The Natural Hazards Wikisaurus - Explanation and Understanding of Natural Hazards to build disaster resilience

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The «Natural Hazard WIKISAURUS»

Explanation and Understanding of Natural Hazards to Build Disaster Resilience

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Framework
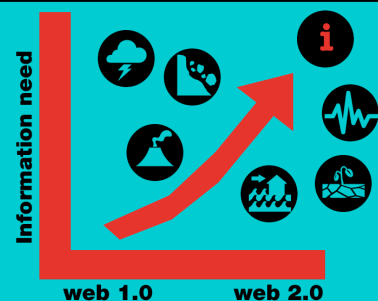
In the internet and web 2.0 era the need of information is increased. Recent major and minor disasters highlighted that information is a crucial element in emergency management. Informing the population is the focus of any civil protection activity and program.
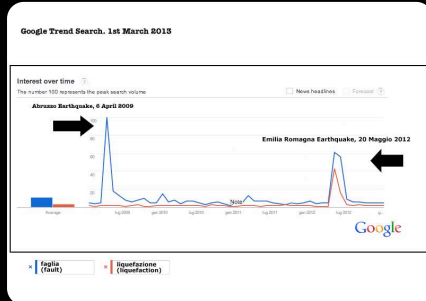
During disaster web information search increases. But there are cases of misleading or inaccurate information published also by media. Reliable validated scientific information on natural hazards becomes a crucial need: scientific contents "findability" score is not a validation index.
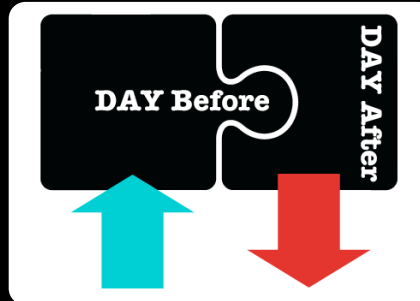
Risk perception and social vulnerability are widely discussed issues "when a disaster occurs": a "day-after" approach that should be replaced by a "day-before" one. Is that a cultural problem? Is it a communication issue?
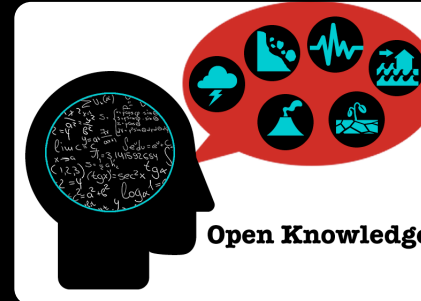
Academic, experts, institutions are called to be more effective in transferring natural hazards knowledge (technical contents), abandoning the "Elites Knowledge" approach and supporting "Open Knowledge" and "Open Data" perspective.
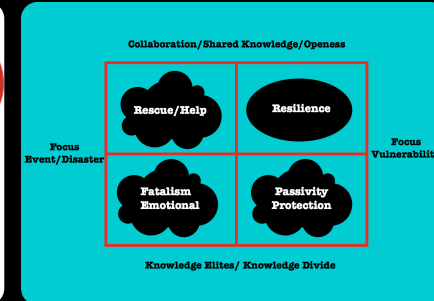
To sustain an Open Knowledge approach the challenge is also to switch from «protection/passivity» (focused on disaster event) to «resilience» (focused on vulnerability).

Objective

Terms can be a source of ambiguity. Terminology approach to identify and communicate Natural Hazards is a relatively new science (F.M. Christensen et al. 2003). A correct and precise vocabulary use in disaster resilience and risk management is an acknowledged issue: e.g. during emergencies is crucial to understand each other on the basis of a common terminology ground where terms and associated concepts are both comprehensive and unambiguous.
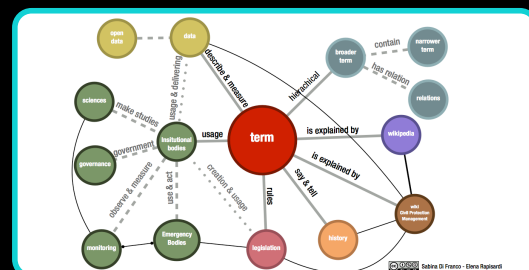
Expected Results

The NHW aims to become a point of reference to break down barriers (language and knowledge,) between practitioners, academics, and citizens, civil servants, media representatives, and students. A "participatory open space" of scientifically validated contents and "relations". Following the state of the art on risk ontologies, NHW is intended as the "matrix" model to be used in "practice" and a first step, for a further challenging programme.

Natural Hazards Wikisaurus - NHW

"HyperIspro" - a wiki on civil protection set up in 2006 and promoted by Giuseppe Zamberletti, former Italian Minister of Civil Protection. A knowledge based web space, to spread validated information in the domain of national civil protection and civil defence.
Sources: ISPRO, Acknowledged practitioners
SW: Wikimedia | Role & Permmissions: subscribed user can modify a term, can not delete previous entries; new contributions are pending for scientific committee approval.

HyperIspro

"Earth Thesaurus" developed by CNR-IIA on environmnetal terminology, combines the search of stable logical and conceptual basis with an applicative flexibility. EARTh is based on a multidimensional classificatory and semantic model. It's basically mono-hierarchical and it has been developed according to a tree semantic model.
Sources: GEMET; ThIST; EnvDev, Australian Emergency Glossary, EMA and others
SW: Supertheses - SQL, UNICODE, Client Server.

Earth

Starting from the «words» (Thesaurus) the aim is to build an augmented «ontology», enriched by a wiki collaboration knowledge (open and participatory knowledge) and the power of linked data. The NHW is intended as a collaborative virtual source with validated information to represent knowledge about Natural Hazards and Civil Protection to sustain and support a common understanding of the concerned area.

Semantic Framework

1. NHW Wiki: Sematification of HyperIspro: MediaWiki, Semantic extensions http://goo.gl/LTRbA.
2. Setting up the NHW Thesaurus: OS platform; Standards compliant (RDF, SPARQL, OWL, and SKOS), W3C guidelines; Thesaurus will help to define the ontologies (Italian and English) to be used as the categories trees of the wiki; implementing the specifications and descriptions of the terms relations.
3. SW review and selection to integrate the two tools so to build a knowledge-based ontology service.

State of the Art