



**CENTRAL GROUND WATER BOARD**  
**MINISTRY OF WATER RESOURCES, RIVER DEVELOPMENT**  
**AND GANGA REJUVENATION**

**GOVERNMENT OF INDIA**

**STATUS OF GROUND WATER LEVEL SCENARIO, DURING**  
**MID-MONSOON SEASON-2015 (AUGUST)**

**(ANDHRA PRADESH STATE)**



**GROUND WATER MONITORING CELL**  
**SOUTHERN REGION**  
**HYDERABAD**  
**October-2015**

**STATUS OF GROUND WATER LEVEL SCENARIO, DURING MID-MONSOON  
SEASON-2015 (AUGUST)  
(ANDHRA PRADESH STATE)**

**EXECUTIVE SUMMARY**

1. During mid-monsoon season of August 2015, total 861 wells were monitored (758 DW+ 103 Pz).
2. During the year June-2015-August-2015, state received excess 5.5 % rainfall as compared to June-2015-August-2015.
3. The minimum and maximum depth to water level varies from 0.05 in Vishakhapattanam to 47.6 m bgl in Cuddapah district.
4. Water Levels during August 2015 are in the range of 5 to 10 m bgl are predominant covering about 39 % of the total geographical area, represented by 24 % of the wells.
5. Fluctuations in water level during August-2015 WRT May-2015 shows a maximum rise of 17 m in Prakasham District and a fall of 5.7 m in Kurnool district. But in major part of the positive fluctuations in water levels are noticed.
6. Water level fluctuation data of August 2015 with respect to August 2014 shows fall in 78220 Km<sup>2</sup> area due to normal rainfall and over exploitation of groundwater resources during the period.
7. Water level fluctuations during August-2015 WRT decadal mean of August-2005-2014, shows a fall in 77 % of area and this fall is mainly due normal rainfall during decadal period and over exploitation of groundwater resources.

**STATUS OF GROUND WATER LEVEL SCENARIO, DURING MID-MONSOON  
SEASON-2015 (AUGUST)**

**(ANDHRA PRADESH STATE)**

<b>S. NO.</b>	<b>CHAPTER</b>	<b>PAGE</b>
<b>1.</b>	<b>INTRODUCTION</b>	<b>1</b>
<b>2.</b>	<b>RAINFALL</b>	<b>2</b>
	2.1 Rainfall Departure (June 15- Aug 15) with Normal Rainfall of same Period	2
	2.2 Rainfall Departure June 15 to Aug-15 With respect to June 14 to Aug-14	3
	2.3 Rainfall Departure (June-Aug-15 with Decadal Mean of June-Aug (2005-2014)	4
<b>3</b>	<b>DEPTH TO WATER LEVEL DURING MID-MONSOON SEASON (AUG-15).</b>	<b>6</b>
<b>4</b>	<b>WATER LEVEL FLUCUATION DURING AUGUST 2015 with RESPECT to MAY 2015</b>	<b>8</b>
<b>5</b>	<b>WATER LEVEL FLUCUATION DURING AUGUST 2015 with RESPECT to AUGUST 2014</b>	<b>10</b>
<b>6</b>	<b>WATER LEVEL FLUCTUATION-DECADAL MEAN OF AUGUST (2005-2014) WITH AUGUST 2015</b>	<b>13</b>
Figure-1	Rainfall Departure (June-15-Aug-15, WRT Normal of same Period).	3
Figure-2	Rainfall Departure (June14-Aug-15 WRT June 14-Aug-14).	4
Figure-3	Rainfall Departure (June-15-Aug-15, WRT to Decadal Mean,June-May, 2005-2014).	5
Figure-4	Graphical representation of Different Ranges of DTW-Aug-2015.	6
Figure-5	Depth to Water Levels During Aug-2015, Telangana State.	7
Figure-6	Percentage of wells in different ranges of DTW, Aug-2015, Telangana State.	7
Figure-7	Graphical representation of Different Ranges of WLF in Aug-2015 WRT May 2015.	8
Figure-8	Water Level Fluctuations in August-2015 WRT May 2015.	9
Figure-9	Percentage of wells in different ranges of DTW, Aug-2015, WRT May 2015.	9
Figure-10	Water Level Fluctuations in August 2015 WRT August 2014, Telangana State.	11
Figure-11	Graphical representation of Different Ranges of WLF in Aug-2015 WRT Aug 2014.	12
Figure-12	Percentage of wells in different ranges of WLF, Aug-2015, WRT Aug 2014.	12
Figure-13	Water Level Fluctuations, Decadal Mean (August 2004-2014 WRT August 2015, Telangana State.	14
Figure-14	Graphical representation of WLF, During Aug-2015 WRT Decadal Mean (Aug-2005-14).	15
Figure-15	Percentage of wells Showing WLF during Aug-2015, WRT Decadal Mean (Aug-2005-	15
Table-1	Salient Features of Rainfall and its Variability in Telangana State.	2
Annexur-I	District Wise Status of Ground Water Monitoring Wells- August, 2015, Telangana State	16
Annexure-II	Summerised Results of Depth To Water Level, Mid-Monsoon Season-August-2015 (M Bgl)	17
Annexure-III	District Wise Water Level Fluctuations And Frequency of Distribution (May-2015 Wrt August 2015), Telangana State	18
Annexure-IV	District Wise Water Level Fluctuation Andfrequency of Distribution (August 2015 Wrt August 2014), Telangana State	19
Annexure-V	District Wise Water Level Fluctuation From Mean of 10 Years ((August 2005-August 2014) With August 2015, Telangana State	20

**LIST OF OFFICERS/OFFICIALS WHO CARRIED OUT MONITORING  
DURING MID MONSOON SEASON, 2015 (AUGUST-2015)**

<b>S. No.</b>	<b>Name of the Officer/Official</b>	<b>Designation</b>	<b>District Allotted</b>
1	Dr. M. Sudheer Kumar	Scientist-C	Adilabad & Nizamabad
2	Dr. Murali Krishna	Scientist-C	Medak
3	Shri Ramesh Reddy	Scientist-D	Mahabubnagar
4	Shri Maruthi Prasad	Scientist-B	Khammam
5	Shri Tarun Roy	STA (Chem)	Nalgonda
6	Shri M. N. Rao	Sr. Surveyer	Warangal and Karimnagar
7	Shri M.K. Rafiuddin	Scientist-D	Hyderabad and Rangareddy
8	Shri R. V. V. Sagar	Scientist-D	East Godavari and West Godavari
9	Shri P. Srinivas	Draftsman	Guntur and Krishna
10	Shri Bharat Bhushan	Scientist-D	Nellore and Prakasham
11	Shri B. Sharat	Draftsman	Chittoor and YSR Kadapa
12	Shri D. Mohantha	AHG	Anantapur and Kurnool
13	State Unit Office, Vishakhapatnam	Shri G. Bhaskar Rao, Sc-D and Dr. VSR Krishna	Srikakulam, Vishakhapatnam Vizianagaram,

**DATA ENTRY, DATA VALIDATAION, MAP GENERATION AND  
REPORT WRITING**

<b>1</b>	<b>Shri P. Sudakar</b>	<b>Scientist-C (Hydrometeorologist)</b>
<b>2</b>	<b>Dr. Pandith Madhnure</b>	<b>Sr. Hydrogeologist (Scientist-D) &amp; OIC Monitoring Section</b>

**UNDER THE OVERALL GUIDANCE OF**

**Shri A. D. Rao  
Regional Director  
CGWB, SR  
HYDERABAD**

## **STATUS OF GROUND WATER LEVEL SCENARIO IN ANDHRA PRADESH STATE, DURING MID-MONSOON SEASON -AUGUST 2015**

### **1. INTRODUCTION**

Depth to Water level data was collected from monitoring wells known as Ground Water Monitoring Wells (GWMS) in Andhra Pradesh during mid-monsoon season of 2015 (August, 2015). The numbers of operational wells after the monitoring in May, 2015 are 873 (764 DW and 109 Pz). Ground water monitoring wells abandoned during August, 2015 are 16 (10 DW+6Pz) whereas 4 Ground water monitoring wells (DW) were established during the period. Thus the number of operational wells after present monitoring stands at 861 (758 DW and 103 Pz).

During August 2015, a total number of 96 Ground water monitoring wells (94 DW & 2 Pz) are dry. The maximum number of dry wells (26 DW) is from Chittor district due to less rainfall received during June 2015- August 2015. Total 56 wells (32 DW and 24 Pz) could not be monitored due to various reasons like inaccessibility, damaged roads, installation of pumps, jamming of piezometers cap, roots entered etc. District wise status of Ground Water monitoring wells is presented in **Annexure-I**.

Based on the rainfall data and water level data collected from the Ground water monitoring wells during August, 2015 and the earlier periods, seven maps are prepared on 1:5 million scales and data is represented as pie and bar diagrams in various figures.

## 2. RAINFALL

The rainfall data collected from India Meteorological Department and compiled from Weekly Weather reports has been used to analyze the rainfall for the period June 2005 to Aug 2015. District-wise rainfall data for the period June-15-Aug15, Jun'14-Aug'14, decadal mean (Jun-August) of 2005-2014 and normal of June-Aug and the departure of Jun'15-Aug'15 rainfall with all the rest of the periods is given **Table 1** and various thematic maps are given in **Fig. 1, Fig. 2 and Fig. 3**.

