LIFE14 CCA/GR/000389 - AgroClimaWater
Promoting water efficiency and supporting the shift towards a climate resilient agriculture in Mediterranean countries

Deliverable C1.2: Fully functional Geodatabase

Action C1: LIFE AgroClimaWater Geodatabase development, update and maintenance

Action:	C1
Release:	Version 1
Action Responsible:	HYETOS
Contribution to action's implementation:	IOTSP, LRI, UNIBAS

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Terminology / Abbreviations

Term	Description
C.A.P.	Common Agricultural Practices
CCDA	Nationally Designated Areas
CLC	Corine Land Cover
EL.STAT.	Hellenic Statistical Authority
ESDAC	European Soil Data Centre
GIS	Geographic Information System
GYS	Hellenic Military Geographical Service
IBA	Important Bird Area
IGME	Institute of Geology & Mineral Exploration
OPEKEPE	Greek Payment Authority of Common Agricultural Policy (C.A.P.) Aid Schemes
SCI	Sites of Community Importance
Shp	Shapefile
SPA	Special Protected Areas
USGS	U.S. Geological Survey

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1. INTRODUCTION

The objective of this deliverable is to describe the project's Geodatabase that has already been created and is fully functional. For this reason, a short description of the structure and content of the Geodatabase and the relevant screen shots are included in this deliverable.

2. GEODATABASE

The Geodatabase is a valuable tool for the evolution of the project. It was designed to handle extensive range of data collected and has or will be generated during the project. In this way all data linked with the respective spatial information can be promptly stored, processed and queried, so as to analyze current situation and assess project's results.
In order to develop the Geodatabase, Geographic Information Systems (GIS) and in particular ArcGIS 9.3.1 by ESRI was used. ArcGIS provides contextual tools for mapping and spatial reasoning with the purpose of exploring data and understanding how information is connected (ESRI, 2017).
All data imported in the Geodatabase are projected on the World Geodetic System 1984 (WGS84) and should be accompanied with metadata, according to the INSPIRE directive.
The following chapters present all the details concerning the Geodatabase.

2.1. Geodatabase structure and naming of the data

In order to create a new Geodatabase from scratch, a complete set of tools provided in ArcCatalog was used to create the schema for feature datasets inside the database as depicted in Fig. 1. The type of Geodatabase that was chosen for this project was a personal Geodatabase in order to be small and easy to handle by all partners. A feature dataset can be considered to be as a sub-directory within the Geodatabase to store feature classes and elements governing spatial behaviour.

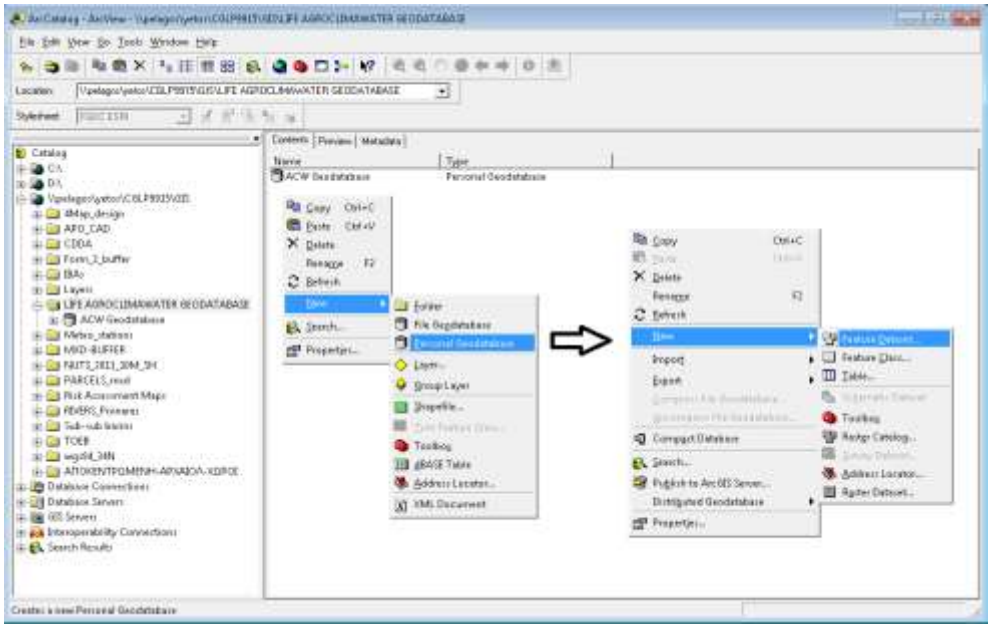


Fig. 1: Geodatabase development

The Geodatabase was sub-divided in three feature datasets; one per pilot area, in order to organise the relevant data for each area and to apply the same topology rules to all of them (Fig. 2). All feature classes (data) in each feature dataset share the same projection, XY tolerance and XY resolution. Tabular data and raster data are stored at the base Geodatabase level and cannot be stored inside the feature classes (Fig. 3).
Concerning the input of the data, which are in various formats (shapefiles-.shp, raster datasets), the ArcCatalog import tool was used to migrate-convert these data into the Geodatabase. After their import, ArcCatalog was used for further modifications such as building attributes, adding fields, etc.

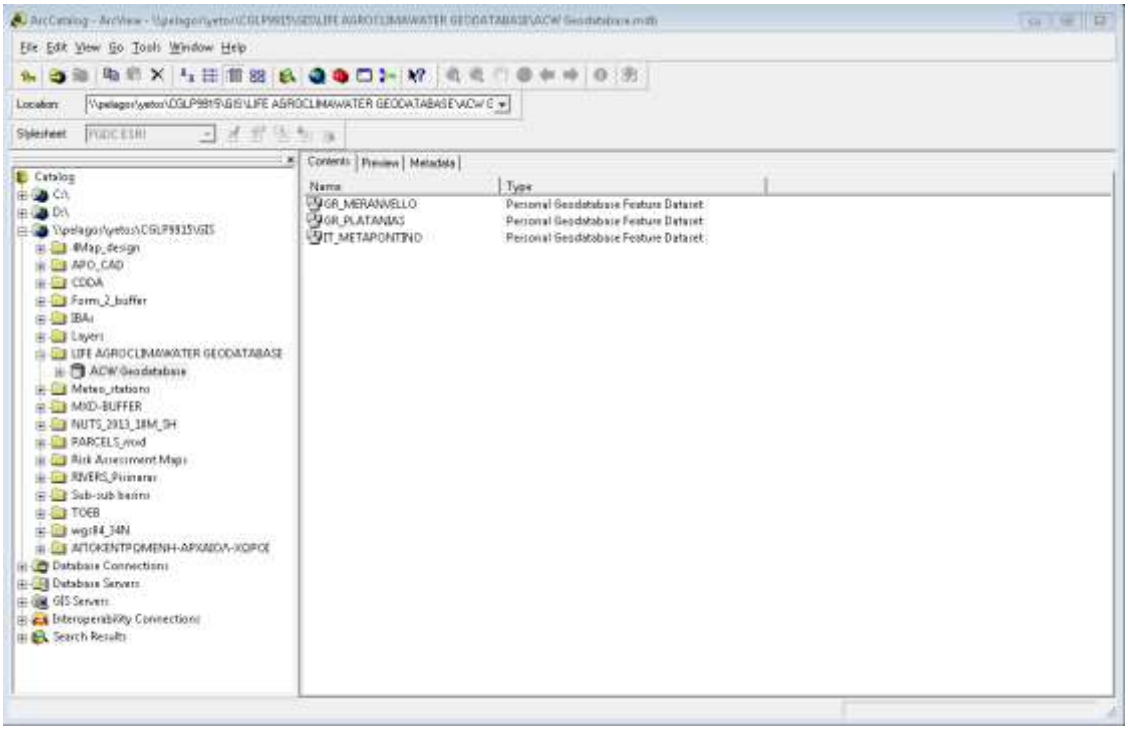


Fig. 2: Feature Datasets of the Geodatabase

The name of each dataset is the name of the pilot area (GR_MERANVELLO, GR_Platanias IT_METAPONTINO), the feature classes' names start with the three first letters of the name of the pilot area, for instance PLA_soils (Soil data for Platanias' pilot area), MER_geology (Geological data of Mirabello's pilot area), MET_HydroSystem (Groundwater data of Metapontino's pilot area).

