



## BeWater

### Making society an active participant in water adaptation to global change

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#### **D3.1 Data integration in the Aquaknow platform**

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## Executive summary

Data integration schemes intent to provide users with procedures and tools to combine data from different sources in order to have a unified view of them, giving the ability to share a common method that allows information to be passed in an understandable and ordered way. In this regard, this report deals with the different options provided by the “Water Knowledge Management Platform” known as Aquaknow ([www.aquaknow.net](http://www.aquaknow.net) // Water Resources Unit at the Joint Research Centre-European Commission) in the frame of the BeWater project: “Making society an active participant in water adaptation to global change”. The main project's objective in terms of data integration is to provide a space and a methodology to organize data coming from the four Case-Study River Basins (CRBS) involved in the project: Pedieos in Cyprus, Vipava in Slovenia, Tordera in Spain and Rmel in Tunisia.

The JRC/IES/Water Resource Management unit has been in charge of the implementation and further development of the commented platform which is a web-based tool for improving the communication and exchanges of information among the international community on water issues. This online management platform integrates a dynamic virtual space for facilitating communication between the different users. The platform's contents (videos, news, scientific articles, events, links, spatial data and information, etc...) are continuously expanded and updated by and for the community of practitioners. Furthermore, the community and so the partners within the BeWater project can benefit from the custom and online tools; facilitating geographic data sharing through a database that compiles standard information, metadata templates to better understand data and definitely providing a space on where partners and beneficiaries can share and consult the availability of information gathered and generated within the different phases of the project.

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# 1. Introduction

## 1.1 About Aquaknow

As a collaborative workspace and content management system Aquaknow offers a collaborative workspace dedicated to technical and scientific knowledge for the sustainable development of the water sector.

Knowledge management and capacity building are key elements in the design and implementation of sustainable water management policies. AquaKnow is a dynamic platform for sharing knowledge on water sector related issues. It is a space for gathering and providing dynamic tools to manage scientific and technical information. These tools provide a powerful means of sharing documents, data, information, ideas, experiences, and of finding help and working with other stakeholders involved in the water sector.

The AquaKnow platform is designed for experts and practitioners of the institutions involved in the water sector such as governmental and non-governmental organisations, universities and research centres, international organisations, the private sector, water utilities, basin agencies, etc.

As in other interactive online platforms, users are central to the AquaKnow, as they provide and share the online information through this user-friendly interface.

AquaKnow is built on two axes:

- Knowledge Management, whereby information is uploaded as part of thematic indexes within the following sections:

- News, events, Library (where information is stored in various document formats or links), Capacity Building (which includes an inventory of training sessions, workshops, seminars and methodological tools), and Tools and Data (databases and tools for the water sector).

These indexes are populated by and directly updated by users and members.

- Building a community using interactive and user-friendly tools that facilitate distance working and improved online exchanges. The 'Working Groups' section is a specific space for developing collaborative work.

The Working Group that initiated this project took the following criteria into account:

- the increasing importance of knowledge as a factor in transforming Sector Performance

- the opportunities available through advances in information technology
- the favorable context for increasing harmonisation and aid efficiency

Knowledge management and capacity building are key elements for building a partnership-based sustainable water management approach.

AquaKnow is a dynamic platform so user contribution is fundamental to enhancing and sharing the knowledge available regarding water issues. This platform provides the necessary tools to share documents, data, information, ideas, experiences, and to find help and work with other stakeholders involved in a given project.

## 1.2 BeWater in Aquaknow

The activities followed in this first stages of the Data Integration schema have been focused on:

- I) The creation of a private/supervised BeWater Working Group during December 2013 in order to let partners participate in the integration process. This group can be accessed through the following link:

<http://www.aquaknow.net/en/be-water/>

Being private means that the group has restricted access to its content and that the permissions are granted under request and validated by web-managers. It is supposed that partners of each CSRBs or at least managers contributing with their data will request an account in order to be able to start uploading data and/or metadata. In addition, any potential user of these data or researchers involved in the project can also request an account and access the uploaded information.

A request for a new account can be done at <http://www.aquaknow.net/en/user/register>. Users must insert all the mandatory information (\*) like Username, Email address, Country. In the About Yourself text-field BEWATER term should be added in order to give the administrator information to let the user join the group.

Further and graphical instructions are given in Annex I:

- How to request access to the BeWater group,
- How to log in to the BeWater group.

- II) A brief description of the available information (section 2)
- III) Definition of Aquaknow capabilities and general guidelines including the description of information sharing options, which includes:
  - a. Sharing contents in the Group Community page (section 3.1)

- b. The creation of an specific web-metadata-template, GeoMetadata Repository (sect. 3.2.1)
  - c. The characterization of Aquaknow web-GIS capabilities, Tools and Data (sect. 3.2.2)
- IV) Finally, help tutorials are attached to facilitate a more comprehensive and practical approximation to the different sections explained in this document.

## 2. Available information

One of the objectives within the project, described in the Work Package 3 (Description of Work, DOW document) is to, among others, exchange information, knowledge and experiences between the scientific community and society. First actors contributing with the compiled data from the river basins and others with their local knowledge, perceptions, needs and concerns. Towards these goals, it is foreseen 1) to compile for each study area the maximum information available on global change impacts on water and 2) to identify related vulnerabilities, measures and actions to achieve good quantitative and qualitative status of all water bodies.

Considering those preliminary needs and having in mind the data integration process, it's necessary to know what data is currently available to characterize the basins, which are their main characteristics in terms of spatial and temporal resolution, formats, descriptions, source references, permissions, etc. In this sense, the European Forest Institute partner designed and sent to the CSRB partners a table requesting this information. It was mainly focused on quantitative data for current and future situation, and topics like water (hydrology, groundwater, quality, etc.), climate, land uses, etc. were included.

As often happens when gathering environmental data, this first survey showed its diverse and heterogeneous nature (table 1), both from a technical and probably from a data model point of view. Some of the detected and most common issues are:

- The nature of the data itself for a given topic (e.g. Hydrology: water level vs information on dams vs. modelled hydrologic cycle)
- Availability and number of datasets depending on the CSRB.
- Different spatial resolutions and scales.
- Different acquisition periods and frequencies.
- Many different format types, some non georeferenced
- Lack of information.
- Data accessibility (restrictions)

	TYPE	CYPRUS			SLOVENIA	
		Description	FORMAT		Description	FORMAT
Future	Water availability	Analysis of future stream flow (in process)			Estimation stream flow and GW level changes	doc,...
	Climate data	rainfall, Tmin, Tmax	ascii-raster restricted		Temp./Precip. Change	doc, pdf
	Future land use-agriculture				Prediction Water availability, etc.	doc, pdf
	Future Land uses-Urban				Potentially significant flood risk areas	shp
	Future land uses-forestry				Assessment of vulnerability	pdf
Present	Land uses-industry				Potentially significant flood risk areas	shp
	other relevant future projections/scenarios				recommendation on adaptation regarding natural hazards	doc, pdf
	Water flow	daily mean flow	excel	restricted	Streamflow data, temperature, transport of material	xls
	hydrology	information on dam	pdf		Water level and level of precipitation	xls
	groundwater	existing but not available			Level of underground water, some water quality data	xls
	water quality	some existing but not available			Water analysis data (T, ph, O2, COD, BOD, etc.)	xls
	Climate data	Daily rainfall, Tmin, Tmax	csv	restricted	Climatological stations data (wind speed, direction, air temp,...)	xls
		Daily gridded rainfall, Tmin, Tmax	Ascii-raster	restricted		
	Extreme events	List of flood events	pdf		Water level, dates, return periods of extrem P,...	doc, xls
	Land Cover/Land Use	Corine 2006	shp	open (EEA)	CORINE 1995, 2000	shp
	Elevation data	Elevation model	Ascii-raster	restricted	DEM	ascii
	Digital orthophotos	Google Earth			Scanned ortophoto	tiff, MrSD
	Soils	Soil maps 1961, 1970, 1999	shape	restricted	Pedological maps	shp
	Geology	Geological map	shape	restricted	Geological map	shp
	User agriculture	Land zone maps	pdf		Land Cadastre // National Land use data	xls, shp
		Claimed agricultural plots	shape	restricted		
		Agricultural water use				
	Uses Urban	Land zone maps	pdf		Land Cadastre // National Land use data	xls, shp
		Population by community				
	Uses-forestry	Land zone maps	pdf			
		State forest maps	pdf	restricted	Land Cadastre // National Land use data	xls, shp
	Uses-industry	Land zone maps	pdf		Industrial buildings, water consumption, etc.	xls, shp
	Other relevant uses				Data on overgrowing areas	ascii
	Water related infrastructures	Tamasos Dam	pdf		Water accumulation	shp
	Other infrastructures relevant in the river basin				Highways, roads,...	shp

