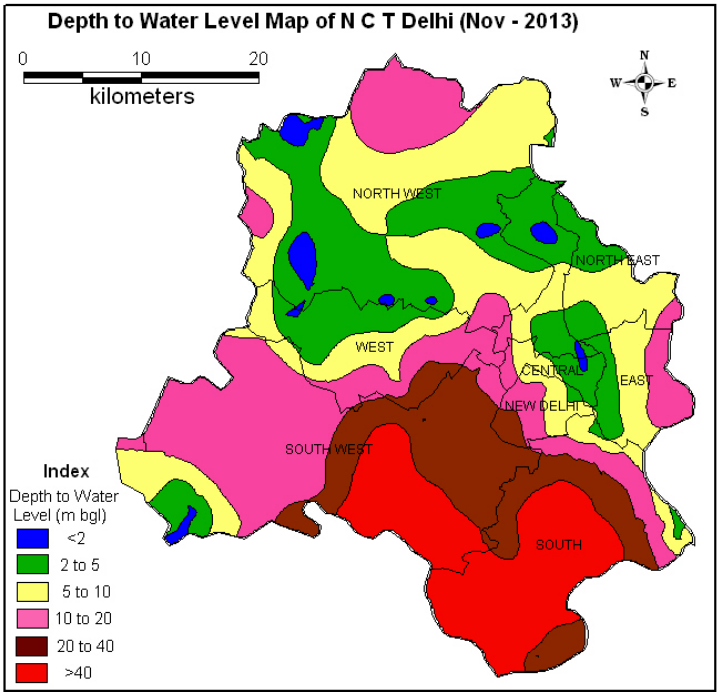
Fluctuation - November 2013 to November Decadal mean (2003-12)

When compared the decadal mean water level (November 2003 to 2012) with November 2013, about 60 % of observation wells are showing a fall in water level. Out of the 60% wells, 50 % of the wells are showing a fall up to 2 m, 7 % of the monitored wells show fall between 2 to 4 meters and 3% of the monitored wells are showing fall in water level of more than 4 m. Rise of water level as compared to the decadal mean is observed in 40 % of the monitored wells. Almost 37% of the monitored wells are showing a rise in the range of 0-2m.

4.05 Delhi

Depth to Water Level– November - 2013

The depth to water level recorded in the state of Delhi during November 2013 ranged from 0.92 m bgl to 65.81 m bgl. It is observed that 11% of the wells have shown water level in the range of 0-2 m bgl. About 19 % of the wells analysed have shown water level in the range of 2-5 m bgl, about 27% of the wells have shown water level in the range of 5-10 mbgl and 24 % wells shows 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 8% & 11% of the wells analysed respectively.



Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in about 70 % of the wells and fall in about 30% of the wells out of which 64% wells have shown a rise in 0-2 m range, about 28% of the wells have shown fall in 0-2m range. Maximum rise in water level has been recorded as 3.54 m and maximum fall in water level has been recorded as 6.48 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water levels of Pre Monsoon 2013 when compared to water level of November 2013 in the state indicates that about 90 % of the wells analysed have recorded a rise in water level, out of which 68 % 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 3% of the wells have shown rise more than 4 m. About 10 % of the wells have shown fall in water level, out of which 9 % fall in the range of 0 to 2m.

Fluctuation - November 2013 to November Decadal mean (2003-12)

The fluctuation analysis of water level during November 2013, when compared with the Decadal mean (November 2003-2012) indicate that in general there is rise as well as fall in water level. About 45 % of analysed wells have shown rise in water level. Out of this 37 % of the wells have shown rise in the range of 0-2 m, 6 % of analysed wells have shown rise in the range of 2 to 4 m. About 55% wells have shown a decline in water level. Out of this 34 % of the wells have shown decline in water level in the range of 0-2 m, 13% of the wells have shown decline in water level in the range of 2-4 m, 8 % of the wells have shown decline in water level in the range of more than 4 m.

4.06 Goa

Depth to Water Level - November - 2013

The depth to water level recorded in the state of Goa during November 2013 ranges from 0.27 m bgl to 15.24 m bgl in North Goa. It is observed that out of 71 monitored wells, 23 % wells show less than 2 m bgl water level, 41% wells show 2 to 5 m bgl water level, 30% wells show 5 to 10 m bgl water level and 7 % wells show 10 to 20 m bgl water level.

Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in about 54% of the wells and fall in about 46% of the wells. 51% wells have shown a rise in 0-2 m range, 46% of the wells have shown fall in 0-2 m range. Maximum rise in water level has been recorded as 3.45 m and maximum fall in water level has been recorded as 1.74 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water level of November 2013 when compared to water level of Pre Monsoon 2013 in the state of Goa indicates that in general the entire state have recorded a rise in water level. About 82 % of the wells analysed show rise in water level. Out of which 39 % wells have recorded a rise in the range of 0 to 2 m, 32% of analysed wells have shown rise in the range of 2 to 4 m and 11 % of the wells have shown rise more than 4 m. 18 % wells shows fall in water level, out of which 16 % shows fall in the range of 0-2 m.

Fluctuation - November 2013 to November Decadal mean (2003-12)

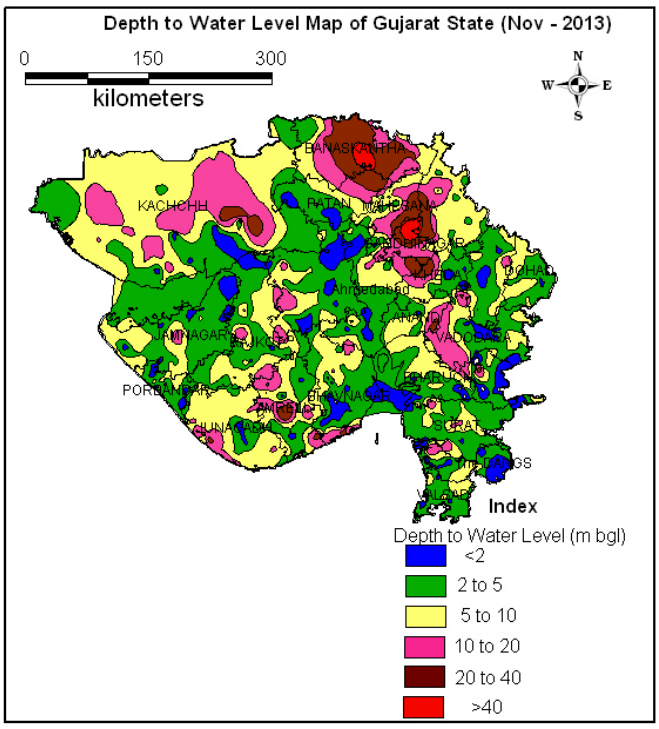
The fluctuation of water level during November 2013 when compared with the Decadal mean (November 2003-2012) indicates that about 65% of analysed wells have shown a rise in water level. Out of this 58 % of the wells have shown rise in the range of 0 to 2 m, 5 % wells have shown a rise in water level in the range of 2-4 m and remaining 2 % of the wells shows rise more

than 4 m. About 35 % wells have shown a decline in water level and all the wells shows fall in the range of 0-2 m.

4.07 Gujarat

Depth to Water Level - November - 2013

The depth to water level recorded in the state of Gujarat during November 2013 ranges up to 58.90 m bgl in Kutch district. The depth to water level for 21 % of the wells analysed have shown water level in the range of 0-2 m bgl, 36 % of the wells have shown water level in the range of 2-5 m bgl. About 27 % of the wells analysed have shown water level in the range of 5-10 m bgl and 11 % 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 5% of the wells analysed.



Water Level Fluctuation-November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that in general there is rise in water level, where 78% of the wells show rise in water level and 21% of the wells show fall in water level. 1% of wells have recorded no change in water levels. 39% wells have shown a rise in 0-2 m range, 16% show rise in water level in the range of 2-4m and 23 % shows water level in the range of more than 4 m. About 16% of the wells have shown fall in 0-2m range. Maximum rise in water level has been recorded as 39.42 m and maximum fall in water level has been recorded as 34.44 m` in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water level data of November 2013 when compared to Pre Monsoon 2013 shows that in general there is rise in water level in the entire state. About 78 % of the wells analysed shows rise in the water level. Out of this, 39% wells have shown a rise in the range of 0-2 m. About 16% of the wells have shown rise in 2-4 m range and about 23 % wells have shown rise in water in more than 4 m. About 21 % of the total wells have shown a fall in water level, out of which 16% wells have shown a fall in 0-2 m range. 1% of the wells show no change in water levels.

Fluctuation - November 2013 to November Decadal mean (2003-12)

The water level data of November 2013 has been compared with decadal mean (November 2003 to 2012) to assess the rise/fall in water level of this year with respect to long term average

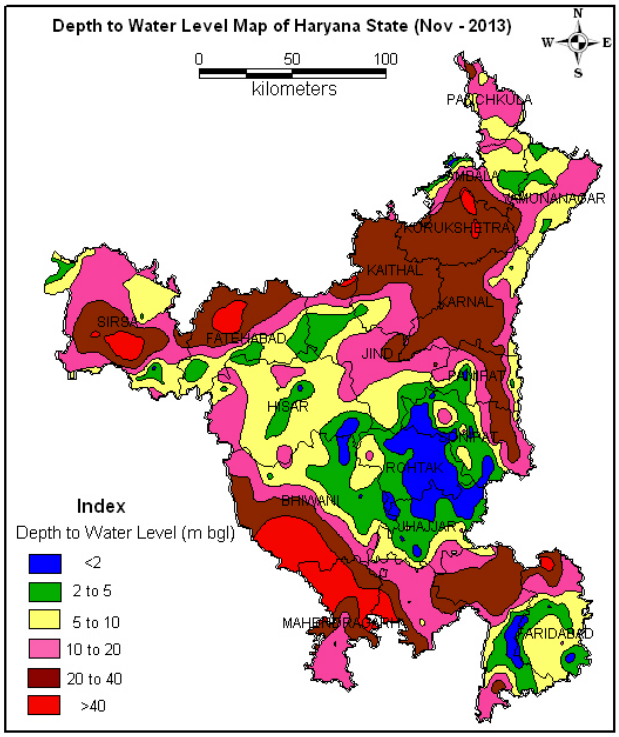
of the corresponding period. 75% of monitoring wells shows rise in water level and 25 % wells are showing fall in water level. About 47% of wells show rise in 0-2 m range,17% wells shows rise in the 2-4 m range and 11% wells are showing rise in the range of more than 4 m. 20 % of the wells have shown fall in water level in the range of 0-2 m.

