



Coordinating and integrating state-of-the-art
Earth Observation Activities in the regions of
North Africa, Middle East and Balkans
and Developing Links with GEO related initiatives
toward GEOSS

GEO-CRADLE Pre Kick-Off Meeting
Friday, 18th of February, 2016
EGS networking event

EuroGeoSurveys
Institute of Geology and Mineral Exploration



F. Chalkiopolou



Brief Information

- ★ IGME is a Public Body supervised by the Ministry of Environment & Energy, with 90% of its budget coming from state funds. It is the Greek State's advisor on special issues in the fields of Geology, Mineral Raw Materials, Geo-Hazards, Hydrogeology, e.t.c..
- ★ Besides drilling machinery and field inspection equipment, IGME has a significant infrastructure in laboratory facilities and equipment allowing the performance of various test works. Part of these serve exploration activities in the Mineral Raw Materials Field, in the extractive wastes assessment and exploitation field, Engineering Geology Studies, hydrology surveys e.t.c..
- ★ IGME collaborates with the Ministry of Energy & Environment, inter alia, for the assessment of pollution in specific cases.





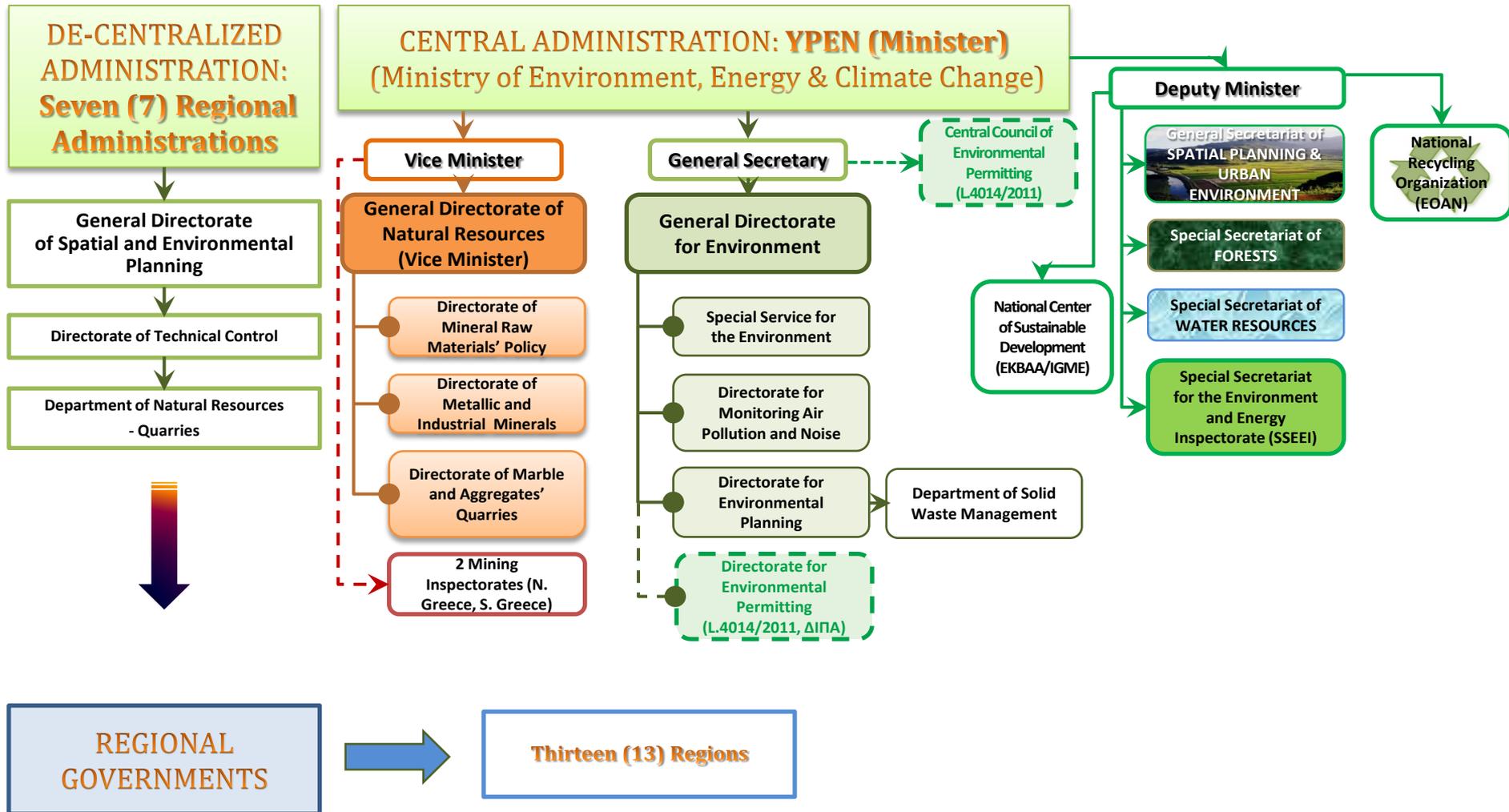
Policy for Mineral Raw Materials (MRM) in Greece – Main Axes