	TYPE	SPAIN			TUNISIA	
		Description	FORMAT		Description	FORMAT
Future	Water availability	SWAT model // stream flow, PET, future water demand	ascii			
	Climate data	A2/ECHAM5 and B1/ECHAM5 downscaled	ascii			
		Future climate analysis	ascii			
	Future land use-agriculture	Future agric. Water demand	raster			
	Future Land uses-Urban	Land use, population and water demand scenarios 2030	raster and ascii			
Present	Future land uses-forestry	Future simulation of main forest species evolution	ascii			
		Climate suitability of main forest species	ascii			
		Future simulations of fire risk	raster			
	Land uses-industry	Two future land use scenarios 2030	raster			
		Two future water demand scenarios 2030	raster			
	other relevant future projections/scenarios					
	Water flow	Stream flow data	ascii		discharge data	txt/excel
	hydrology	modelled hydrologic cycle information	ascii		Rainfall data	txt/excel
	groundwater	Characterization of all aquifers, groundwater flux, etc.	Maps and tables		?	
	water quality	Indicators to define ecologic status of water bodies	tables		Water quality at the dam	
	Climate data	Digital Climatic Atlas	raster		Temperature and Evaporation	txt/excel
		Daily meteorological station data	ascii			
		Historical climatic series analysis	ascii			
	Extreme events	Meteorological drought index calculations	ascii		Data series can display exceptional events	
		Socio-economical drought registers	document			
		Flooding plan	map (pdf)			
	Land Cover/Land Use	Corine LC (1990, 2000) and Local LC map (1993, 2000, 2	raster		yes 2004	shp
	Elevation data	DEM	raster		yes	shp
	Digital orthophotos	Orthophotos	raster		need to be purchased	
	Soils	Tordera Soil map	raster		yes	shp
	Geology	Geological map of Catalonia	raster		yes	jpeg
	User agriculture	Distrib of main crops	raster		Land use map	shp
		Agricultural water uses	ascii			
		Agriculture water uses estimation	graphic/tables			
	Uses Urban	Urban water uses	ascii		Data being gathered	
		Population in the basin	ascii			
	Uses-forestry	Main forest areas	raster, ascii		Some and the rest is being gathered	shp
	Uses-industry	Location	raster		Data being gathered	
		Industry water uses	ascii			
		Industry water uses estimations	graphic			
	Other relevant uses	Bottling industry, non consumptive uses, recreative uses	tables aggregated data		Mineral water/thermal station	
	Water related infrastructures	dams, channeling, desalting, potabilization, etc.	raster and tables aggregated data		Different size of reservoirs, etc.	shp
	Other infrastructures relevant in the river basin	Highways, pipelines	raster, unknown		Data being gathered	

Table 1. Summary of some dataset characteristics



These issues were taken into account when designing the characteristics of the integration schema within Aquaknow, giving the process enough flexibility to receive any kind of data. The definition of these issues will also serve as a reference when writing the guidelines for the harmonization process in order to guarantee, if possible, spatial and temporal homogeneity and make datasets from different basins intercomparable.

It has to be considered that the data gathering, it's characterization, harmonization and integration must be seen as an iterative process, meaning that the proposed schema as well as any other future step can be changed and enriched when new requirements arise.

### 3. Aquaknow capabilities

As stated in the introduction, Aquaknow is thought as a Knowledge Management System, whereby information is uploaded as part of thematic indexes within different sections. Two of those sections refer to Tools and Data (section 3.2.) and to the Library (section 3.1). This distinction is made on the basis of information nature, where library is used to store document, image, video file formats or links and “tools and data” section is designed with web-GIS capabilities, so to store georeferenced information.

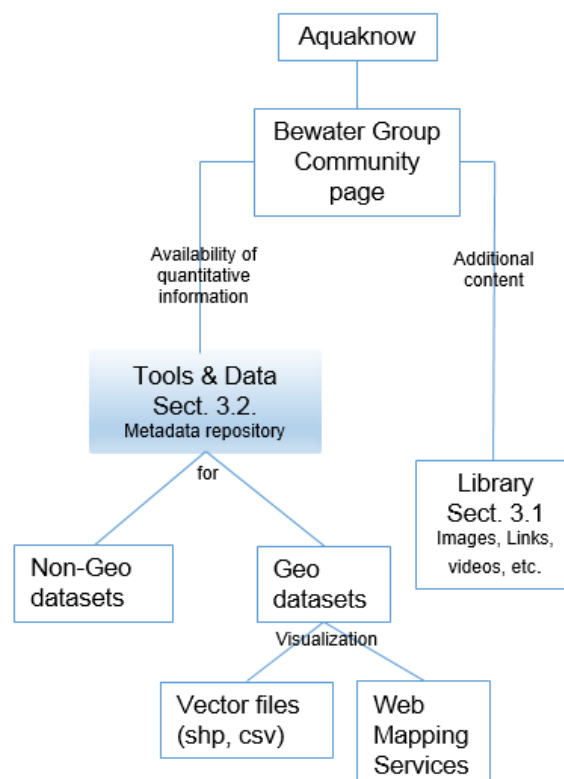


Figure 1. Aquaknow information stage schema

Once analyzed the characteristics of data provided by the groups, and due to its peculiarities it has been necessary to add a new functionality in between the Tools and Data section, the GeoMetadata repository (Figure 1). The reasoning behind this approach is mainly related with the fact of having non-georeferenced environmental information (e.g. scanned map files, reports, etc.), so the metadata template was created in order to give the possibility to combine both the geo and non-georeferenced files.

Additionally, for those georeferenced datasets, Aquaknow gives the possibility to add them to its web-GIS module, which is developed and integrated within the platform and further discussed in the following sections.

### 3.1 Sharing content in the Group Community page (Library)

Each user of the BeWater Group will be able to *create different kind of content pages* and all content created will be *private*, only visible to other group users and administrators. All content generated by the user will be visible in the Group Community page. This is an interactive space in which different users can create their own content in order to collaborate at a distance, so that they can share ideas, data, documents and their professional know-how. Each content can be bookmarked and commented by other users. These are the content types that a user can create and share in this section:

**Document** – Can be any document type that can be managed by the group. Documents can be organized by thematic areas, geographic areas and by tag terms. Important content can be flagged as Key Document that will appear in the Dashboard dedicated section ‘Key Document’. Files can be attached to the content.

**Image** – Images and photos that are related to the group activities, like meeting, summit and seminar can be uploaded or embedded providing an external URL.

**Link** – Relevant URL from external websites with an optional description. Links can be organized by thematic areas, geographic areas and locations.

**Video** – Video content from Youtube, Vimeo, Flickr Photosets, Blip.tv can be embedded with an image thumbnail and a description text.

**Event** – Any type of event, with a starting and ending date and time, a description, links to existing documents.

**Water Feed** – External feeds from URL with a description. Water feed can be organized by tag terms.

**News** – A news related to the group with description and optional attachments.

All these can be organized by thematic areas, geographic areas and tag terms.

Description of different kind of data that can be uploaded in the platform:

The file types that can be loaded as attachments to a document in the Aquaknow CMS are:

- Jpg, Jpeg, Gif, Png, Txt, Doc, Xls, Csv, Pdf, Ppt, Pps, Odt, Ods, Odp, Zip, Rar, Gz, Bz2, Eps, Raw, Docx, Tiff, R, Mp4, Xlsx, Pptx (Max. dimension 64 Mb per file)

### 3.2 Integrating and organizing data (Tools and Data)

The GeoMetaData repository section 3.2.1 explains which are the requirements in order to have consistent information across the process. The following section 3.2.2 summarizes the possibilities in terms of webGIS data integration.

#### 3.2.1 *GeoMetadata Repository*

As commented in the Aquaknow Capabilities section, a metadata template which will serve as a repository of all the collected data sets was created. All the partners should use this module to upload both non georeferenced and georeferenced data sets, and use the Library capabilities explained in the previous section to upload any other kind of file.

The template was created following some of the recommendations of the Inspire Metadata implementing rules, mainly those included in the Metadata elements section. This Directive, 2007/2/EC, lays down general rules for the establishment of the Infrastructure for Spatial Information in the European Community. In its first article states that it is necessary for a user to be able to find spatial data sets and services and to establish whether they may be used and for what purpose. It also recommends to provide descriptions in the form of metadata for those spatial data sets and services. Since such metadata should be compatible and usable in a Community and trans-boundary context, it is necessary to lay down rules concerning the metadata used to describe those data sets and services. So even the directive is not strictly applied in the present framework, its guidelines have served to build the commented template.

Once logged in a BeWater group, the module can be accessed through the “about this group” tab, concretely following the “Geometadata” link (Fig. 2).

<http://www.aquaknow.net/en/be-water/node/add/geometadata>

[News](#)
[Activity](#)
[About this group](#)
[Key documents](#)



Sustainable water management under climate change is an urgent challenge for the Euro-Mediterranean region. Future climate change projections estimate an increase in water scarcity and droughts in the region, causing substantial socioeconomic losses and environmental impacts.

In this context, efforts are needed to strengthen public [participation](#) and embed a sense of responsibility within the society concerning water management and adaptation towards these threats. The combination of improved awareness, mutual learning processes and shared responsibility of the civil society and [stakeholders](#) are key to ensuring successful adaptation strategies and their implementation, leading to increased resilience of the social-ecological system of a river basin.

BeWater addresses the above challenges by promoting dialogue and collaboration between science and society. The project aims at launching a transition from a technologically-focused river basin management approach to a stakeholder driven planning and management process that allows a pro active response to emerging climatic changes and related pressures. Based on a bottom-up approach, the multidirectional and multi-sectoral knowledge transfer throughout the project will raise awareness, feed ownership and ultimately lead to effective adaptation policies.

How to add GeoMetaData information: click [here](#).