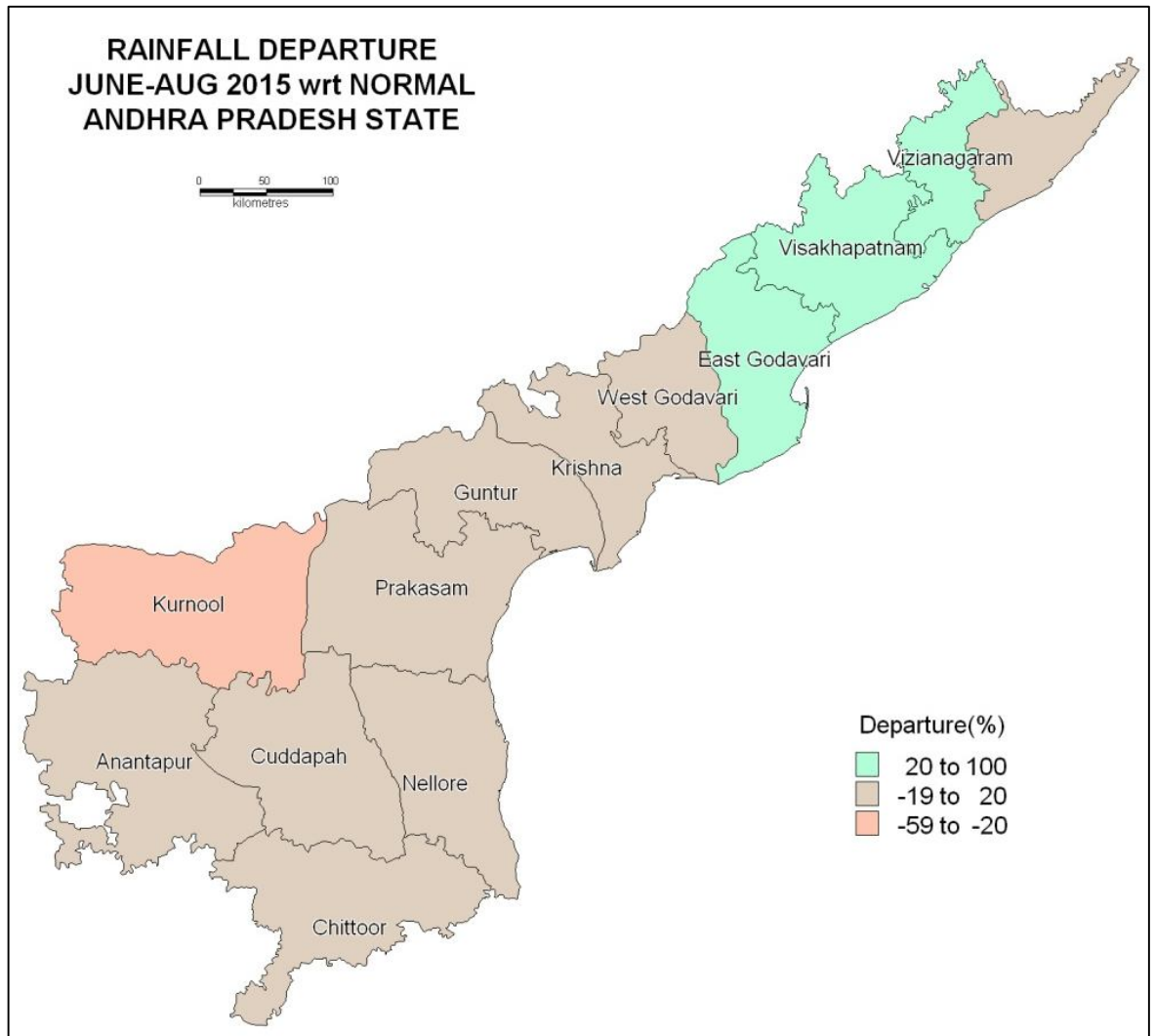
**Table-1: Salient Features of Rainfall and its Variability in Andhra Pradesh State.**

S NO.	DISTRICT	RAINFALL(mm)				Departure of ( June'15-Aug'15 rainfall		
		JUNE'15-AUG'15	AUG'14-AUG'14	DECADAL MEAN (2004-14)	NORMAL	JUNE'15-AUG'15	DECADAL MEAN (2005-14)	NORMAL
1	Anantapur	179	168	237	194	6.9%	-24.5%	-7.7%
2	Chittoor	269	242	317	277	11.1%	-15.1%	-2.9%
3	Cuddapah	258	186	269	280	38.9%	-4.1%	-7.7%
4	East Godavari	657	273	490	527	140.7%	34.1%	24.7%
5	Guntur	422	267	425	393	58.3%	-0.7%	7.4%
6	Krishna	546	267	544	532	104.6%	0.4%	2.7%
7	Kurnool	170	303	351	321	-43.9%	-51.6%	-47.0%
8	Nellore	237	227	249	240	4.2%	-4.8%	-1.1%
9	Prakasam	262	185	276	260	41.9%	-5.1%	1.0%
10	Srikakulam	539	576	567	538	-6.4%	-4.9%	0.3%
11	Vishakhapatnam	648	441	456	489	46.8%	42.1%	32.5%
12	Vizianagaram	619	546	548	517	13.5%	13.0%	19.7%
13	West Godavari	648	435	598	604	48.9%	8.4%	7.3%
	<b>STATE MEAN</b>	<b>420</b>	<b>317</b>	<b>410</b>	<b>398</b>	<b>32.5%</b>	<b>2.4%</b>	<b>5.5%</b>

*Source: India Meteorological Department, GOI*

### 2.1 Rainfall Departure (June 2005 to Aug 2015) with Normal Rainfall of Same Period

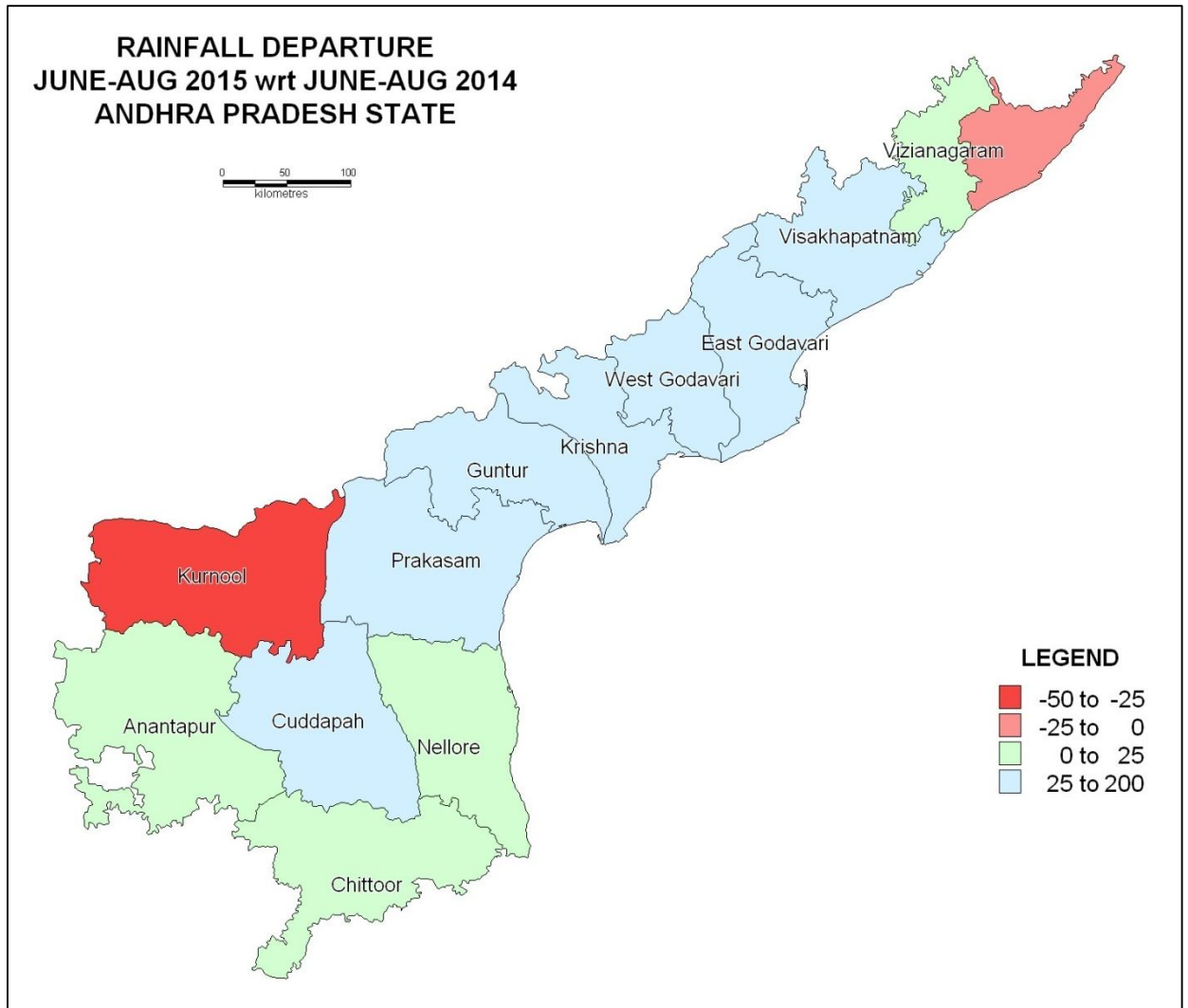
The departure of June 2005 to Aug 2015 rainfall with normal rainfall of the same period is given in **Fig.1**. It is prepared to correlate with depth to water level map of Aug 2015. During the period June 2005 to Aug 2015, the state has received 5.5 % more rainfall than normal rainfall. It ranges from -47% in Kurnool to 32.5% in Visakhapatnam district. The deficit rainfall is observed in Kurnool district and received excess in Visakhapatnam, East Godavari and Vizianagaram districts and in other districts it received normal rainfall.



**Fig.1:** Rainfall Departure (June-14-May-15, WRT Normal of same Period).

## 2.2 Rainfall Departure June 2005 to Aug 2015 with respect to June 14 to Aug 14

The departure of rainfall with Jun'14-Aug'14 rainfall is given in **Fig.2**. It is prepared to correlate with water level fluctuation map of Aug 2015 with Aug 2014. **Table 1** indicates that state has received 420 mm of rainfall during the period Jun'15 to Aug'15, which is 32.5 % more than the rainfall received during the same period last year. The state received about 317 mm of rainfall during the same period last year. The departure in percentage ranges from -44% in Kurnool district to 141% in East Godavari district.