<http://www.latomet.gr/ypan/Hypertrak/BinaryContent.aspx?pagenb=14492>

1. The Mineral National Policy is a basic component of the national and regional development policy of the Country
2. Adequate land use planning that shall ensure the possibility of access to the MRM deposits and contribute to the resolution of issues related to the competition of different land uses.
3. Codification and modernization of the quarry/mining legislation (licensing system, exploration and exploitation, H&S control, environmental issues etc) with emphasis on a) Legal framework for the environmental permit, and b) Legal framework for the exploitation of aggregate quarries.
4. Promotion of dialogue – Acceptance by the local society.
5. Education – Research –Innovation
6. Efficient use of MRM including substitution, reuse, recycling and use of by-products/waste of mining processes, tailings ponds waste and metallurgy waste. The aim is to ensure a rational management and minimization of all mining waste.



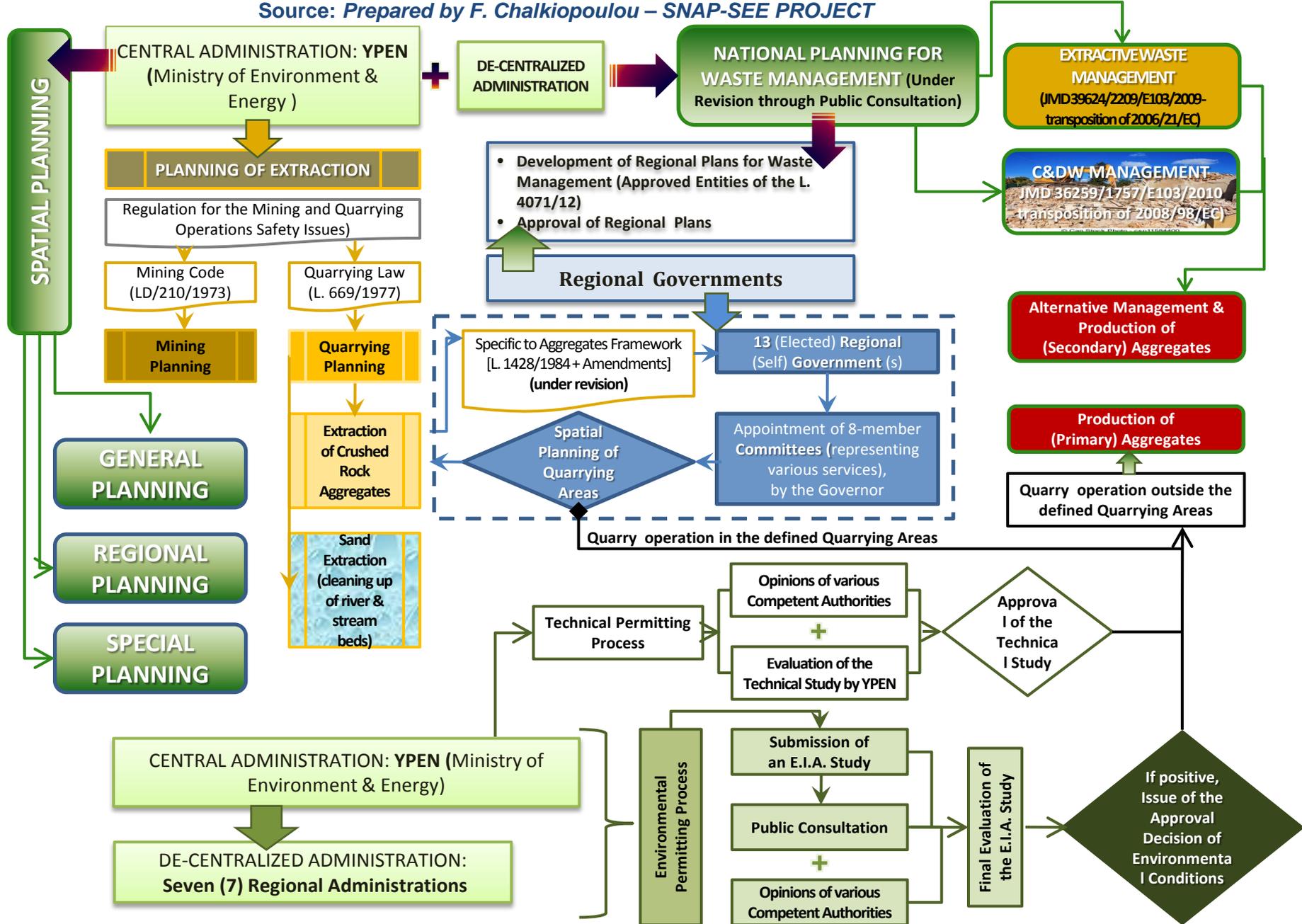
Roadmap of the Competent Authorities Involved in the Planning of MRMs in Greece (2014)



Source: Prepared by F. Chalkiopolou – SNAP-SEE PROJECT

Planning Scheme of MRMs & Aggregates in Greece (2014)

Source: Prepared by F. Chalkiopolou – SNAP-SEE PROJECT





Ministry of Energy & Environment: National Data Base for the Greek Mining Activity

<http://www.latomet.gr/ypan/default.aspx>

- ✦ Sites of "Quarry Areas" in Greece.
- ✦ Information about workforce safety at mining and quarrying sites.
Statistical data on relevant accidents
- ✦ Annual Production data for the Greek mining/metallurgical industry

OPEN DATA:

- ☛ Specially exempted mining areas for reasons of public interest available both (as a web application, as a wms service and as shapefiles (.shp) for downloading)
- ☛ Greek Aggregates specific areas "Quarry Areas"(as a web application, as a wms service and as shapefiles (.shp) for downloading)
- ☛ Greek Geothermal Fields (as a web application and as shapefiles (.shp) for downloading)





IGME: Data Bases for Mineral Raw Materials

IGME Central Data Base

- ★ Geographical and non geographical digital data concerning economic geology information (Industrial Minerals, Metallic Minerals, Marbles, Aggregates, Marble Wastes, e.t.c.)
- ★ Integrated GIS System that includes: a) An Oracle application with forms for data entry, b) An application for metadata management, and c) A GIS application for maps preparation

Other IGME Data Bases

- ★ A number of separate databases including data collected so far within a number of national research projects.