**Creation date:** 06/12/13

**Created by:** [waterteam](#)

Figure 2. Accessing the GeoMetadata template

A template will be shown on where the user is requested to fill different fields. It is recommended to provide as much information as possible in order to give a detailed description of the data set of interest (Anex I offers a graphical overview of this templates and instructions about how to proceed). In any case, considering the many issues encompassing the accessibility to this kind of information, not all the requested is mandatory but only some, those marked with a red asterisk.

### Dataset tab (Fig 3.)

- Resource Title: which is a characteristic name by which the resource is known.
- File URL: In those cases where the data source is known the url link would point to the external service providing the original dataset.

- Theme or topic category which will assist in the grouping and topic-based search of available data resources.
- Publication date of the resource when available, or the date of entry into force.

### Description tab

- Short Abstract: This is a brief narrative summary of the content of the resource.
- Data type: This field classifies data into groups, the georeferenced ones which can be vector or raster files and “others”, those which refers to quantitative/qualitative data but with non geographical information.
- Spatial resolution: Refers to the level of detail of the data set. It shall be expressed as a set of zero to many resolution distances (typically for gridded data and imagery-derived products) or equivalent scales (typically for maps or map-derived products).
- Temporal extent: Defines the time period covered by the content of the resource. This time period may be expressed as any of the following: an individual date, an interval of dates expressed through the starting date and end date of the interval and a mix of individual dates and intervals of dates.

Create GeoMetaData

Title: \*

SAVE PREVIEW

Location

Dataset Description Geographical Information Contacts Optional Info

Data Owner: \*

Institution/Organization/Company name

File URL:

URL reference for file downloading

Theme: \*

Data topic (Water Quality, Climate, Land Cover, Elevation Data, etc)

Publication Date: \*

Format: 07 04 2014  
dd mm yyyy

Attach files to this geometadata

Changes made to the attachments are not permanent until you save this post. The first "listed" file will be included in RSS feeds. Files must be smaller than 64 MB and have one of the following extensions: jpg jpeg gif png txt doc xls csv pdf ppt pps odt ods odp zip rar gz bz2 eps raw docx tif tiff r mp4 xlsx pptx.

Browse... No file selected.

Notifications

☐ Do not send notifications for this update.

Privacy

You can choose if this document will be only visible to members of this group or public.

☐ Make this document private  
If you check this, the document will be visible only to this group

Publishing options  
Published

Authoring information  
By TestLM001

Revision information  
No revision

SAVE PREVIEW

Figure 3. Example of the requested Metadata, mandatory (marked with a red asterisk) and optional fields under the Dataset tab

- Temporal resolution: Is the frequency with which data is collected or acquired.
- Quick Look: Gives the possibility to upload an image file of the data, it is specially thought for raster files but any kind of snapshot could be uploaded. It has a limit of 64MB.
- Geonode reference: If a given data set is integrated in the web-GIS (geonode creation), this reference gives the opportunity to link both the geometadata and the data.

### **Geographical Information tab**

- Extent: It refers to the geographic location of the data set.
- Bounding coordinates: This is the extent of the resource in the geographic space, given as a bounding box. The bounding box shall be expressed with westbound and eastbound longitudes, and south-bound and north-bound latitudes in decimal degrees, with a precision of at least two decimals.
- Reference System

### **Contacts tab**

This table intends to compile the description and the contact information of the organisation responsible for the creation and maintenance of the metadata. The description shall include the organization, person, email address and phone/website.

### **Optional Info tab**

- Creation Date: The date which specifies when the metadata record was created or updated.
- Lineage Statement: This is a statement on process history and/or overall quality of the spatial data set. Where appropriate it may include a statement whether the data set has been validated or quality assured, whether it is the official version (if multiple versions exist), and whether it has legal validity.
- Progress: States if the data generation is in process or if it is a final product.
- Maintenance and Update Frequency of the data set.
- Format: File format (TIFF, geoTIFF, PNG, shape, CSV, etc.)
- Medium and Fees and terms.

**Note** that in addition to all these information, there is an option to upload the file itself: "Attach files to this geometadata".

### 3.2.2 Geographical Information Sytem tools

The GIS module within Aquaknow and specifically within the BeWater group might be seen as a complementary data integration tool. In this sense, it has been stated that at the moment and due to the data peculiarities the core repository of information would remain in the GeoMetadata.

Despite this fact, a number of GIS tools have been developed and integrated within the AquaKnow platform. The GIS module includes many functionalities that can be summarized as follows: 1) find and download spatial datasets from the AquaKnow Geodata Library, 2) share data among registered members uploading data and maps into the system including the possibility of uploading tables in CSV, shapefile formats, 3) represent them in a map (geocoding tools) exploring data tables, customizing this maps/graphs, and 4) perform simple spatial operations and visualize maps using the Map tool.

#### Geo Dashboard

##### FIND AND DOWNLOAD GEODATA



###### Find geodata (geonodes)

Search for a particular geographic data of interest using the existing list of keywords or use our search engine. Data can be used to perform spatial analyses within Aquaknow and downloaded in accordance with copyright information.



###### Find existing visualisations / maps (WMS)

Find pre-built visualisations or maps. Please bear in mind that these datasets cannot be used to perform spatial analyses. Maps are only valid for visualisation purposes.

##### ADD / UPLOAD



###### Import my data (CSV, SHP)

This feature allows you to import your CSV or shapefile files to be shown on a map. Once the data is uploaded it can be shared among registered users in many different formats including Web Services.



###### Import data from an external WMS services (URL)

This feature allows you to import layers from an external WMS to be shown on a map.

##### HELP



###### Manual

A tour through Aquaknow! You can watch any of our videos to learn more about the features of your Geo Dashboard.

##### MY DATA AND MAPS



###### Explore and edit my data

Consult your geographic data tables, create your own graphs, change the style of your maps and much more.



###### Visualise my maps (Map Tool)

Check and customize your own maps taking advantage of all the existing functionalities of the AquaKnow Map Visualiser. Export your maps to a ready-to-print version in just a few clicks!

##### DATA ANALYSIS



###### Create a new Spatial Analysis

This feature allows you to carry out spatial operations such as: buffer, intersect, merge, etc. using your own data but also with the geographic data stored into the Geodata Library.



###### View my Spatial Analysis

This feature allows you to check the status of your spatial operations providing direct access to the analysis results.

Figure 4. Overview of the AquaKnow Geo Dashboard including all the GIS tools developed as part of the GIS module.



- **The Aquaknow Geodata Library**

The AquaKnow Geodata Library is a repository of geographic data and pre-built visualizations/maps. This database includes a set of base layers such as administrative boundaries at different levels, satellite imagery and shade relief images that can be used as background imagery to produce maps ( See Figure 5).

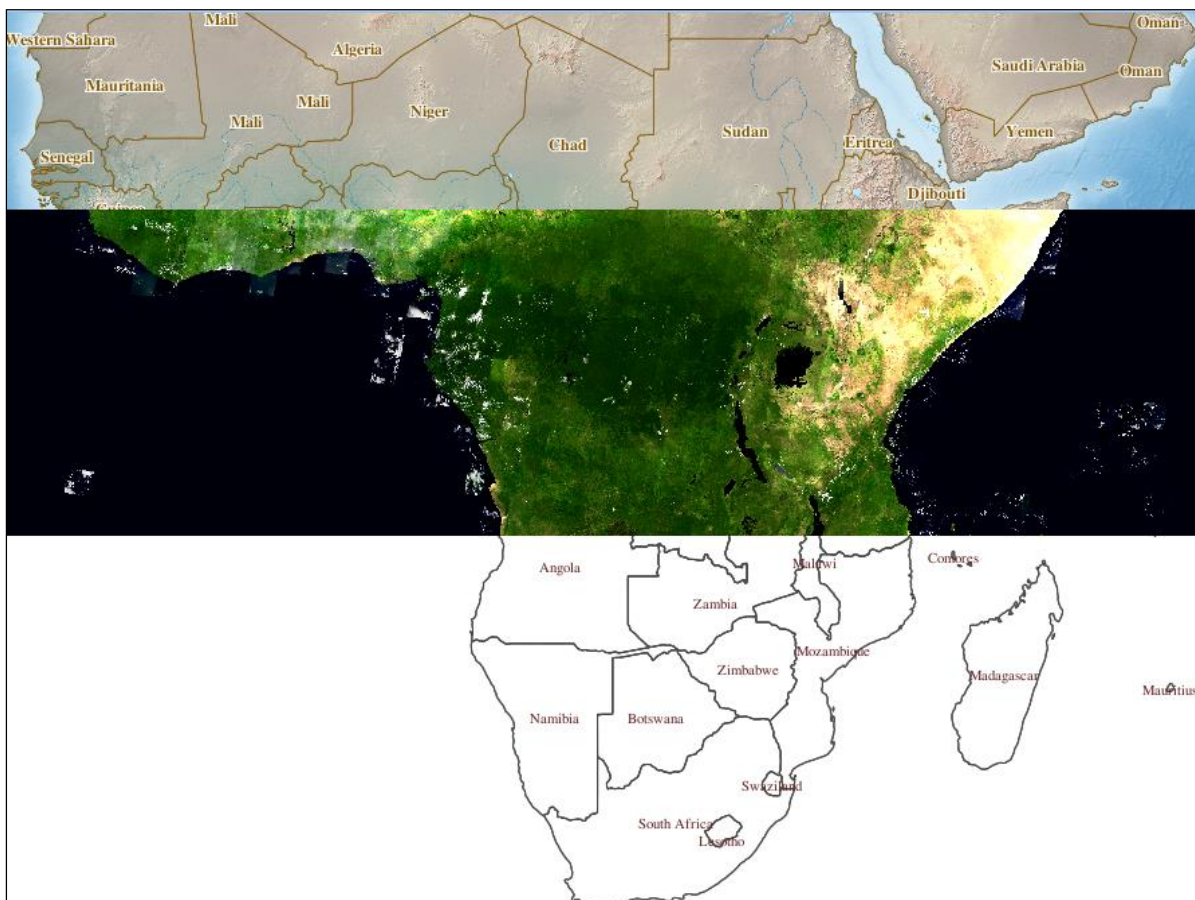


Figure 5. Background images or base layers that can be used for visualization purposes. From the top to the bottom: shade relief map, satellite imagery, and administrative boundaries map

