

Cartography and GI

Cartography, in connection with geoinformatics, is responding to one of today's most important questions: how can we help solve disaster-reduction requests in general, and early-warning (EW) and crises management (CM) in particular? Cartography has changed much in response to new opportunities offered by Information and Communication Technology (ICT). Intelligent access to databases and interactive user support can be applied not only in locating suitable maps on the internet, but also for map creation and modification according to individual requirements. Instead of just using maps previously created by someone else, these new technologies allow interactive use of cartography on the basis of a user's study and needs for spatial information. New technologies allow "live connection" between the instinctive, inner sphere of our cognition and, via direct interaction, a new generation of cartographic visualisations and thereby almost infinite internet resources in the fields of EW and CM.

Not Just Technology

Disaster reduction is not simply a matter of sophisticated technology and hardware; at root it also means communication and education. Experience shows that not hardware but people must be at the centre of any successful disaster warning and preparedness measures. People must also be the main players in reducing and managing risk, at the core of sustainable development-policy efforts. Prevention of and resilience to disaster, and associated pre-disaster strategy, must be fostered at all levels, from the individual to international organisations. Given this context, the potential for mapping is not visible enough. Cartographers have to be able to offer their own results as part of the above culture. Yet they remain too focused on technological aspects rather than the everyday needs of decision-makers whose educational and professional backgrounds, skills and ways of thinking may differ widely. These people need appropriate cartographic online visualisation support at various levels of hierarchy taking into account their skills, education, level of understanding of geoinformation and ability to perceive digital/analogue graphic output. There is a key role as a decision-support tool for cartographic visualisation in EW and CM based on standardisation, semantics, ontology, modelling and an improved role for critical infrastructures in the era of second-generation spatial data infrastructure (SDI). Future maps for EW and CM must be both more individual than current maps and more intuitively comprehensible. For this, thorough research is needed into map content and controls, so that they become tailored to user needs, not vice versa. This is particularly vital in the domain of early warning and crisis management. Psychological studies of user behaviour are also important.

Topics

A new workgroup on Cartography on EW and CM was established after the 2007 International Cartographic Conference in Moscow (<http://cartography.tuwien.ac.at/ica/>) to cover topics including:

- development of concepts, ontology and standardisation of early warning for hazard, risk and vulnerability mapping and cartographic modelling
- promoting cartographic use of geospatial data and various analysis techniques for EW and CM
- investigating psychological condition of rescued persons and of end users, given by their character and situation-initiating and promoting quality and cartographic modelling, including modern technology for EW and CM
- contributing to global initiatives in EW and CM
- promoting hazard, risk and vulnerability mapping for crisis management and communication
- developing mechanisms and networks for exchange of information among stakeholders.

These came under intense discussion during the Seminar "EW and Disaster/Crises Management " held with EU co-operation as a part of the second Cartography and GIS conference in Borovets, Bulgaria (<http://datamap-bg.com/conference2008/>). The same topics will be highlighted at the first Symposium on Cartography and Geo-information for EW and CM to be held from 18th to 20th November 2008 in Prague, the Czech Republic (<http://c4c.geogr.muni.cz>). The symposium is being organised under the auspices of Professor Petr Fiala, rector of Masaryk University, in co-operation with the European Commission and JRC in Ispra. All experts and sister organisations, such as ISPRS, FIG, IHO and ISDE, from around the globe are invited to participate.