IGME: Arc-GIS Applications

ArcCatalog - ArcInfo - Database Connections\Connection to igme_geodatabase.sde\IGME.MRMARBLEPHOTO

File Edit View Go Geoprocessing Customize Windows Help

Location: Database Connections\Connection to igme_geodatabase.sde\IGME.MRMARBLEPHOTO

Catalog Tree

- IGME.MRMARBLEMARKET_HIST
- IGME.MRMARBLEMECHEQUP
- IGME.MRMARBLEMECHEQUP_HIST
- IGME.MRMARBLEMECHPROP
- IGME.MRMARBLEMECHPROP_HIST
- IGME.MRMARBLEMINFEAT
- IGME.MRMARBLEMINFEAT_HIST
- IGME.MRMARBLEPERSONEL
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- IGME.MRMARBLEPHOTO
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- IGME.MRMARINDMCEQPE

Contents Preview Description

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4500173	4500173	MBAREA	L-38
4500174	4500174	MBAREA	L- 39
4500175	4500175	MBAREA	L- 40
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4500177	4500177	MBAREA	L- 42
4500178	4500178	MBAREA	L- 43
4500179	4500179	MBAREA	L- 44
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4500196	4500196	MBAREA	P - 17
4500197	4500197	MBAREA	P - 18
4500198	4500198	MBAREA	P - 19
4500199	4500199	MBAREA	P - 20
4500200	4500200	MBAREA	P - 21

Preview: Table (of 219)

SDE Table selected





IGME's Data Bases for Mineral Raw Materials – Current Status

- ★ Review and homogenization of the existing databases including their update in order to upgrade their performance and prepare their linkage to other national existing databases, within the National Strategic Reference Framework (NSRF 2007 – 2013)
- ★ The results of other projects, like Minerals4EU (Codelists and base design) as well as the INSPIRE Directive were taken into account.
Promine: IGME compiled the Greek Mineral Raw Materials in Access with 310 entries.
- ★ More work to be done towards this goal in the Programming Period 2014-2020.
- ★ Accessibility issues will be finalized in due time.





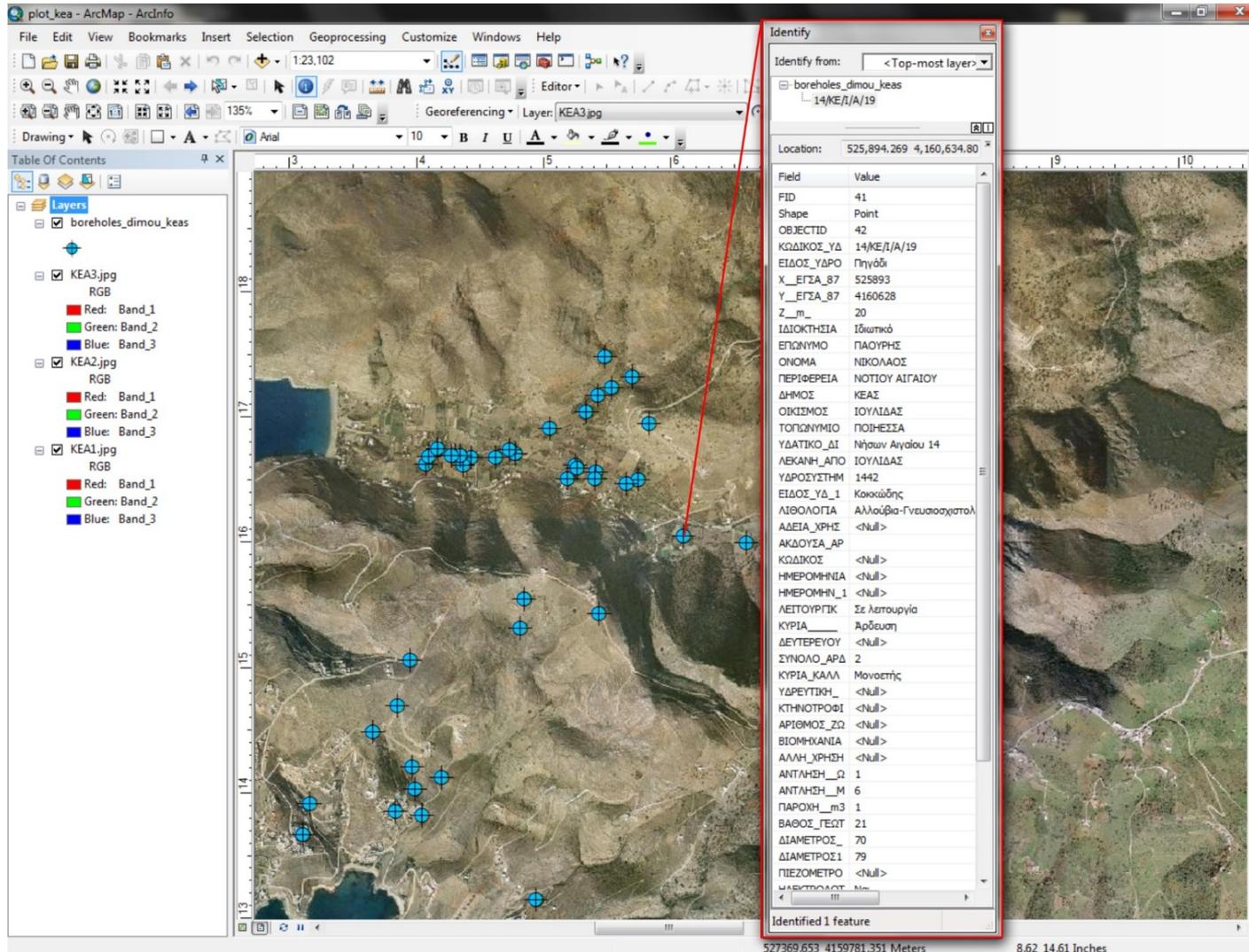
IGME: Hydrogeology Key Research Activities