It also includes data in the format of Web Map Services<sup>1</sup>, coming from different organizations: Food Agriculture Organization (FAO), The Center for International Earth Science Information Network (CIESIN), United Nations Development Programme (UNDP), Programa GeoSur, Instituto de Hidrología, Meteorología y Estudios Ambientales (IDEAM) etc. Finally, it gives access to a set of indicators maps, covering environment, governance and human development topics.

<sup>1</sup> A Web Map Service (WMS) is a standard protocol for serving georeferenced map images over the Internet that are generated by a map server using data from a GIS database. Source: Wikipedia



Search tools are also available to find a particular geographic data or map in the library via the existing list of keywords or the search engine. In some cases data can be downloaded and used following copyrights statements.

- **Add/Upload tools:**

A number of tools were specifically developed for importing data into the system so AquaKnow users can benefit from all the existing GIS functionalities and use the data stored in the Geodata Library.

The different options for importing/integrating data consist of:

- Upload data in CSV format or as a shapefile. CSV tables should contained latitude and longitude columns or either the official ISO country code (ISO3), or at least a continent, region, country column name.
- Upload data from an external Web Map Service (WMS). This option allows users to import data stored and maintained from an external organisation into the AquaKnow by just typing a URL.
- Add a new visualization/map (WMS). This option allows users to create maps or visualizations based on the geographic data uploaded.

Once data is uploaded it can be shared with other users in many different formats. The uploaded CSV tables and shapefiles can be used to perform some simple spatial analysis (See figure 6).

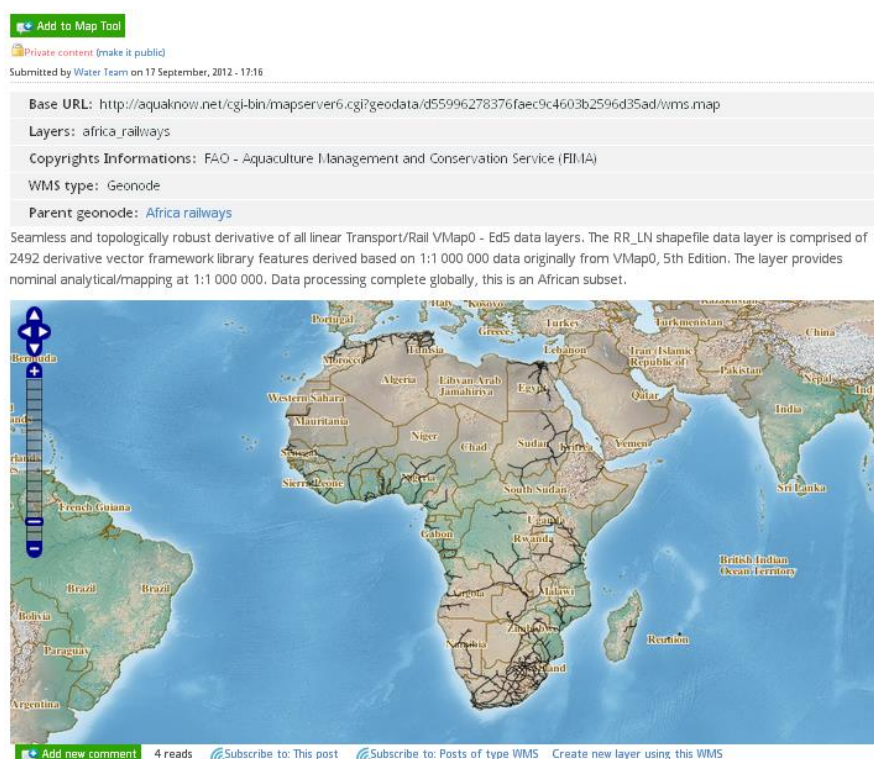


Figure 6. Data imported into the AquaKnow in a shapefile format. The map shows the African Railways network from Food and Agriculture Organization of the United Nations (FAO).

- **Explore data tool:**

Data can be explored and queried via a table explorer with the possibility to produce different types of graphs (bars, lines, points) that can be downloaded in jpg format.

- **Map tool:**

The AquaKnow Map tool offers a wide range of functionalities for customizing and creating your own maps based on existing data contained into the Geodata Library or data uploaded by the user (See Figure 7). The functionalities developed include: navigation tools such as zoom in, zoom out, zoom to maximum extent, zoom box, zoom history, move map, query information on a map, tools for measuring distances and areas, full screen mode, open a window in a print mode, export maps in pdf or jpeg formats, set the transparency of a layer, add or remove layers from the library, change the order of layers, and save map preferences.

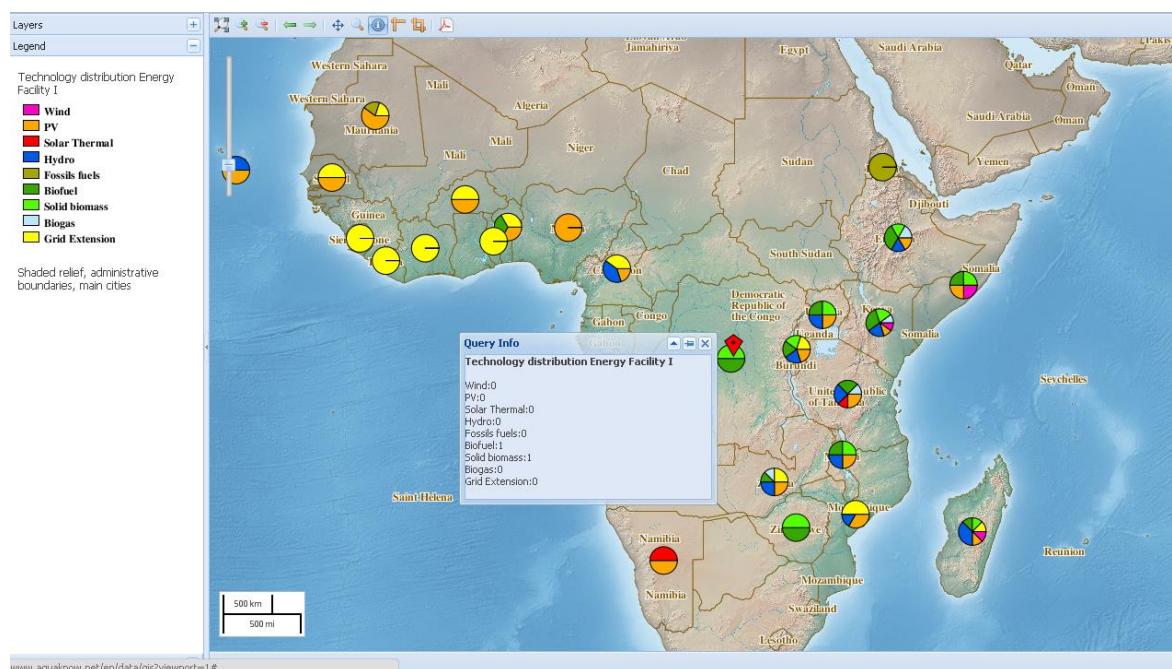


Figure 7. Overview of the Map Tool using the “query info button” for consulting information on the displayed map.

A tool for generating dynamic thematic maps is also available to registered members. Users can define a specific attribute table to be mapped, select the number of classes and choose the color palette to be shown in the map. Maps can be shared among registered users using the AquaKnow Map tool but also with other GIS software.

- **Spatial Analysis tool:**

The Spatial Analysis tool allows users to make a number of spatial operations such as: Buffer, Dissolve, Merge, Intersect and Within using the data stored in the Geodata Library (See Figure 8). It is important to note that spatial operations can be performed only with geographic data and not using the existing visualizations or maps. All the spatial operations are monitored by the system. AquaKnow users are duly informed by email about their analysis results, including a direct access.

Here is a short description of the spatial operations that have been implemented so far in the system:

**Buffer or proximity analysis:** This geo-process is used for identifying areas surrounding geographic features at a certain distance or radius. This operation is useful for instance to establish a perimeter for ensuring access to water points.

**Dissolve:** This geo-process works with one only input layer, whose geometry type must be polygon. Merge polygons together that have a common attribute. This operation can be used to aggregate information, for instance if we have a detailed river basin layer we can easily generate a new layer with major basins using a common attribute.

