

## DevInfo in Action

### Bhutan: Using DevInfo for Emergency Preparedness

*Editor's note: This week's edition explores how Bhutan has implemented EmergencyInfo to address its emergency preparedness needs. To view a recent DevInfo webinar on this topic, please click [here](#).*

On 21 September 2009, a magnitude 6.1 earthquake struck the Himalayan nation of Bhutan, leaving an estimated 7,290 citizens without adequate shelter and causing an estimated US \$52 million in overall damage.<sup>1</sup> For a country of approximately 700,000 people, this represented a large-scale disaster. In the immediate aftermath of the earthquake, the Royal Government of Bhutan and international relief partners faced key questions in preparing for an effective response. What was the extent of the damage? How should resources be distributed? What were the hardest hit areas? Who should take on specific responsibilities for distributing relief?



Photo courtesy UNICEF: Families affected by the Bhutan earthquake receive emergency family kits

This experience highlighted key gaps in the country's existing emergency response system and catalyzed efforts for internal reform, so the nation would be better prepared for its next emergency.

Post-2009, the Department of Disaster Management (DDM) – Bhutan's central government authority overseeing emergency preparedness and response – worked with international partners such as UNICEF to identify the specifications for such an improved system.



#### Improving disaster assessment

According to Kinlay Penjor, Planning Officer, UNICEF Bhutan, the emergency relief community looked to implement a "Bhutan-specific system that would reduce multiple information requests by local actors of the affected population, identify crisis areas, facilitate assessment mechanisms, and enhance coordination between actors and efficient use of resources."

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<sup>1</sup> "[Bhutan Earthquake September 21, 2009: Joint Rapid Assessment for Recovery, Reconstruction and Risk Reduction](#)," report prepared by the Royal Government of Bhutan, the World Bank and the United Nations on 20 October 2009, pp. 5-6, accessed on 29 November 2011.

This process included the creation and implementation of standard assessment tools, standard operating procedures, standardized disaster reports, and rapid response-and-relief operations. With engagement of all relevant sectoral focal agencies and districts, a multi-sectoral rapid assessment tool called the Bhutan Disaster Assessment (BDA) tool was developed, which covers the initial assessment period spanning the first 72 hours and the subsequent period till the 14<sup>th</sup> day.

For the critical component of information management of the assessment, Kinlay explains that [EmergencyInfo](#), a decision support system built on [DevInfo](#) database technology, was the right fit. Adapted in-country as BDAInfo, EmergencyInfo facilitates quick data capture from multiple affected areas and multiple sources. This facilitates the conversion of raw numbers into meaningful and ready-to-use information. The data will be captured manually using standardized questionnaires and subsequently entered into a desktop computer at the district level. The data can then be relayed to DDM via e-mail or other means.



Using EmergencyInfo technology

Specifically, EmergencyInfo provides relief partners with tools to create standard rapid assessment questionnaires; collate, aggregate and analyze the assessment data; and generate timely and quality reports such as Situation Reports (SITREPs).

Kinlay says that EmergencyInfo was appealing in other ways. For one, it has “an established implementation record since 2005 and is founded on DevInfo technology, a technology already used in Bhutan via the customized national database, BhutanInfo.”

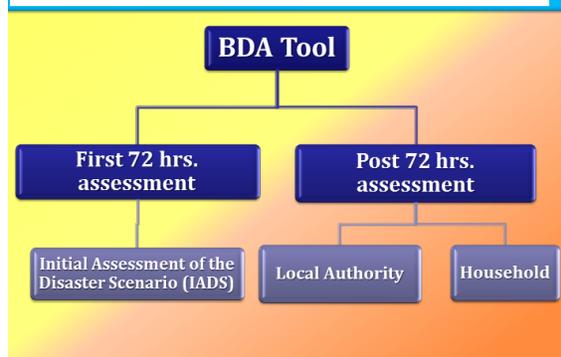
In addition, data capture is available in many forms such as PDA, desktop, mobile phone, and on the web. This flexibility is particularly important because of Bhutan’s varied terrain and at times limited connectivity. Finally, users can conduct basic analyses and generate tables, maps and graphs from the underlying data.

**Achievements and next steps**

Bhutan has come a long way towards full implementation of this improved emergency



Field testing the Bhutan Disaster Assessment tool



BDA tool system flow chart

preparedness system. Most importantly, the Bhutan Disaster Assessment (BDA) tool has been finalized. The BDA provides the methodology, survey templates, and system protocol for disaster assessment and response. The BDA utilizes a three-pronged approach: an initial assessment of the disaster scenario within the first 72 hours, followed up by subsequent assessments at the local authority level as well as at the household level. Local and national government officials, corporations, NGOs, and international organizations have all been oriented on the system.

EmergencyInfo is the technological backbone of the BDA, used to generate electronic forms, surveys and data capture tools. Furthermore, a DevInfo database is being created, ready to receive information from the field during an emergency situation and capable of rapidly generating customized reports, tables, maps and graphs.

### **Looking ahead**

To be certain, challenges still remain before the country is fully ready for its next disaster. Communication gaps between agencies continue to leave the door open for duplication and inefficiency. More local capacity building must take place to support coordinated and efficient localized response. To maintain its relevance within the context of evolving government structures as well as other legal provisions related to national disaster management, the BDA tool must be able to adjust accordingly.

Even so, steps to address these issues are in the pipeline, and the foundation for a much more effective disaster response is now in place. The current BDA tool is being updated in accordance with the latest draft Disaster Management Bill. With climate change – and its resulting unpredictable weather patterns - already affecting Bhutan, the country's investment in the BDA and EmergencyInfo is more important than ever.

*Data making a difference.*

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