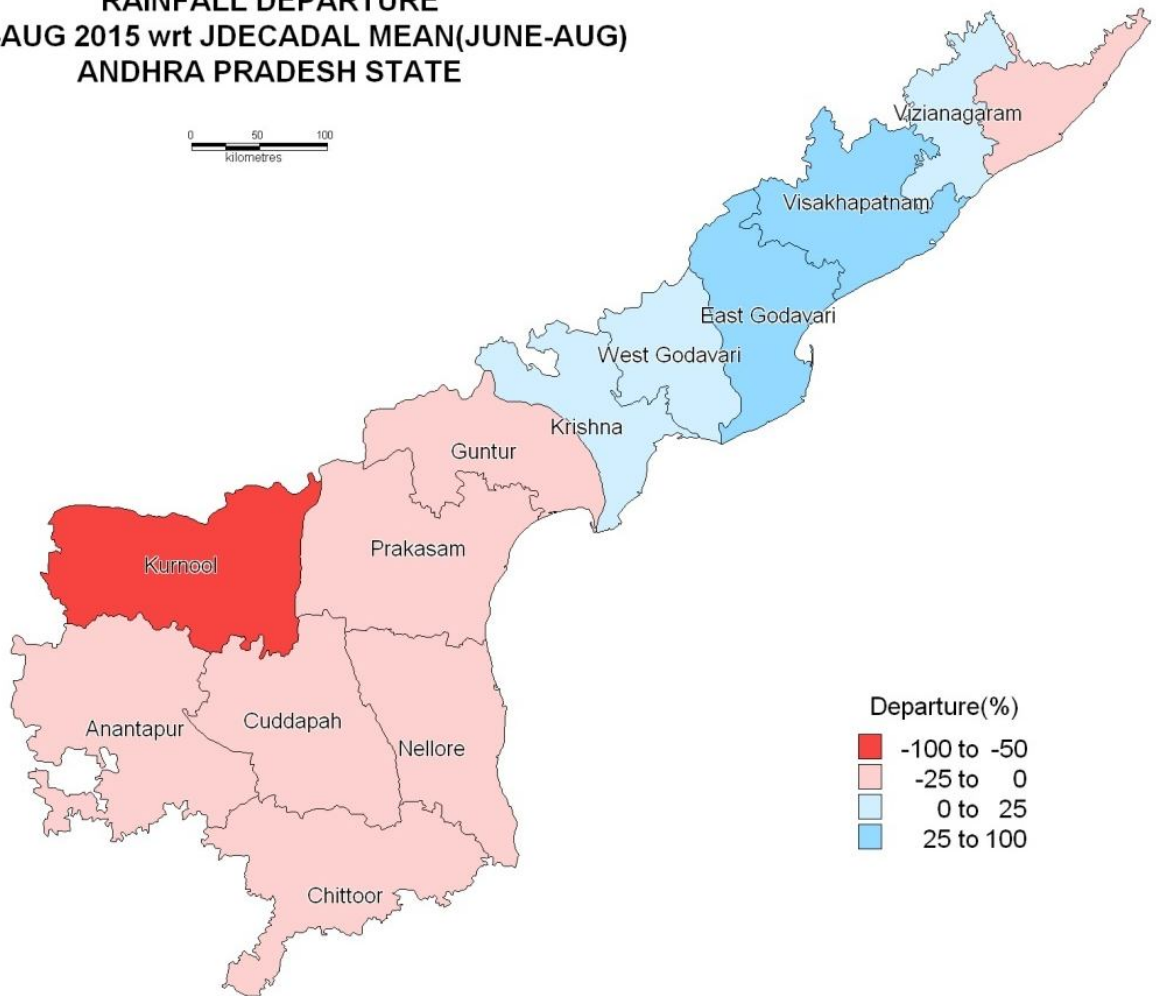
**Fig.2:** Rainfall Departure (June14-Aug-15 WRT June 14-Aug 14).

### 2.3 Rainfall Departure, June 2005 to Aug 2015 with Decadal Mean June-Aug (2005-14)

The departure of Jun'15-Aug'15 rainfall with decadal mean rainfall (Jun-Aug) is given in **Fig.3**. It is prepared to correlate with water level fluctuation map of Aug 2015 with Decadal mean (Aug 2005-2014). **Table 1** indicates that the decadal mean rainfall (Jun-Aug) of the state is 410 mm. During the period June-Aug 2015 the state has received 2.35 more than the decadal mean. The departure in percentage ranges from -107% in Kurnool district to 30% in Visakhapatnam district.



**RAINFALL DEPARTURE  
JUNE-AUG 2015 wrt JDECADAL MEAN(JUNE-AUG)  
ANDHRA PRADESH STATE**



**Figure-3:** Rainfall Departure (June-14-May-15, WRT to Decadal Mean, June-May, 2005-2014).

### 3. DEPTH TO WATER LEVEL DURING MID-MONSOON SEASON (AUG-15).

The depth to water levels are summarized below and presented as pie diagram (Fig. 4), areal distribution of DTW in Fig.5 and percent distribution of wells as bar diagram (Fig. 6).

1. An analysis of depth to water level data of 785 wells (Annexure-II) shows, water levels in the range of 0.05 (Vishakhapattanam district) 47.45 m bgl (YSR Cuddapah district).
2. One well located at in Krishna district shown artesian conditions (-0.2 m).
3. Shallow water level in the range of 0 to 2 m bgl covers an area of about 20,700 Km<sup>2</sup> (13 % of state area) and mostly observed in eastern part of north coastal districts.
4. Water levels in the range of 2 to 5 m occupies about 43,730 Km<sup>2</sup> areas (27 % of the total geographical area of the state), occupying mostly eastern and northern part of the State.
5. During August, majority of the water levels are in the range of 5 to 10 m bgl occupying about 62,020 Km<sup>2</sup> areas (39 %) and represented by 24 % of wells.
6. Water levels between 10-20 m bgl cover about 29,820 Km<sup>2</sup> of state area (19 %) represented by 12 % of wells.
7. Deep water levels in the range of 20-40 m bgl and > 40 m bgl covers about 1631 Km<sup>2</sup> and 1999 Km<sup>2</sup> area (1 % and 1.2 % respectively) of the total geographical area respectively, covering south eastern part of YSR Cuddapah district.

