



Hazard and Risk Profiling – An Analysis of GBM Delta

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Introduction

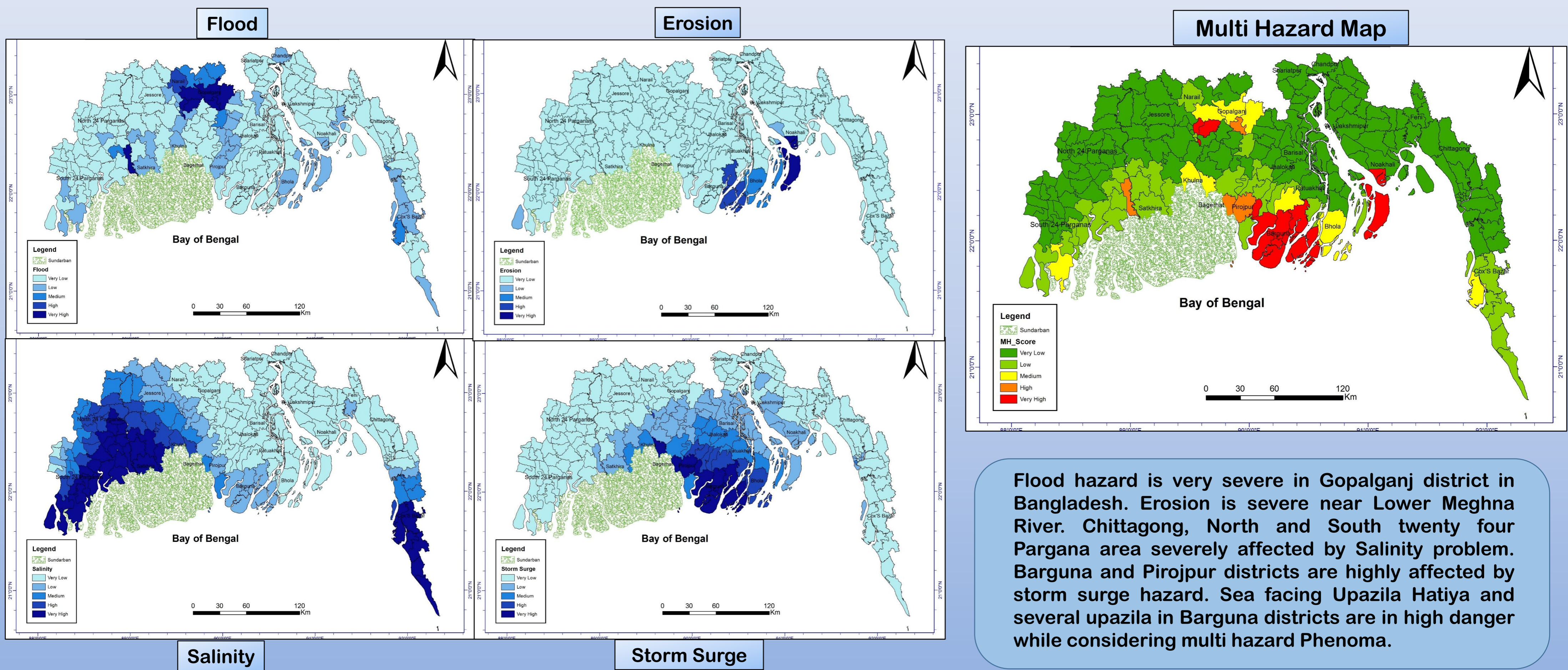
- Ganga-Brahmaputra-Meghna (GBM) delta is a dynamic low-lying area resulting from the interaction between the rivers forming the delta, upstream catchment areas and receiving oceans.
- It is typically hot spot of biodiversity and provides ample natural resources and area of intensive agricultural production and high population.
- At the same time, it is highly vulnerable to environmental hazards such as floods, erosion, storm surges and salinity intrusion. It's sustainability is under threat due to the consequences of global environmental change and human interventions.

Methodology

The Study has been carried out at the 153 Upazilas of Bangladesh and 51 C.D blocks of India using 2011 Census data from Census of India and Bangladesh Bureau of Statistics with MSF Method. IPCC AR5 approach has been used for Hazard and Risk preparation