**Merge:** This geo-process works with two input layers. It creates a new layer which has a feature for each feature of all input layers. However the merge operation can only be applied with input layers of the same data type i.e. merge points with points; polygons with polygons. This operation can be used for instance to merge two different tables containing geo-referenced locations such as wells.

**Intersect:** This geo-process works with two layers: the input layer and the overlay layer. It calculates all the locations where two datasets overlap each other. This operation can be used for instance to identify wells intersecting within a certain river basin.

**Within or filter by distance:** This geo-process allows users to perform radius searches within a specified distance. This operation can be used for instance to allocate project points that are within a certain distance from a geographical object, such as rivers, cities, etc.

**Title: \***

Name your new dataset (required)

**Available Operations**

- BUFFER
- DISSOLVE
- INTERSECT
- MERGE
- WITHIN**

**SELECT SPATIAL DATA TO BE PROCESSED:**

**SELECT SPATIAL DATA TO BE PROCESSED:**

**RADIUS:** Enter the distance to filter in degree units (1 degree ~ 100km)

**EXECUTE**

This operation allows users to perform radius searches within a specified distance. This operation can be used for instance to allocate project points that are within a certain distance from a geographical object, such as rivers, cities, etc.

Figure 8. Spatial analysis tool within the AquaKnow platform.

## 4. Conclusions

Data gathering and mainly harmonization and integration are topics requiring considerable preliminary effort. It is important to correctly define the main characteristics of the required data sets, but not only from the technical point of view but from the objectives. A good understanding of those could help on the design of a well established protocol to minimize data inconsistencies and make them intercomparable.

In this regard, a survey was carried out by the European Forest Institute to get a first impression on data availability and its characteristics. This showed the diverse and heterogeneous nature of the received list of data sets, being the most common issues the differences on data availability and nature of them for a given topic, the different spatio-temporal resolutions and acquisition periods, format types and lack of information, data accessibility restrictions, etc.

In addition, it was also noticed, for instance, that in some cases there were file formats without any associated location information, meaning that they are not georeferenced file formats, in other cases, the accessibility to the files is restricted.

Taking into account mainly the latest limitations, an alternative and complementary integration strategy has been adopted; rather than uploading the data itself using the GIS capabilities of Aquaknow, it was thought to create a metadata template which will be used as a tool to collect all the available information within the four different basins. This will serve as a centralized repository of data about the data, including descriptions, data types, characteristics and a long list of optional information. Additionally, files with location information can also be uploaded using the geo-dashboard options within the platform, which means that those data can be uploaded to the GIS database.

Finally, it is recommendable to have in mind that data gathering, its characterization, harmonization and integration steps should be seen as iterative processes, meaning that the proposed schema as well as any other future step can be changed and enriched when new requirements arise.

## 5. Annex

- A help guide or tour through the Aquaknow Geodashboard can be found in the following link:

<http://www.aquaknow.net/en/gis-help-tutorials>

- 1.1 [AquaKnow GIS Tutorial-Explore and edit your data](#)
- 1.2 [AquaKnow GIS Tutorial-Import shapefiles and create maps](#)
- 1.3 [AquaKnow GIS Tutorial-Import CSV files and create maps](#)
- 1.4 [AquaKnow Map Tool Tutorial- Part 1](#)
- 1.5 [AquaKnow Map Tool Tutorial- Part 2](#)
- 1.6 [Aquaknow GIS tutorial. Import shapefile file and create a map](#)
- 1.7 [Aquaknow GIS tutorial. Import CSV file and create a map](#)

- Additionally, the following pages give an overview on how to use the Aquaknow platform.

Annex I:

- 2.1 How to request access to the BeWater group
- 2.2 How to log in to the BeWater group
- 2.3 How to create GeoMetaData files in the BeWater group
- 2.4 How to view GeoMetaData files in the BeWater group
- 2.5 How to create a Geonode and visualize it in the map tool
- 2.6 How to add an external WMS server

# How to use the AquaKnow platform

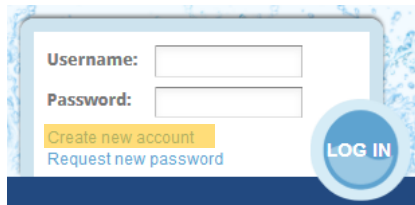
# Index

- How to request access to the BeWater group
- How to log in to the BeWater group
- How to create Geometadata files in the BeWater group
- How to view GeoMetaData files in the BeWater group
- How to create a Geonode and visualize it in the map Tool
- How to add an external WMS server

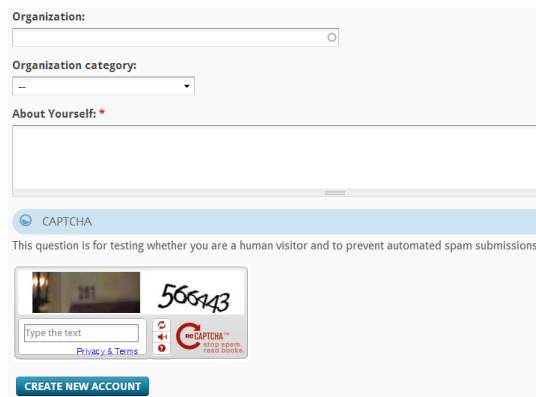


# How to request access to the BeWater group

1. The BeWater group on the Aquaknow platform is a **private group**. Each content created in that group is visible only to group members. The membership is available upon invitation.
2. To create a new user account go to the URL: <http://www.aquaknow.net/en/user/register> or click on Create new account in the User block in [aquaknow.net](http://www.aquaknow.net)



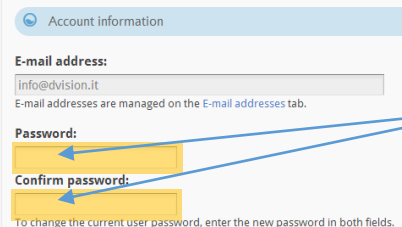
3. Insert all the mandatory information (\*) like Username, Email address, Country. In the About Yourself text-field add the term BEWATER. Do not forget to fill in the CAPTCHA code and click CREATE NEW ACCOUNT.



4. You will receive a confirmation email. The administrators will manually check your account and send you a one-time login link. After log in you will be redirected to the Edit Account page where you must create your password.

This is a one-time login for *williamhill* and will expire on *16 April, 2014 - 16:22*. Click on this button to login to the site and change your password. This login can be used only once.

LOG IN

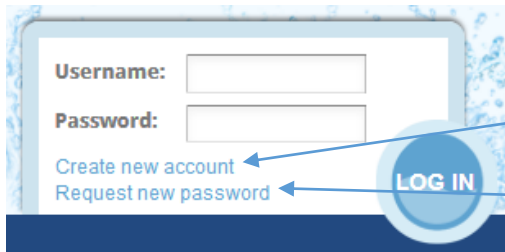


Create your password to protect your user account.



# How to log in to the BeWater group

1. Go to the URL: <http://www.aquaknow.net/>
2. Login using your Username and Password.

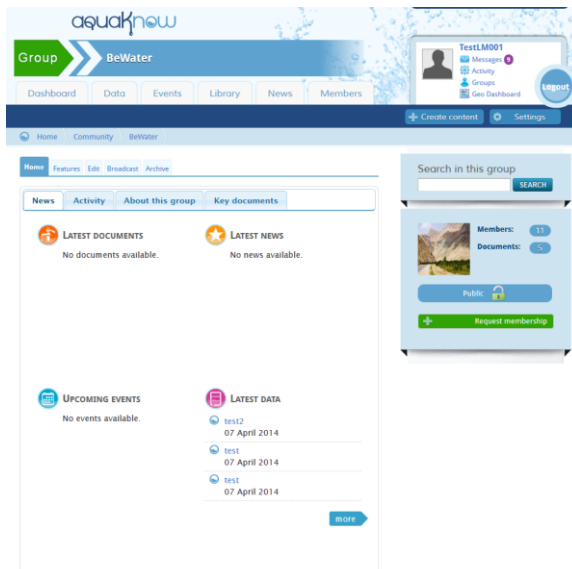


The login form is displayed on a tablet-like interface. It features two input fields: 'Username:' and 'Password:'. Below these fields are two links: 'Create new account' and 'Request new password'. A prominent blue circular button with the text 'LOG IN' is positioned to the right of the password field. Arrows from the text boxes on the right point to the 'LOG IN' button and the 'Request new password' link.

You can create an account here, please add your interest in the BeWater group in the About Yourself field on the register page.

You can request a new password by clicking here, it's an automated procedure. You will receive a link to update the password in your email.

3. After login click the Community tab and select the BeWater group under the My groups tab or go directly to this URL: <http://www.aquaknow.net/en/be-water/>
4. You will see the main Dashboard of the BeWater Group, with all the files and information the Group users decided to share.




The dashboard for the BeWater group is shown. At the top, there's a header with the 'aquaknow' logo and a 'Group' tab. Below this, a navigation bar includes 'Dashboard', 'Data', 'Events', 'Library', 'News', and 'Members'. A user profile section for 'TestLM001' is visible, showing 'Messages', 'Activity', 'Group', and 'Geo Dashboard' links, along with a 'Logout' button. The main content area is divided into several sections: 'News' (with 'Latest Documents' and 'Latest News' subsections, both showing 'No documents/news available'), 'Upcoming Events' (showing 'No events available'), and 'Latest Data' (listing three entries dated '07 April 2014'). A 'Search in this group' box is on the right, and a 'Request membership' button is at the bottom right.