4.08 Haryana

Depth to Water Level - November - 2013

During November 2013, the depth to water level in the state of Haryana varies from 0.20 m bgl in Ambala district to 70.78 m bgl in Sirsa district.

About 12 % of wells monitored have reported water level up to 2 m bgl. Another 19% of the wells monitored falls within the range of 2-5 m bgl. About 19 % 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 26% of the monitored wells. Deep water level i.e. 20-40 m bgl is observed in 20% of the monitored wells. Very deep water levels more than 40 m bgl are also observed in almost 4% of the monitored wells.



Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in about 54% of the wells and fall in about 45% of the wells and 1% wells show no change. 46% wells have shown a rise in 0-2 m range and about 31% of the wells have shown fall in 0-2m range. Maximum rise in water level has been recorded as 10.75 m and maximum fall in water level has been recorded as 13.07 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

The water level data of November 2013 when compared with Pre Monsoon 2013 indicates that there is rise in water level in about 70 % of the wells monitored. In most of the areas rise is in the range of 0-2 m. About 52 % 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 more than 4 m have been observed in about 15% wells & 4 % wells respectively. Decline in water level has been recorded in 30 % of the wells. Fall in range of 0-2m has been recorded in 21 % wells.

Fluctuation - November 2013 to November Decadal mean (2003-12)

The fluctuation of water level during November 2013 when compared with the average water level of past decade (Decadal mean November 2003-2012) indicates in general there is decline as well as rise in water level in the entire state. About 50% of monitored wells have shown rise in water level. The rise of 0-2 m has been observed in about 43 % of the wells analysed. About 5% of wells reported rise in water level between 2-4 m and remaining 2 % wells shows rise of more than 4m. About 49% of wells analysed have shown fall in water level. Fall in the range of 0-2 m has been recorded in 29% of monitored wells. Less than 1% wells show no change in water levels.

4.09 Himachal Pradesh

Depth to Water Level - November - 2013

The depth to water level in the state of Himachal Pradesh during November 2013 varies from 0.50 m bgl in Kangra district to 28.21 m bgl in Solan district. About 60 % of the wells show water level of less than 5 m bgl. Out of these almost 20 % of the wells are showing water level in the range of 0-2 m bgl, another 40 % of the wells show water level in the range of 2-5 m bgl, About 22% 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 observed at 4 % wells.

Water Level Fluctuation - November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in about 58% of the wells, fall in about 41% of the wells and 1% wells show no change in water levels. 51% wells have shown a rise in 0-2 m range, about 5% of the wells have shown rise in the range of 2-4 m. Out of 41 % wells showing fall, 37% of the wells have shown fall in 0-2m range. Maximum rise in water level has been recorded as 12.12 m and maximum fall in water level has been recorded as 4.71 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water level data of November 2013 compared to Pre Monsoon 2013 shows that there is rise in water level in entire state. About 94% of the wells analysed shows rise in the water level covering the whole state. Out of this 52 % wells have shown a rise in 0-2 m range, about 29 % of the wells have shown rise in 2- 4 m range and about 13 % wells has shown rise in water level of more than 4 m. About 6 % of the total wells have shown a fall in water level and all the wells shows fall in the range of 0-2 m.

Fluctuation - November 2013 to November Decadal mean (2003-12)

The water level data of November 2013 has been compared with decadal mean (November 2003 to 2012) to assess the rise/fall in water level of this year with respect to long term average

of the corresponding period. About 66 % of monitoring wells show rise in water level and rest 34% wells show fall in water level. Out of 66 % wells in the rise category, about 52 % of the monitored wells show rise in the 0-2 m range and 9% wells showing rise in the 2- 4 m range and remaining 5 % wells are showing rise in water level more than 4 m. 34 % of the wells have shown decline in water level, out of which 33% falls in the range of 0-2 m.

4.10 Jammu & Kashmir

Depth to Water Level - November - 2013

It is observed that out of the total 234 wells monitored, about 34 % wells have less than 2 m bgl water level, mainly in outer plain areas. About 45% of the wells analysed have shown water level in the range of 2-5 m bgl. About 12% 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 from ground level in Kathua district to 31.54 m bgl in Jammu district. All the areas of valley in Udhampur and Rajouri districts shows water level between 0-2 and 2-5 m bgl.

Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in about 71% of the wells, fall in about 28% of the wells and 1% show no change. 61% wells have shown a rise in 0-2 m range, about 7% of the wells have shown rise in the range of 2-4 m. 26% of the wells have shown fall in 0-2m range. Maximum rise in water level has been recorded as 11.09 m and maximum fall in water level has been recorded as 2.67 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water levels of November 2013 when compared with water level of Pre Monsoon 2013 in the state indicates that 84% of the wells analysed have recorded a rise in water level, out of which 54% of analysed wells have recorded a rise in the range of 0 to 2 m, 16% of analysed wells have shown rise in the range of 2 to 4 m and about 14% of the wells have shown rise more than 4 m. 16% of the wells have shown fall in water levels mostly in 0-2 m range.

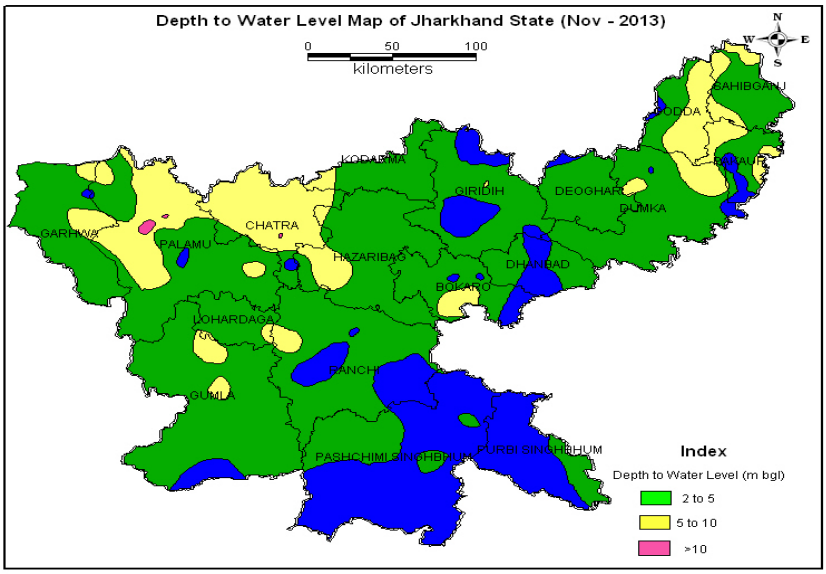
Fluctuation - November 2013 to November Decadal mean (2003-12)

The fluctuation analysis of water level of November 2013 with the decadal mean (November 2003-2012) indicates that about 77% of analysed wells have shown a rise in water level. Out of this 70% 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 and 2% in the range of more than 4 m bgl. About 22% wells have shown a decline in water level, out of which 21% wells have shown fall in the range of 0 to 2 m. 1% wells show no change.

4.11 Jharkhand

Depth to Water Level - November - 2013

Out of the total 172 wells analysed, about 28% of wells have shown depth to water level in the range of 0 to 2 m. Water level in about 55 % of the wells was found between 2 to 5 m bgl. About 15% of the wells analysed are showing water level in the range of 5-10 m bgl. Deeper water levels of 10 to 12.28 mbgl are observed in only 2% wells.



Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in about 78% of the wells and fall in about 22% of the wells. Out of 78 % wells showing rise, 52% wells have shown a rise in 0-2 m range, about 22% of the wells have shown rise in the range of 2-4m. 17% of the wells have shown fall in 0-2m range and 4% wells show fall in the range of 2-4m. Maximum rise in water level has been recorded as 10.43 m and maximum fall in water level has been recorded as 4.60 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

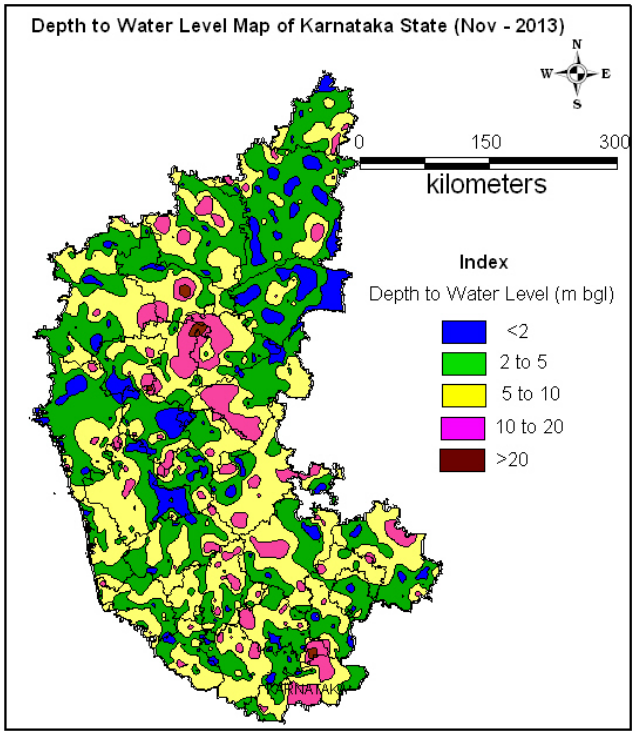
In the state of Jharkhand there is an overall rise in water level in November 2013 as compared to Pre Monsoon 2013. About 94 % of the wells analysed shows rise in the water level. Out of this only, 10% wells have shown a rise in 0-2 m range. About 28% of the wells have shown rise in 2-4 m range. A maximum of about 57% of the wells have shown rise in water level more than 4 m. Only 6% of the wells analysed show decline in the water level.