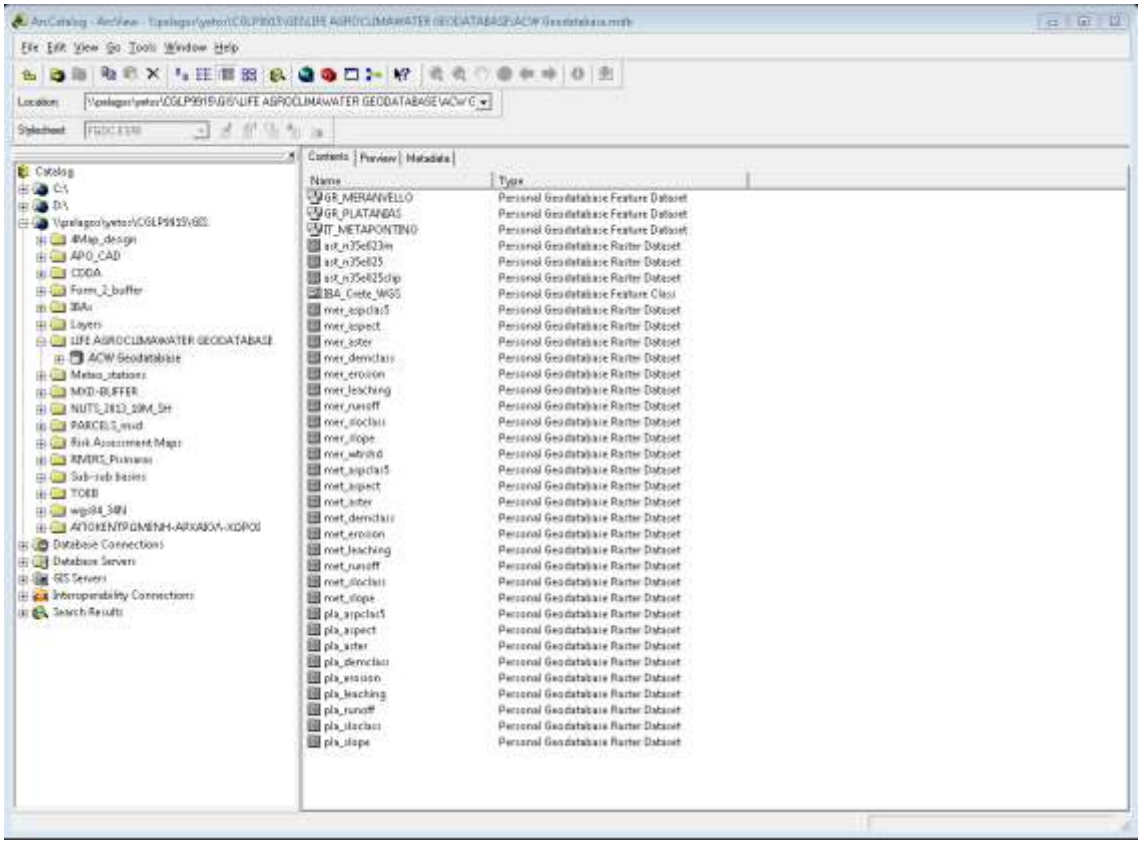


Fig. 3: Raster Features inputted in the base Geodatabase level

2.2. Data quality control

Given that data was and will be collected and generated throughout the duration of the project, from more than one source and by all beneficiaries, data quality control is applied. In order to assure validity, integrity and completeness the following control is taken place.

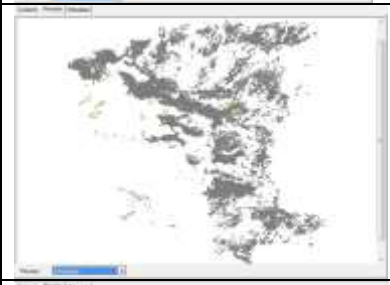
Firstly, there is the need of checking the content of each data if it is relevant with the project's purpose. Also, after importing the data in the Geodatabase, a control concerning the boundaries of the files, their projection system and their validity is made. If there are inconsistencies concerning the boundaries of the files the relevant modifications is taken place in order to use these data for the project's purposes. As far as their projection system is concerned, all data is modified in case their projection system is other than WGS84 and then there is the need of rechecking the data to avoid significant changes in their shape-boundaries. The validity of the data is made by choosing data from authorized bodies.

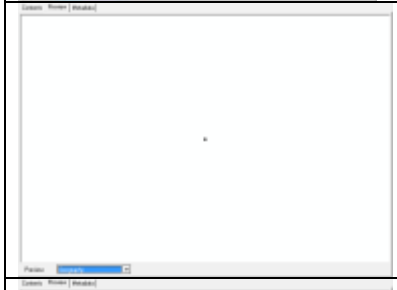
2.3. Geodatabase content

As mentioned in Chapter 2.1 the Geodatabase was sub-divided in three features datasets one per pilot area (Table 1, Table 2 and Table 3). The following tables show the content of each feature dataset and their corresponding source.

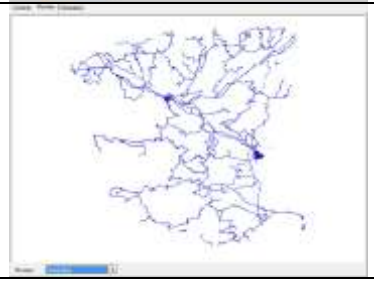
Table 1: Content of the feature dataset of Mirabello

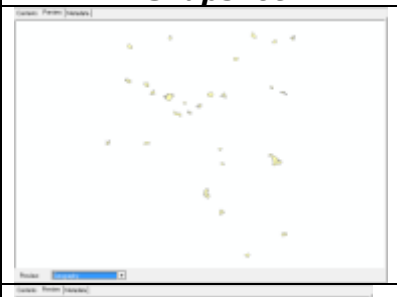
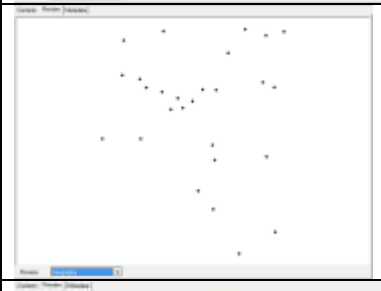
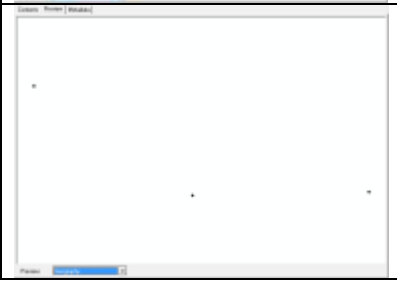
Name	***Description***	***Source***	***Snapshot***
ADMIN_Meranvello	It concerns the boundaries of the Municipality of Agios Nikolaos	After contacting Agios Nikolaos Municipality, the corresponding shapefile was sent to HYETOS	
MER_basins	It concerns the River Basins within the Municipality's boundaries.	HYETOS' scientific team digitalised the contour lines from the maps of the Hellenic Military Geographical Service (GYS), these were inputted in AutoCad CIVIL 3D 2012 and then the team formed the basins and sub-basins, which were imported in the Geodatabase.	
MER_subbasin	It concerns the River Sub-basins within the Municipality's boundaries.		
MER_pilotsubb	It concerns the pilot sub-basin that was selected for the implementation of the project.		

