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Disaster Risk Reduction (DRR) – Damage Assessment of Kosi Flood Disaster, 2008 Through Remote Sensing and GIS

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Abstract:

Natural disasters like earthquake, drought, flood, landslide, forest fire, hailstorm, cyclone, etc. are the perpetual phenomena occurring all over the world that cause devastating impact on human life, economy and environment. About 85 per cent of Indian territory is prone to one or the other forms of disaster. The eastern part of the country including Bihar, Jharkhand, West Bengal, are the worst affected area witnessing frequent recurrence of flood, cyclone, drought, earthquake and forest fire affecting the ecology and economy of the region badly , trapping human lives and leaving the survivors in acute physiological trauma and confusion. Though natural disasters can not be avoided, it is possible to alleviate the potential risk by employing appropriate management system. Space Technology has unequivocally demonstrated its capabilities in providing vital information and services for disaster management. The earth observation satellites provide comprehensive , synoptic and multi temporal coverage of large areas in real time and at frequent intervals and thus have played significant role for continuous monitoring of atmosphere as well as surface parameters related to natural disasters. KOSI, originating from the Tibetan plateau of China and passing through hills and foothills of Nepal confluences with the Ganga in Bihar. Due to its unpredictable meandering behaviour and devastating capabilities the river is regarded as the 'Sorrow of Bihar' The government of Bihar spends crore of rupees per year to meet the eventuality. Centre assistance to manage the disaster depends on political consideration and priority agenda. The National Disaster Management Policy is still to work on regional basis. Kosi flood, 2008 has made a mark in the recent decade taking heavy toll of human lives and resources. An analysis of the causes and magnitude of damage owing to devastating flood has been presented in this communication. ETM+ and MODIS data have revealed that out of 6829.69 sq.km of geographical area of Kosi basin 3105.34 sq.km was completely inundated due to flood that damaged 1249.81 sq.km of crop land. Its short term and long term implications have been visualized and recommendations for combating such disasters have been advanced.