

The Updated Groundwater Zoning Map of Bangladesh (Prepared in 2011 by using data of 2010)

Groundwater zoning map of Bangladesh has been updated after six years by Bangladesh Agricultural Development Corporation (BADC). The first one was prepared by BADC engineers with the technical support of Bangladesh University of Engineering and Technology (BUET) in 2005 using the data of 2004. Though the first one was prepared without financial support of any project or program, but the updated one needed government support in order to simulate it with mean sea level. The old one was used to know the depth of groundwater level for selecting type, size, discharge, etc. of tube wells used for irrigation purposes. It also helps to know the location and area of different zones based on groundwater tables.

The updated one was prepared by using space technology, geophysical survey and both manual and auto water level recorders. The latitude, longitude and reduced level (RL w.r.t. mean sea level) of 3066 groundwater level monitoring wells and 100 saline water intrusion monitoring wells were measured with the help of RTK GPS during 2009-2011 fiscal year.

As per directives of Hon'ble minister for agriculture Matial Chowdhury and active support of Chairman of BADC, Dr. S M Nazmul Islam, the updated zoning map has been prepared by the Minor Irrigation Information Services Unit (MIISU) division of BADC. This is the first one of its kind in the country. This is known as 3 dimensional digital elevation model, commonly known as groundwater zoning map. It is possible to be used to identify the direction of movement of under ground saline water intrusion if any, and the critical area for shallow tube well irrigation which covers about 63% of the total dry season irrigated area of the country.

If it is compared with that prepared in 2005 using data of 2004, it is clear that a significant changes have taken places which provides us an early warning about the adverse impact of increased withdrawal of groundwater without proper planning. The differences are clearly visible from the findings which is given below both in tabular and graphical form.

Table 1: The comparison of some parameters found in the zoning map prepared by using data of 2004 and 2010.

GW Level (m)	Area in 2004	Area in 2010 (Considering No Data Area)	Difference	Percentage
0.1-5.3	41958	35769	-6189	-14.75
5.3-7.6	31778	34671	2893	9.10
7.6-9.8	14441	13691	-750	-5.19
9.8-11.3	5503	6849	1345	24.44
11.3-15.0	4812	5099	287	5.96
15.0-20.5	1464	3787	2323	158.73

20.5-26.0	200	452	251	125.47
26.0-35.5	112	209	96	85.77
35.5-60+	76	91	15	19.80
River	10856	10856	0	0.00
No Data	31836	31836	0	0.00
Char Land	4260	4260	0	0.00