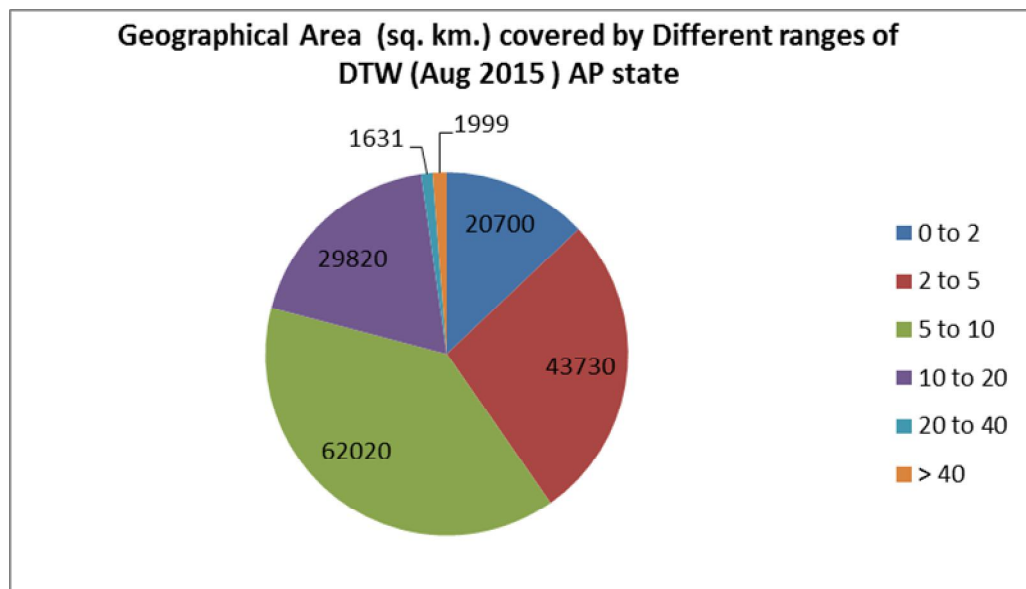
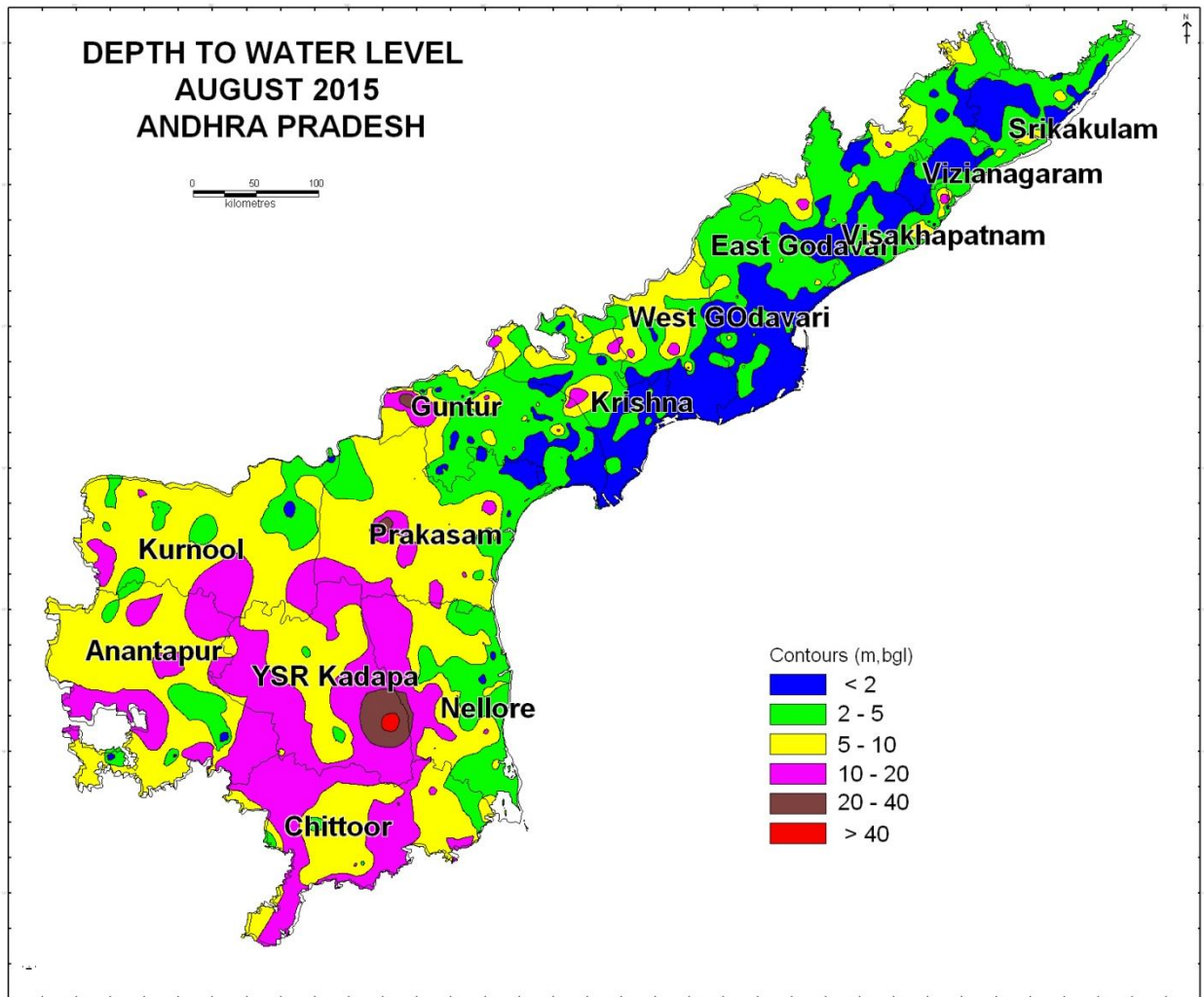
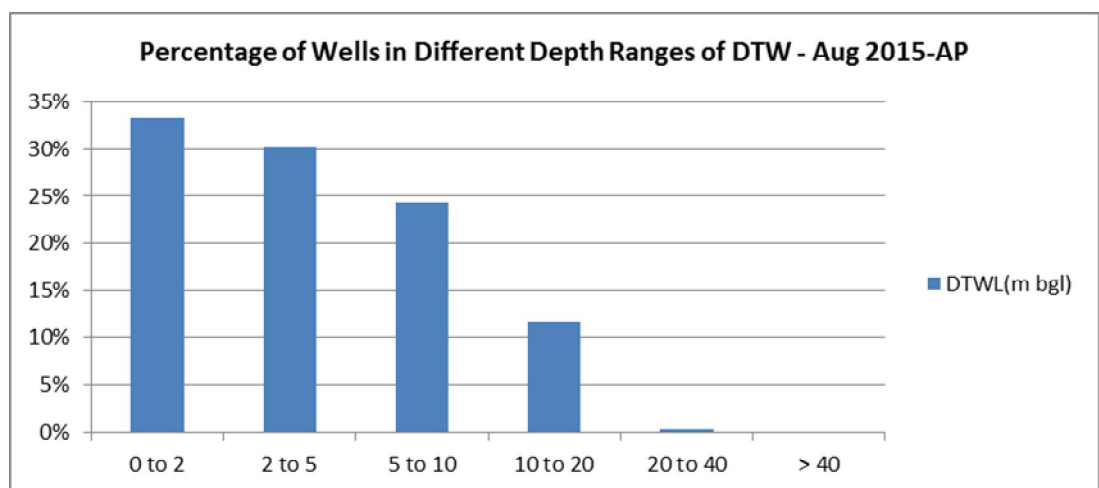


Fig.4: Graphical representation of Different Ranges of DTW-Aug-2015.



**Fig.5:** Depth to Water Levels during Aug-2015, Andhra Pradesh State.

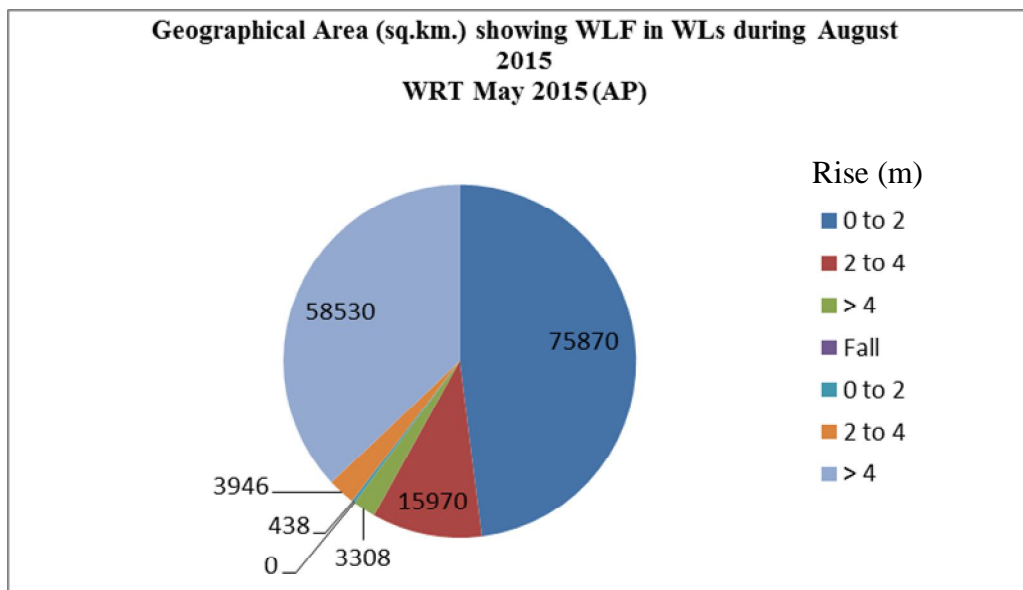


**Fig.6:** Percentage of wells in different ranges of DTW, Aug-2015, A.P. State.

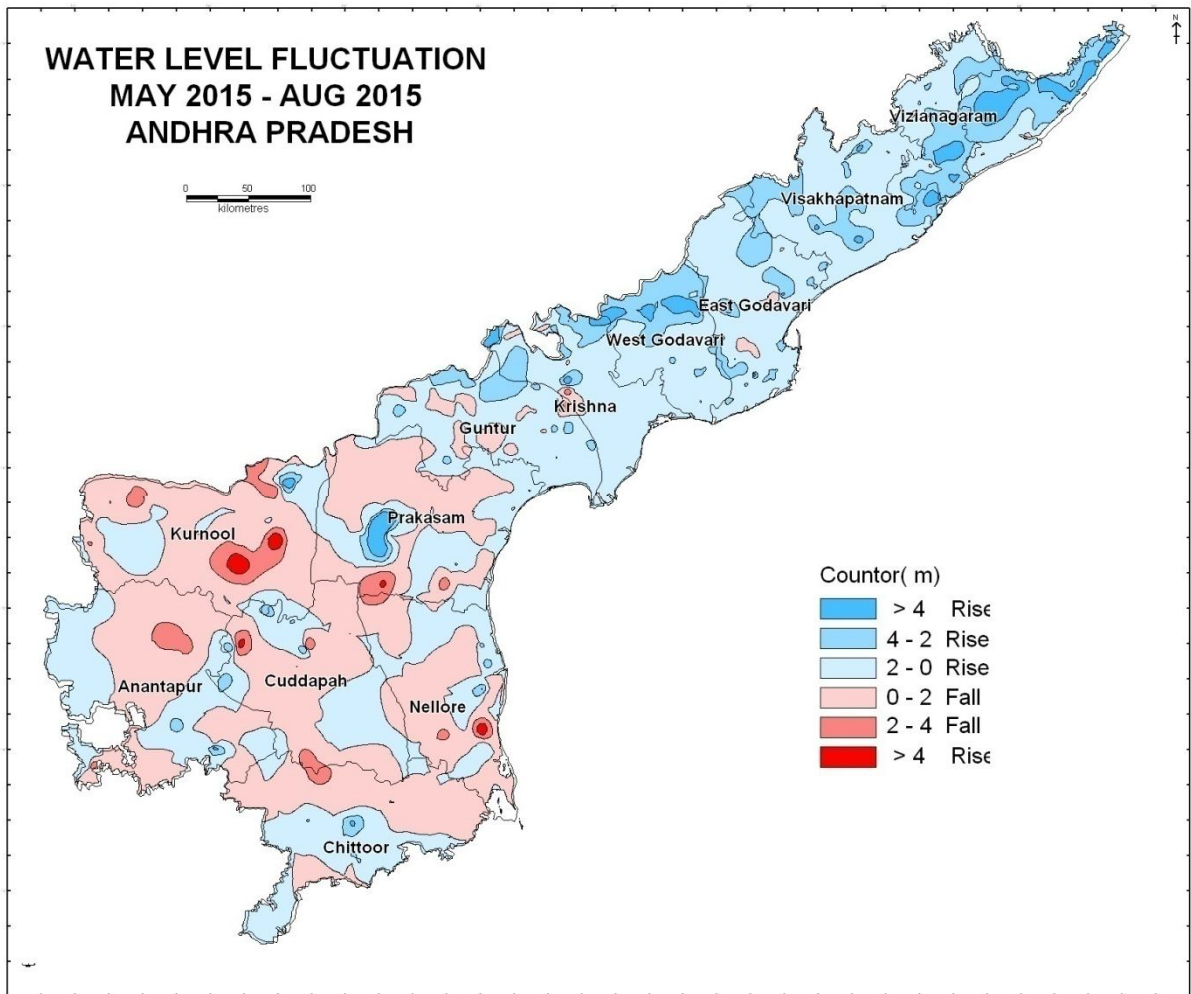
#### 4. WATER LEVEL FLUCUATION DURING AUGUST 2015 with RESPECT to MAY 2015

Water level fluctuations during August 2015 with respect to May 2015 are presented in **Annexure-III and** An analysis of 765 wells shows that water level rise is recorded in 67 % wells (510 nos) covering an area of about 59 % of the total geographical area. About 41 % of the areas have shown a fall in water level representing 21 % wells (163) and 92 wells have no rise or fall in water levels. Rise in water levels is mainly due to monsoon rainfall. Area wise water level fluctuations are shown in as pie diagram in **Fig.7** and areal in Fig. 8 and percentage of wells as bar diagram (**Fig.9**).