Fluctuation - November 2013 to November Decadal mean (2003-12)

The water level data of November 2013 has been compared with decadal mean (November 2003- 2012 to assess the rise/fall in water level during current year with respect to long term average of the corresponding period. About 77% 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, 17% wells have shown rise in the range of 2 to 4 m and 4% in the range of more than 4 m bgl. About 23% wells have shown a fall in water level, out of which 18% wells have shown fall in the range of 0 to 2 m and 5% wells have shown rise in the range of 2 to 4 m.

4.12 Karnataka

Depth to Water Level – November - 2013



The analysis of 1215 wells shows that 24% wells have less than 2 m bgl water level, 32% wells show 2 to 5 m bgl water level and 31% wells show 5 to 10 m bgl water level. Moderately deep water level of 10 to 20 m bgl is seen in 12% wells and more than 20 m bgl is observed in almost 1% of wells.

The depth to water level recorded in the state during November 2013 ranges from ground level to 34.58 m bgl.

Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in about 63% of the wells and fall in about 31% of the wells. About 6% of wells have shown no change in water level. 43% wells have shown a rise in 0-2 m range. 14% of the wells have shown a rise in 0-2m range. 26% wells have shown a fall in the range of 0 -2 m. Maximum rise in water level has been recorded as 16.87 m and maximum fall in water level has been recorded as 11.14 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water level of November 2013 when compared to that of Pre Monsoon 2013 have shown that about 85 % of the analysed wells have recorded a rise in water level and 8% wells have recorded a fall in water level. About 6% of wells have shown no change. The rise of water level in the range 0-2 m is observed in 29% of the analysed wells, rise in water level in the range of 2-4 m is recorded in 27 % wells and more than 4 m is recorded at another 30% of wells. The fall in water level in the range of 0-2 m is observed in 7% of analysed wells.

Fluctuation – November 2013 to November Decadal mean (2003-12)

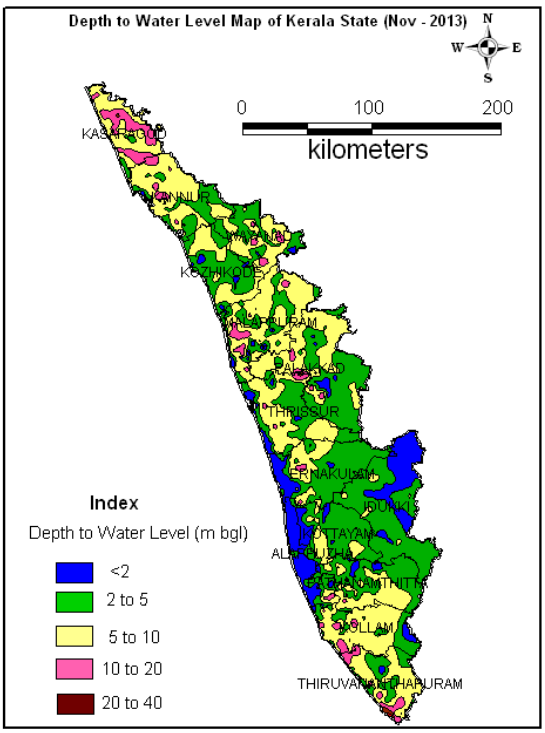
The fluctuation of water level during November 2013 when compared with the average water levels of past decade (Decadal mean November 2003-2012) indicates that about 54% of the wells analysed shows a rise in water level and the remaining 46% wells shows a fall. A rise of 0-2 m is recorded in 40% of analysed wells. A rise in the range of 2-4 m and more than 4 m is recorded in 10 % & 4 % of wells for each range respectively. In the fall category, a fall of 0-2 m is

prominent and is recorded in 31% of analysed wells. Fall of 2 to 4 m and more than 4 m is seen in 8% and 7% of the analysed wells respectively.

4.13 Kerala

Depth to Water Level - November - 2013

During November 2013, it is observed that in the state of Kerala, 23% of the wells have less than 2 m bgl water level, mainly in coastal areas. About 32% of the wells analysed have shown water level in the range of 2-5 m bgl and 35% wells have shown water level in the range of 5-10 m bgl, 9% wells have shown 10 to 20 m bgl water level and less than 1% wells have shown more than 20 m bgl water level.



The depth to water level recorded in the state of Kerala during November 2013 ranges from ground level to 56.58 m bgl.

Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in about 62% of the wells and fall in about 37% of the wells. 1% of the wells show no change. 53% wells have shown a rise in 0-2 m range, 6 % in the range of 2-4 m. 33% of the wells have shown fall in 0-2m range and 3% of the wells show fall in the range of 2-4m. Maximum rise in water level has been recorded as 10.58 m and maximum fall in water level has been recorded as 6.28 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water levels of November 2013 when compared to water level of Pre Monsoon 2013 in the state indicates that almost the entire state, about 93 % of the wells analysed, have recorded a rise in water level, out of which 51% of analysed wells have recorded a rise in the range of 0 to 2 m, 31% of analysed wells have shown rise in the range of 2 to 4 m and 11% of the wells have shown rise more than 4 m. About 7 % of the wells have shown fall in water level.

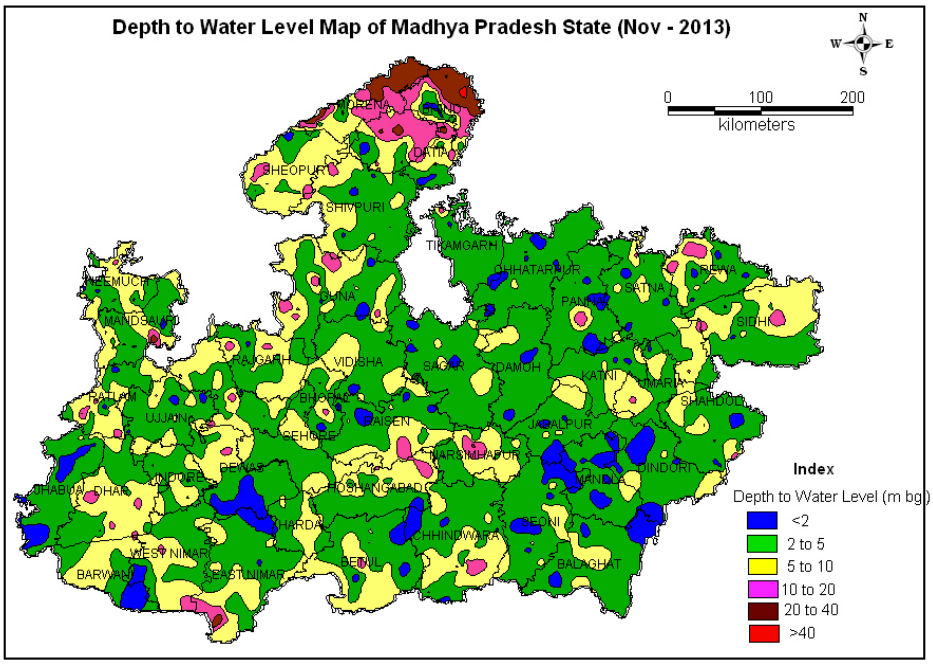
Fluctuation - November 2013 to November Decadal mean (2003-12)

The fluctuation of water level during November 2013 when compared with the decadal mean (November 2003 -2012) indicates that about 59% of analysed wells have shown a fall in water level, of which 55% of the wells fall in the range of 0 to 2 m. About 41% wells have shown a rise in water level out of which 37 % wells shows rise in the range of 0-2 m.

4.14 Madhya Pradesh

Depth to Water Level - November - 2013

The depth to water level during November 2013 in Madhya Pradesh varies from 0.10 to 47.00 m bgl. In general the depth to water level ranges up to 5 m bgl in most parts of Madhya Pradesh. About 16 % monitoring wells are showing water level in 0-2 m bgl range. About 48 % 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 27% wells and about 9% wells show water level ranging more than 10 m bgl located mostly in northern most parts of the state in the districts of Bhind and Datia.



Water Level Fluctuation - November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in about 70% of the wells and fall in about 27% of the wells. 3% wells show no change. 45% wells have shown a rise in 0-2 m range, 17% of the wells have shown rise in 2-4 m range and 9 % shows rise in more than 4 m range. About 20% wells show fall in the range of 0-2 m. Maximum rise in water level has been recorded as 17.50 m and maximum fall in water level has been recorded as 11.60 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water levels of November 2013 when compared to water level of Pre Monsoon 2013 in the state, indicates that the entire state shows rise in water level. About 95% of the wells analysed have recorded a rise in water level, out of which 13% of analysed wells have recorded a rise in the range of 0 to 2 m, 24% of analysed wells have shown rise in the range of 2 to 4 m and 58% of the wells have shown rise of more than 4 m. Only 4% wells shows fall in water level.

