**Study the Impacts of Land Degradation Processes on Food Security in Coastal Areas of Bangladesh by Using Geospatial Intelligence (Case Study: Impacts of Mega Storm Surge Aila)**

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**Abstract**

Bangladesh ranks top most position among the vulnerable countries in the world due to climate induced natural hazards. Being a vulnerable country Bangladesh tried to improve its overall conditions and achieved remarkable infrastructural developments and increased awareness, particularly in coastal areas, by the combined effort of Government, non government and other social initiatives. Exception prevails with reference to the extremity and uncertainty due to climate change. In May 25, 2009 devastating Aila hit the coastal areas of Bangladesh and bleached embankments, roads and settlements, developed new channels, and increased widths and depths of old channels. As an aftermath huge area has been exposed for a long time to the regular tidal flashing processes by sea water with high salinity. Multiple threats like salinity ingression, contamination of social water (drinking and agriculture use), flood and erosion have been intensified and integrated by Aila.

The potentiality of Geo-intelligence provided a strong support in coupling a wide range of data and geospatial analysis. To study the pre and post Aila situations time series satellite images of different resolutions have been analyzed, and Focus Group Discussions (FGD) have been conducted to perceive the community perceptions that they have experienced between two time periods. The traces of land use and land cover change have been found by analyzing the time series satellite images.

Bangladesh is a shrimp exporting country and southwestern coastal region is the major shrimp growing zone. Economic activities of this region are aquaculture (Gher) dependent. From the analysis of satellite images it is found that massive erosion has occurred in Gher and its surrounding areas. All sorts of socioeconomic activities are more sensitive to the climatic events. Major portions of the community are now dependent on the forest based resources while before Aila most of them were dependent on aquaculture and agriculture.