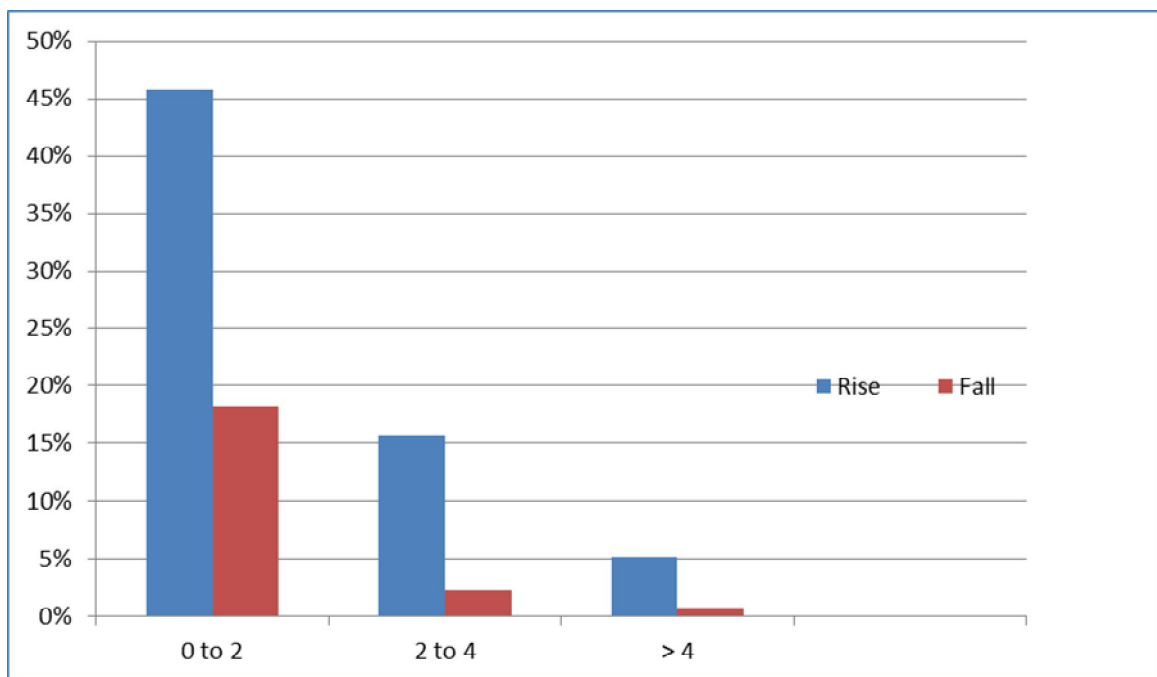
1. The minimum and maximum rise in water level fluctuations is recorded as 0.02 m and 17.0 m in Prakasham districts.
2. The minimum and maximum fall in water level fluctuations is recorded in 0.05 m and 5.7 m in Kurnool district.
3. In the state about 95148 km<sup>2</sup> area shown a rise in water levels in the range of < 2 to > 4 m and in rest of the area ( 62914 Km<sup>2</sup>) water level fluctuations have shown a fall in the range of < 2 to > 4 m.
4. Water level rise of more than 4 m is recorded in small patches of Srikakulam, Vizianagaram, West Godavari and Prakasham districts while fall of more than 4 m is recorded mainly in small patches in Kurnool and Nellore districts.