- 1) ***BOREHOLES INVENTORY AND REGISTRATION IN DATABASE:*** Registration of water boreholes all over Greece, in order to create “National Database of Water Boreholes”
- 2) ***NATIONAL GROUNDWATER MONITORING NETWORK:***
 - ***Operation of an effective and representative monitoring network of main aquifers***
 - ***Monitoring of the spatial-temporal groundwater changes caused by natural or/and human activities***
 - ***Recording of field and laboratory data (hydrological, hydrochemical, physico-chemical, etc) to a Geo-database, in order to support Regional management project-plans and National water policy***

Source: IGME / DPT OF HYDROGEOLOGY



National Geo-Database of Water Boreholes



Data are recorded in Arc Gis GeoDatabase

Source: **IGME / DPT OF HYDRO-GEOLOGY**



NATIONAL GROUNDWATER MONITORING NETWORK

Monitoring Stations Map

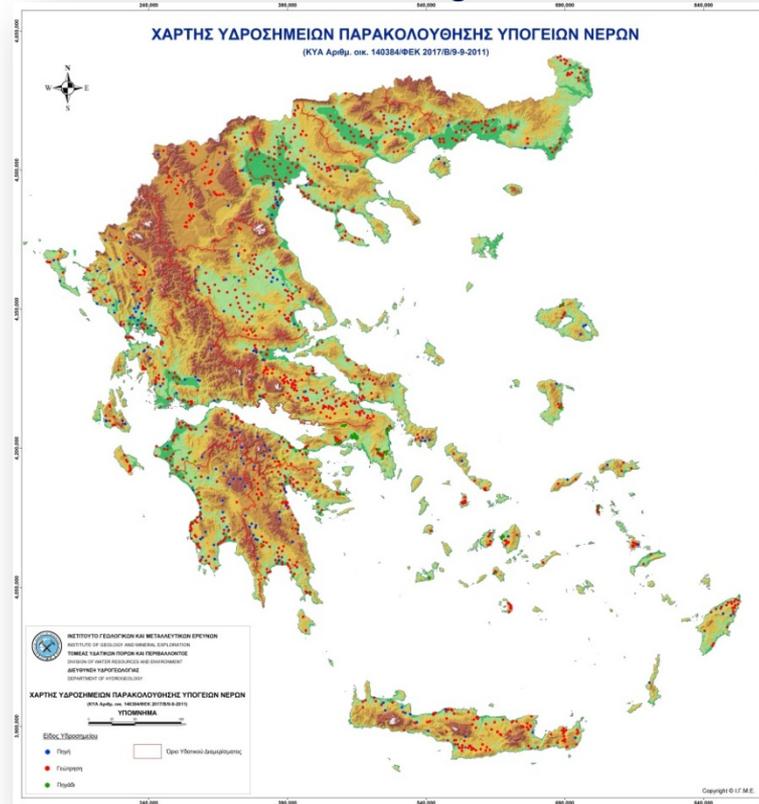
2nd – 3rd Community Support Framework (2000 – 2008)

