BEHAVIOUR OF WATER LEVELS IN THE STATE OF CHHATTISGARH DURING NOVEMBER 2008

Based on Data Collected from the Network of National Hydrograph Stations in North Central Chhattisgarh Region

The network of hydrograph stations in the North Central Chhattisgarh Region has been monitored for water level from 5th November, 2008 to 30th November, 2008. Out of the 540 observation stations, 438 are dug wells and 102 are piezometers. Water levels, however, could be measured in 419 dug wells & 89 piezometers. For various reasons water levels could not be measured in remaining wells.

Four maps are prepared on the basis of monitoring data, which are described below.

DEPTH TO WATER LEVEL (November 2008):

In general, depth to water level ranges up to 5 mbgl in 73% of the observation wells in the entire area of the state. Water levels ranging between 5 and 10 mbgl occur only in 24% of the observation wells mostly in parts of Jashpur, Kanker, Mahasamund, Rajnandgaon and Surguja districts. In Bilaspur, Durg,J ashpur, Korba, Rajnandgaon and Surguja districts a few wells are showing deeper water levels in the range of 10-20 m bgl. The deepest water level of 19.54 m bgl was monitored in Sambalpur observation well of the Durg district.

Around 17% of the monitored wells in the State are showing water levels between 0-2 m bgl. The highest percentage of wells in this range is in Janjgir Champa district (44%). Water level in the range of 2-5 m bgl is recorded in 55% of the wells monitored. The highest percentage of wells in this range is in Dantewada district i.e 83%. The highest percentage of observation wells exhibiting water level in the range of 5-10 m bgl is noticed in Mahasamund district i.e. 42%.

Different ranges of depth to water table as observed in November 2008 are represented on a map and appended as **Plate-I.**

WATER LEVEL FLUCTUATION (November 2007 vs November 2008)

When compared to water level in November 2007, 27% of the observation wells show rise in water levels in November 2008, mostly in the range of 0-2 m in most parts of the State except in Rajnandgaon, Dantewada, Kawardha and Mahasamund districts where no sire was water level was recorded as compared to that in November 2007. Rise of water level in the range of 0-2 m is observed in 24% of the wells, whereas rise within the range of 2 to 4m is observed in 3% of the observation wells of the entire State. Fall of water level is recorded in 73% of the observation wells. Fall of water level in the range of 0-2 m is observed in 63% of the observation wells in all the districts. Fall of water levels in the range of 2 to 4m is observed in 7% of the observation wells mostly lying in Bilaspur, Durg, Mahasamund, Raipur and Rajnandgaon districts. Fall of water level by more than 4m as compared to Nov'07 is observed in 3% of the wells. Maximum fall of water level of 6.54 m is noted in Urga observation well of Korba district. Maximum rise of water level by 3.82 m is noted in Baloda Bazar observation well of Raipur district.

Different ranges of fluctuation in November 2008 as compared to November 2007 are represented on a map and appended as **Plate-II.**

WATER LEVEL FLUCTUATION (May 2008 vs November 2008):

There is mostly a rise in water level in November 2008 when compared to water level in May 2008. About 96% of the monitored wells exhibit rise in the water level. About 25% of the monitored wells exhibit rise in the water level in the range of 0-2 m in parts of all the districts. In 41 % of the monitored wells the water levels show rise in the range of 2-4 m in most of the districts while the remaining 30% of the observation wells show rise of more than 4 m mostly in major parts of all the districts. The maximum rise of 14.19 m was recorded in Devri observation well of Kanker district. The maximum fall of 1.73 m was recorded in Khati observation well of Durg district.

Fluctuation of water level (May2008 vs November 2008) is represented on a map appended as **plate-III.**

WATER LEVEL FLUCTUATION (Mean of Nov'98 to Nov'07 Vs Nov 2008):

When compared with the decadal mean water level (November 1998 to November 2007), 28.5% of observation wells show rise in water level in November 2008. Out of the wells monitored, 26.4% of the wells show rise upto 2 m, and remaining 2.1% of the monitored wells show rise of more than 2 m. About 71.5% of monitored wells show fall in water level, mostly in the range of 0-2 meter (61%) in all

districts of the State. About 9% of the wells show fall in the range of 2-4 metre in a few districtslike Bilaspur,Durg,Jashpur,Mahasamund,Raigarh, Raipur,Rajnandgaon and Surguja districts.Only 1.5% of the wells monitored show fall of more than 4 m. and is restricted to Durg, Kanker, Korba, Raipur and Surguja districts. The maximum water level rise of 3.4m was recorded in Taraimal observation well in Raigarh district.The maximum water level fall of 5.77m was recorded in Urga observation well in Korba district.

