



GMES – An instrument for the prevention of risks

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At the dawn of the 21st century, security and environment questions loom large in the public consciousness and increasingly dominate the political agenda. Society demands protection against natural disasters, such as flooding, storms and earthquakes, and man-made ones like pollution, fires and explosions, as well as against the implications of global warming.

Space agencies cannot remain aloof from these discussions. Already, security organisations are using surveillance satellites.

Indeed, these threats are of a global scope, and the only effective way to address them is with collective, global action. Space technology can do more, by facilitating observation, measurement, surveillance and communication and could be the heart of a global environmental intelligence system capable of modelling, explaining and predicting planetary developments and future hazards.

This is what GMES is all about.

Concentrating in vast urban zones has made humanity more vulnerable to nature. Today some three billion humans are gathered in conurbations that cover only a few percent of the Earth's surface, clustered along rivers, near major seismic faults and in coastal regions where they are exposed to hurricanes, flooding, landslides and earthquakes.

This vulnerability has both economic and wider human implications. How long can we continue to put up with natural disasters like the recent spate of deadly earthquakes: 25 thousand killed in Turkey in 1999, 6 thousand killed in Kobe, Japan in 1995. Floods, while less deadly, are devastating in their own right, afflicting developed and developing countries alike. As the climate becomes more unstable, flooding becomes more common. A major reinsurer recently estimated the economic cost of such disasters for a single year, 1999, at over 100 billion Euros.

How do satellites fit into this scenario?

The threat of natural disasters demands integrated surveillance, prediction and warning systems to anticipate and prevent disaster-related damage, and not simply to assess them after the fact. Exploratory ventures have been set up to demonstrate in actual operation how space techniques can be used to prevent, predict and manage the response to disasters. Notably, this has been the charter on space resources and disasters.



An operational capability for preventing, predicting and managing the effects of natural disasters is one of the objectives of GMES. In Europe, flood prediction and prevention with space-based observation is moving forward, entering operational use with civil protection and water resource authorities. Much is owed to the exemplary cooperation achieved between industry, services, government research organisations and the public administration. Space imaging in a disaster- response scenario has repeatedly proven itself in recent times, providing valuable support to rescue teams, civil protection agencies and humanitarian organisations during emergencies (hurricane and landslides in El Salvador, flooding in France, earthquakes in Turkey and India, Nyiragongo volcano eruption, etc.). The Charter played no small role in this assistance.

The next major step will be the creation of an environment governance system for planet Earth. For Europe, the role it will play in that system represents a challenge and an opportunity; for the planet, it is one of the large issues of our time; and GMES has a big part to play.