

Web and Mobile GIS for Disaster Recovery and Rehabilitation: Use Case of Nepal

Suman Baral (Nepal)

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SUMMARY

The current challenge for Nepal's recovery and rehabilitation efforts after 2015 earthquake is the innovation in data collection, management and its utilization for effective planning, monitoring, evaluation and reporting. Habitat for Humanity Nepal (HFHN) is initiating mobile and web GIS system for overcoming challenges and helping communities in building back safer homes.

Although the system is simple, it is sophisticated in terms of its effectiveness- it is location and image based mobile data collection system coupled with GIS portal for data management and presentation. Data is managed through spatial database management system and presented in the form of web maps, charts and graphs. It contains powerful feature of theme based static/dynamic maps and filtering and analytical features of spreadsheets. This eliminates the hassle of playing around every time with the data to make products (static maps, spreadsheet dashboards) since it's automatically updating system. Moreover, automatic report generation algorithm increases efficiency of management and information dissemination process involving wider community.

As the system is location and image based, HFHN volunteers go to individual houses to collect other biographical, WASH and livelihood information depending on project objectives using mobile. This is called baseline information. It is helpful in identifying what kind of support families and communities need and determine the availability of construction workers and materials. The information can also be used for comparing data at different stages of construction, including while conducting monitoring and evaluation.

Since, usually houses are built on the same location, you only need to update information related to house construction to determine progress. The information can be visualized by the means of above mentioned presentation methods for decision-making. For example, if you click on a completed

house on the web maps, it shows the images of foundation level, superstructure and roofing. This helps in presenting hundreds of success stories in a single map.

The information summarized into maps, charts and graphs is helping HFHN managers and related stakeholders in planning educational and vocational trainings. It will ultimately help communities in improving livelihood and shelter related standards.

Thus, web and mobile GIS when wisely implemented, can speed up disaster recovery and rehabilitation process in an effective and efficient manner. The system then acts as a helping tool for tracking quality against standard i.e. and the progress against the target which eventually results in quality implementation of project, helping the affected communities in need in a transparent way.