The decadal range of fluctuation has been shown in the **plate –IV.**

PLATE-I

DEPTH TO WATER LEVEL MAP OF CHHATTISGARH
NOVEMBER 2008

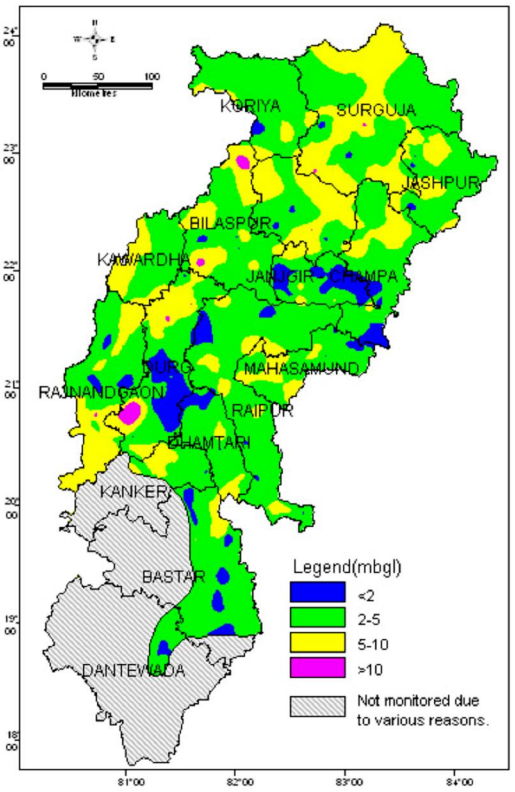

PLATE-II

WATER LEVEL FLUCTUATION MAP OF CHHATTISGARH
NOVEMBER'07 vs NOVEMBER'08

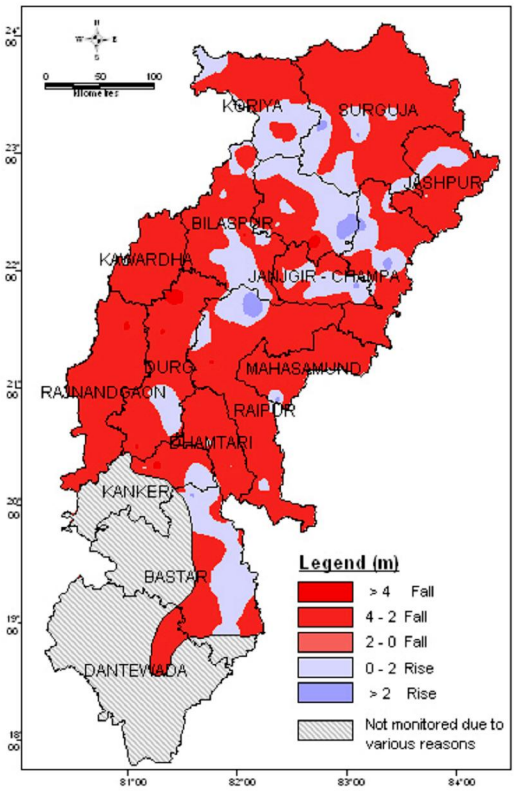

PLATE-III

WATER LEVEL FLUCTUATION MAP OF CHHATTISGARH
MAY'08 vs NOVEMBER'08

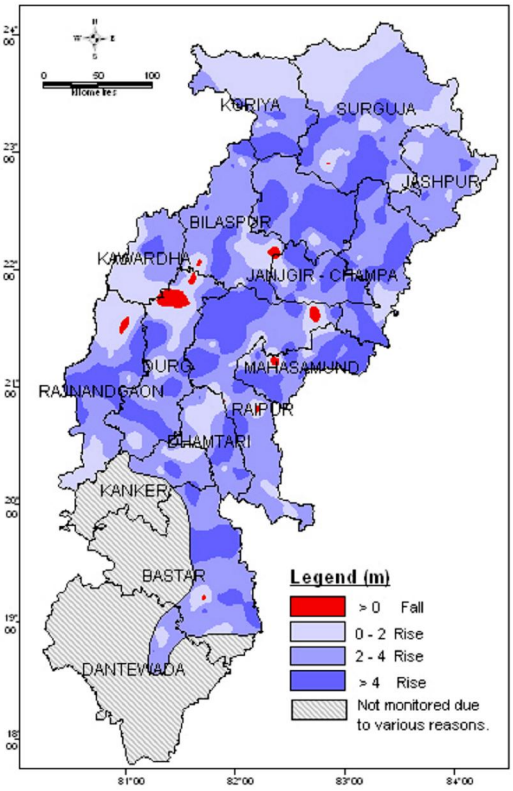

PLATE-IV

WATER LEVEL FLUCTUATION MAP OF CHHATTISGARH
DECADAL MEAN (NOV 1998-2007) vs NOV'08