# How to create GeoMetaData files in the BeWater group

1. Log in using your Username and Password and visit the URL: <http://www.aquaknow.net/en/be-water/>
2. Select the About this group tab. Click the link at the bottom of the page or visit this link: <http://www.aquaknow.net/en/be-water/node/add/geometadata>

News Activity About this group Key documents

[\[Edit\]](#) [\[Export\]](#) [\[Clone\]](#)



Sustainable water management under climate change is an urgent challenge for the Euro-Mediterranean region. Future climate change projections estimate an increase in water scarcity and droughts in the region, causing substantial socioeconomic losses and environmental impacts.

In this context, efforts are needed to strengthen public [participation](#) and embed a sense of responsibility within the society concerning water management and adaptation towards these threats. The combination of improved awareness, mutual learning processes and shared responsibility of the civil society and [stakeholders](#) are key to ensuring successful adaptation strategies and their implementation, leading to increased resilience of the social-ecological system of a river basin.

BeWater addresses the above challenges by promoting dialogue and collaboration between science and society. The project aims at launching a transition from a technologically-focused river basin management approach to a stakeholder driven planning and management process that allows a pro active response to emerging climatic changes and related pressures. Based on a bottom-up approach, the multidirectional and multi-sectoral knowledge transfer throughout the project will raise awareness, feed ownership and ultimately lead to effective adaptation policies.

How to add GeoMetaData information: click [here](#).

A **GeoMetaData** is a content type that will keep all the information you want to share on the resource you have available. Aquaknow allows you to upload your file in the Platform, or to add a own download link URL or to keep your Geographical file without sharing it.

Here you can create a GeoMetaData content that will contain all information on the Geographical data you want to share.

## Create GeoMetaData

Title: \*

SAVE

PREVIEW

Location

Dataset

Description

Geographical Information

Contacts

Optional Info

Data Owner: \*

Institution/Organization/Company name

File URL:

URL reference for file downloading

Theme: \*

Data topic (Water Quality, Climate, Land Cover, Elevation Data, etc)

Publication Date: \*

Format: 07 04 2014  
dd mm yyyy

Attach files to this geometadata

Changes made to the attachments are not permanent until you save this post. The first "listed" file will be included in RSS feeds. Files must be smaller than 64 MB and have one of the following extensions: jpg jpeg gif png txt doc xls csv pdf ppt pps odt ods odp zip rar gz bz2 eps raw docx tif tiff r mp4 xlsx pptx.

Browse... No file selected.

Notifications

☐ Do not send notifications for this update.

Privacy

You can choose if this document will be only visible to members of this group or public.

Publishing options

Published

☐ Make this document private

If you check this, the document will be visible only to this group

Authoring information

By TestLM001

Revision information

No revision

SAVE

PREVIEW

You can preview the GeoMetaData before saving and publishing it.

Add the title of your resource. This field is mandatory \*.

Remember to fill all the mandatory (\*) fields in all the tabs. You can add more informations if you want.

You can add a link to the download location of the file.

You can upload your file.

All GeoMetaData are published when Save button is pressed. You can unpublish them (only you will be able to see/edit them) by clicking the Publishing options tab and unchecking the Published checkmark.

Dataset Description Geographical Information Contacts Optional Info

Add a description of the data you want to share.

**Short Abstract: \***

Dataset history and contents description

**Data Type:**

- None -

**Spatial Resolution:**

Refers to the level of detail of the data set. It shall be expressed as a set of zero to many resolution distances (typically for gridded data and imagery-derived products) or equivalent scales (typically for maps or map-derived products)

**Temporal Extent:**

Defines the time period covered by the content of the resource. This time period may be expressed as any of the following: an individual date, an interval of dates expressed through the starting date and end date of the interval and a mix of individual dates and intervals of dates.

**Temporal Resolution:**

Frequency with which data is collected or acquired.

**Quick Look:**

Examinar... No se ha seleccionado ningún archivo.

UPLOAD

Maximum file size: 64 MB  
Allowed extensions: jpg jpeg png gif

**Geonode Reference:**

- None -

Fill this text area with relevant information on the content of the resource. This field is mandatory \*.

Choose the type of data between Raster, Vector and other. Do not modify this field if the resource is not one of this type.

Upload a Quick look or a Screenshot of your resource.

Select the river basin country (Cyprus, Slovenia, Spain, Tunisia). This field is mandatory \*.

Dataset Description Geographical Information Contacts Optional Info

**Extent: \***

Cyprus

**Bounding Coordinates:**

Lat/Log in decimal degrees (DD° MM' SS") of lower left and upper right vertices of bounding rectangle

**Reference System:**

**Dataset** **Description** **Geographical Information** **Contacts** **Optional Info**

Add your contact information.

**Organization: \***

**Person: \***

**Email address: \***

**Phone / Email / Website:**

Add the name of the organization that owns/created the resource. This field is mandatory \*.

Enter the name of the person to contact for more information on the resource. This field is mandatory \*.

Add the email address of the contact person. This field is mandatory \*.

**Dataset** **Description** **Geographical Information** **Contacts** **Optional Info**

**Creation Date:**

Format: 07 04 2014  
dd mm yyyy

**Lineage Statement:**

Description of source materials and transformations used to derive final digital cartographic data files

**Progress:**

Completed

**Maintenance and Update Frequency:**

**Format:**

File format (TIFF, geoTIFF, PNG, shape, CSV, etc)

**Medium:**

Data sharing medium (Cd-Rom, DVD-Rom, Usb stick, etc)

**Fees and terms:**

Report the progression state of the resource.

Add in which format the resource is available.

Add the file format in case the resource is available in other medium.

Fill this field in case there are any fees and/or terms for the use of the resource.

# How to view GeoMetaData files in the BeWater group

1. Log in using your Username and Password and visit the URL: <http://www.aquaknow.net/en/be-water/>
2. Visit the main Dashboard, and click the Library link. Next click the GeoMetaData link or visit this URL: <http://www.aquaknow.net/en/be-water/library/geometadata>



The screenshot shows the 'aquaknow' website interface. At the top, there's a 'Group' dropdown set to 'BeWater'. Below this is a navigation bar with tabs: Dashboard, Data, Events, Library (selected), News, and Members. Under the 'Library' tab, there's a sub-bar with 'Documents', 'Files', 'Videos', 'Images', 'GeoMetaData' (selected), and 'Links'. A breadcrumb trail at the bottom of the navigation bar reads: Home > Community > BeWater > Library > GeoMetaData. The main content area is titled 'GeoMetaData Library' and features a search bar. The first entry is 'River precipitation', submitted by Lorenzo.Maineri on 1 April, 2014 - 16:25. It is 'Posted in groups BeWater'. Below this, there's a 'Dataset' section with 'Publication Date: 1 April, 2013'. A 'Description' section is partially visible. Under 'Geographical Information', there's a 'Contacts' section. At the bottom of the entry, there's a green button 'Add new comment', '16 reads', '1 attachment', and a 'Make public' link.

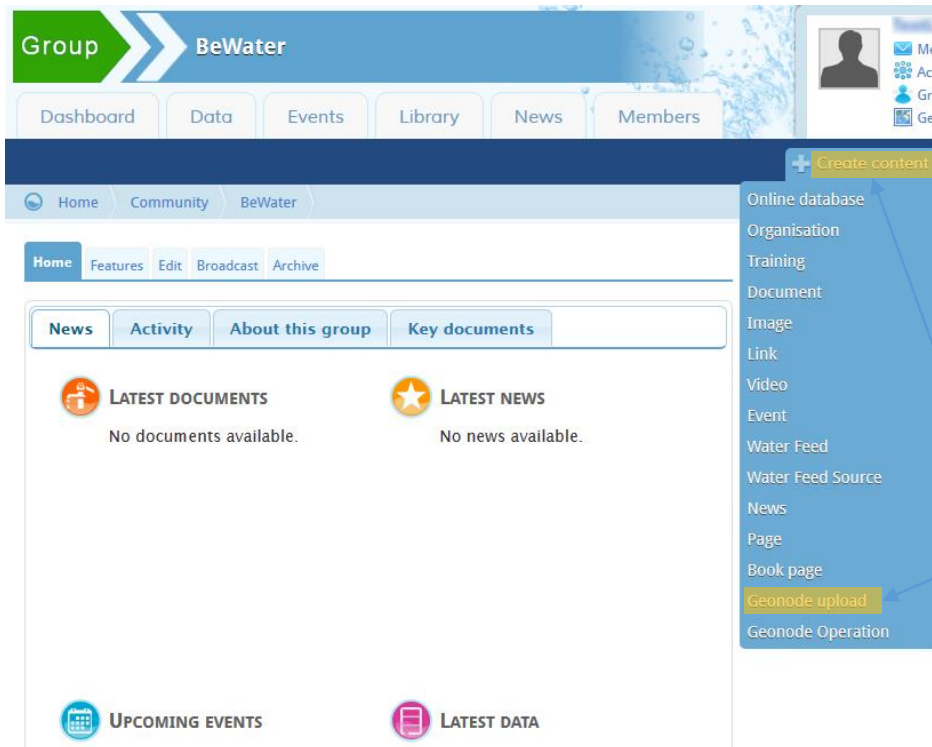
Click on the title to access all the information on this GeoMetaData.