600 monitoring stations



NSRF (2013 – 2015)

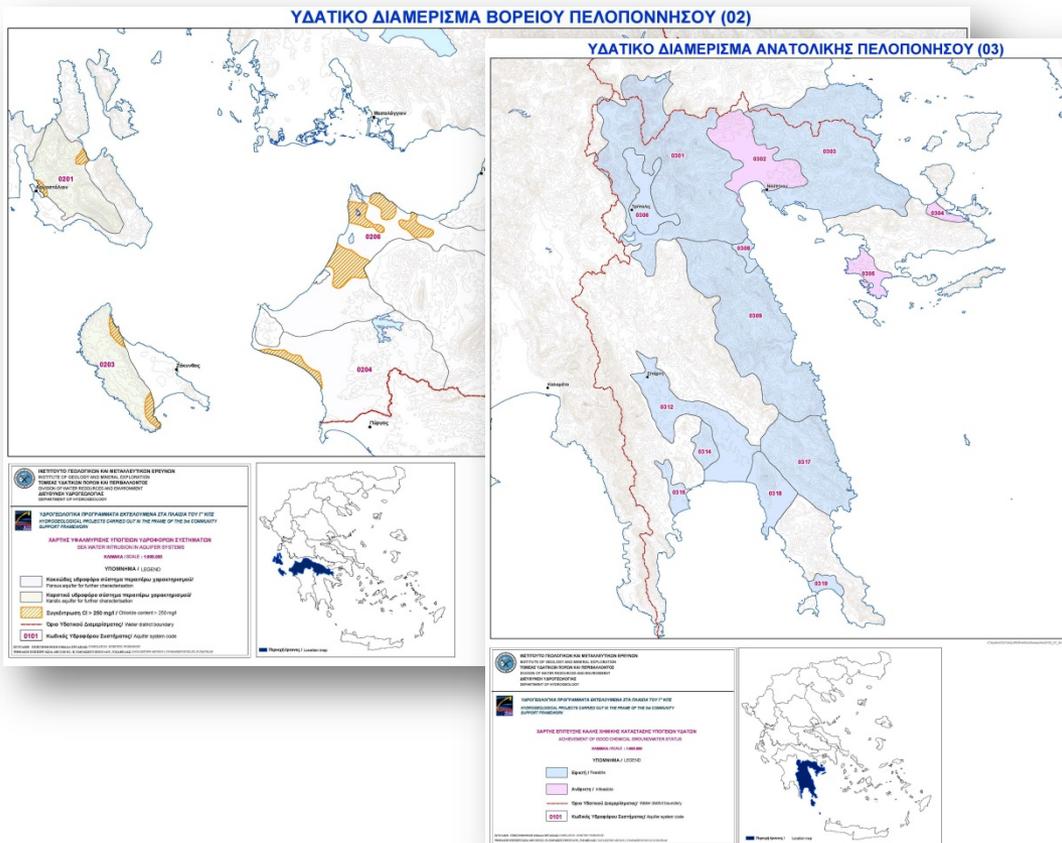
1400 monitoring stations