**Fig. 7:** Graphical representation of Different Ranges of WLF in Aug-2015 WRT May 2015.



**Fig. 8: Water Level Fluctuations in August-2015 WRT May 2015.**

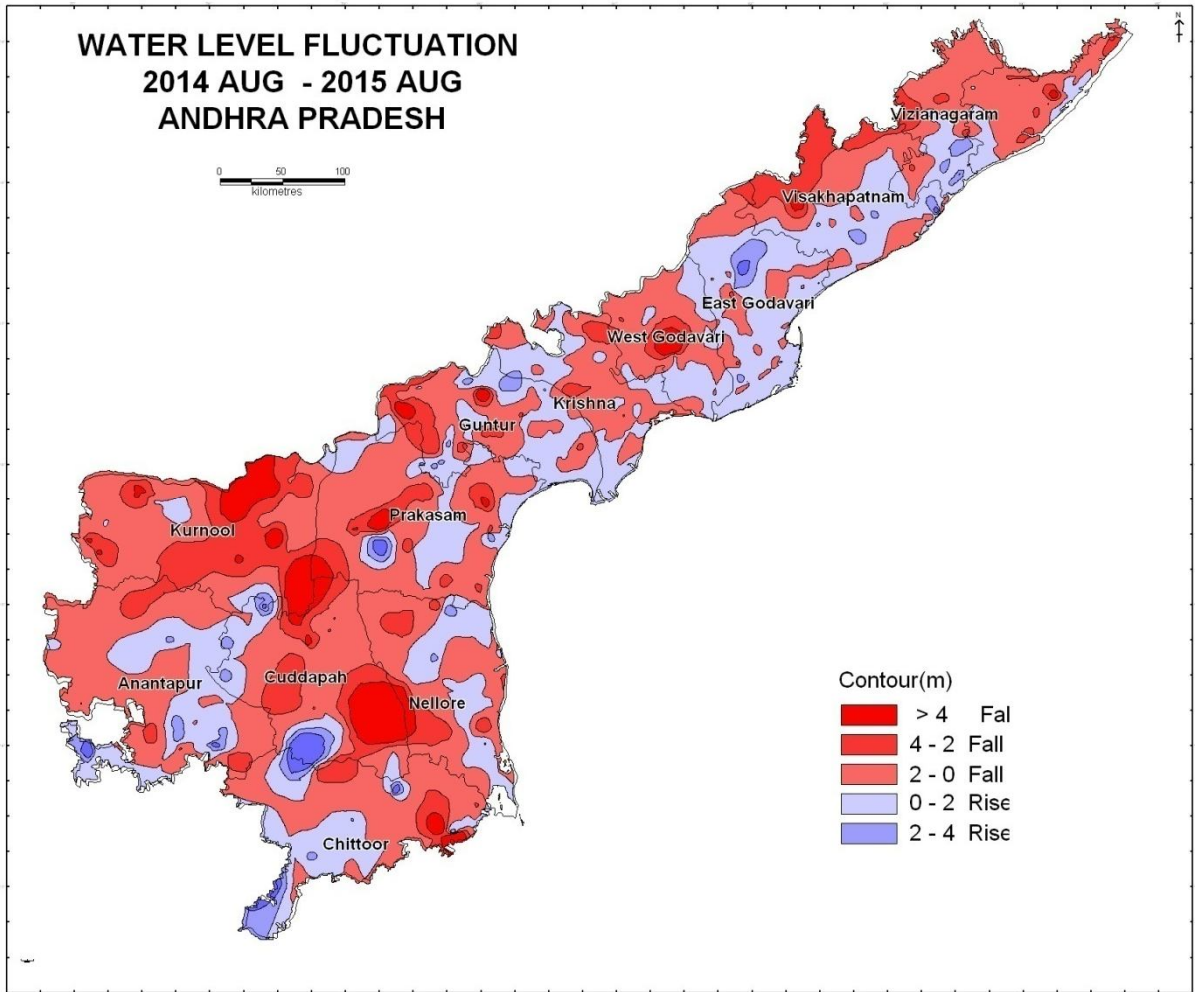


**Fig. 9: Percentage of wells in different ranges of DTW, Aug-2015, WRT May 2015.**

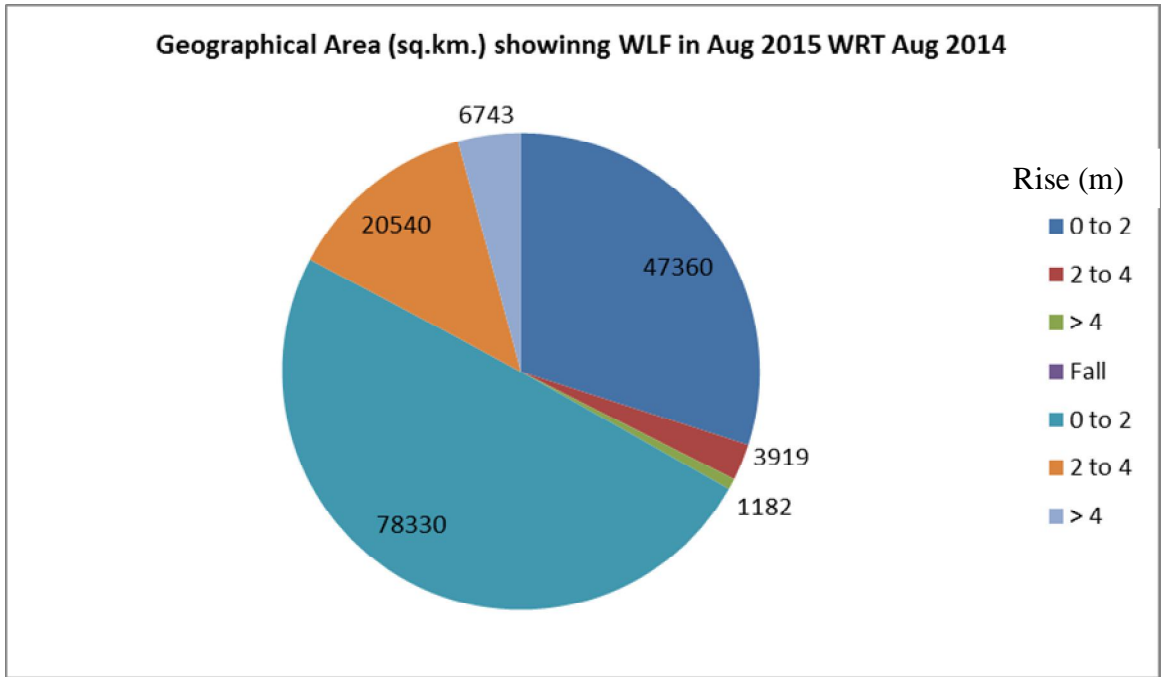
## 5. WATER LEVEL FLUCUATION DURING AUGUST 2015 with RESPECT to AUGUST 2014

Water level fluctuation data of August 2015 with respect to August 2014 is presented in **Annexure-IV and Fig.10**. An analysis of 718 wells shows that water level rise is recorded in 43.5 % wells (312 nos) covering an area of about 33 % of the total geographical area. About 66 % of the areas have shown a fall in water level representing 49.4 % wells (355 nos). About 51 wells have shown neither rise nor fall in water levels. Fall in water levels is mainly due to less rainfall (-30 %) than the normal rainfall in the period. Area wise water level fluctuations are shown as pie diagram (**Fig. 11**) and percentage of wells as bar diagram (**Fig.12**).

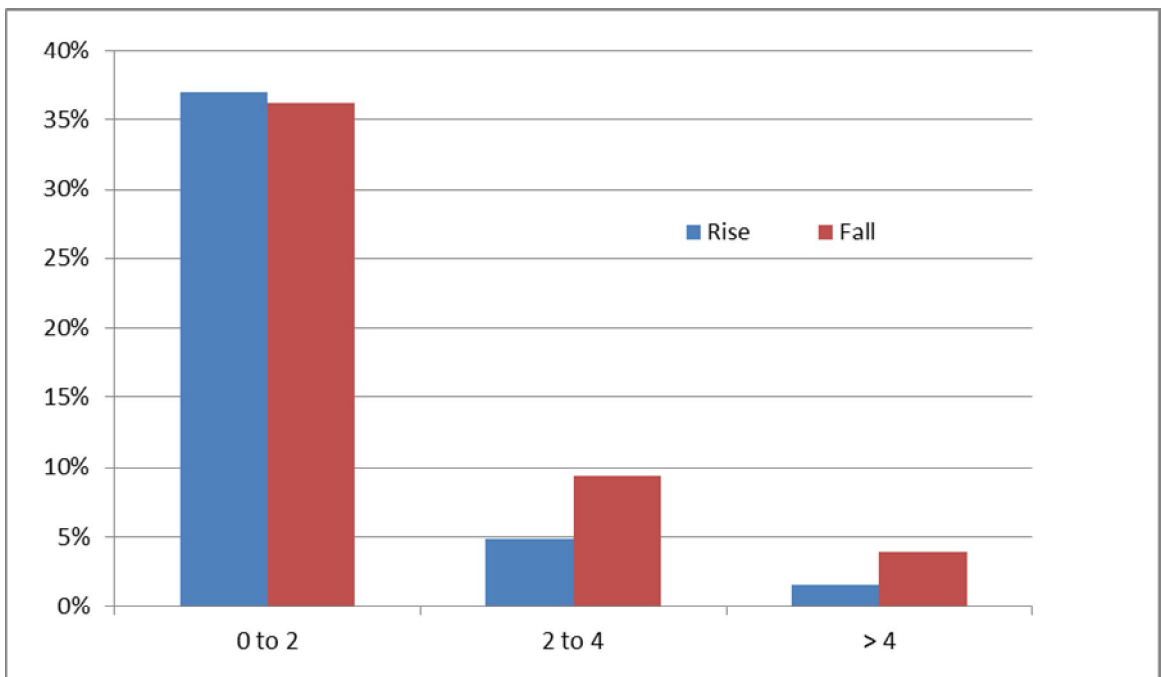
1. The minimum and maximum rise in water level fluctuations is recorded as 0.02 m in Krishna district and 13.14 in Cuddapah districts.
2. The minimum and maximum fall in water level fluctuations is recorded in 0.01 m Vishakhapattanama district and 19.2 m in Cuddapah district respectively.
3. In the state about 36825 km<sup>2</sup> area shown a rise in water levels in the range of < 2 to > 4 m and in about 78220 of the area, water level fluctuations have shown a fall in the range of < 2 to > 4 m.
4. Water level fall of more than 4 m is recorded mainly in Kurnool and Cuddapah district.



**Fig. 10: Water Level Fluctuations in August 2015 WRT August 2014, AP State.**



**Fig. 11:** Graphical representation of Different Ranges of WLF in Aug-2015 WRT Aug 2014.



**Fig. 12:** Percentage of wells in different ranges of WLF, Aug-2015, WRT Aug 2014.



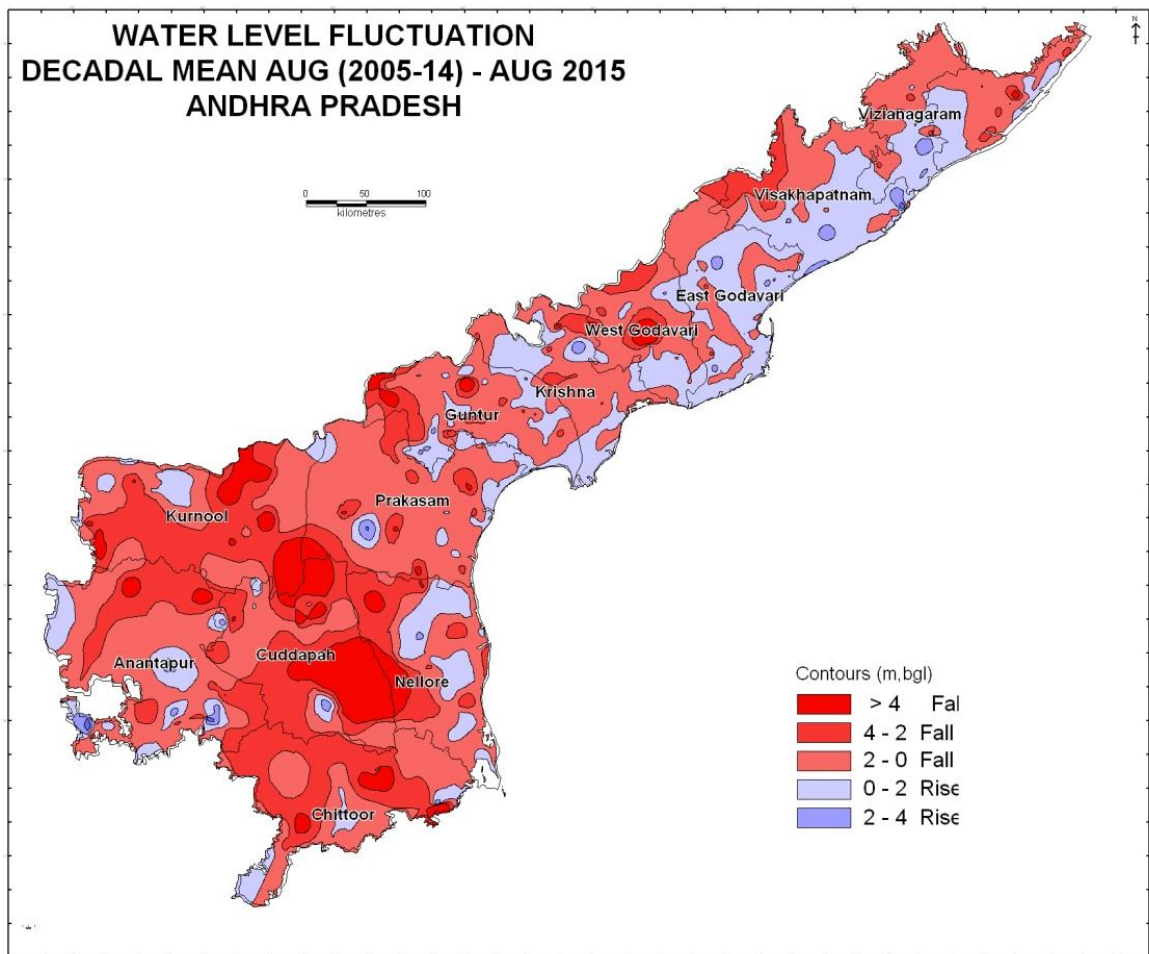
## **6. WATER LEVEL FLUCTUATION-DECADAL MEAN OF AUGUST (2005-2014) WITH AUGUST 2015**

Water level fluctuation of August, 2015 with reference to Decadal means of August, (2005-2014) is presented in **Annexure-V and Fig.13**. Area wise water level fluctuations are shown as pie diagram (**Fig. 14**) and percentage of wells as bar diagram (**Fig.15**).

