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The contribution of the Geological Survey of Italy to the GeoERA Programme challenges towards a geological service for Europe

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The better knowledge of the subsurface is one of the challenges faced by the Geological Survey Organizations all around the world. The assessment, and sustainable use, also concurrent, of subsurface resources, requires a holistic approach that takes into account also natural hazards and environmental impacts. Such approach is particularly significant in Italy where a large part of the territory is affected by several hazards (earthquakes, landslides, floods, volcanic eruptions, ground subsidence), and the exploitation of subsurface resources has been recently a theme for a scientific and political debate to address, investigate, and manage the potential contribution of human activities to increase natural hazards.

Exploration and knowledge, sustainable use and management, impacts, and publicly available information are key topics addressed in the GeoERA Programme by the Geological Survey of Italy (SGI) a department of ISPRA, through the participation to eight GeoERA projects.

In the Geo-Energy Theme, the SGI contribution focuses on subsurface knowledge and database production: geological 3D model of the Po Basin subsurface as base input data for geothermal assessment of Mesozoic multilayer carbonate reservoir (HotLime); the implementation of the European Fault Database – EFD with information about faults characteristics, including 3D geometry and activity (HIKE).

As regards the Raw Materials Theme, in the last decade, various projects aimed at implementing data and metadata on available raw materials have been fostered by the EU Commission. The projects involving SGI range from cataloguing mineral resources (MINTELL4EU) into a Database INSPIRE compliant, to the inventory of ornamental stones containing information about the physical and mechanical characteristics of the rocks (EUROLITHOS), as well as to deepen the knowledge aimed at a possible recycling/reuse of minerals from extractive wastes (FRAME) in a circular economy perspective.

In the Groundwater Theme, the main efforts of the SGI are involved on the implementation of an Italian inventory of available information on thermal-mineral water, an investigation on their geological background and the preparation of maps and web-map service (HOVER); the calculation of groundwater recharge at selected observation boreholes applying a statistical lumped model

and as well using satellite data to produce spatially distributed recharge maps (TACTIC).

Finally, SGI contributes to the implementation and development of the GeoERA Information Platform that is established to support the other GeoERA projects in managing and disseminating geospatial data, reports and unstructured data, and the results of their research.

In a long term perspective, through the participation to eight GeoERA projects, the SGI has contributed to the development of a geological service for Europe built on the joint cooperation among national and regional geological surveys, that will be the long term objective of the whole GeoERA Programme.

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