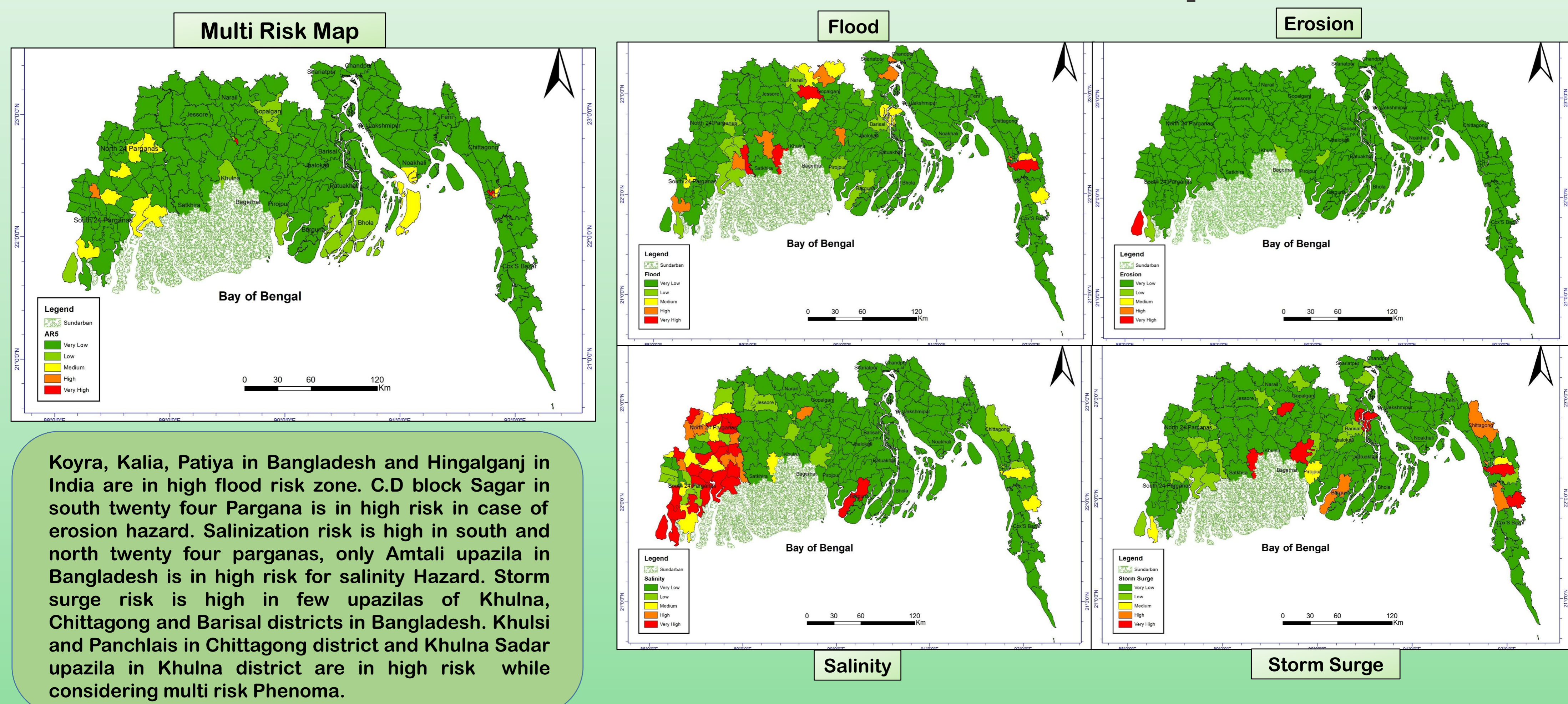
Variables	Indicators	Weight through MSF method
Population Density	Population Density	0.24
Number of Household	Number of Household	0.19
Sex Ratio (Male-Female Ratio)	Type of Household	0.17
Ratio of earning Population to total Population	Proportion of Cropped Land	0.27
Literacy Rate	Literacy Rate	0.13
Percentage of households live in kutcha (temporary) House	Male Female Ratio	0.468
Sources of water supply	Ratio of Total Population to Earning People	0.532
Proportion of cropped land	Source of Drinking Water	0.32
Polder	Polder	0.68

Hazard Maps



Flood hazard is very severe in Gopalganj district in Bangladesh. Erosion is severe near Lower Meghna River. Chittagong, North and South twenty four Pargana area severely affected by Salinity problem. Barguna and Pirojpur districts are highly affected by storm surge hazard. Sea facing Upazila Hatiya and several upazila in Barguna districts are in high danger while considering multi hazard Phenoma.

Risk Maps



Koyra, Kalia, Patiya in Bangladesh and Hingalganj in India are in high flood risk zone. C.D block Sagar in south twenty four Pargana is in high risk in case of erosion hazard. Salinization risk is high in south and north twenty four parganas, only Amtali upazila in Bangladesh is in high risk for salinity Hazard. Storm surge risk is high in few upazilas of Khulna, Chittagong and Barisal districts in Bangladesh. Khulsi and Panchlais in Chittagong district and Khulna Sadar upazila in Khulna district are in high risk while considering multi risk Phenoma.

Conclusion

Assessing Risk zone will help to understand how communities are exposed to multiple natural hazards. From all of the Hazard and risk maps it can be said that South twenty four pargana district is in high risk zone for salinity. Besides this, sea facing districts like Barguna, Chittagong, Noakhali etc. are highly risk prone area for all types of Hazards.