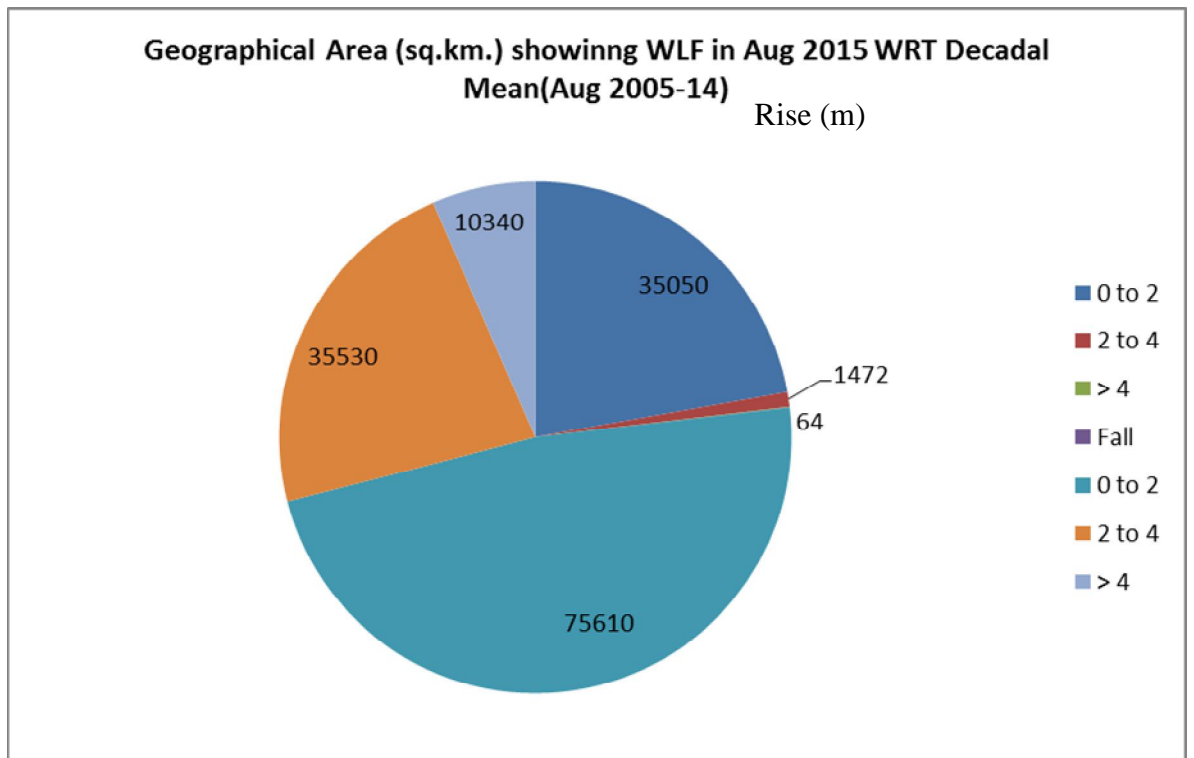
An analysis of 725 wells data shows a rise in water levels in 288 wells (40 %) and fall in 412 wells (57 %) covering an area of 36,586 km<sup>2</sup> (23 %) and 1,23,314 km<sup>2</sup> (77 %) respectively. This fall in water levels with respect to decal mean is mainly due to less rainfall in Rayalaseema region of the state.

Perusal of the map shows a general fall in water levels in major part of the state.

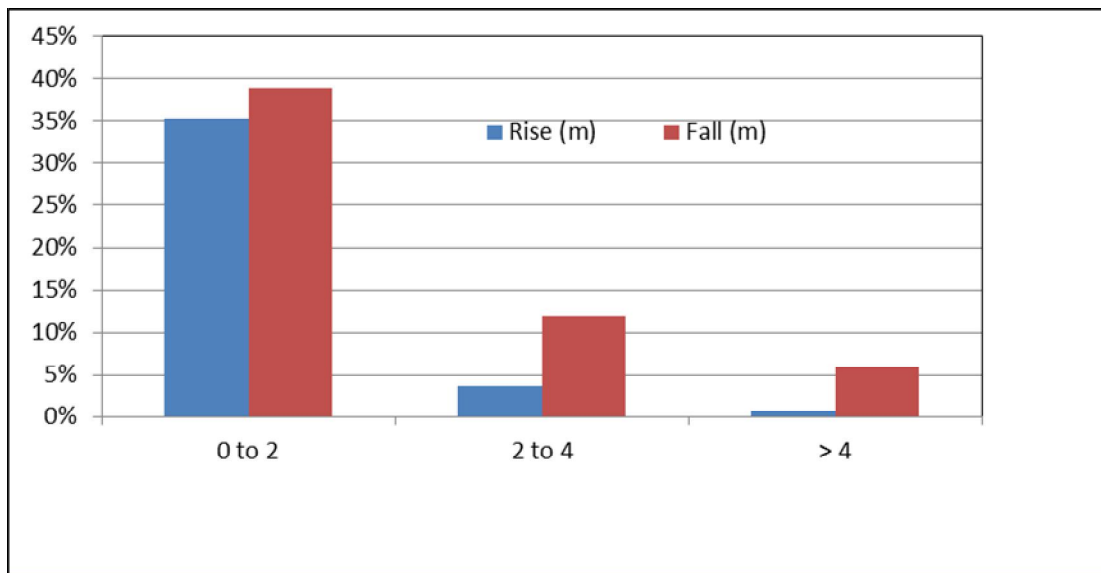
1. The minimum and maximum rise in water level fluctuations is recorded as 0.02 m and 5.68 in Vishakhapattanam districts.
2. The minimum and maximum fall in water level fluctuations is recorded in 0.01 m Vishakhapattanam district and 31.3 m in Cuddapha district respectively.
3. In the state about 121480 km<sup>2</sup> area shown a fall in water levels in the range of < 2 to > 4 m and in about 36586 of the area, water level fluctuations have shown a rise in the range of < 2 to > 4 m.
4. Perusal of the map shows a general fall in water levels in 77 % of part of the state And > 4 m water level fall is recorded in Rayalseema region of the state.



**Fig. 13: Water Level Fluctuations, Decadal Mean (August 2004-2014 WRT August 2015, Andhra Pradesh State.**



**Fig. 14:** Graphical representation of WLF (m), During Aug-2015 WRT Decadal Mean (Aug-2005-14).



**Fig. 15:** Percentage of wells Showing WLF during Aug-2015, WRT Decadal Mean (Aug-2005-14).

## ANNEXURE-I

## DISTRICT WISE STATUS OF GROUND WATER MONITORING WELLS- AUGUST, 2015, ANDHRA PRADESH STATE

S. No.	District	No of Stations to be monitored			No of Stations where WL data Recorded			No of Stations Monitored as Dry			No of Stations not Monitored due to Various Reasons			No of Stations Abandoned			No of Stations Established			No of Stations as on 31/08/2015		
		DW	Pz	Total	DW	Pz	Total	DW	Pz	Total	DW	Pz	Total	DW	Pz	Total	DW	Pz	Total	DW	Pz	Total
1	Anantapur	35	20	55	30	19	49	4	0	4	1	1	2	1	0	1	1	0	1	35	20	55
2	Chittoor	48	0	48	24	0	24	26	0	26	0	0	0	0	0	0	2	0	2	50	0	50
3	Cuddapah	32	3	35	14	2	16	18	1	19	0	0	0	0	0	0	0	0	0	32	3	35
4	East Godavari	98	14	112	88	12	100	2	0	2	8	2	10	1	1	2	0	0	0	97	13	110
5	Guntur	92	16	108	90	9	99	2	1	3	0	6	6	0	3	3	0	0	0	92	13	105
6	Krishna	69	7	76	67	4	71	2	0	2	1	3	4	0	1	1	0	0	0	70	7	77
7	Kurnool	39	19	58	34	14	48	5	0	5	0	5	5	0	1	1	0	0	0	39	18	57
8	Nellore	62	2	64	40	1	41	15	0	15	7	1	8	1	0	1	0	0	0	61	2	63
9	Prakasam	59	14	73	39	9	48	14	0	14	6	5	11	3	0	3	0	0	0	56	14	70
10	Srikakulam	46	0	46	46	0	46	0	0	0	0	0	0	0	0	0	0	0	0	46	0	46
11	Visakhapatnam	<b>72</b>	<b>4</b>	<b>76</b>	<b>70</b>	<b>4</b>	<b>74</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>70</b>	<b>4</b>	<b>74</b>
12	Vizianagaram	<b>48</b>	<b>0</b>	<b>48</b>	<b>48</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>0</b>	<b>48</b>
13	West Godavari	<b>64</b>	<b>10</b>	<b>74</b>	<b>55</b>	<b>9</b>	<b>64</b>	<b>6</b>	<b>0</b>	<b>6</b>	<b>7</b>	<b>1</b>	<b>8</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>62</b>	<b>9</b>	<b>71</b>
	Total	<b>764</b>	<b>109</b>	<b>873</b>	<b>645</b>	<b>83</b>	<b>728</b>	<b>94</b>	<b>2</b>	<b>96</b>	<b>32</b>	<b>24</b>	<b>56</b>	<b>10</b>	<b>6</b>	<b>16</b>	<b>4</b>	<b>0</b>	<b>4</b>	<b>758</b>	<b>103</b>	<b>861</b>