Fluctuation - November 2013 to November Decadal mean (2003-12)

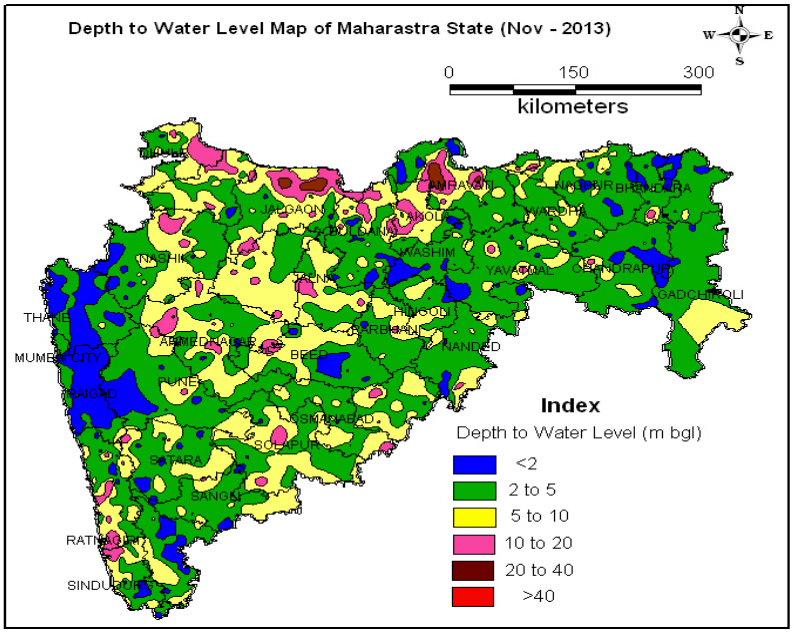
The fluctuation of water level during November 2013 when compared with the Decadal mean (November 2003 -2012) indicates that about 80% of analysed wells have shown a rise in water level, of which 41% of the wells fall in the range of 0 to 2 m. About 24% wells have shown a rise

in water level in the range of 2-4 m and 15% wells have shown a rise in water level in the range of more than 4 m. About 19% wells have shown a decline in water level, out of which 15 % falls in the range of 0-2 m. 1% wells show no change in water level.

4.15 Maharashtra

Depth to Water Level - November - 2013

During November 2013, in the state of Maharashtra, water level less than 2 m bgl are observed in about 22% wells. Depth to water level of 2 to 5 m bgl is observed in 46% of the wells. About 24% of the wells analysed shows water level in the range of 5-10 m bgl. About 7% of the wells analysed shows water level in the range of 10-20 m bgl and only 1% of the wells analysed show water level in the range of 20-40 m bgl. Only one well show water level of more than 40 m bgl range.



The depth to water level during November 2013 in the state varies from 0.05 m bgl to 58.00 m bgl in Jalgaon district.

Water Level Fluctuation-November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in about 68% of the wells and fall in about 30% of the wells. 45% wells have shown a rise in 0-2 m range, about 13% of the wells have shown rise in the range of 2-4 m and 10% wells show rise of more than 4 m. 23% of the wells have shown fall in 0-2 m range. Maximum rise in water level has been recorded as 20.75 m and maximum fall in water level has been recorded as 19.70 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water level of November 2013 when compared to water level of Pre Monsoon 2013 in the state indicates that about 94% of the wells analysed have recorded a rise in water level, out of which 20% of analysed wells have recorded a rise in the range of 0 to 2 m, 29% of analysed wells have shown rise in the range of 2 to 4 m and 45% of the wells have shown rise of more than 4 m. Rest 6% of the wells have shown fall in water level.

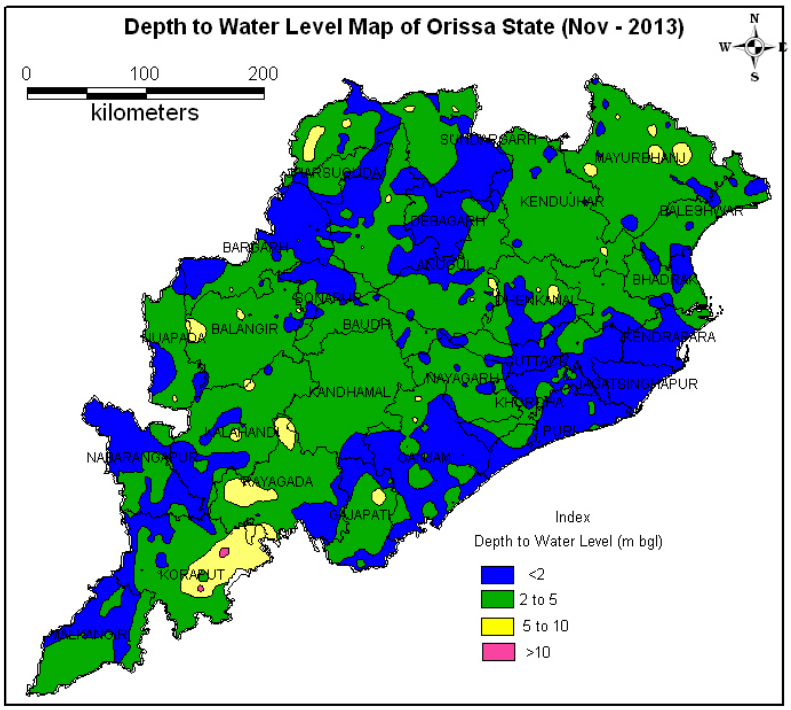
Fluctuation - November 2013 to November Decadal mean (2003-12)

The fluctuations of water level during November 2013 when compared with the Decadal mean (November 2003-2012) indicates that about 69% of analysed wells have shown a rise in water level, 52% of the wells show rise in the range of 0 to 2 m. About 31% wells have shown a decline in water level, 25% of which fall in the range of 0-2 m.

4.16 Odisha

Depth to Water Level - November - 2013

During November 2013, it is observed that in 48% of the wells, water level ranges in 0-2 m bgl. About 46% of the wells analysed have shown water level in the range of 2-5 m bgl. A few wells fall in the range of 5-10 m bgl as observed at 5% of the wells analysed. Less than 1% wells analysed have water level in the range of 10-20 m bgl.



The depth to water level recorded in the state of Odisha during November 2013 ranges upto 12.10 m bgl.

Water Level Fluctuation- November 2013 to November 2012

Water level data of November 2013 was compared with that of November 2012. The analysis shows that there is rise in water level in about 66% of the wells and fall in about 33% of the wells. Out of 66 % wells showing rise, 54% wells have shown a rise in 0-2 m range and 11 % shows rise in the range of 2-4 m. 31% of the wells have shown fall in 0-2m range out of 33 %. Maximum rise in water level has been recorded as 6.18 m and maximum fall in water level has been recorded as 5.08 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

In Odisha water level of November 2013 when compared to water level of Pre Monsoon 2013 in the state indicates that the entire state shows a rise in water level. About 97% of the wells analysed have recorded a rise in water level, out of which 27% of analysed wells have recorded a rise in the range of 0 to 2 m, 42% of analysed wells have shown rise in the range of 2 to 4 m and 28% of the wells have shown rise of more than 4 m. Rest 3 % wells shows fall in water level.

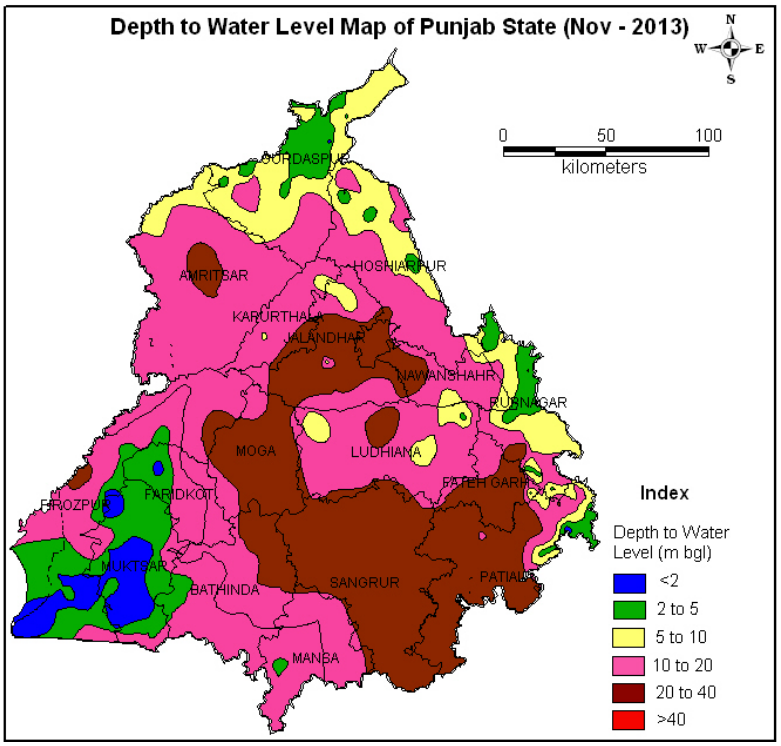
Fluctuation - November 2013 to November Decadal mean (2003-12)

The fluctuation of water level during November 2013 when compared with the Decadal mean (November 2003-2012) indicates that about 69% of analysed wells have shown a rise in water level out of which 61% of the wells show rise in the range of 0 to 2 m, 7% in the range of 2-4 m and less than 1% in the range of more than 4 m. About 31% wells have shown a fall in water level, falling mostly in the range of 0-2 m (29% of the wells).

4.17 Punjab

Depth to Water Level - November - 2013

During November 2013, in Punjab, it is observed that in 7% of the wells, water level ranges in 0-2 m depth range. About 17% of the wells analysed have shown water level in the range of 2-5 m bgl and a major percentage of wells i.e. 31% fall in the range of 10-20 mbgl. 21% of the wells show water levels in the range of of 5-10 m bgl. 24 % wells have shown water level in the range of 20-40 m bgl. The depth to water level recorded in the state during November 2013 ranges from 0.19 m bgl to 37.25 m bgl.