Source: IGME / DPT OF HYDROGEOLOGY

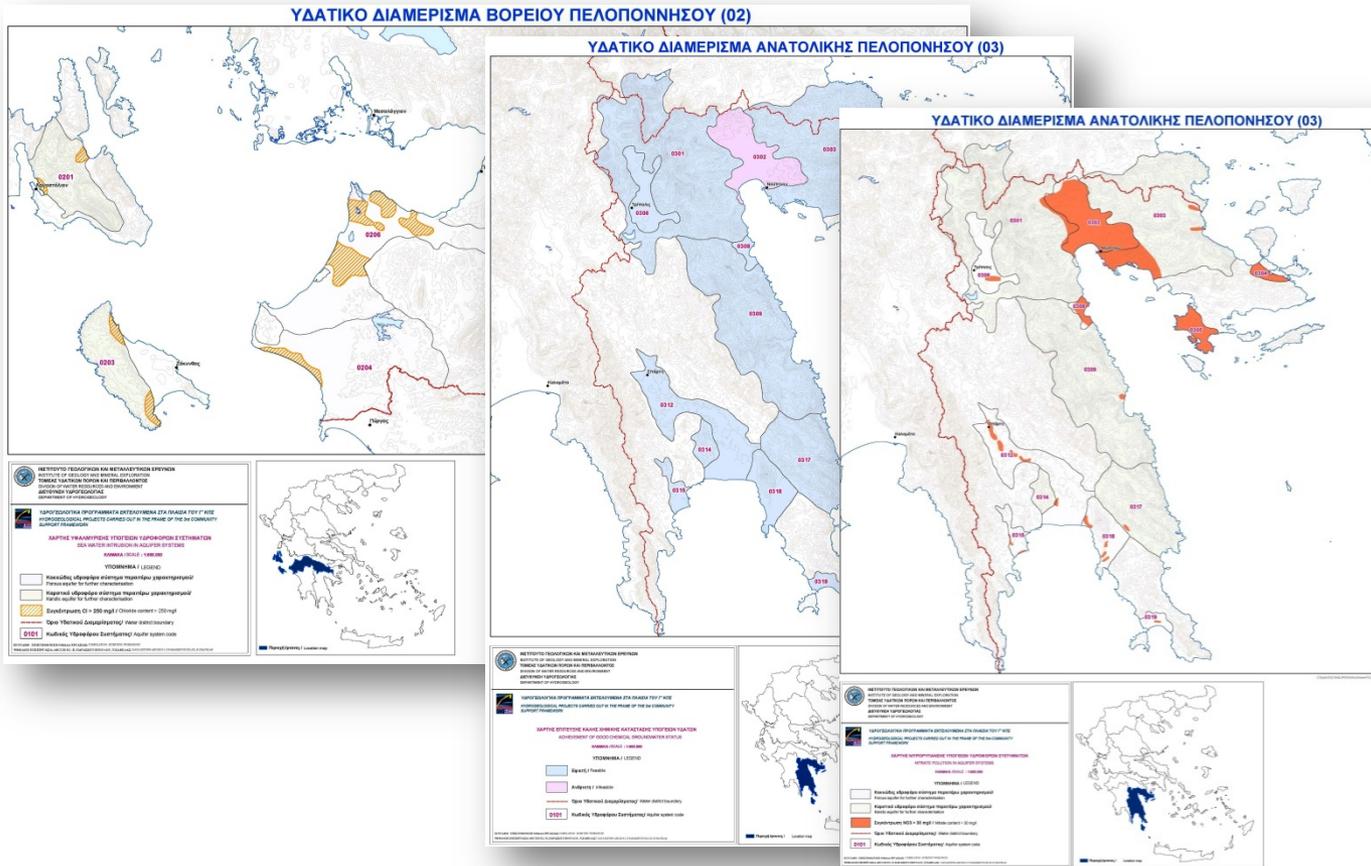
Hydrogeological /Hydrochemical Thematic Maps

