Boosting the capabilities of emergency relief efforts

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Humanitarian relief efforts are often hampered by the inability of the different international and local bodies involved to properly communicate and share information. European researchers have come up with a new system to overcome this barrier.

When a relief agency becomes involved in an emergency situation like the aftermath of an earthquake, typhoon or tsunami, it is vital to have as much information as possible so the mission planners know how to best use the resources at their disposal.

There have been efforts made by various international bodies, including the United Nations and the European Commission, to develop harmonised standards which make it possible for different organisations speaking different languages and using different technologies to access information such as satellite images, photographs and maps.

The EU-funded STREAM project has taken this work a step further by creating an IT platform which supports all of these standards, and brings the different information together, so it can be accessed from a single entry point by everybody who needs to use it.

According to project coordinator Prof Hichem Sahli, the project has three main objectives. The first is workflow management to ensure the headquarters can monitor who is doing what and where.

Getting people talking

The second is creating a harmonised description of what people are doing, collecting information which can be shared by the different organisations in the field.

“As things stand, you will often find two organisations working side by side do not talk to each other. One may be assessing structural damage to buildings and infrastructure and the other dealing with the human cost in loss of life and outbreaks of disease.

“Even if they do talk, the data they are collecting is not made use of by both organisations because they are not coded in the same way and don’t have the same meanings, so there is a great deal of duplication of effort. So, we are ensuring harmonised data sharing, exchange, transfer and understanding,” notes Sahli.

Thirdly, STREAM deals with data archiving and the free access to data by both decision-makers and field workers. Quite often when an outside agency responds to an emergency situation, it creates data, uses it for its own purposes and either takes it away or destroys it when pulling out, so nothing is left for the local bodies on the ground, explains Sahli.

If the data is archived and freely available then there is a huge new resource for anybody who needs it.

Not reinventing emergency aid wheel

Different modules have been designed for use in a remote headquarters where all the information is available to the mission planner, in an emergency centre in the country where the effort is taking placing, and by field workers on laptops and PDAs.

Sahli points out that STREAM is intended to add value to existing systems and ways of doing things rather than replacing them, and should be seen by aid agencies and government bodies as an 'extra resource' rather than any form of competition.

"From the very start of the project, we looked at what was being used, particularly by international relief bodies, and then made a list of additional requirements. We didn't want to reinvent the emergency aid wheel, just to make it more efficient."

Once the basic system had been developed and lab tested, field trials were undertaken in Lebanon and Angola. In Lebanon, the project looked at the aftermath of the 2006 fighting between Israel and Hezbollah, which destroyed a lot of buildings and infrastructure and made tends of thousands of people homeless.

Although a lot of data had been collected directly after the fighting finished, not all of it was still available. The project had to collect new data and feed both it and the old data into the STREAM platform to develop scenarios of where to house displaced people and where to put up emergency centres.

Planning landmine clearance

In Angola, the project concentrated on mines left over from its civil war and the independence wars before that.

"We went in prior to the hazard reduction phase to create a picture of which areas were the most dangerous and where the most urgent clearance was needed," says Sahli. "We looked at old maps and updated them using recent satellite images, as well as having field surveyors on the ground to develop a complete and updated picture of the situation."

The results of the trials are still being properly evaluated, he tells ICT Results, with the EU project having been given a five-month extension past the original end date of 30 June, 2008.

“We are also putting together a business plan for future exploitation of the system by international aid agencies and those EU bodies which are involved in aid and emergency relief,” he says.

A central database of all the information collected in different emergencies around the world would be of great help, so that the resource is there to help plan responses to similar emergencies elsewhere.

The end result might not be a safer world, but one in which rescue and help for victims of both natural and manmade catastrophes is conducted more efficiently.

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