

## THE LONG WAY TOWARDS THE CONSERVATION AND ENHANCEMENT OF THE GEOLOGICAL HERITAGE

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The enhancement and the conservation of the geological heritage represent a huge complex problem, even more challenging compared to the one related to the animal and vegetal kingdoms. The main cause is the poor perception of the value of the geological heritage by the general public. This is due to several reasons: the difficulty to simplify the academic geological language; the distrust of the public towards the geologists, whose figure is generally associated to natural disasters; the lack of concern in communicating to the wide public the issues related to the specialistic geological subjects. For a long time, this has kept away the geologists from the scientific communication system, mainly dominated by issues relating to biodiversity.

Fortunately in the last decades the interest of the general public and local administrations towards this "strategic" issue is growing. This is due, first of all, to a change of mentality, which considers the communication of the scientific subjects an essential aspect. Furthermore, to the high number of dissemination initiatives carried out by associations such as ProGEO (in Europe) and by institutions like ISPRA (in Italy), which have promoted the first geosites census. Finally, thanks to several organizations that enhance the geo-tourism as a new approach to the knowledge of the territory.

However, the way we have to run is still long.

The intent of the authors is to provide an overview on the state of the art of what was done, what is currently going on and what should be done in the future.

### A – TOOLS FOR THE KNOWLEDGE OF THE TERRITORY AND THE GEOLOGICAL HERITAGE

- 1) basic geological cartography and geo-thematic cartography;
- 2) geo-touristic cartography (from protected areas to urban areas);
- 3) geological itineraries and geo-tourist guides;

- 4) numerous museums that deal with geo-sciences;
- 5) the synergies between these museums and the territory;
- 6) the census of the sites of geological interest (<http://sgi2.isprambiente.it/geositiweb/>)

With regard to this point, the availability of products for the general public has increased significantly in the last years. After the first timid experiences, often still designed for specialists, new products have been prepared to be used also by the general public, despite their scientific rigor. Nowadays is quite easy to find suitable material, both surfing the web and in the bookstores, to plan a hike through the geological beauties of a certain location.

### B - THE PROTECTION LAWS AND THEIR ENFORCEMENT, RELATED RESOURCES

- 1) International, national, regional and local regulations. A study on the international and Italian regulations concerning the geological heritage is available on ISPRA's INDEKS website (<http://www.envidocnet.isprambiente.it/INDEKS/public/exposeMuseoVirtuale.do?idVoce=2.3>);

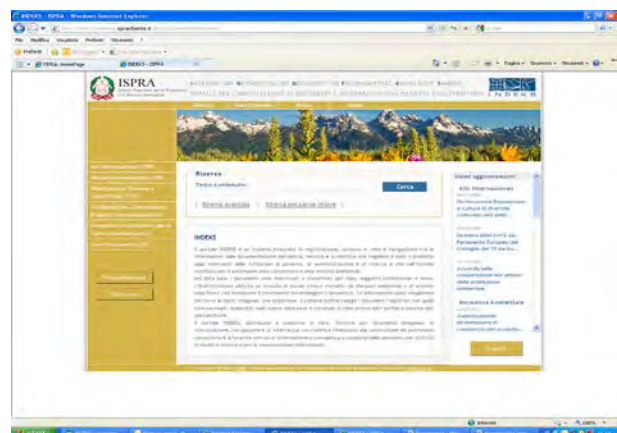


Fig. 1 – INDEKS Indexing and Networking of Documents on Environmental Knowledge Sharing

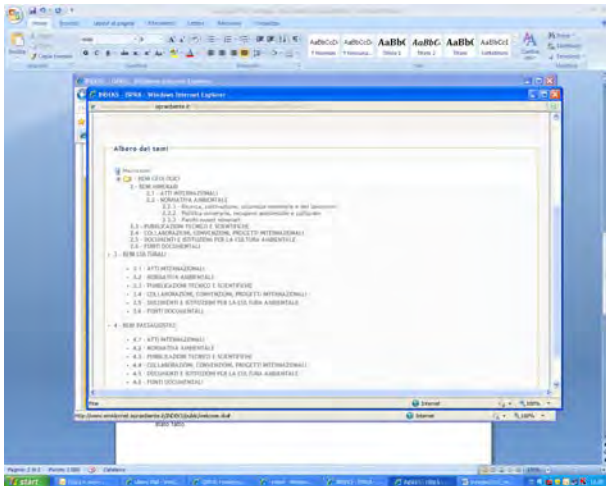


Fig. 2 – Search: Virtual Museum Area - Scheme divided as follows: Property geological, mining, culture, landscape.

- 2) the establishment of areas designed for the geo-preservation: Geoparks, the European EGN network ([www.europeangeoparks.org](http://www.europeangeoparks.org)) and the global GGN network, mining museums and parks, eco-museums;

- 3) the inclusion of the sites of geological interest in the territory planning politics.

Several Italian Regions (e.g.: Puglia, Liguria, Emilia-Romagna) and many foreign countries (e.g.: Spain, Portugal, Greece, Holland) enacted specific regulations, not so much for the enhancement but for the conservation of the geologic heritage, particularly in areas which are not yet protected. Unfortunately, it is necessary to underline that at the moment many of these regulations have not sufficient financial resources and don't provide the employment of dedicated staff. The implementation is often delegated to municipalities that have even less appropriate resources. However, it can be considered is already a good result the fact that in the urban planning, it is necessary to report the geological emergencies.

- 4) the availability of resources for the conservation/enhancement.

### C - THE AWARENESS AND RESPONSIBILITY OF LOCAL MANAGERS

- 1) Integration of Science (researchers), Administration and Management;
- 2) the creation of synergies between areas with similar geological features;
- 3) the ability to use the funding towards effective projects (shared and with long-lasting effects).

This aspect, not separated from the former,

should be the cornerstone of any project that includes the promotion of the geological heritage. Keeping separate the scientific world and the political world, as frequently happens, is a losing strategy. The researcher and decision maker must work side by side, looking for the necessary resources and the way to use them more effectively.

### D - THE DISSEMINATION TOOLS FOR THE ENHANCEMENT OF THE GEOLOGICAL HERITAGE

- 1) The museums as instrument for the transmission of knowledge and the stakeholder engagement;
- 2) the museums in situ as a means of direct enhancement of the territory and geological processes;
- 3) the presence of organizations in the territory, from the institutions to the cooperatives and to the voluntary service, involved in the preservation, dissemination and enhancement of the geological heritage (e.g.: [www.geologiaeturismo.it](http://www.geologiaeturismo.it));
- 4) the organization of exhibitions and events at national and local level;
- 5) mass media, information technology (the ease of access to information is an indisputable advantage), publishing.

Very seldom the mass media dedicate space to specific topics related to the geological heritage, while they prefer to point the attention to the disaster breaking news. Generally we hear talking about geology in the broadest sense of the term only on the occasion of natural disasters. The programs refer to the natural beauties, but hardly describe the mechanisms necessary to understand how everything around us is not the result of an accident. Like the animal species have a specific evolution, our planet has its own evolution and "life" too: the natural heritage is at risk of extinction as well

There would be a lot to say about the subject of dissemination. The museums are important tool of witness, but steps 3 -5 should be developed; finally, the information technology tools are excellent instruments through which it is possible to reach capillary the general public. There's still a lot to do, although much has been done already.

Experiences of geological heritage enhancement in some European countries (Spain, Portugal, Greece, Netherlands) and in parts of European States (Emilia-Romagna, Catalonia, Bavaria) are reported as evidence of the path.