Source: *IGME / DEPARTMENT OF HYDROGEOLOGY*



Hydrogeological /Hydrochemical Thematic Maps

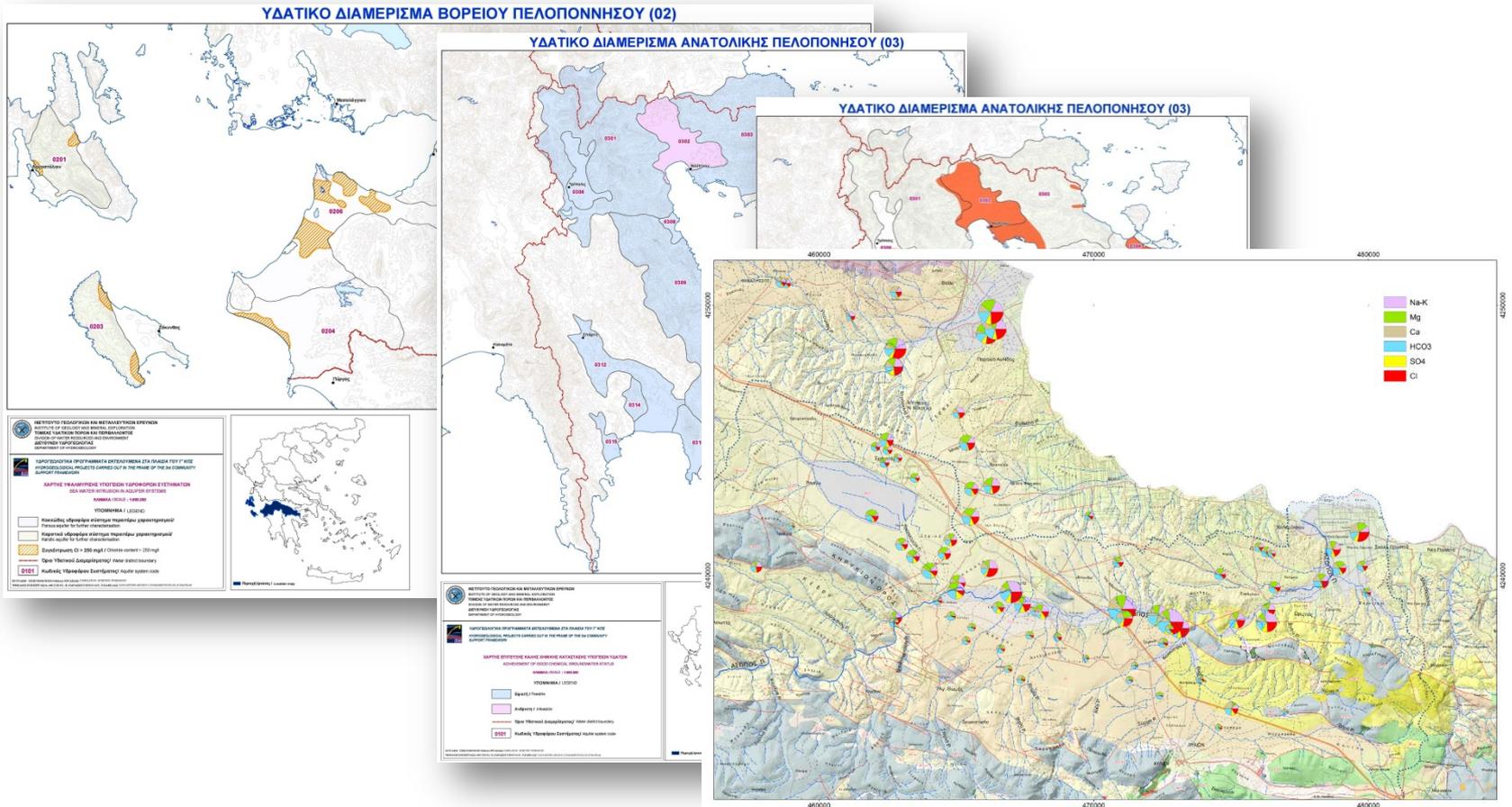
Source: *IGME / DEPARTMENT OF HYDROGEOLOGY*





Hydrogeological /Hydrochemical Thematic Maps

Source: *IGME / DEPARTMENT OF HYDROGEOLOGY*



IGME - GREECE

Thank you for your attention