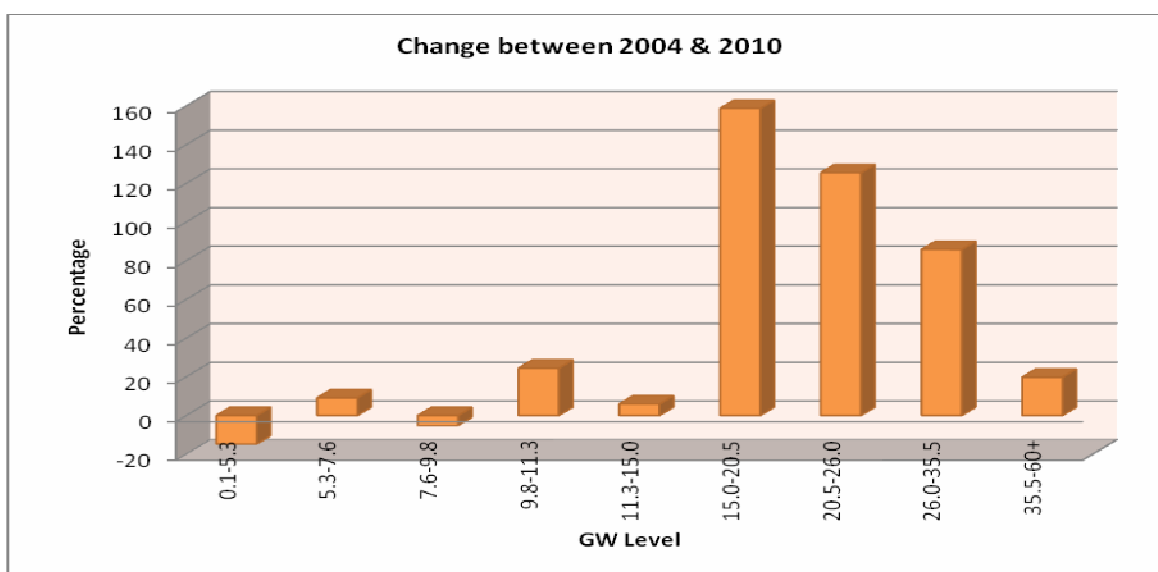
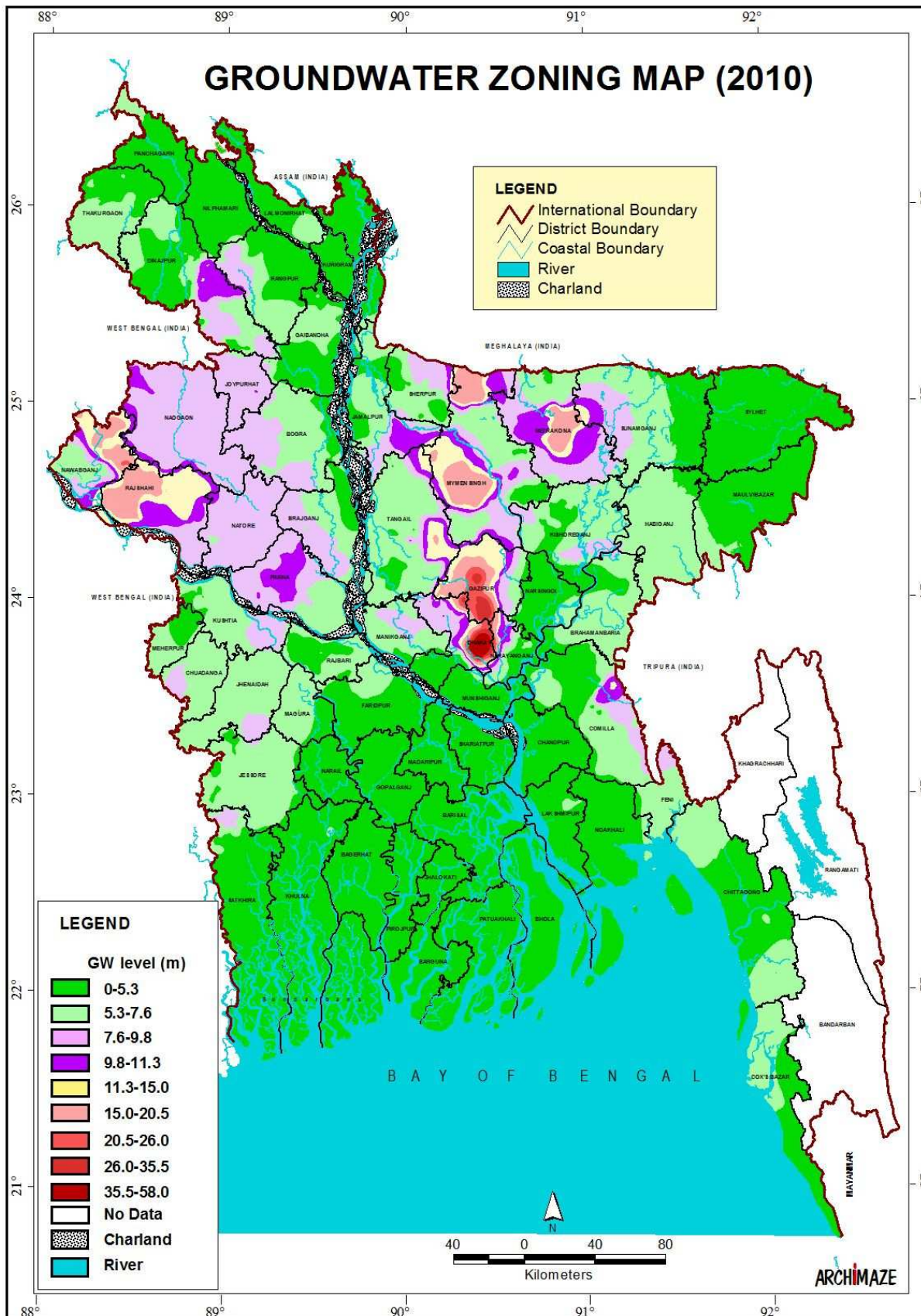


Figure 1: Change in different level's of groundwater between 2004 and 2010.

The updated groundwater zoning map is given below for finding the differences that happened during the last six years. It not only indicates the adverse impact, but also shows us some realistic solutions that should be adopted to overcome the upcoming disaster of underground saline water intrusion and rapid groundwater depletion, if we look at it carefully.

It should be noted that these are happening beneath the earth surface and invisible.

For further information and clarification, contact- Dr. Md. Eftekharul Alam, Chief (MISU), BADC (if required).



GROUNDWATER ZONING MAP (2004)