Name	***Description***	***Source***	***Snapshot***
MER_CCDA_GRC	It concerns the Nationally designated areas (CDDA), which are areas designated under national legislation for the purpose of nature protection.	These data were acquired from EIONET Central Data Repository: http://cdr.eionet.europa.eu/gr/eea/cdda1	
MER_corine	It concerns the Corine Land Cover (CLC) for Greece for the year 2000, in accordance with the deliverables of the CORINE programme of the European Union.	These data were acquired from Geodata, where the Hellenic Mapping and Cadastral Organization had uploaded them as open data: http://geodata.gov.gr/dataset/corine-2000	
MER_crops	It concerns the exact location and types of crops in the area of Agios Nikolaos.	LRI requested the relevant data from Greek Payment Authority of Common Agricultural Policy (C.A.P.) Aid Schemes (OPEKEPE) and the relevant shapefiles were acquired were forwarded to HYETOS.	
MER_drillings	It concerns the exact location, type and other information of the drillings in the Municipality of Agios Nikolaos.	These data were downloaded as an excel file from the Decentralized Administration	

Name	***Description***	***Source***	***Snapshot***
MER_irrigation_use	It concerns the drillings that are only used for irrigation purposes	of Crete. Then, by using the columns that were showing the exact coordinates of the drillings, the relevant shapefiles were produced by HYETOS. http://www.apdkritis.gov.gr/en/dataset/ground-water-wells-crete	
MER_OtherUses	It concerns the drillings that are used for other purposes (e.g. industrial, touristic)		
MER_potable_use	It concerns the drillings that are only used for drinking water		
MER_geology	It concerns the geology of the pilot area.	The relevant geological maps were bought from the Institute of Geology & Mineral Exploration (IGME), then, they were scanned and were digitalised by HYETOS' team.	

Name	***Description***	***Source***	***Snapshot***
MER_hydrogeo	It concerns the geological formations' water permeability and their categories.	After producing the Geology shapefile, HYETOS' scientific team managed to categorise the formations according to their water permeability and produced the corresponding shapefile.	
MER_HydroSystem	It concerns the groundwater bodies that are within the administrative boundaries of Agios Nikolaos Municipality.	The relevant maps of the River Management Plan of Crete (GR13) were used and were digitalised by HYETOS' scientific team.	
MER_NATURA_SCI	It concerns the Sites of Community Importance (SCI) according to the EU Directive 92/43.	These data were acquired from the Ministry of Environment & Energy, where they have them as open data for download. http://www.ypeka.gr/?tabid=504	
MER_NATURA_SPA	It concerns the Special Protected Areas (SPA) according to EU Directive 79/409.		

Name	***Description***	***Source***	***Snapshot***
MER_Parcels	It concerns the final list of the pilot parcels.	These shapefiles were produced by using the excel files that farmers had filled in with all the relevant information concerning their parcels (coordinates, irrigation, fertilization, etc.) by HYETOS.	
MER_Plots	It concerns the first list of the farms that were considered to be used for the project's purposes.		
MER_riv	It concerns the hydrographic network of the area within the administrative boundaries of Agios Nikolaos Municipality.	HYETOS' scientific team digitalised the contour lines from the maps of the Hellenic Military Geographical Service (GYS), these were inputted in AutoCad CIVIL 3D 2012 and then the team formed the hydrographic network, which was imported in the Geodatabase.	
MER_roads	It concerns the road network of the area that falls within the Municipality of Agios Nikolaos.	The first data were acquired from the OpenStreetMap https://www.openstreetmap.org/ Then, HYETOS made all the required modifications, so as to use the shapefile in the Geodatabase.	

Name	***Description***	***Source***	***Snapshot***
MER_settlem	It concerns the Settlements of the country as polygon shapefiles.	These data were acquired from Geodata, where the Hellenic Statistical Authority (EL.STAT.) had uploaded them as open data: http://geodata.gov.gr/dataset/oikismoi	
MER_settlem_point	It concerns the Settlements (point shapefile) of the country as used by EL.STAT., for census purposes		
MER_soils	It concerns the soils of the area of interest.	The map produced by the Institute of Geology and Mineral Exploration (I.G.M.E) was downloaded from the European Soil Data Centre (ESDAC) and then was digitalized by HYETOS. http://esdac.jrc.ec.europa.eu/content/soil-map-greece-edafologikos-xartis-ellados	
MER_springs	It concerns the springs that are located within the Municipality of Agios Nikolaos.	HYETOS requested these data from the Decentralized Administration of Crete and then imported them in the Geodatabase.	

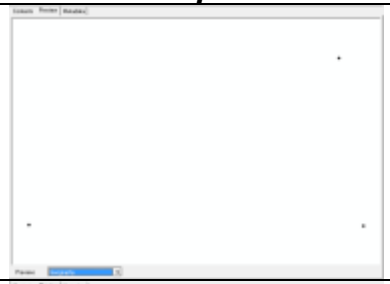
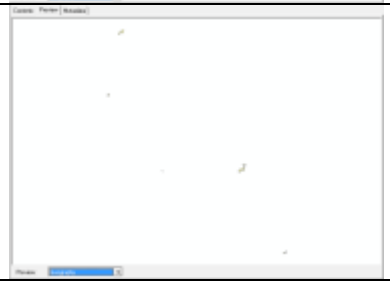
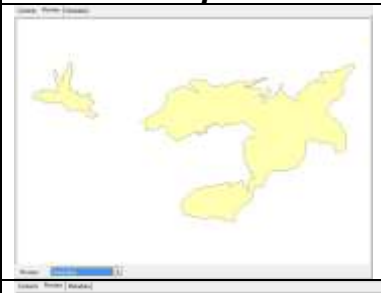
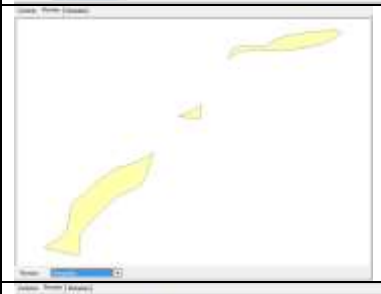
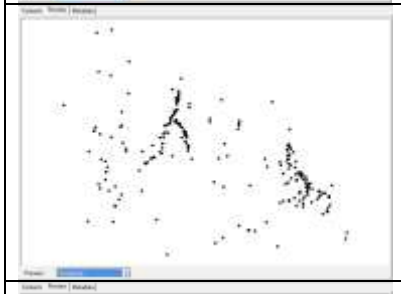
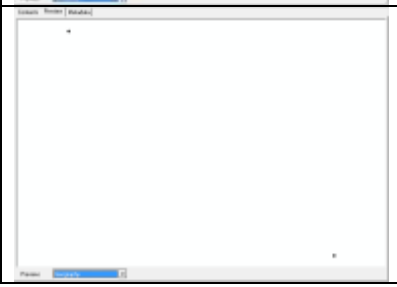
Name	Description	Source	Snapshot
MER_stations	It concerns the location of the meteorological stations that are located in the area of interest and its surroundings.	These data were downloaded as an excel file from the Decentralized Administration of Crete. Then, by using the columns that were showing the exact coordinates of the meteorological stations, the relevant shapefiles were produced by HYETOS. http://www.apdkritis.gov.gr/el/dataset	
MER_wetlands	It concerns the small natural island wetlands contained in the Presidential Decree "Small island wetlands list approval and defining the conditions and restrictions for their protection" published in the Government Gazette 229 AAP/19.05.2012.	These data were downloaded from Ygrotopio, the WWF portal for the dissemination of environmental information on Greek island wetlands. http://www.oikoskopio.gr/ygrotopio/general/article.php?id=30&lang=en_US	