Water Level Fluctuation- November 2013 to November 2012

Water level data of November 2013 was compared with that of November 2012.The analysis shows that there is rise in water level in about 55% of the wells and fall in about 43% of the wells. Out of 55% wells showing rise, about 47% wells have shown a rise in 0-2 m range and 7 % in 2-4 m range. About 38% of the wells show fall in 0-2m range. Maximum rise in water level has been recorded as 12.27 m and maximum fall in water level has been recorded as 9.27 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

The water level of November 2013 when compared with Pre Monsoon 2013 indicates that there is rise as well as decline in water level in entire state. About 61% of the wells analysed shows a rise in water level. The water level rise between 0-2 m has been observed in 51 % of the wells analysed and 7% of wells showing rise in the range of 2-4 m. More than 2 % of the wells shows

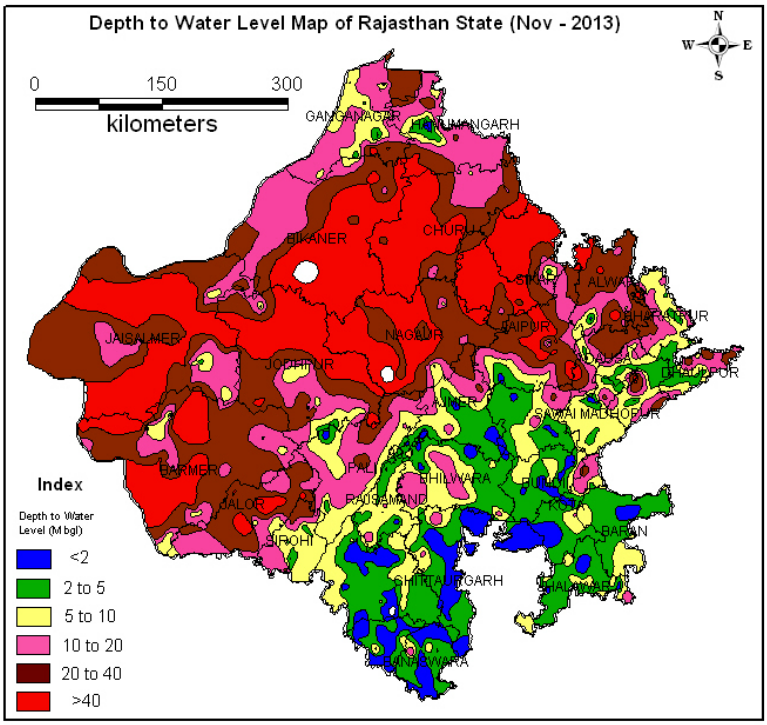
rise of more than 4 m. Decline in water levels is observed in 39% of the wells analysed. The fall of 0-2 m has been observed in 30% of the wells monitored.

Fluctuation - November 2013 to November Decadal mean (2003-12)

The fluctuation of water level during November 2013 when compared with the average water level of past decade (Decadal mean November 2003-2012) indicates decline as well as rise of water level in all the districts of Punjab State. About 57% of wells have shown decline, of which 37% wells show water level decline in the range of 0-2 m, 10% of wells reported decline between 2-4 m. Decline of more than 4 m has been observed in 10% of the wells analysed. Rise in water level is observed in 43% of the wells. Out of this, 40% of the wells analysed is showing rise in the range of 0-2 m and 3% of the wells showing rise of more than 2 m.

4.18 Rajasthan

Depth to Water Level - November - 2013



During November 2013, it is observed that 12% wells have shown water level in the range of 0-2 m bgl, 18% of the wells have shown water level in the range of 2-5 m bgl. About 17% of the wells analysed have shown water level in the range of 5-10 m bgl, 18% 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 16% of the wells analysed and water level more than 40 m bgl is shown by 20% of the wells analysed. Thus more than 50% of the wells show depth to water level in the range of 10 to more than 40 m bgl.

The depth to water level recorded in the state of Rajasthan during November 2013 ranges from ground level in Ajmer district to 145.09 m bgl in Bikaner district.

Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared with that of November 2012. The analysis shows that there is rise in water level in about 54% of the wells and fall in about 42% of the wells. About 4% wells show no change in water level. 35% wells have shown a rise in 0-2 m range whereas 28% of the wells have shown fall in 0-2 m range. Maximum rise in water level has

been recorded as 16.20 m and maximum fall in water level has been recorded as 38.96 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water level of November 2013 when compared to water level of Pre Monsoon 2013 in the state indicates that about 73% of the wells analysed have recorded a rise in water level, out of which 29% 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 25% of the wells have shown rise more than 4 m. Only 19% of the wells have shown fall in water level, out of this, 13% have recorded fall in the range of 0 to 2m. 8% wells show no change in water level.

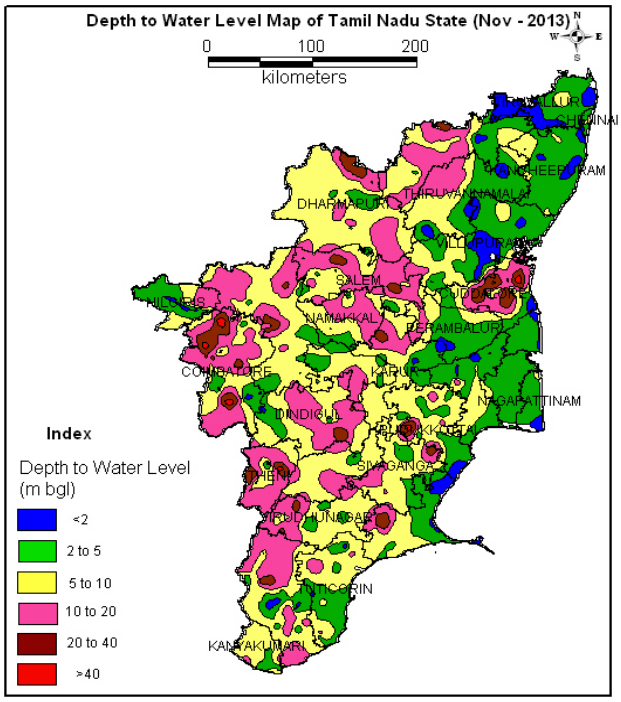
Fluctuation - November 2013 to November Decadal mean (2003-12)

The fluctuation of water level during November 2013 when compared with the Decadal mean (November 2003 -2012) indicates that there is rise in water level in about 61% of analysed wells. Out of this 27% of the wells have shown rise in the range of 0-2 m, 17% of analysed wells have shown rise in the range of 2 - 4 m and 17% of the wells have shown rise of more than 4 m. About 38% of the wells have shown a fall in water level. Out of this 17% of the wells have shown fall in the range of 0-2 m while 7% of the wells have shown fall in the range of 2-4 m and 14% of wells analysed have shown fall of more than 4 m. 1% of wells show no change in water level.

4.19 Tamil Nadu

Depth to Water Level - November - 2013

The depth to water level during November 2013 varies from 0.01 m bgl to 72.00 m bgl. It is observed that 13 % wells have shown water level in the range of 0-2 m bgl, 26 % of the wells have shown water level in the range of 2-5 m bgl. About 33% of the wells analysed have shown water level in the range of 5-10 m bgl, 21% 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 6% of the wells analysed and water level more than 40 m bgl is shown by 1% of the wells analysed.



Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared with that of November 2012. The analysis shows that there is rise in water level in about 30% of the wells and fall in about 69% of the wells. 1% wells show no change in water level. Out of the wells showing rise, 22% wells have

shown a rise in 0-2 m range, 4 % shows rise in 2-4 m range and another 4% shows more than 4 m range. 34% of the wells have shown fall in 0-2m range, 17 % shows fall in 2-4 m range and 18% shows decline more than 4 m range. Maximum rise in water level has been recorded as 17.90 m and maximum fall in water level has been recorded as 49.41 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

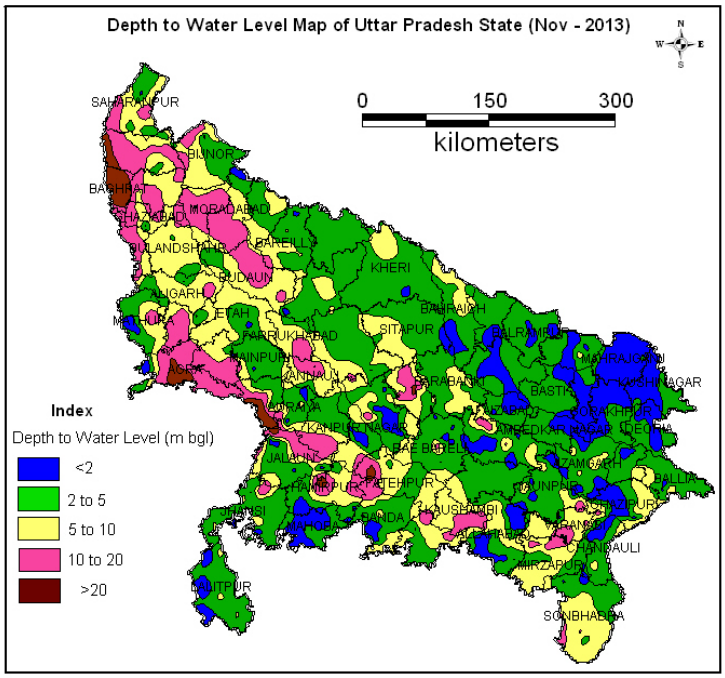
Water level of November 2013 when compared to water level of Pre Monsoon 2013 in the state indicated that there is a rise in water level in the entire state. About 71% of the wells analysed have recorded a rise in water level, out of which 32% of analysed wells have recorded a rise in the range of 0 to 2 m, 19% of analysed wells have shown rise in the range of 2 to 4 m and 20% of the wells have shown rise of more than 4 m. About 24% of the wells have shown fall in water level, out of this 19% of wells have recorded fall in the range of 0 to 2 m and 5% have shown fall in the range of more than 2 m. 5% wells show no change in water level.Fluctuation - November 2013 to November Decadal mean (2003-12)

The fluctuation of water level during November 2013 when compared with the Decadal mean (November 2003 -2012) indicates that there is in general fall in water level in the entire state. About 73% of analysed wells have shown decline in water level. Out of this 38% of the wells have shown decline in the range of 0-2 m, 18% of analysed wells have shown fall in the range of 2 - 4 m and 17% of the wells have shown fall of more than 4 m. About 27% of the wells have shown a rise in water level. Out of which 20% of the wells have shown rise in the range of 0-2 m.

