INFORMATICS AND GIS APPLICATIONS FOR RISK MANAGEMENT

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ABSTRACT

The integration of informatics into disaster management strategies is crucial for reducing the risk and impact of disasters. While informatics can be used in forecasting techniques to estimate long-term risks, our focus is on the use of informatics to deliver early warning and detection of impending disasters. This "lookout" strategy of monitoring, warning, action planning, and mitigation allows the opportunity to mitigate or decisively control disasters early on. Mobile telemeters with rain gauge serves as an automatic monitoring system and provides real-time input for disaster warning.

In this presentation we will discuss two types of Informatics: "Semi-GIS" and "GIS" information, including why they are useful and if we overlay GIS layers, what kinds of analysis we can perform. Various informatics layers that will be introduced are sea surface height anomalies, sea surface temperature, drought-risk maps, flood-risk maps, land-slide maps, and flooding images from satellites such as RADARSAT, LANDSAT, and SPOT. Overlaying these layers together helps analyze disaster types that occur in each area. For spatial data analysis, our technology "Internet GIS and MIS" will be demonstrated.

One finding for Thailand is that there are several areas, especially in northeastern Thailand, where both drought and flooding occur in the same location. This information tells us that we need to think of solutions that can solve both drought/flood problems, otherwise we may result with conflicting strategies that could potentially undermine the effectiveness of the other. A comprehensive understanding and strategy help our planning and investments in flood/drought management. An example of shared intelligence is the use of sea surface height anomaly and sea surface temperature informatics to give us a 3-6 month outlook for overall water situations and anomaly potential.