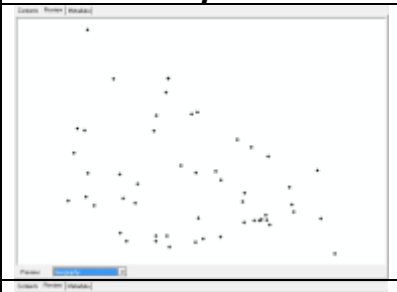
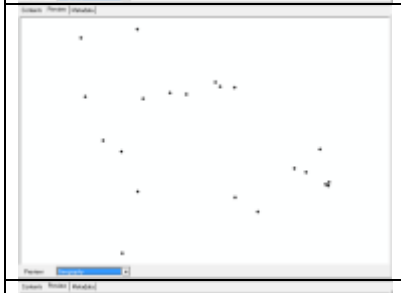
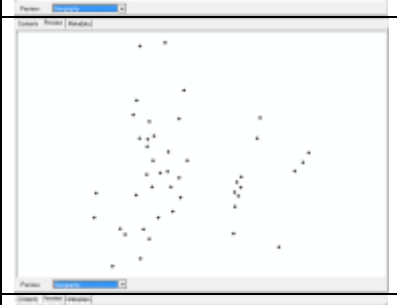
Table 2: Content of the feature dataset of Platanias

Name	Description	Source	Snapshot
ADMIN_PLATANIAS	It concerns the boundaries of the Municipality of Platanias.	After contacting Platanias Municipality, the corresponding shapefile was sent to HYETOS	

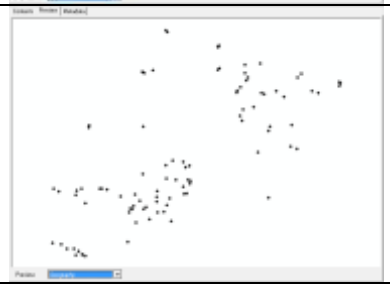
Name	***Description***	***Source***	***Snapshot***
PLA_basins	It concerns the River Basins within the Municipality's boundaries.	HYETOS' scientific team digitalised the contour lines from the maps of the Hellenic Military Geographical Service (GYS), these were inputted in AutoCad CIVIL 3D 2012 and then the team formed the basins and sub-basins, which were imported in the Geodatabase.	
PLA_subbasin	It concerns the River Sub-basins within the Municipality's boundaries.		
PLA_pilotsubb	It concerns the pilot sub-basins that were selected for the implementation of the project.		
PLA_CCDA_GRC	It concerns the Nationally designated areas (CDDA), which are areas designated under national legislation for the purpose of nature protection.	These data were acquired from EIONET Central Data Repository: http://cdr.eionet.europa.eu/gr/eea/cdda1	

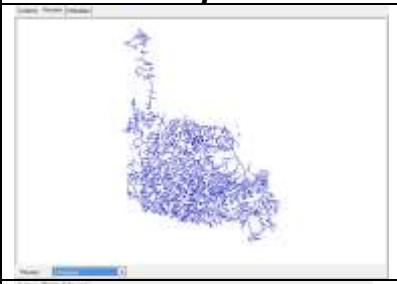
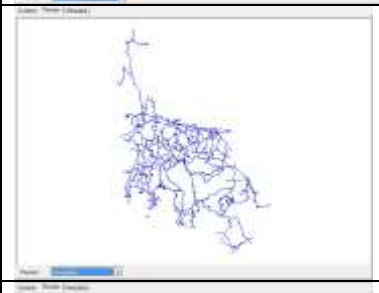
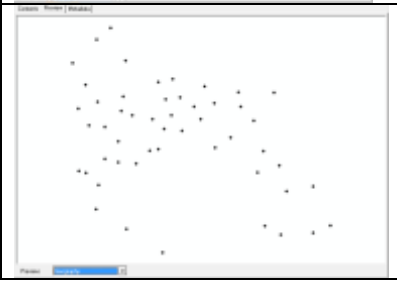
Name	***Description***	***Source***	***Snapshot***
PLA_ProForests	It concerns the Protected Forests that are within Platanias' administrative boundaries.		
PLA_Wildlife	It concerns the Wildlife Refuges, as characterized by the Law 2637/1998 in the area of interest.		
PLA_Woodland	It concerns mainly forests with special ecological and scientific interest (National Woodland parks)		
PLA_corine	It concerns the Corine Land Cover (CLC) for Greece for the year 2000, in accordance with the deliverables of the CORINE programme of the European Union.	These data were acquired from Geodata, where the Hellenic Mapping and Cadastral Organization had uploaded them as open data: http://geodata.gov.gr/dataset/corine-2000	

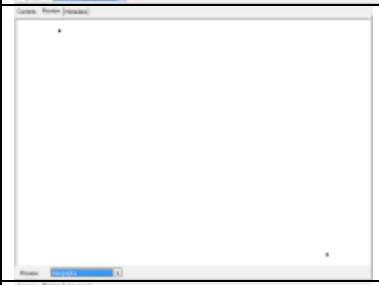
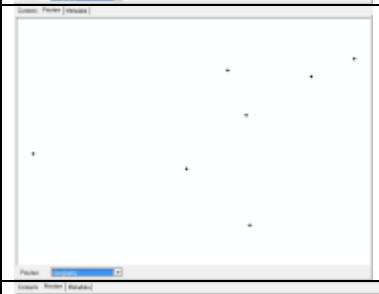
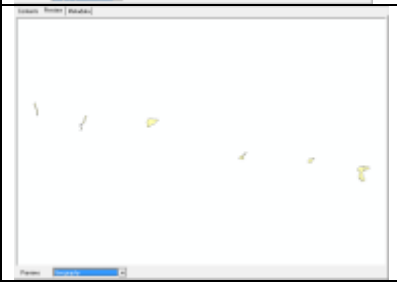
Name	***Description***	***Source***	***Snapshot***
PLA_crops	It concerns the exact location and types of crops in the area of Platanias.	LRI requested the relevant data from Greek Payment Authority of Common Agricultural Policy (C.A.P.) Aid Schemes (OPEKEPE) and the relevant shapefiles were acquired were forwarded to HYETOS.	
PLA_drillings	It concerns the exact location, type and other information of the drillings in the Municipality of Platanias.	These data were downloaded as an excel file from the Decentralized Administration of Crete. Then, by using the columns that were showing the exact coordinates of the drillings, the relevant shapefiles were produced by HYETOS. http://www.apdkritis.gov.gr/en/dataset/ground-water-wells-crete	
PLA_irrigation_use	It concerns the drillings that are only used for irrigation purposes		
PLA_OtherUses	It concerns the drillings that are used for other purposes (e.g. industrial, touristic)		

Name	***Description***	***Source***	***Snapshot***
PLA_potable_use	It concerns the drillings that are only used for drinking water		
PLA_ker_drill	It concerns the drillings that are located in Keritis River Basin.		
PLA_tavr_drill	It concerns the drillings that are located in Tavronitis River Basin.		
PLA_geology	It concerns the geology of the pilot area.	The relevant geological maps were bought from the Institute of Geology & Mineral Exploration (IGME), then, they were scanned and were digitalised by HYETOS' team.	

Name	***Description***	***Source***	***Snapshot***
PLA_geology_ tavronitis	It concerns the geology of Tavronitis River Basin.		
PLA_PAgeology	It concerns the geology of the two pilot sub-basins in Platanias.		
PLA_hydrogeo	It concerns the geological formations' water permeability and their categories.	After producing the Geology shapefile, HYETOS' scientific team managed to categorise the formations according to their water permeability and produced the corresponding shapefile.	
PLA_HydroSystem	It concerns the groundwater bodies that are within the administrative boundaries of Platanias Municipality.	The relevant maps of the River Management Plan of Crete (GR13) were used and were digitalised by HYETOS' scientific team.	

