

GIS and Remote Sensing for natural disaster support: emergency and planning actions

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Natural Disaster at the South East of Brazil

- Causes
 - Deficiency of Urban planning
 - Inappropriate human occupation
- Consequences
 - Loss of lives
 - Spread of diseases
- Solution
 - Use of Spatial information and GIS to subsidize the decision-making

Natural Disasters Projects – GIS Lab

- Flood Dynamic Mapping
- Spatial Data Infrastructure for Natural Disasters
- Humanitarian Logistics – Food banks
- Reallocation of population living in risk areas

SDI for Natural Disaster policies – Dangerous cargo

- Sao Paulo State
- Great amount of spatial information
- Many research Institutes
- Difficulties for sharing the information



SDI for Natural Disaster policies

- Developing a conceptual model for SDI to subsidize policies for managing and prevent Natural Disasters at the Sao Paulo state (BRA)
 - Satellite and GPS information
 - Understand the institutional agreements
 - Establish the SDI

Flooding dynamic maps

- Citizen is a Sensor Goodchild (2007)
- Volunteered Geographic Information (VGI) for flood dynamic mapping at Sao Paulo city
 - Satellite images information
 - Cell phones GPS
 - Conceptual model

Humanitarian Logistics – Food banks

- Ontologies to increase the semantic interoperability for humanitarian logistics systems
 - Geographic Information Services
 - Food banks operation
- Use for Geographical Information Services development

Reallocation of population living in risk areas



Reallocation of population living in risk areas

- Difficulty of finding adequate areas
- Population needs
- Sao Paulo Metropolitan Region
 - Sliding
 - Flooding
- Develop of methodology to identify and classify the best areas for reallocate population

Reallocation of population living in risk areas

- Identification of areas
 - Agreement with the GRI of MSU
 - Develop of rules for Geographic Object-Based Image Analysis (GEOBIA) classification
- Classification of the potential areas
 - Infrastructure information
 - Costs on drainage interventions
 - Areas prices
 - Other relevant Information
 - Multi-criteria decision analysis

GIS Lab Contributions to SPIDER

- Training in SDI and Remote Sensing Techniques
- Infrastructure and Knowledge exchange
- University of Sao Paulo and Polytechnic School Infrastructure availability
- Methodology development

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Thank you!!!