

Date

Wednesday 18 July 2007

Title of session

Workshop 2 - Mapping for Disaster Response

Name of presenter/chair

Chair: David Spackman, OEB, Chief Executive, MapAction

Presenter: Nigel Woof, Operations Director, MapAction

Name of rapporteur

Cheryl Morrow, Ordnance Survey of Northern Ireland

Be Prepared, Be very Prepared! This was the key message portrayed to the disaster management workshop. David presented the MapAction experience to the workshop highlighting the various disaster responses they have been involved in. The truly valuable aim of the response team is the improvement of access to spatial information for the humanitarian community when needed most.

MapAction train their teams in mapping techniques, communication and first aid to produce a highly skilled team ready to deploy for action. However, the power of GIS can often be missing at the key stage immediately after the disaster. This is often the case for various reasons including the lack of access to base layer mapping for the disaster area. In many cases this is as a direct result of the countries mapping being controlled by the military and thus often inaccessible to those who need it most.

Asian Tsunami, December 2004:

MapAction were immediately deployed to the Asian Tsunami in December 2004. As the tsunami affected a very large geographical area MapAction needed to set up at an optimum base location. Information was immediate in Sri Lanka and thus MapAction chose to base the team there where information was rich. For the team it was a very steep learning curve in a country with limited shared awareness of GIS capacity. On this occasion the MapAction team faced numerous obstacles including the mapping for disaster areas being controlled by the military and problems with map distribution.

Hurricane Katrina, New Orleans, August 2005:

Whilst some may presume a developed area such as New Orleans would have sufficient means to deal with such a disaster, New Orleans went into a period of shock following the disaster that unexpectedly hit. The MapAction team were again on hand to begin management of this disaster. However, extensive power cuts, limited equipment and lack of cartographers during a time of high demand for the output of paper maps proved challenging.

‘An immediate hindrance to the effective GIS response was the lack of base layers and aerial imagery making the most urgent requirement a comprehensive and easily accessible data source.’

Directions magazine, May 2007

With each of these case studies David reinforced the imperative value of maps whilst initially dealing with a disaster.

Nigel then explored the wide range of the users of GIS in more detail. Nigel asked the workshop for some experience of disaster management. Representatives from the Geographical Survey Institute of Japan then discussed their experiences with the workshop describing Japan as ‘the department store of disasters’.

MapAction deploys to a disaster struck area for an initial period of 10 to 14 days. Thus the team must consider who within the country are going to be the successors of responsibility. It is not always the case that a national disaster plans exist. Therefore many disasters result in a state of emergency being declared with help and involvement being sought from other organisations/countries. It is therefore vital that MapAction plays a part in insuring the appropriate spatial information is available for all involved.

Nigel then discussed with the workshop the vital data requirements

- Base Mapping e.g. Infrastructure, administrative boundaries etc
- Base line human data (pre disaster)
- Situation data (post event)

It is essential for optimum map production that data is seamless and up-to-date.

Nigel also answered the question as to what needs to be in place to generate the right map products at the right time. Particular emphasis was paid to the need for effective distribution methods.

Simulation Exercise:

A very engaging simulation exercise was undertaken by the workshop teams. The densely populated fictitious country of Juliandia was reported to have experienced an earthquake measuring 7.5 on the Richter scale on 2nd of May 2007. The delegates were provided with background information, fictitious web reports and mapping of the area giving the disaster a strong element of realism to the group. The workshop broke into three groups to consider an action plan of their own in facing the Juliandia disaster. Three questions were put to the groups to encourage them to explore fully the spatial provisions needed when dealing with a disaster (see question and answer section at end of paper). The exercise was certainly thought provoking and opened up many lines of

thought for a lively discussion on disaster management.

The workshop was concluded with two further case studies faced by the MapAction team, each drawing on new skills and experiences of the team:

□ Pakistan Earthquake, October 2005:

A key element drawn from this disaster management experience was that daily co-ordination meetings were vital. Information exchange between individuals and teams ensured that the co-ordination efforts were successful. It was clear to the MapAction team that mapping was an essential tool in this information exchange. For example, location maps were crucial to non-local organisations that needed to gain a spatial awareness of the disaster area; orientation, affected population, slope analysis and detailed area mapping each contributed to providing this spatial awareness.

□ Suriname Floods, north coast of South America, May 2006:

When MapAction arrived on scene traditional mapping methods were being used on arrival. This included large paper maps hung on walls benefiting the operation rooms but did not facilitate the distribution of information. This disaster saw a mainly national response with additional aid from some international agencies and NGOs. Situation mapping was used, an essential response planning tool, along with satellite overviews, humanitarian Infrastructure and relief supply distribution mapping. A particularly beneficial map produced was an airstrip characteristics map, allowing international pilot crews to obtain the exact co-ordinates and status of the country's airstrips. A situation map with up-to-date photos was produced by MapAction allowing those dealing with the disaster a greater visualisation before entering the area.

The MapAction team brought to light the great importance of spatial information for the humanitarian community in any location worldwide. It must be recognised that nowhere is excluded from the potential to be struck by disaster but that with the lessons learned from MapAction disaster management can be optimised.

Questions	Answers
<p>What spatial information management resources should be marshalled by the Juliandian government to respond to this emergency?</p>	<p>The decision to physically place mapping resources in a disaster – must be where co-ordination is happening. The logistics and practicalities, the back to basic levels of life – power, heat, transport, food.</p> <p>The need to network and draw on resources e.g. military that would not normally be part of the network. Form a large team of all that can help</p>
<p>What types of spatial data are likely to be required as top priorities in this type of emergency?</p> <p>From where might these be obtained?</p>	<p>First task is data collection – request for information and carry out field survey, key to contact correct people</p> <p>Second task is to produce mapping presenting the valuable information gathered:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Topographic maps at large-scale</li> <li><input type="checkbox"/> Street maps</li> <li><input type="checkbox"/> Road maps</li> <li><input type="checkbox"/> Villages &amp; settlements maps</li> <li><input type="checkbox"/> Database for the census</li> <li><input type="checkbox"/> Commercial/residential zone mapping</li> <li><input type="checkbox"/> Drainage systems mapping</li> </ul>
<p>What should be done by the Juliandia GIS/mapping community after this disaster to prepare for future emergencies?</p>	<p>In an ideal situation the Juliandia GIS/Mapping would resurvey the country at as large a scale as possible, perhaps even employ aerial photography.</p> <p>Key areas to resurvey include:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Infrastructure – road width/classification for supply truck access</li> <li><input type="checkbox"/> Population centres/patterns</li> <li><input type="checkbox"/> Health services</li> <li><input type="checkbox"/> Open areas with potential for evacuation areas – be wary of rain fall in May to Mid June</li> <li><input type="checkbox"/> Schools, halls etc with potential for evacuation areas</li> </ul> <p>It would be beneficial to build strong relationships with the military. Perhaps even becoming involved in disaster training.</p> <p>Locate local food and water supplies to access in first 3 days before aid reaches.</p> <p>It is essential to have situation data from previous</p>

	<p>disasters on hand.</p> <p>It is desirable to have a co-ordinating body—possibly a government cabinet.</p> <p>Distribution programme – distribution centres to print and distribute mapping.</p>
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