Name	***Description***	***Source***	***Snapshot***
PLA_NATURA_SCI	It concerns the Sites of Community Importance (SCI) according to the EU Directive 92/43.	These data were acquired from the Ministry of Environment & Energy, where they have them as open data for download. http://www.ypeka.gr/?tabid=504	
PLA_NATURA_SPA	It concerns the Special Protected Areas (SPA) according to EU Directive 79/409.		
PLA_Parcels	It concerns the final list of the pilot parcels.	These shapefiles were produced by using the excel files that farmers had filled in with all the relevant information concerning their parcels (coordinates, irrigation, fertilization, etc.) by HYETOS.	
PLA_Plots	It concerns the first list of the farms that were considered to be used for the project's purposes.		

Name	***Description***	***Source***	***Snapshot***
PLA_riv	It concerns the hydrographic network of the area within the administrative boundaries of Platanias Municipality.	HYETOS' scientific team digitalised the contour lines from the maps of the Hellenic Military Geographical Service (GYS), these were inputted in AutoCad CIVIL 3D 2012 and then the team formed the hydrographic network, which was imported in the Geodatabase.	
PLA_roads	It concerns the road network of the area that falls within the Municipality of Platanias.	The first data were acquired from the OpenStreetMap https://www.openstreetmap.org/ Then, HYETOS made all the required modifications, so as to use the shapefile in the Geodatabase.	
PLA_settlem	It concerns the Settlements of the country as polygon shapefiles.	These data were acquired from Geodata, where the Hellenic Statistical Authority (EL.STAT.) had uploaded them as open data: http://geodata.gov.gr/dataset/oikismoi	
PLA_settlem_point	It concerns the Settlements (point shapefile) of the country as used by EL.STAT., for census purposes		

Name	***Description***	***Source***	***Snapshot***
PLA_soils	It concerns the soils of the area of interest.	The map produced by the Institute of Geology and Mineral Exploration (I.G.M.E) was downloaded from the European Soil Data Centre (ESDAC) and then was digitalized by HYETOS. http://esdac.jrc.ec.europa.eu/content/soil-map-greece-edafologikos-xartis-ellados	
PLA_springs	It concerns the springs that are located within the Municipality of Platanias.	HYETOS requested these data from the Decentralized Administration of Crete and then imported them in the Geodatabase.	
PLA_Stations	It concerns the location of the meteorological stations that are located in the area of interest and its surroundings.	These data were downloaded as an excel file from the Decentralized Administration of Crete. Then, by using the columns that were showing the exact coordinates of the meteorological stations, the relevant shapefiles were produced by HYETOS. http://www.apdkritis.gov.gr/el/dataset	
PLA_wetlands	It concerns the small natural island wetlands contained in the Presidential Decree "Small island wetlands list approval and defining the conditions and restrictions for their protection" published in the Government Gazette 229 AAP/19.05.2012.	These data were downloaded from Ygrotopio, the WWF portal for the dissemination of environmental information on Greek island wetlands. http://www.oikoskopio.gr/ygrotopio/general/article.php?id=30&lang=en_US	

For the areas of Platanias and Mirabello, HYETOS bought the Important Bird Areas (IBAs) shapefiles from the Hellenic Onrithological Society for the entire Crete, as shown in Fig. 4.

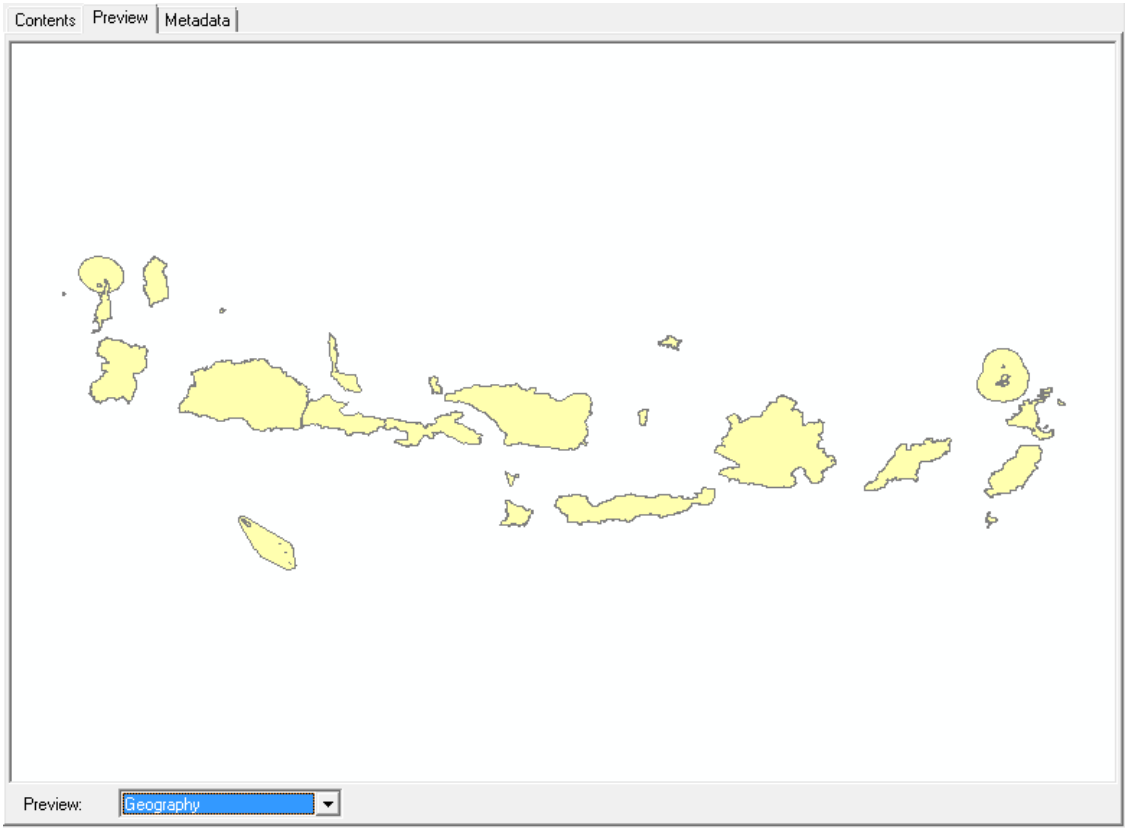
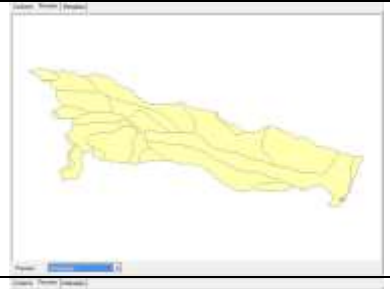
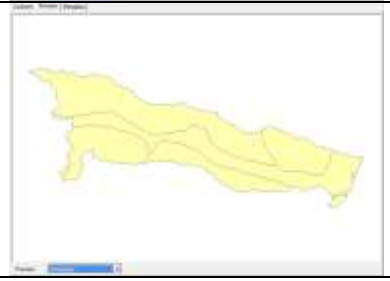


Fig. 4: Preview of the Important Bird Areas of Crete

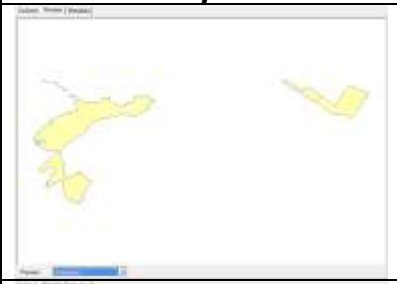
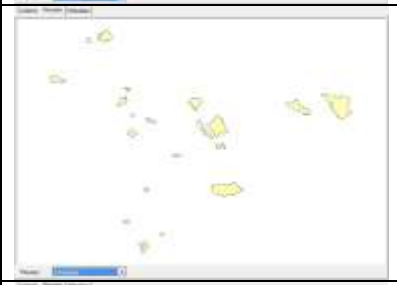
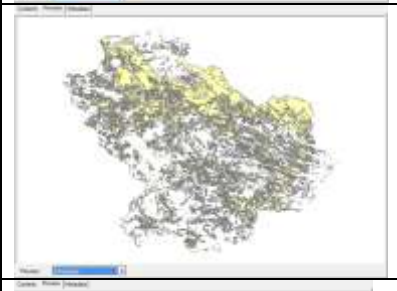
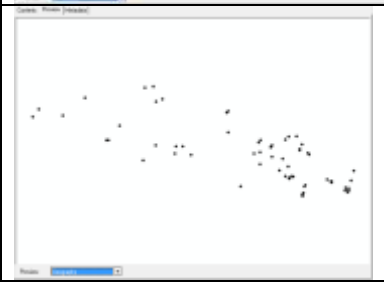
Table 3: Content of the feature dataset of Metapontino