You can add a comment to the GeoMetaData.

You can check if the GeoMetaData has an attachment.

# How to create a Geonode and visualize it in the map Tool

1. Log in using your Username and Password and visit the URL: <http://www.aquaknow.net/en/be-water/>
2. Click the Create content button and then click the Geonode upload link or visit this URL:  
<http://www.aquaknow.net/en/be-water/node/add/geonode>



A **GeoNode** is a content type that allows the user to upload a vector file (ShapeFile or CSV) and to visualize it on your own maps taking advantage of all the existing functionalities of the AquaKnow Map Tool.

Click on Create content to show the menu. Click it again to close it.

Click on Geonode upload to open the upload interface.



## Geonode upload

**Title: \***

Please enter a layer title. Max 60 characters.

**Data abstract:**

Description of the data.

**Geographic area:**

☐ Africa

☐ Americas

☐ Asia

☐ Europe

☐ Oceania

**Thematic area:**

☐ Agriculture - Food

☐ Climate change

☐ Education- awareness

☐ Environment- ecosystem

☐ Gender

☐ Health-hygiene

☐ Research

☐ Communication-reporting

☐ Development - cooperation

☐ Governance

☐ Infrastructures- technologies

☐ Project- Program management

☐ Remote sensing

☐ Water resources management

☐ Other

**Attach a data file:**

No file selected.

**Data file type: \***

☐ This file is a shapefile

☐ This file contains a latitude and a longitude column

☐ This file contains countries ISO3 column

☐ This file contains continent, region, country names column

Please specify the type of data contained in data file. You can download a sample of iso3 and region/country names [here](#).

**Copyright Information:**

Specify copyrights or restrictions on the use of this data.

Insert the Title of the layer, it will appear in the map layers list. This field is mandatory \*.

Fill this text area with relevant information on the content of the file.

Upload the file (only ShapeFile or CSV format) and select the data file type. This field is mandatory \*.

Add the Copyright information and click NEXT >



[< PREVIOUS](#)
[SAVE](#)

Click < PREVIOUS if you want to modify some information, click SAVE if you want to proceed.

No associated Maps found [CREATE NEW MAP >](#)

Click CREATE NEW MAP > if you want to proceed.

Map title: \*

Add a small abstract to the map.

last test


Please enter a layer title. Max 60 characters.

**Map abstract:**

**Map copyrights:**

Year	Population aged 65 and over (billions)
1990	0.1
2000	0.2
2010	0.4
2020	0.8

Select color of **your** map:

#5A5A5A  Please choose a base color for your layer

▼ Advanced configuration


Please select a index column to display in map.



This column will be used as index for data column (usually it is a country iso or name or a region name).

Please select a data column to display in map:

Only one numeric data column can be displayed on the map.

4 

Select the max number of classes for your layer.

Consider the following value as no data:

If you enter a value here this will be considered as no data, just like an empty or missing value. Please note that this is only for the data column you selected above.



SAVE

Choose the color of the map layer.

Click SAVE to proceed.

View **Associated Maps** Explore data Edit

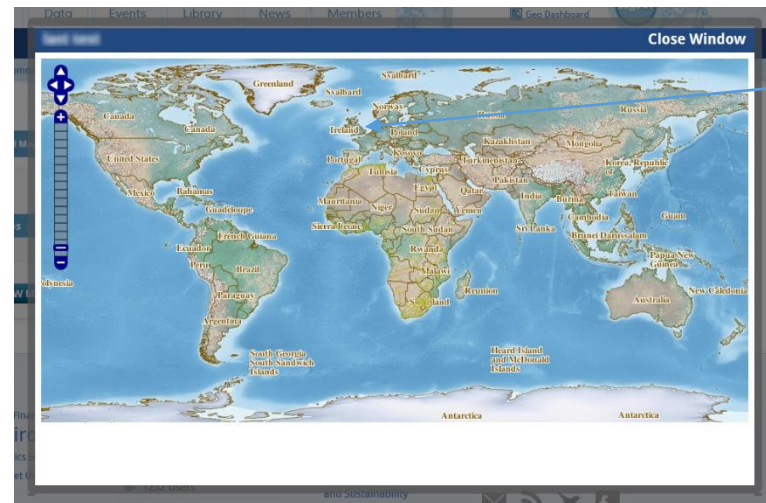
You can edit the data by clicking one of the two links.

You can explore the data by clicking this menu tab.

[Link to maps](#)
[Association](#)
[Preview](#)

[CREATE NEW MAP >](#)

You can preview the Map by clicking this Icon.



Map preview in a pop-up layer.

To view your layer in the Map Tool you can visit the page: <http://www.aquaknow.net/en/data/gis> or click Geo Dashboard in the User block and then click Visualize my maps (Map Tool).



Click Geo Dashboard in the User block.

## Geo Dashboard

### FIND AND DOWNLOAD GEODATA



#### Find geodata (geonodes)

Search for a particular geographic data of interest using the existing list of keywords or use our search engine. Data can be used to perform spatial analyses within Aquaknow and downloaded in accordance with copyright information.



#### Find existing visualisations / maps (WMS)

Find pre-built visualisations or maps. Please bear in mind that these datasets cannot be used to perform spatial analyses. Maps are only valid for visualisation purposes.

### ADD / UPLOAD



#### Import my data (CSV, SHP)

This feature allows you to import your CSV or shapefile files to be shown on a map. Once the data is uploaded it can be shared among registered users in many different formats including Web Services.



#### Import data from an external WMS services (URL)

This feature allows you to import layers from an external WMS to be shown on a map.

### MY DATA AND MAPS



#### Explore and edit my data

Consult your geographic data tables, create your own graphs, change the style of your maps and much more.



#### Visualise my maps (Map Tool)

Check and customize your own maps taking advantage of all the existing functionalities of the Aquaknow Map Visualiser. Export your maps to a ready-to-print version in just a few clicks!

### DATA ANALYSIS



#### Create a new Spatial Analysis

This feature allows you to carry out spatial operations such as: buffer, intersect, merge, etc. using your own data but also with the geographic data stored into the Geodata Library.



#### View my Spatial Analysis

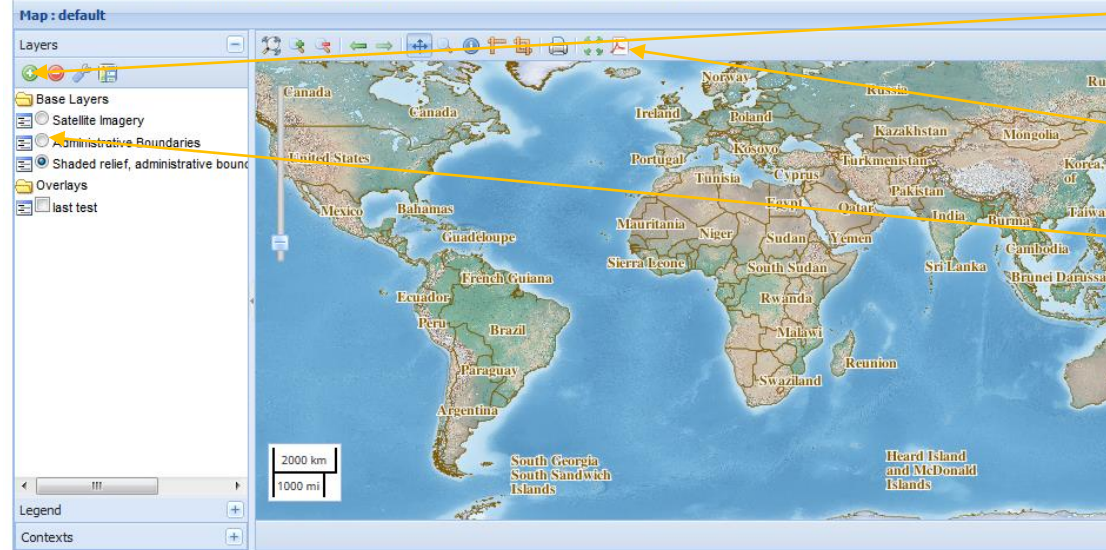
This feature allows you to check the status of your spatial operations providing direct access to the analysis results.

Click Visualize my maps (Map Tool)

You can create a Spatial Analysis by clicking here.

## Map Tool

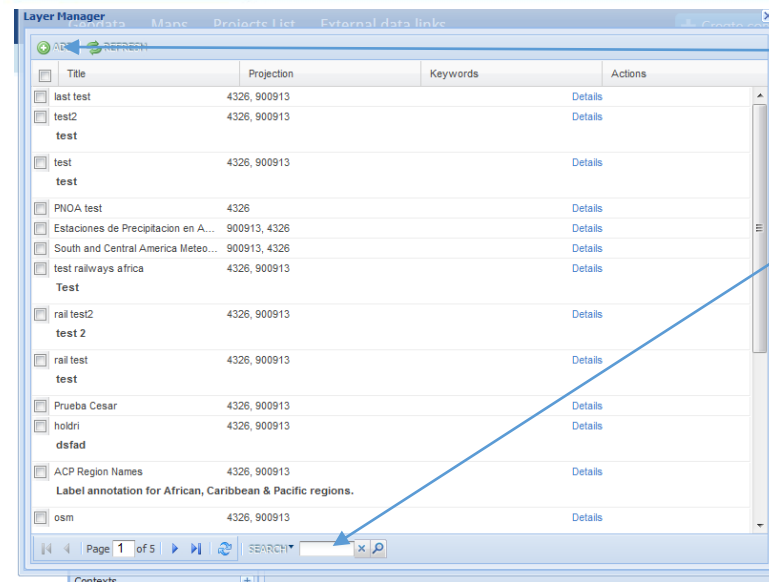
You can add geo data using [Geodata Library](#) or add your own data by clicking [here](#)



Add a layer to the map.