4.20 Uttar Pradesh

Depth to Water Level - November - 2013

In Uttar Pradesh shallow water level ranging between 0-2 m bgl was observed at 21 % of the wells monitored mostly located in eastern UP. Shallow water level ranging between 2-5 m bgl was observed at 39% of wells. The depth to water level between 5-10 meters has been observed in 24 % wells. Depth to water level ranging between 10-20 meters has been observed 14% wells. Water levels of more than 20 m bgl have been observed in only 2% wells. The depth to water level in the state ranges upto 35.60 m bgl in Etawah district.



Water Level Fluctuation-November 2013 to November 2012

Water level data of November 2013 was compared with that of November 2012. The analysis shows that there is a rise in water level in about 65% of the wells and fall in about 34% of the wells. 1% wells show no change in water level. 54% wells have shown a rise in 0-2 m range, about 8% of the wells have shown rise in the range of 2-4 m and 3% shows rise more than 4 m. 31% of the wells have shown fall in 0-2m range. Maximum rise in water level has been recorded as 8.02 m and maximum fall in water level has been recorded as 17.08 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

Water levels of November 2013 when compared to water levels of Pre Monsoon 2013 in the state indicated that the entire state shows a rise in water level. About 95% of the wells analysed have recorded a rise in water level, out of which 52% of analysed wells have recorded a rise in the range of 0 to 2 m, 31% of analysed wells have shown rise in the range of 2 to 4 m and 13% wells have shown rise of more than 4 m. Only 4% of the wells have shown fall in water level.

Fluctuation - November 2013 to November Decadal mean (2003-12)

The fluctuation of water level during November 2013, when compared with the Decadal mean (November 2003-2012), indicates that there is in general rise as well as fall in water level in the state. About 57% of analysed wells have shown rise in water level. Out of this 46% of the wells have shown rise in the range of 0-2 m, 9% of analysed wells have shown rise in the range of 2 - 4 m and 2% of the wells have shown rise more than 4 m. About 43% of the wells have shown a fall in water level. Out of this 38% of the wells have shown fall in the range of 0-2 m while 5% of the wells have shown fall in the range of more than 2 m.

4.21 Uttarakhand

Depth to Water Level - November - 2013

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 bgl is observed in 24% of the wells analysed, 40 % of the wells shows water level in the range of 2-5 m gbl, 16% in the range of 5-10 m bgl, 18% in the range of 10-20 m bgl and 3 % in the range more than 20 mbgl. In general depth to water in November 2013 varies from 0.47 m bgl in Udhamsingh Nagar to 28.16 m bgl in Nainital district.

Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in 61% of the wells and fall in 36% of the wells. 3% wells show no change in water level. 47% wells have shown a rise in 0-2 m range, 8% of the wells show rise in

2-4 m range and 6% wells shows more than 4 m rise. All the 36 % wells shows fall in water level and all the wells fall in the range of 0-2 m. Maximum rise in water level has been recorded as 4.37 m and maximum fall in water level has been recorded as 1.60 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

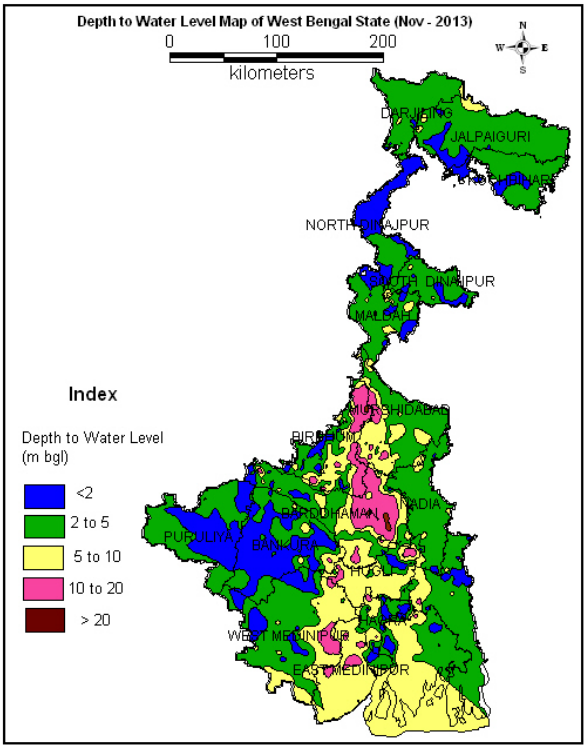
The comparison of November 2013 water level with Pre Monsoon 2013 reveals that there is rise in water level in the entire state. 100% of the well analysed have shown rise in water level. The rise in water level for 0-2 m has been observed for 54 % of wells whereas the rise in water level for 2-4 m is observed in 17% wells and rise in water levels of more than 4 m is observed in 29 % wells.

Fluctuation - November 2013 to November Decadal mean (2003-12)

The comparison of November 2013 water level with decadal mean of (November 2003 -2012) reveals that about 53% of the analysed wells have shown rise in water level. Out of this the rise in water level in the range of 0-2 m has been observed at 40% of wells whereas the rise in water level in 2-4 m range is observed at 11% wells and rise in water level more than 4 m is observed at 2% wells. About 47% of the analysed wells have shown decline in water level and all the wells fall in the range of 0-2 m.

4.22 West Bengal

Depth to Water Level - November– 2013



During November, 2013, depth to water level varies in the range of 0-2 m bgl at 28 % of wells analysed, 2-5 m bgl at 41 % of wells analysed, 5-10 m bgl at 22% of wells analysed and 10-20 m bgl at 9 % of wells analysed. Only 1 % wells are showing water level of more than 20 m bgl. In general water level varies in the range of 0 to 10 mbgl.

Water Level Fluctuation – November 2013 to November 2012

Water level data of November 2013 was compared to November 2012 and the analysis shows that there is rise in water level in about 80% of the wells and fall in about 20% of the wells. 56% wells have shown a rise in 0-2 m range, about 16% of the wells have shown rise in the range of 2-4 m, and 8% wells falls in the range of more than 4m. 16% of the wells have shown fall in 0-2 m range. Maximum rise in

water level has been recorded as 14.13 m and maximum fall in water level has been recorded as 11.70 m in the State.

Water Level Fluctuation (November 2013 to Premonsoon 2013)

When compared the water level of November 2013, with Pre Monsoon 2013, the entire state shows rise in water level. About 97% of the observation wells are showing rise in water level. Rise of water level in the range of 0-2m is observed in 23 % of the observation wells, rise of water level in the range of 2-4m is observed in 37% wells and rise in the range of more than 4 m is observed in about 37% of the wells monitored. Fall of water level is recorded in about only 3 % of the monitored wells in the state, all of which lies in the range of 0-2 m.

Fluctuation - November 2013 to November Decadal mean (2003-12)

When compared the decadal mean water level (November 2003 to 2012) with water level of November 2013, there is both rise and fall of water level in the state. About 66% of observation wells are showing a rise in water level. Out of this, 53 % of the wells are showing a rise up to 2 m, 10% of the monitored wells show rise between 2 to 4 meters and 3% of the monitored wells are showing a rise in water level of more than 4 m. Fall of water level as compared to the decadal mean is observed in 34% of the monitored wells. Out of this, 26 % of the wells are showing a fall up to 2 m, 5% of the monitored wells show fall between 2 to 4 meters and 3% of the monitored wells are showing a fall in water level of more than 4 m.

Annexure-I

State-wise Depth to water Level and Distribution of Percentage of Wells for the Period of November-2013

S. No.	Name of State	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (metre below ground level) 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**	1142	0.00	36.21	568	49.74	335	29.33	185	16.20	47	4.12	7	0.61	0	0.00
2	**Arunachal Pradesh**	7	1.04	7.40	1	14.29	4	57.14	2	28.57	0	0.00	0	0.00	0	0.00
3	**Assam**	188	0.01	15.90	75	39.89	94	50.00	17	9.04	2	1.06	0	0.00	0	0.00
4	**Bihar**	372	0.00	12.59	87	23.39	235	63.17	48	12.90	2	0.54	0	0.00	0	0.00
5	**Chandigarh**	16	2.55	38.51	0	0.00	4	25.00	2	12.50	6	37.50	4	25.00	0	0.00
6	**Chhattisgarh**	775	0.19	41.00	120	15.48	419	54.06	180	23.23	49	6.32	6	0.77	1	0.13
7	**Dadra & Nagar Haveli**	6	1.55	6.66	2	33.33	3	50.00	1	16.67	0	0.00	0	0.00	0	0.00
8	**Delhi**	119	0.92	65.81	13	10.92	23	19.33	32	26.89	28	23.53	10	8.40	13	10.92
9	**Goa**	71	0.27	15.24	16	22.54	29	40.85	21	29.58	5	7.04	0	0.00	0	0.00
10	**Gujarat**	772	0.00	58.90	160	20.73	277	35.88	210	27.20	86	11.14	36	4.66	3	0.39
11	**Haryana**	405	0.20	70.78	48	11.85	76	18.77	78	19.26	106	26.17	83	20.49	14	3.46
12	**Himachal Pradesh**	98	0.50	28.21	20	20.41	39	39.80	22	22.45	13	13.27	4	4.08	0	0.00
13	**Jammu & Kashmir**	234	0.00	31.54	80	34.19	104	44.44	29	12.39	14	5.98	7	2.99	0	0.00
14	**Jharkhand**	172	0.39	12.28	48	27.91	95	55.23	26	15.12	3	1.74	0	0.00	0	0.00
15	**Karnataka**	1215	0.00	34.58	294	24.20	396	32.59	379	31.19	141	11.60	5	0.41	0	0.00