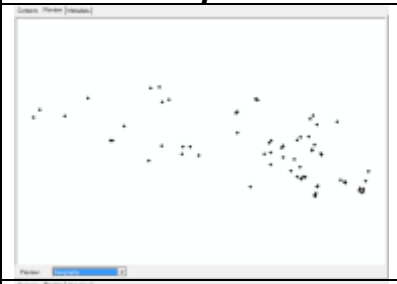
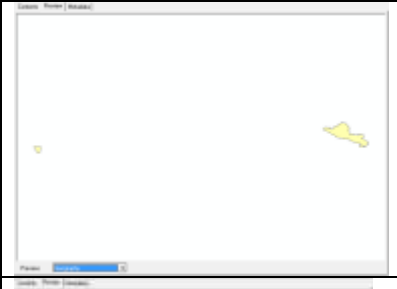
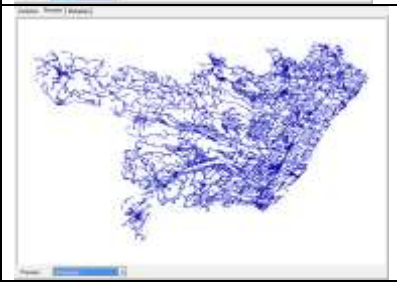
Name	***Description***	***Source***	***Snapshot***
ADMIN_ Metapontino	It concerns the administrative boundaries of Metapontino.	DiCEM's scientific team digitalised the administrative boundaries of Metapontino, based on the municipalities that fall within the area http://www.istat.it/it/archivio/104317	
MET_basins	It concerns the River Basins within Metapontino.	The first data were acquired from the SINANET - Rete del Sistema Informativo Nazionale Ambientale http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/ AdB Basilicata - Autorità Interregionale di Bacino della Basilicata http://www.autoritadibacino.basilicata.it/ Then, DiCEM made all the required adjustments, so as to import the shapefile in the Geodatabase.	
MET_subbasin	It concerns the river sub-basins within Metapontino.	DiCEM's scientific team produced the river sub-basins shape file, starting from the river basins shape file and performing a QGis tool in order to form the sub-basins, which were imported in the Geodatabase. http://www.autoritadibacino.basilicata.it/	

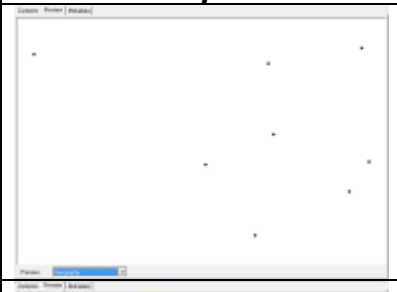
Name	***Description***	***Source***	***Snapshot***
MET_pilotsubb	It concerns the pilot sub-basin that was selected for the implementation of the project.		
MET_CCDA_IT	It concerns the Nationally designated areas (CDDA), which are areas designated under national legislation for the purpose of nature protection.	DiCEM's scientific team elaborated the following data: Ministero dell'Ambiente e della Tutela del Territorio e del Mare - Direzione generale per la protezione della natura http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/wfs/EUAP.map&service=WFS&request=GetCapabilities	
MET_corine	It concerns the Corine Land Cover (CLC) for Italy for the year 2012, in accordance with the deliverables of the CORINE programme of the European Union	DiCEM's scientific team elaborated the following open data: SINANET - Rete del Sistema Informativo Nazionale Ambientale http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/	
MET_corinePA	It concerns the Corine Land Cover (CLC) for the pilot sub-basin.		

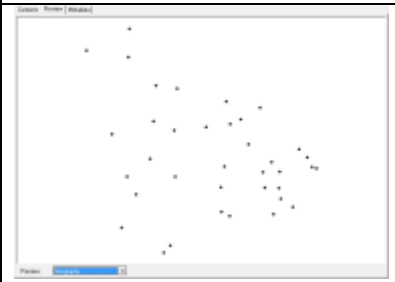
Name	***Description***	***Source***	***Snapshot***
MET_geology	It concerns the geology of the pilot area.	DiCEM's scientific team elaborated the following open data: ISPRA - Istituto Superiore per la Protezione e la Ricerca Ambientale – Portale del Servizio Geologico d'Italia http://sgi.isprambiente.it/geoportal/catalog/content/OGC/wfservice.page	
MET_geologyPA	It concerns the geology of the pilot sub-basin.		
MET_hydrogeo	It concerns the geological formations' water permeability and their categories.	DiCEM's scientific team elaborated the following data: SINANET - Rete del Sistema Informativo Nazionale Ambientale http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/	
MET_hydrogeoPA	It concerns the geological formations' water permeability and their categories for the pilot sub-basin.		

Name	***Description***	***Source***	***Snapshot***
MET_HydroSystem	It concerns the groundwater bodies that are within the administrative boundaries of Metapontino.	DiCEM requested these data at Distretto idrografico dell'Appennino Meridionale, then HYETOS imported the shapefile in the Geodatabase http://www.ildistrettoidrograficodellappenninomeridionale.it/	
MET_Iba	It concerns the Important Bird Areas (IBAs) that are located in the pilot area.	DiCEM's scientific team obtained the relevant shape file starting from the following data: Ministero dell'Ambiente e della Tutela del Territorio e del Mare - Geoportale nazionale ttp://www.pcn.minambiente.it/GN/accesso-ai-servizi/servizi-di-download/wfs http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/wfs/IBA.map&Service=WFS&service=WFS&request=GetCapabilities	
MET_NATURA_SCI	It concerns the Sites of Community Importance (SCI) according to the EU Directive 92/43.	Regione Basilicata – open data http://dati.regione.basilicata.it/catalog/dataset/zone-a-protezione-speciale-zps-revisione-2012 http://dati.regione.basilicata.it/catalog/dataset/siti-di-interesse-comunitario-sic-2013	

Name	***Description***	***Source***	***Snapshot***
MET_NATURA_SPA	It concerns the Special Protected Areas (SPA) according to EU Directive 79/409.		
MET_NDareas	It concerns the Nationally designated areas (CDDA), which are areas designated under national legislation for the purpose of nature protection for the greater area of Metapontino.	Ministero dell'Ambiente e della Tutela del Territorio e del Mare - Direzione generale per la protezione della natura http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/wfs/EUAP.map&service=WFS&request=GetCapabilities	
MET_NitrateZones	It concerns areas that vulnerable to nitrates.	DASREM - Dipartimento Agricoltura, Sviluppo Rurale, Economia Montana, Regione Basilicata, (2006). AA. VV. I suoli della Basilicata. Carta pedologica della Regione Basilicata in scala 1:250.000. http://www.basilicatanet.it/suoli/carta2.htm	
MET_Parcels	It concerns the final list of the pilot parcels.	These shapefiles were produced by using the excel files that farmers had filled in with all the relevant information concerning their parcels (coordinates, irrigation, fertilization, etc.) by HYETOS.	

