Geo-sociology: Born of Necessity

The breaking up of the Russian tanker Nakhodka in stormy weather in the Sea of Japan on 2nd January 1997 resulted in over six million litres of spilled oil reaching the coasts, seriously damaging the environment and affecting human activity. What lessons could be drawn from this accident? Discussion during the aftermath of the disaster revealed that planning for protection and oil-removal operations required the setting up of an advanced system based on (geo-)ICT. These discussions further disclosed that prerequisite for proper response-phase collaboration among citizens both mutually and between governments were new communication schemes involving web-based GIS and social media.

Oil-spill Model

As a result of the above deliberations Japan developed a web-based oil-spill information dissemination system. The core is an oil-spill simulation model fed by layers of base data and in-situ observations. With the help of SAR imagery, X-band radar, and other remotely sensed data, the system makes possible estimation of the manner of oil dispersal over the sea, and so determination of position and state of the spilled oil over time. The situation over coming hours and days, as forecast by the system, can be uploaded and made available to the general public via Web-GIS. People can be called upon to assist, or take measures to protect their own property or reduce damage to the environment. The US system Geo-Platform, powered by Environmental Response Management Application (ERMA), has similar features to the Japanese system. The GeoPlatform gulf-response site offers the public a 'one-stop shop' for spill response information relating to the oil spill which scourged the Gulf of Mexico from 20th April 2010 onwards, thirteen years after the Nakhodka oil spill.

Lessons Learnt

In the meantime, we have learnt lessons from our own Japanese web-based GIS service. Smooth co-operation during a disaster requires that people be available both during working hours and in their spare time. However, work and private space are usually separate, and this impairs the establishment of human networks in which people are called upon to take responsibility for helping themselves, others and the environment. Our system demonstrates that co-operation between citizens and government is not just a matter of offering a web-based GIS; it requires truly networked groups within a Geospatial Information Society, and this in turn induces the need for further development of Geospatial Information Sociology.

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