S. No.	Name of State	No. of wells Analysed	Depth to Water Level (mbgl)		Number & Percentage of Wells Showing Depth to Water Level (metre below ground level) in the Range of											
					0-2		2-5		5-10		10-20		20-40		> 40	
			Min	Max	No	%	No	%	No	%	No	%	No	%	No	%
16	**Kerala**	1061	0.00	56.58	245	23.09	333	31.39	373	35.16	96	9.05	6	0.57	1	0.09
17	**Madhya Pradesh**	1203	0.10	47.00	193	16.04	575	47.80	329	27.35	80	6.65	24	2.00	2	0.17
18	**Maharashtra**	1372	0.05	58.00	308	22.45	631	45.99	327	23.83	90	6.56	15	1.09	1	0.07
19	**Meghalaya**	7	0.28	3.49	5	71.43	2	28.57	0	0.00	0	0.00	0	0.00	0	0.00
20	**Odisha**	1213	0.14	12.10	585	48.23	562	46.33	64	5.28	2	0.16	0	0.00	0	0.00
21	**Pondicherry**	4	1.37	2.60	1	25.00	3	75.00	0	0.00	0	0.00	0	0.00	0	0.00
22	**Punjab**	255	0.19	37.25	18	7.06	44	17.25	53	20.78	80	31.37	60	23.53	0	0.00
23	**Rajasthan**	907	0.00	145.09	105	11.58	161	17.75	153	16.87	166	18.30	142	15.66	180	19.85
24	**Tamil Nadu**	550	0.01	72.00	71	12.91	144	26.18	179	32.55	113	20.55	33	6.00	10	1.82
25	**Tripura**	29	0.88	5.42	8	27.59	18	62.07	3	10.34	0	0.00	0	0.00	0	0.00
26	**Uttar Pradesh**	866	0.13	35.60	181	20.90	337	38.91	205	23.67	123	14.20	20	2.31	0	0.00
27	**Uttarakhand**	38	0.47	28.16	9	23.68	15	39.47	6	15.79	7	18.42	1	2.63	0	0.00
28	**West Bengal**	1030	0.00	22.60	284	27.57	426	41.36	225	21.84	89	8.64	6	0.58	0	0.00
	Total	**14127**	**0.00**	**145.09**	**3545**	**25.09**	**5384**	**38.11**	**3149**	**22.29**	**1348**	**9.54**	**469**	**3.32**	**225**	**1.59**

Annexure-II

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from Nov 2013 to Nov 2012

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total				Wells showing no change	
			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	%	No	%
1	Andhra Pradesh	719	0.01	15.64	0.02	9.31	270	37.55	85	11.82	83	11.54	238	33.10	27	3.76	9	1.25	438	61	274	38	7	1
2	Arunachal Pradesh	5	0.13	0.78	0.20	0.61	3	60.00	0	0.00	0	0.00	2	40.00	0	0.00	0	0.00	3	60	2	40	0	0
3	Assam	158	0.01	3.63	0.02	7.35	48	30.38	2	1.27	0	0.00	88	55.70	5	3.16	2	1.27	50	32	95	60	13	8
4	Bihar	233	0.01	3.89	0.06	6.04	127	54.51	21	9.01	0	0.00	76	32.62	4	1.72	3	1.29	148	64	83	36	2	1
5	Chandigarh	15	0.08	3.43	0.27	4.49	6	40.00	1	6.67	0	0.00	6	40.00	1	6.67	1	6.67	7	47	8	53	0	0
6	Chhattisgarh	505	0.01	11.86	0.01	9.58	128	25.35	17	3.37	11	2.18	287	56.83	40	7.92	21	4.16	156	31	348	69	1	0
7	Dadra & Nagar Haveli	6	0.20	1.30	1.68	1.68	4	66.67	0	0.00	0	0.00	1	16.67	1	16.67	0	0.00	4	67	2	33	0	0
8	Delhi	118	0.01	3.54	0.01	6.48	75	63.56	8	6.78	0	0.00	33	27.97	1	0.85	1	0.85	83	70	35	30	0	0
9	Goa	39	0.02	3.45	0.02	1.74	20	51.28	1	2.56	0	0.00	18	46.15	0	0.00	0	0.00	21	54	18	46	0	0
10	Gujarat	673	0.01	39.42	0.01	34.44	265	39.38	110	16.34	153	22.73	109	16.20	21	3.12	11	1.63	528	78	141	21	4	1
11	Haryana	328	0.01	10.75	0.04	13.07	150	45.73	17	5.18	9	2.74	102	31.10	30	9.15	17	5.18	176	54	149	45	3	1
12	Himachal Pradesh	79	0.04	12.12	0.02	4.71	40	50.63	4	5.06	2	2.53	29	36.71	2	2.53	1	1.27	46	58	32	41	1	1
13	Jammu & Kashmir	189	0.02	11.09	0.02	2.67	115	60.85	14	7.41	5	2.65	49	25.93	3	1.59	0	0.00	134	71	52	28	3	2
14	Jharkhand	102	0.04	10.43	0.04	4.60	53	51.96	22	21.57	5	4.90	17	16.67	4	3.92	1	0.98	80	78	22	22	0	0
15	Karnataka	822	0.01	16.87	0.01	11.14	355	43.19	113	13.75	50	6.08	212	25.79	29	3.53	16	1.95	518	63	257	31	47	6
16	Kerala	676	0.01	10.58	0.01	6.28	358	52.96	39	5.77	22	3.25	223	32.99	22	3.25	4	0.59	419	62	249	37	8	1
17	Madhya Pradesh	952	0.01	17.50	0.01	11.60	428	44.96	154	16.18	85	8.93	187	19.64	38	3.99	28	2.94	667	70	253	27	32	3
18	Maharashtra	1012	0.01	20.75	0.03	19.70	455	44.96	129	12.75	102	10.08	237	23.42	45	4.45	21	2.08	686	68	303	30	23	2

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total				Wells showing no change	
			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	%	No	%
19	Meghalaya	6	0.01	2.63	0.13	0.63	3	50.00	1	16.67	0	0.00	2	33.33	0	0.00	0	0.00	4	67	2	33	0	0
20	Odisha	757	0.01	6.18	0.01	5.08	407	53.76	80	10.57	12	1.59	234	30.91	14	1.85	2	0.26	499	66	250	33	8	1
21	Pondicherry	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22	Punjab	211	0.02	12.27	0.01	9.27	100	47.39	14	6.64	3	1.42	80	37.91	9	4.27	2	0.95	117	55	91	43	3	1
23	Rajasthan	762	0.01	16.20	0.01	38.96	268	35.17	75	9.84	68	8.92	213	27.95	51	6.69	53	6.96	411	54	317	42	34	4
24	Tamil Nadu	405	0.04	17.90	0.01	49.41	90	22.22	16	3.95	16	3.95	138	34.07	69	17.04	73	18.02	122	30	280	69	3	1
25	Tripura	24	0.01	1.40	0.01	3.04	8	33.33	0	0.00	0	0.00	14	58.33	1	4.17	0	0.00	8	33	15	63	1	4
26	Uttar Pradesh	799	0.01	8.02	0.01	17.08	428	53.57	68	8.51	23	2.88	244	30.54	17	2.13	9	1.13	519	65	270	34	10	1
27	Uttarakhand	36	0.04	4.37	0.03	1.60	17	47.22	3	8.33	2	5.56	13	36.11	0	0.00	0	0.00	22	61	13	36	1	3
28	West Bengal	765	0.01	14.13	0.01	11.70	432	56.47	120	15.69	62	8.10	125	16.34	15	1.96	11	1.44	614	80	151	20	0	0
TOTAL		**10396**	**0.01**	**39.42**	**0.01**	**49.41**	**4653**	**45**	**1114**	**10.72**	**713**	**6.86**	**2977**	**28.64**	**449**	**4.32**	**286**	**2.75**	**6480**	**62**	**3712**	**36**	**204**	**2**

Annexure-III

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from Nov 2013 to Premonsoon 2013

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total				Wells showing no change	
			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	%	No	%
1	Andhra Pradesh	994	0.02	31.51	0.13	6.52	260	26.0	289	29.0	403	41.0	29	3.0	6	1.0	1	0.0	952	96.0	36	4.0	6	1
2	Arunachal Pradesh	5	0.19	2.35			4	80.0	1	20.0	0	0.0	0	0.0	0	0.0	0	0.0	5	10.0	0	0.0	0	0
3	Assam	155	0.02	7.31	0.07	8.86	101	65.0	20	13.0	9	6.0	18	12.0	3	2.0	4	3.0	130	84.0	25	16.0	0	0
4	Bihar	332	0.08	9.93	0.04	3.42	123	37.00	137	41.0	50	15.0	19	6.0	3	1.0	0	0.0	310	93.0	22	7.0	0	0
5	Chandigarh	16	0.46	4.30	0.05	1.83	8	50.00	0	0.00	1	6.0	7	44.0	0	0.0	0	0.0	9	56.0	7	44.0	0	0
6	Chhattisgarh	732	0.01	27.55	0.01	4.70	182	25.0	236	32.0	282	39.0	24	3.0	4	1.0	1	0.0	70	96.0	29	4.0	3	0
7	Dadra & Nagar Haveli	5	0.10	3.99	0.54	0.54	2	40.0	2	40.0	0	0.0	1	20.0	0	0.0	0	0.0	4	80.0	1	20.0	0	0
8	Delhi	118	0.02	8.11	0.03	5.04	80	68.0	22	19.0	4	3.0	11	9.0	0	0.0	1	1.0	106	90.0	12	10.0	0	0
9	Goa	38	0.08	10.68	0.05	4.24	15	39.0	12	32.0	4	11.0	6	16.0	0	0.0	1	3.0	31	82.0	7	18.0	0	0
10	Gujarat	673	0.01	39.42	0.01	34.44	265	39.0	110	16.0	153	23.0	109	16.0	21	3.0	11	2.0	528	78.0	141	21.0	4	1
11	Haryana	355	0.01	11.96	0.02	8.34	183	52.0	52	15.0	13	4.0	76	21.0	23	6.0	8	2.0	248	70.0	107	30.0	0	0
12	Himachal Pradesh	87	0.08	10.12	0.12	0.65	45	52.0	25	29.0	12	14.0	5	6.0	0	0.0	0	0.0	82	94.0	5	6.0	0	0
13	Jammu & Kashmir	225	0.08	13.75	0.01	7.79	122	54.0	37	16.0	29	13.0	25	11.0	9	4.0	2	1.0	188	84.0	36	16.0	1	0
14	Jharkhand	143	0.02	15.31	0.14	5.14	14	10.0	40	28.0	81	57.0	4	3.0	2	1.0	2	1.0	135	94.0	8	6.0	0	0
15	Karnataka	973	0.03	22.02	0.01	12.63	280	29.0	259	27.0	291	30.0	68	7.0	7	1.0	5	1.0	830	85.0	80	8.0	63	6
16	Kerala	915	0.03	40.82	0.02	9.08	470	51.0	283	31.0	99	11.0	48	5.0	8	1.0	5	1.0	852	93.0	61	7.0	2	0
17	Madhya Pradesh	1045	0.10	40.66	0.04	4.85	135	13.0	250	24.0	609	58.0	28	3.0	7	1.0	3	0.0	994	95.0	38	4.0	13	1