Name	***Description***	***Source***	***Snapshot***
MET_Plots	It concerns the first list of the farms that were considered to be used for the project's purposes.		
MET_RAMSAR	It concerns the Wetlands of International Importance according to the Ramsar Convention.	DiCEM's scientific team elaborated the following data: http://wms.pcn.minambiente.it/ogc?map=/ms_ogc/wfs/RAMSAR.map	
MET_riv	It concerns the hydrographic network of the area within the administrative boundaries of Metapontino.	DiCEM's scientific team elaborated the following data: http://www.sinanet.isprambiente.it/it/sia-ispra/download-mais/reticolo-idrografico/view	
MET_roads	It concerns the road network of the area that falls within Metapontino.	DiCEM's scientific team elaborated the following data: http://dati.regione.basilicata.it/catalog/dataset/database-topografico-tema-strade	

Name	***Description***	***Source***	***Snapshot***
MET_settlem	It concerns the settlements that are located in Metapontino.	DiCEM's scientific team elaborated the following data: http://www.istat.it/it/archivio/104317	
MET_soil_texture	It concerns the soil texture of the entire Basilicata region.	DASREM - Dipartimento Agricoltura, Sviluppo Rurale, Economia Montana, Regione Basilicata, (2006). AA. VV. I suoli della Basilicata. Carta pedologica della Regione Basilicata in scala 1:250.000. http://www.basilicatanet.it/suoli/carta2.htm	
MET_soil_texture2	It concerns the soil texture of the entire Basilicata region with an English legend.		
MET_soils	It concerns the soils of the area of interest.	DASREM - Dipartimento Agricoltura, Sviluppo Rurale, Economia Montana, Regione Basilicata, (2006). AA. VV. I suoli della Basilicata. Carta pedologica della Regione Basilicata in scala 1:250.000. http://www.basilicatanet.it/suoli/carta2.htm	
MET_solisPA	It concerns the soils of the pilot sub-basin.		

Name	***Description***	***Source***	***Snapshot***
MET_springs	It concerns the springs that are located within Metapontino.	DiCEM's scientific team elaborated the following data: Regione Basilicata – open data http://dati.regione.basilicata.it/catalog/dataset/database-topografico-tema-acque-interne-e-di-transizione ISPRA - Istituto Superiore per la Protezione e la Ricerca Ambientale – Portale del Servizio Geologico d'Italia http://sgi.isprambiente.it/geoportal/catalog/content/OGC/wmservice.page Distretto idrografico dell'Appennino Meridionale http://www.ildistrettoidrograficodellappenninomeridionale.it/	
MET_stations	It concerns the location of the meteorological stations that are located in the area of interest and its surroundings.	These data were provided as an excel file by ALSIA - Agenzia Lucana di Sviluppo e di Innovazione in Agricoltura. Then, by using the columns that were showing the exact coordinates of the meteorological stations, the relevant shapefiles were produced by DiCEM. http://www.alsia.it/	

The structure of these datasets is shown in Fig. 5, Fig. 6 and Fig. 7 for Mirabello, Platanias and Metapontino, respectively.