Export the map as PDF or JPG.

Change the base map layer.

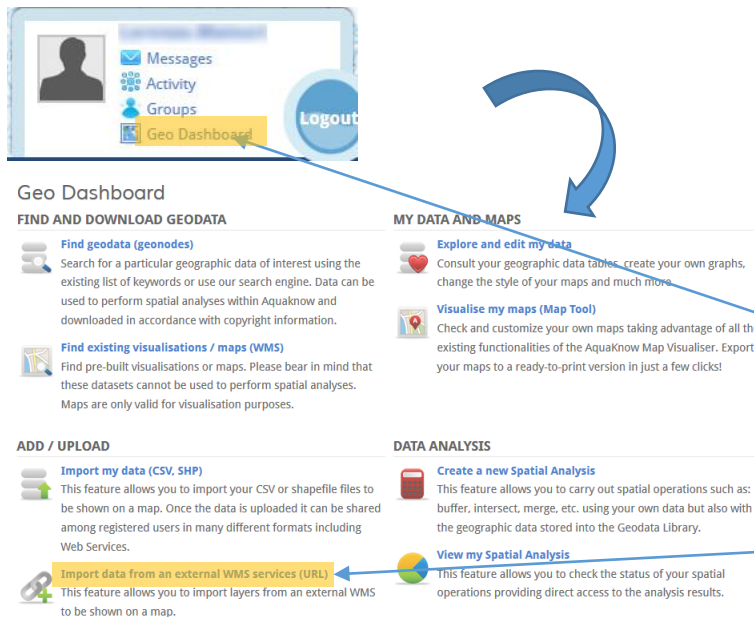


Select a layer and add it to the map.

Search for a specific layer.

# How to add an external WMS service

Log in using your Username and Password and visit the URL: <http://www.aquaknow.net/en/wms/nojs/explorer> and or click Geo Dashboard in the User block and then click Import data from an external WMS services (URL).



The screenshot shows the 'Geo Dashboard' interface. A blue arrow points from the 'Geo Dashboard' link in the top navigation bar to the 'Geo Dashboard' section header. Another blue arrow points from the 'Import data from an external WMS services (URL)' link in the 'ADD / UPLOAD' section to a blue callout box. A third blue arrow points from the 'Visualise my maps (Map Tool)' link in the 'MY DATA AND MAPS' section to another blue callout box.

**Geo Dashboard**

**FIND AND DOWNLOAD GEODATA**

- Find geodata (geonodes)**  
Search for a particular geographic data of interest using the existing list of keywords or use our search engine. Data can be used to perform spatial analyses within Aquaknow and downloaded in accordance with copyright information.
- Find existing visualisations / maps (WMS)**  
Find pre-built visualisations or maps. Please bear in mind that these datasets cannot be used to perform spatial analyses. Maps are only valid for visualisation purposes.

**ADD / UPLOAD**

- Import my data (CSV, SHP)**  
This feature allows you to import your CSV or shapefile files to be shown on a map. Once the data is uploaded it can be shared among registered users in many different formats including Web Services.
- Import data from an external WMS services (URL)**  
This feature allows you to import layers from an external WMS to be shown on a map.

**MY DATA AND MAPS**

- Explore and edit my data**  
Consult your geographic data tables, create your own graphs, change the style of your maps and much more.
- Visualise my maps (Map Tool)**  
Check and customize your own maps taking advantage of all the existing functionalities of the Aquaknow Map Visualiser. Export your maps to a ready-to-print version in just a few clicks!

**DATA ANALYSIS**

- Create a new Spatial Analysis**  
This feature allows you to carry out spatial operations such as: buffer, intersect, merge, etc. using your own data but also with the geographic data stored into the Geodata Library.
- View my Spatial Analysis**  
This feature allows you to check the status of your spatial operations providing direct access to the analysis results.

A Web Map Service (WMS) is a standard protocol for serving georeferenced map images over the Internet that are generated by a map server using data from a GIS database.

Click Geo Dashboard in the User block.

Click Import data from an external WMS services (URL)

## WMS Wizard

Step 1: Insert WMS URL » Step 2: WMS Analyze

WMS Url:

Insert here WMS server URL, please ensure that WMS remote server is able to respond in 1.1.1 WMS specs version.

PROCEED TO NEXT STEP

CANCEL

Add the URL of the WMS service and click PROCEED TO NEXT STEP.

## WMS Wizard

Step 1: Insert WMS URL » Step 2: WMS Analyze

WMS: FAO GeoNetwork OGC Web Map Server

Description:

Additional info

**Version:** 1.1.1  
**URL:** http://www.fao.org/geonetwork  
**Title:** FAO GeoNetwork OGC Web Map Server  
**Abstract:**  
**Keywords:** FAO, WMS, OGC, GeoNetwork

**ContactPersonPrimary** **ContactPerson** Jeroen Ticheler  
**Contacts:** **ContactPersonPrimary** **ContactOrganization** Food and Agriculture Organization (FAO)  
**ContactElectronicMailAddress** GeoNetwork@fao.org

**Map URL:** http://geonetwork3.fao.org/ows/1?

**Info URL:** http://geonetwork3.fao.org/ows/1?

**SRS:** EPSG:4326

**Fees:** none

**Access:** none

Root Layer: FAO GeoNetwork OGC Web Map Server

☐ Root node: FAO GeoNetwork OGC Web Map Server

☐ National administrative boundaries of Africa

National boundaries of Africa, prepared by ESRI as part of the FAO/UNEP Desertification and Mapping Project in 1983.

The URL is checked and all relevant information are extracted automatically from the WMS service.

You can add the following information for your convenience and then press PROCESS. Title and Keywords are mandatory fields \*.

Chose the layer to be shown on the map.

Information

**Title:**

**Description:**

**Keywords:**

A comma-separated list of terms describing this content.

**Copyrights:**

Specify copyrights or restrictions on the use of this data.

BACK PROCESS CANCEL



View Edit

test bewater

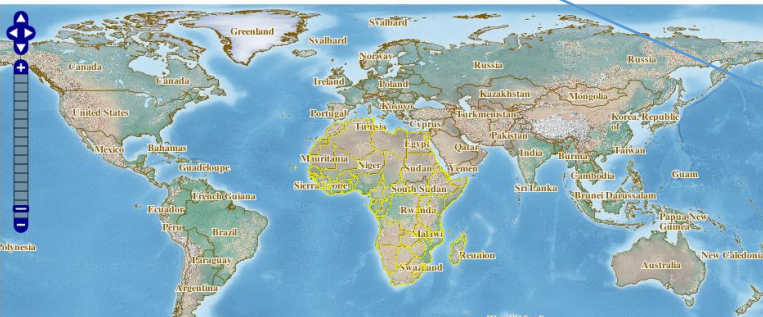
Add to Map Tool

Submitted by Lorenzo.Maineri on 10 April, 2014 - 18:25

bewater

Base URL: <http://geonetwork3.fao.org/ows/1?>

Layers: national\_boundaries\_africa



You can add the resulting layer to the Map Tool.

You can edit the preferences of the resource.

Title: PNOA test

Body:

Show summary in full view

Disable rich-text

Input format

Base URL: <http://www.ign.es/wms-ignite/pnoa-ma?>

Queryable

Supports legend

Notifications

Do not send notifications for this update.

This file must be a csv (comma separated values) data file. It must contain columns named as "latitude" and "longitude". Latitude and longitude must be a numeric, non empty value (i.e. 133.868).

Image format: image/png,image/jpeg,image/gif,image/tiff

Projection: - None - 900913 4326

Book outline

Not in book

Authoring information

By Iban Ametztoy on 2013-12-12 15:52:27 +0200

Publishing options

Published, Promoted to front page

Menu settings

Not in menu

Meta tags

URL path settings

No alias

Attach files to this wms

No attachments

Revision information

No revision

Comment settings

Read/Write

XML sitemap

Inclusion: Default (excluded) Priority: Default (0.5)

Book:

<None>

Your page will be a part of the selected book.

No book selected.

Weight:

0

Pages at a given level are ordered first by weight and then by title.

Copyrights Informations:

Please specify copyrights if requested by the service owner

WMS type:

- None -

Specify the type of WMS if external or geonode generated

Parent geonode:

- None -

Parent geonode used to create wms

SAVE PREVIEW VIEW CHANGES DELETE

You can find more information on the following links:

Generic - <http://www.aquaknow.net/en/faq>

GIS - <http://www.aquaknow.net/en/gis-help-tutorials>

Contact us: [aquaknow-admin@jrc.ec.europa.eu](mailto:aquaknow-admin@jrc.ec.europa.eu)