18	**Maharashtra**	935	0.10	44.80	0.10	10.60	188	20.0	269	29.0	418	45.0	45	5.0	9	1.0	3	0.0	875	94.0	57	6.0	3	0
19	**Meghalaya**	3	0.20	2.29	-	-	2	67.0	1	33.0	0	0.0	0	0.0	0	0.0	0	0.0	3	10.0	0	0.0	0	0
20	**Odisha**	1103	0.02	14.32	0.01	3.32	299	27.0	463	42.0	305	28.0	34	3.0	1	0.0	0	0.0	1067	97.0	35	3.0	1	0
21	**Pondicherry**	4	0.05	1.20	0.19	0.19	3	75.0	0	0.0	0	0.0	1	25.0	0	0.0	0	0.0	3	75.0	1	25.0	0	0
22	**Punjab**	244	0.01	7.41	0.01	9.83	125	51.0	18	7.0	6	2.0	74	30.0	15	6.0	5	2.0	149	61.0	94	39.0	1	0
23	**Rajasthan**	793	0.02	19.45	0.01	22.41	227	29.0	149	19.0	201	25.0	103	13.0	22	3.0	29	4.0	577	73.0	154	19.0	62	8
24	**Tamil Nadu**	330	0.01	16.57	0.05	24.90	104	32.0	64	19.0	67	20.0	64	19.0	10	3.0	6	2.0	235	71.0	80	24.0	15	5
25	**Tripura**	25	0.02	3.09	0.27	1.02	19	76.0	4	16.0	0	0.0	2	8.0	0	0.0	0	0.0	23	92.0	2	8.0	0	0
26	**Uttar Pradesh**	757	0.04	9.84	0.05	15.30	392	52.0	232	31.0	98	13.0	24	3.0	3	0.0	4	1.0	722	95.0	31	4.0	4	1
27	**Uttarakhand**	35	0.45	9.72	0.0	0.0	19	54.0	6	17.0	10	29.0	0	0.0	0	0.0	0	0.0	35	10.0	0	0.0	0	0
28	**West Bengal**	917	0.01	21.09	0.01	10.31	209	23.0	336	37.0	340	37.0	26	3.0	2	0.0	4	0.0	885	97.0	32	3.0	0	0
Total		**11957**	**0.01**	**44.8**	**0.01**	**34.44**	**3876**	**32.0**	**3317**	**28.0**	**3485**	**29.0**	**851**	**7.0**	**155**	**1.0**	**95**	**1.0**	**10678**	**89.0**	**1101**	**9.0**	**178**	**1.0**

Annexure-IV

State-wise Annual Fluctuation & Frequency Distribution of Different Ranges from Aug 2013 to Decadal Mean [Aug(203 to 2012)]

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total				Wells showing no change	
			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	%	No	%
1	Andhra Pradesh	761	0	11.98	0	10.47	379	49.8	141	18.5	77	10.1	124	16.3	29	3.8	9	1.2	597	78	162	21	2	0
2	Arunachal Pradesh	6	0.65	0.93	0.09	0.73	3	50.0	0	0.0	0	0.0	3	50.0	0	0.0	0	0.0	3	50	3	50	0	0
3	Assam	188	0.01	3.63	0.02	4.86	90	47.9	5	2.7	0	0.0	86	45.7	5	2.7	2	1.1	95	51	93	49	0	0
4	Bihar	277	0.04	5.56	0.01	4.53	156	56.3	13	4.7	1	0.4	94	33.9	11	4.0	2	0.7	170	61	107	39	0	0
5	Chandigarh	15	0.07	3.64	0.19	2.94	3	20.0	1	6.7	0	0.0	10	66.7	1	6.7	0	0.0	4	27	11	73	0	0
6	Chhattisgarh	541	0.01	9.49	0	9.58	182	33.6	28	5.2	8	1.5	272	50.3	35	6.5	15	2.8	218	40	322	60	1	0
7	Dadra & Nagar Haveli	6	0.21	1.31	1.74	1.74	5	83.3	0	0.0	0	0.0	1	16.7	0	0.0	0	0.0	5	83	1	17	0	0
8	Delhi	119	0.06	4.02	0.02	7.33	44	37.0	7	5.9	2	1.7	40	33.6	16	13.4	10	8.4	53	45	66	55	0	0
9	Goa	40	0.01	5.41	0.11	1.52	23	57.5	2	5.0	1	2.5	14	35.0	0	0.0	0	0.0	26	65	14	35	0	0
10	Gujarat	709	0.01	14.15	0.01	34.44	330	46.5	119	16.8	80	11.3	141	19.9	21	3.0	17	2.4	529	75	179	25	1	0
11	Haryana	361	0.01	10.75	0.01	13.07	154	42.7	21	5.8	7	1.9	103	28.5	37	10.2	38	10.5	182	50	178	49	1	0
12	Himachal Pradesh	79	0.03	13.85	0.01	2.64	41	51.9	7	8.9	4	5.1	26	32.9	1	1.3	0	0.0	52	66	27	34	0	0
13	Jammu & Kashmir	193	0.02	10.74	0.01	2.81	136	70.5	9	4.7	4	2.1	40	20.7	2	1.0	0	0.0	149	77	42	22	2	1
14	Jharkhand	171	0.03	9.77	0.04	3.42	96	56.1	29	17.0	7	4.1	31	18.1	8	4.7	0	0.0	132	77	39	23	0	0
15	Karnataka	877	0	12.86	0	13.25	353	40.3	85	9.7	36	4.1	275	31.4	69	7.9	57	6.5	474	54	401	46	2	0
16	Kerala	717	0	10.49	0	6.17	262	36.5	19	2.6	10	1.4	397	55.4	24	3.3	4	0.6	291	41	425	59	1	0

S. No.	Name of State	No. of wells Analysed	Range in m				Rise						Fall						Total				Wells showing no change	
			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	%	No	%
17	**Madhya Pradesh**	1022	0.01	22.18	0.01	10.1	420	41.1	243	23.8	155	15.2	155	15.2	25	2.4	16	1.6	818	80	196	19	8	1
18	**Maharashtra**	1143	0	27.06	0.01	14.03	595	52.1	128	11.2	60	5.2	290	25.4	45	3.9	22	1.9	783	69	357	31	3	0
19	**Meghalaya**	7	0.23	1.5	0.05	0.54	5	71.4	0	0.0	0	0.0	2	28.6	0	0.0	0	0.0	5	71	2	29	0	0
20	**Odisha**	789	0.01	5.22	0	4.43	484	61.3	57	7.2	2	0.3	230	29.2	14	1.8	1	0.1	543	69	245	31	1	0
21	**Pondicherry**	4	0.02	2.37	0.82	0.82	2	50.0	1	25.0	0	0.0	1	25.0	0	0.0	0	0.0	3	75	1	25	0	0
22	**Punjab**	229	0.01	9.02	0.02	9.56	91	39.7	7	3.1	1	0.4	85	37.1	23	10.0	22	9.6	99	43	130	57	0	0
23	**Rajasthan**	876	0.01	25.8	0.01	145.7	237	27.1	147	16.8	148	16.9	146	16.7	61	7.0	128	14.6	532	61	335	38	9	1
24	**Tamil Nadu**	544	0.02	26.32	0.01	44.38	111	20.4	16	2.9	20	3.7	209	38.4	99	18.2	89	16.4	147	27	397	73	0	0
25	**Tripura**	28	0.01	1.62	0.01	1.35	14	50.0	0	0.0	0	0.0	14	50.0	0	0.0	0	0.0	14	50	14	50	0	0
26	**Uttar Pradesh**	836	0	9.59	0	6.81	381	45.6	76	9.1	22	2.6	315	37.7	32	3.8	9	1.1	479	57	356	43	1	0
27	**Uttarakhand**	38	0.06	4.89	0	1.47	15	39.5	4	10.5	1	2.6	18	47.4	0	0.0	0	0.0	20	53	18	47	0	0
28	**West Bengal**	809	0.01	13.8	0.01	11.7	432	53.4	76	9.4	25	3.1	208	25.7	44	5.4	24	3.0	533	66	276	34	0	0
Total		**11385**	**0.01**	**27.06**	**0.01**	**44.38**	**5044**	**44.3**	**1241**	**10.9**	**671**	**5.9**	**3330**	**29.2**	**602**	**5.3**	**465**	**4.1**	**6956**	**61**	**4397**	**39**	**32**	**1.0**


जल संरक्षण वर्ष 2013 Water Conservation Year
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