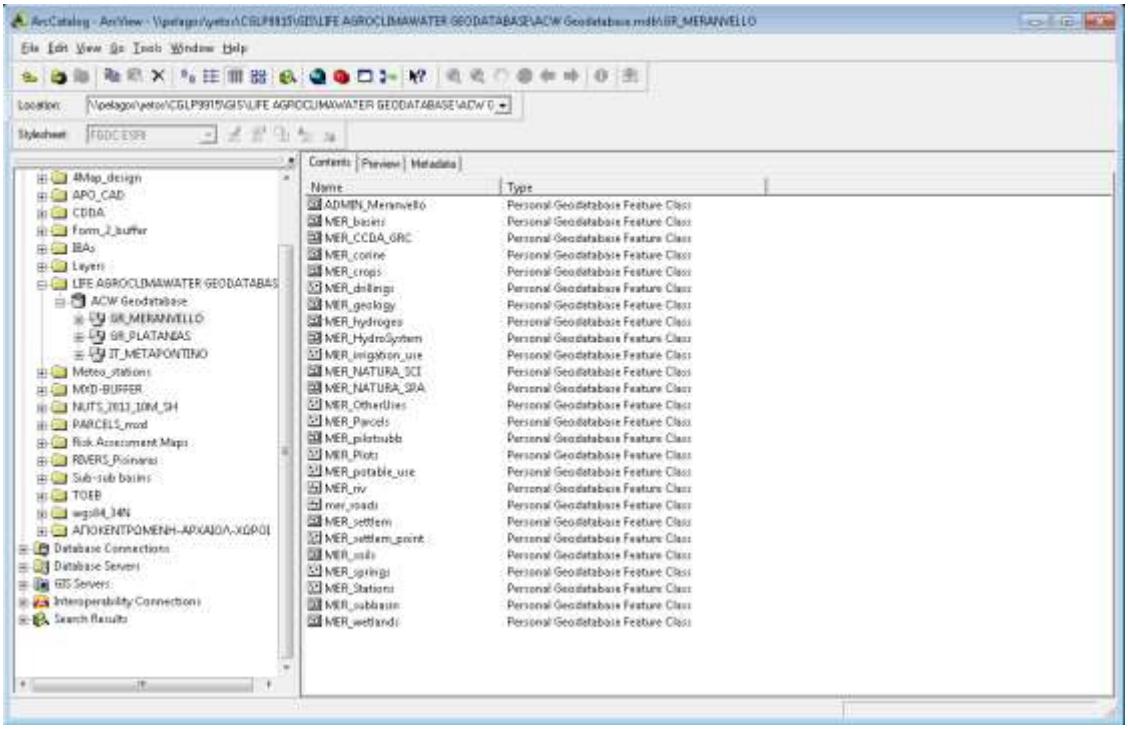


Fig. 5: Mirabello Feature Dataset

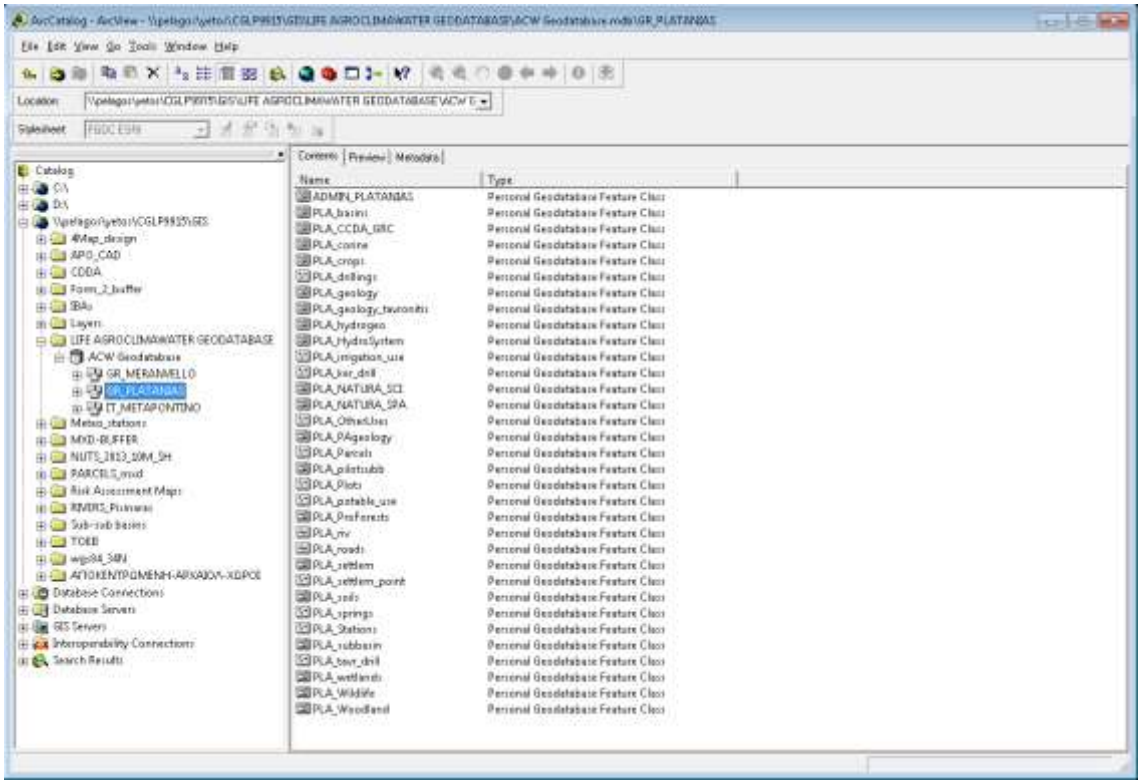


Fig. 6: Platanias Feature Dataset

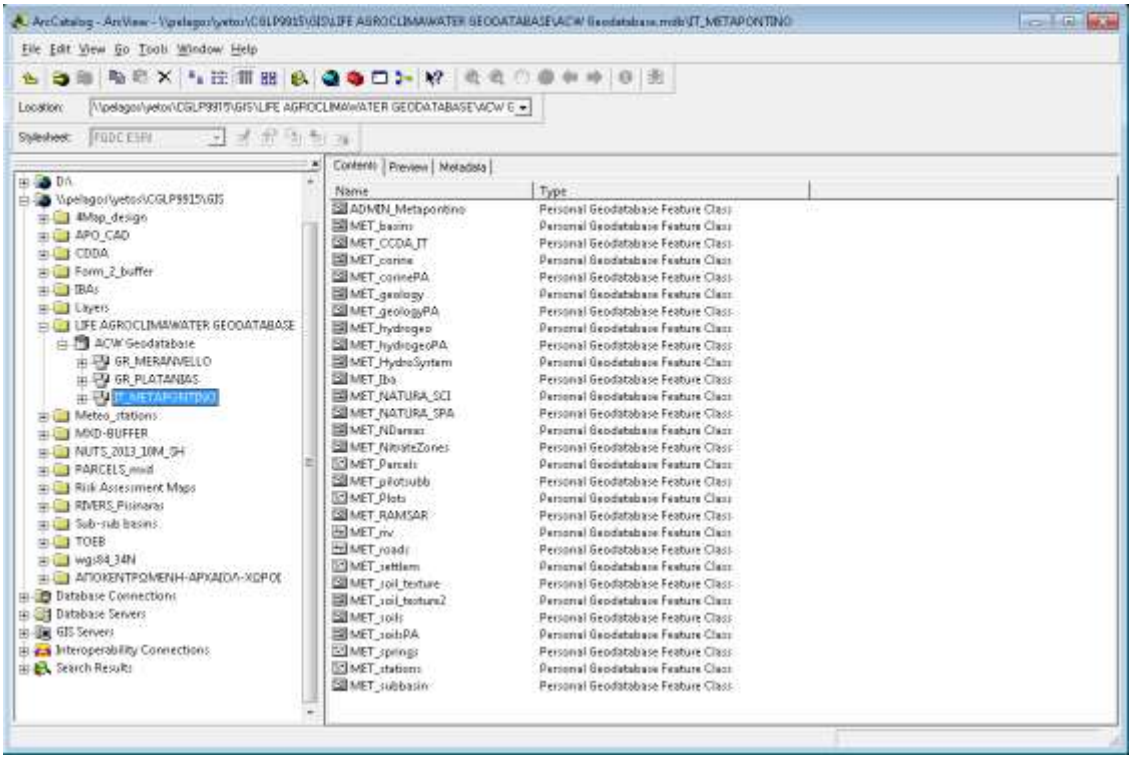


Fig. 7: Metapontino Feature Dataset

Concerning the Raster Datasets (Fig. 3), all files were downloaded from the U.S. Geological Survey (USGS) and then modified and accordingly used by HYETOS.

2.4. Metadata

According to ESRI's GIS Dictionary, Metadata is Information that describes the content, quality, condition, origin, and other characteristics of data or other pieces of information. Metadata for spatial data may describe and document its subject matter; how, when, where, and by whom the data was collected; availability and distribution information; its projection, scale, resolution, and accuracy; and its reliability with regard to some standard. Metadata consists of properties and documentation. Properties are derived from the data source (for example, the coordinate system and projection of the data), while documentation is entered by a person (for example, keywords used to describe the data).

The Metadata documentation for the data used in the Geodatabase is currently in preparation.

3. GEODATABASE'S CONTENT USE

The content of the Geodatabase is used so as to visualise the current status of the areas of interest and then in the years to come to make the relevant comparisons between past, present and future data. To achieve this visualisation several maps were produced in order to be used in some of the deliverables of the project (Chapter 3.1). These maps are the following:

- Geodatabase Map Extract of the administrative boundaries of Mirabello, Platanias and Metapontino
- Geodatabase Map extract showing the river basins in Mirabello, Platanias and Metapontino

- Geodatabase Map extract depicting the Nationally Designated Areas (Wildlife refuges, Protected Forests, Woodlands ,etc) of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins
- Geodatabase Map extract of the Land Uses (CLC) of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins
- Geodatabase Map Extract of the abstraction points for potable, irrigation and other uses based on the water usage legal permits issued for Mirabello, Platanias and Metapontino and for their corresponding pilot sub-basins
- Geodatabase Map Extract of the geological formations of the greater areas of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins
- Geodatabase Map Extract of the hydrogeology of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins.
- Geodatabase Map Extract of the groundwater bodies identified in the areas of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins
- Geodatabase Map extract depicting the NATURA sites of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins
- Geodatabase Map extract depicting the exact location of the volunteer parcels and the final parcels selected for each pilot area.
- Geodatabase Map Extract depicting the location of the pilot sub-basins in each pilot area
- Geodatabase Map extract depicting the hydrographic network of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins
- Geodatabase Map Extract of the Soils' data of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins
- Geodatabase Map Extract depicting the Metapontino area soil texture
- Geodatabase Map Extract with the location of the meteorological stations in the greater areas of Mirabello, Platanias and Metapontino and in their corresponding pilot sub-basins
- Geodatabase Map Extract of the sub-basins in the areas Mirabello, Platanias and Metapontino
- Geodatabase Map Extract of the small island wetlands of each pilot area
- Geodatabase Map Extract of the elevation data (lowland – semi-mountainous – mountainous) of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins
- Digital Terrain Model of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins
- Digital Slope Model of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins
- Geodatabase Map Extract depicting the High Conservation Value Areas in Mirabello, Platanias and Metapontino and in their corresponding pilot sub-basins
- Geodatabase Map extract depicting the Important Bird Areas (IBA) of Mirabello, Platanias and Metapontino and of their corresponding pilot sub-basins

More maps are expected to be produced according to the needs of the project in the years to come.

3.1. Use of maps

The maps mentioned in Chapter 3 were used in several deliverables of the project and are expected to be used in others that will be produced in the next years of the project's life.

These deliverables are:

- Deliverable A1.2: Report on project's targeted areas and pilot sub-basins characteristics
- Deliverable C2: Report on Assessment of Water efficiency of the participant F.ORs before LIFEAgroClimaWater
- Sub-Deliverable C2.1: Water Availability in LIFE AgroClimaWater Pilot sub –basins in Crete
- Sub-deliverable C2.2: Runoff, leaching and erosion risk assessment and use of agrochemicals in high risk areas
- Deliverable C3.2 - Governance actions and floods and droughts action plan for the participant F.ORs
- Deliverable C3.3 – Initial WMAS Strategy final text

In addition, the above mentioned maps were used in presentations in the project's meetings by the beneficiaries of the project.

REFERENCES

- ESRI – GIS Mapping Software, Solutions, Services, Map Apps, and Data. Available at: http://www.esri.com/