Managing Socio-economic and Hydrological Risks in the Northeast India

Risk management is the term used here for the systematic approach and practice of managing uncertainty and potential losses, involving risk assessment and analysis and the development of strategies and specific actions to control and reduce risks and losses. Northeast India is vulnerable to hydrological risks such as flood-drought-flood syndrome, eutrophication of water bodies, huge runoff from hill slopes resulting in soil erosion, settling of contaminants in different sinks, contamination of surface and groundwater because of its fragile geo-environmental setting and economic underdevelopment. It presents a distinctive geophysical unit set in the pristine Eastern Himalayan Region with a unique physiographic framework having a monsoon dominated climatic and a dynamic hydro-geomorphic regime. The region suffers paradoxically both from water excess as well as water crises. Three factors control flood hazard and vulnerability in the region; changes in climate, terrestrial and socio-economic systems, whose relative order of importance is site specific. The socio-economic risks are shifting cultivation as major agriculture land use, unique land tenure system, free range grazing, un-accessible terrain, population growth, economic and financial risks and, proper infrastructure to deal with the risks. Climate change is likely to have major implications for wetland ecosystems, which will include altered water level regimes due to modifications in local and catchment hydrology. Climate change will increase existing risks of species extinction and biodiversity loss. The focus of the study was on risk assessment and measures to reduce risk within the framework of water resources management and integrate risks across various sectors.