## ANNEXURE-II

## SUMMERISED RESULTS OF DEPTH TO WATER LEVEL, August-2015 (m bgl).

Sl. No.	District Name	No. of wells analyzed	Depth to water Table (m bgl)		No of Wells/% of wells showing depth to water level (m bgl) in the range of											
			Min	Max	0 - 2	%	2-5	%	5-10	%	10-20	%	20-40	%	>40	%
1	Anantapur	40	0.48	18	3	7.5	6	15	19	47.5	12	30	0	0	0	0
2	Chittoor	50	1.4	21.3	1	2	6	12	21	42	21	42	1	2	0	0
3	Cuddapah	34	3.2	47.6	0	0	3	8.8	15	44.1	15	44.1	0	0	1	2.9
4	East Godavari	95	0.14	6.85	58	61	29	30.5	8	8.4	0	0	0	0	0	0
5	Guntur	102	0.14	39.5	36	35.3	46	45.1	13	12.7	6	5.9	1	1	0	0
6	Krishna	72	-0.2	17.7	30	41.7	25	34.7	12	16.7	5	6.9	0	0	0	0
7	Kurnool	45	1.18	18.63	4	8.9	12	26.7	21	46.7	8	17.8	0	0	0	0
8	Nellore	57	1.12	17.0	3	5.3	28	49.1	15	26.3	11	19.3	0	0	0	0
9	Prakasam	65	-0.2	32.3	7	10.8	16	24.6	34	52.3	7	10.8	1	1.5	0	0
10	Srikakulam	42	0.19	8.36	19	45.2	18	42.9	5	11.9	0	0	0	0	0	0
11	Visakhapatnam	74	0.05	18.05	38	51.3	22	29.7	11	14.9	3	4.05	0	0	0	0
12	Vizianagaram	48	0.48	9.9	26	54.2	17	35.4	5	10.4	0	0	0	0	0	0
13	West Godavari	61	0.3	13.3	36	59	9	14.8	12	19.7	4	6.6	0	0	0	0
	Total	785	-0.2	47.6	261		237		191		92		3		1	

## ANNEXURE-III

**DISTRICT WISE WATER LEVEL FLUCTUATIONS AND FREQUENCY OF DISTRIBUTION (MAY-2015 WRT AUGUST 2015),  
ANDHRA PRADESH STATE.**

S. No.	District Name	No. of wells analyzed	Range of Fluctuation (m)				No. of wells/Percentage Showing Fluctuation												Total No. of Wells	
			Rise		Fall		Rise						Fall						Rise	Fall
			Min	Max	Min	Max	0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Anantapur	38	0.24	4.81	0.02	3.4	10	26.3	1	2.6	1	2.6	19	50	3	7.9	0	0	12	22
2	Chittoor	48	0.03	4.49	0.17	2.55	5	10.4	4	8.3	1	2.1	12	25	1	2.1	0	0	10	13
3	Cuddapah	34	0.34	3.42	0.07	4.9	3	8.8	4	11.7	0	0	6	17.6	3	8.8	1	2.9	7	10
4	East Godavari	90	0.09	6.2	0.04	0.59	60	66.7	17	18.9	4	4.4	6	6.7	0	0	0	0	81	6
5	Guntur	100	0.06	3.5	0.03	4.9	60	60	15	15	0	0	20	20	1	1	1	1	75	22
6	Krishna	71	0.22	8.3	0.03	3.62	50	70.4	9	12.7	3	4.2	5	7	1	1.4	0	0	62	6
7	Kurnool	42	0.04	6.2	0.05	5.7	9	21.4	2	4.7	1	2.4	19	45.2	6	14.3	2	4.7	12	27
8	Nellore	55	0.03	4.15	0.05	5.62	17	30.9	2	3.6	1	1.8	19	34.5	1	1.8	1	1.8	20	21
9	Prakasam	65	0.02	17.0	0.1	4.4	22	33.8	1	1.5	2	3.1	24	36.9	1	1.5	1	1.5	25	26
10	Srikakulam	42	0.12	8.8	0.12	0.47	15	35.7	16	38.1	9	21.4	2	4.7	0	0	0	0	40	2
11	Visakhapatnam	74	0.04	7.3	0.02	2.7	40	54.1	23	31.1	7	9.5	3	4.1	1	1.4	0	0	70	4
12	Vizianagaram	48	0.11	6.3	0.05	0.35	23	47.9	16	33.3	6	12.5	3	6.2	0	0	0	0	45	3
13	West Godavari	58	0.04	14.2	0.11	0.11	36	62.1	10	17.2	5	8.6	1	1.7	0	0	0	0	51	1
	<b>Total</b>	<b>765</b>	<b>0.02</b>	<b>17.0</b>	<b>0.05</b>	<b>5.7</b>	<b>350</b>		<b>120</b>		<b>40</b>		<b>139</b>		<b>18</b>		<b>6</b>		<b>510</b>	<b>163</b>

## ANNEXURE-IV

**DISTRICT WISE WATER LEVEL FLUCTUATION AND FREQUENCY OF DISTRIBUTION (AUGUST 2015 WRT AUGUST 2014), ANDHRA PRADESH STATE.**

Sl.No.	District Name	No. of wells analyzed	Range of Fluctuation (m)				No. of wells/Percentage Showing Fluctuation												Total No. of Wells	
			Rise		Fall		Rise						Fall						Rise	Fall
			Min	Max	Min	Max	0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
1	Anantapur	38	0.04	5.7	0.08	3.7	11	28.9	4	10.5	2	5.3	12	31.6	7	18.4	0	0	17	19
2	Chittoor	48	0.02	7.1	0.06	7.9	5	10.4	4	8.3	2	4.2	18	37.5	2	4.2	2	4.2	11	22
3	Cuddapah	34	0.11	13.14	0.42	19.2	2	5.9	2	5.9	1	2.9	6	17.6	5	17.4	4	11.7	5	15
4	East Godavari	90	0.07	5.1	0.02	3.13	53	58.9	5	5.56	1	1.1	29	32.2	2	2.2	0	0	59	31
5	Guntur	89	0.05	3.3	0.01	7.8	41	46.1	7	7.8	0	0	29	32.6	9	10.1	2	2.2	48	40
6	Krishna	62	0.02	1.8	0.02	4.5	27	43.6	0	0	0	0	30	48.4	3	4.8	1	1.6	27	34
7	Kurnool	39	0.08	4.8	0.01	9.8	4	10.3	0	0	1	2.6	15	38.6	7	17.9	11	28.2	5	33
8	Nellore	53	0.13	2.6	0.02	3.63	19	35.8	3	5.7	0	0	14	26.4	9	16.9	0	0	22	23
9	Prakasam	60	0.05	6.5	0.05	11.4	16	26.7	1	1.7	2	3.3	24	40.0	7	11.7	3	5.0	19	34
10	Srikakulam	41	0.03	0.99	0.04	6.13	12	29.3	0	0	0	0	22	53.7	6	14.6	1	2.4	12	29
11	Visakhapatnam	70	0.01	5.68	0.01	5.94	39	55.7	5	7.1	1	1.4	20	28.6	4	5.7	1	1.4	45	25
12	Vizianagaram	43	0.03	4.17	0.05	4.16	11	25.6	4	9.3	1	2.5	22	51.1	4	9.3	1	2.3	16	27
13	West Godavari	51	0.05	1.52	0.03	9.69	26	50.1	0	0	0	0	19	37.3	2	3.9	2	3.9	26	23
	<b>Total</b>	<b>718</b>	<b>0.02</b>	<b>13.14</b>	<b>0.01</b>	<b>19.2</b>	<b>266</b>		<b>35</b>		<b>11</b>		<b>260</b>		<b>67</b>		<b>28</b>		<b>312</b>	<b>355</b>

**ANNEXURE-V**

**District Wise Water Level Fluctuation from Mean of 10 Years ((August 2005-August 2014) with August 2015, Andhra Pradesh State.**

District Name	No of Wells analyzed	Range of Fluctuation (m)				No. of wells/Percentage Showing Fluctuation												Total No. of Wells	
		Rise		Fall		Rise						Fall						Rise	Fall
		Min	Max	Min	Max	0 to 2	%	2 to 4	%	> 4	%	0 to 2	%	2 to 4	%	> 4	%		
Anantapur	39	0.1	5.66	0.08	5.13	5	12.8	3	7.5	2	5.1	12	30.8	12	30.8	3	7.7	10	27
Chittoor	48	0.2	3.9	0.06	7.9	6	12.5	2	4.2	0	0	19	39.6	11	22.9	4	8.3	8	34
Cuddapah	34	0.11	3.3	0.6	31.28	1	2.9	2	5.88	0	0	6	17.6	12	35.3	8	23.5	3	26
East Godavari	90	0.03	3.05	0.01	3.36	45	50	6	6.7	0	0	36	40	3	3.33	0	0	51	39
Guntur	89	0.04	3.3	0.01	7.76	34	38.2	4	4.5	0	0	37	41.6	9	10.1	4	4.5	38	50
Krishna	64	0.02	3.47	0.02	6.7	24	37.5	1	1.5	0	0	31	48.4	5	7.8	2	3.1	25	38
Kurnool	41	0.44	1.8	0.03	10.11	7	17.1	0	0	0	0	16	29	6	14.6	11	26.8	7	33
Nellore	53	0.05	2.37	0.02	5.4	19	35.8	1	1.9	0	0	17	32.1	8	18.1	4	7.55	20	29
Prakasam	60	0.15	4.3	0.04	4.9	13	21.7	0	0	1	1.7	31	51.7	8	13.3	4	6.7	14	43
Srikakulam	41	0.03	1.96	0.04	5.8	15	36.6	0	0	0	0	21	51.2	4	9.7	1	2.4	15	26
Visakhapatnam	70	0.02	5.68	0.01	3.72	43	61.4	4	5.7	2	2.8	19	27.1	2	2.86	0	0	49	21
Vizianagaram	44	0.03	3.31	0.02	3.14	19	43.2	3	6.8	0	0	18	40.1	4	9.1	0	0	22	22
West Godavari	52	0.05	2.2	0.03	9.7	25	48.1	1	1.9	0	0	19	36.5	3	5.7	2	3.8	26	24
<b>Total</b>	<b>725</b>	<b>0.02</b>	<b>5.68</b>	<b>0.01</b>	<b>31.28</b>	<b>256</b>		<b>27</b>		<b>5</b>		<b>282</b>		<b>87</b>		<b>43</b>		<b>288</b>	<b>412</b>