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The role of satellite observations through the whole disaster monitoring cycle: the impact of new satellite constellations and of collaborative approaches

Stefano Bruzzi and Laura Candela
ASI - Agenzia Spaziale Italiana, Rome, Italy (laura.candela@asi.it)

The contribution of satellite observations to the complete disaster monitoring cycle is to day not fully demonstrated. Several isolated examples exist for the monitoring of the various phases of a disaster cycle. None of them is showing the full capability of satellite observations to contribute to the whole cycle.
Recent more open-minded approaches, based on a collaborative use of satellite resources and observation capabilities, show a promise of an improved availability of satellite observations to support the whole disaster monitoring cycle. Several initiatives pave the way towards a more effective and enlarged use of satellite observations in this domain.

The International Charter for disaster monitoring, created in 1998 by CNES and ESA, has been extremely effective in demonstrating the interest of satellite observations in the post-event activities but, by itself, it falls short of demonstrating an operational, long term and sustainable contribution of satellite data to the complete disaster monitoring cycle.

CEOS has since long attempted a system approach to disaster monitoring, and its recent “Consensus Report” of the ad hoc disaster team shows clearly how a collaborative approach, organizing the potential contributions of different missions and actors, may well provide a more consistent and sustained response to the requirements expressed by stakeholders and actors.

GEO has sponsored some important activities, also supported by CEOS and a plethora of actors in the field: the science oriented GEO-hazards supersites initiative is undoubtedly one of the most promising efforts of coordination in the domain.
The paper will introduce the opportunities offered by the GMES Collaborative Ground Segment to develop sustainable EO-based services to be operated at national level.

These initiatives show the importance of coordination and of the need for a sustained access to several data sources, in order to meet the requirements of the disaster monitoring cycle.

The same initiatives indicate that substantial efforts are underway to make available consistent series of satellite data for the long term monitoring of disaster prone areas and in order to facilitate post-disaster activities.

The paper will depict, on this background, how local efforts have to connect to global initiatives, taking into account the specificity of disaster situations, how in particular a favourable situation is developing in Europe with the coming into operation of the sentinel satellites and with the availability of national missions of extreme interest for disaster monitoring. The European picture guarantees a long term availability of critical data sets and indicates the way for a wider international cooperation, which is well in the makings by the agencies in CEOS.

Without large scale cooperation and a well conceived approach to coordinated observations, all efforts in this domain are bound to fail.

Without extremely efficient local nodes for data access and tailored services no large scale international coordination will succeed.