

The CLIMB Geoportal -

A web-based dissemination and documentation platform for hydrological modelling data

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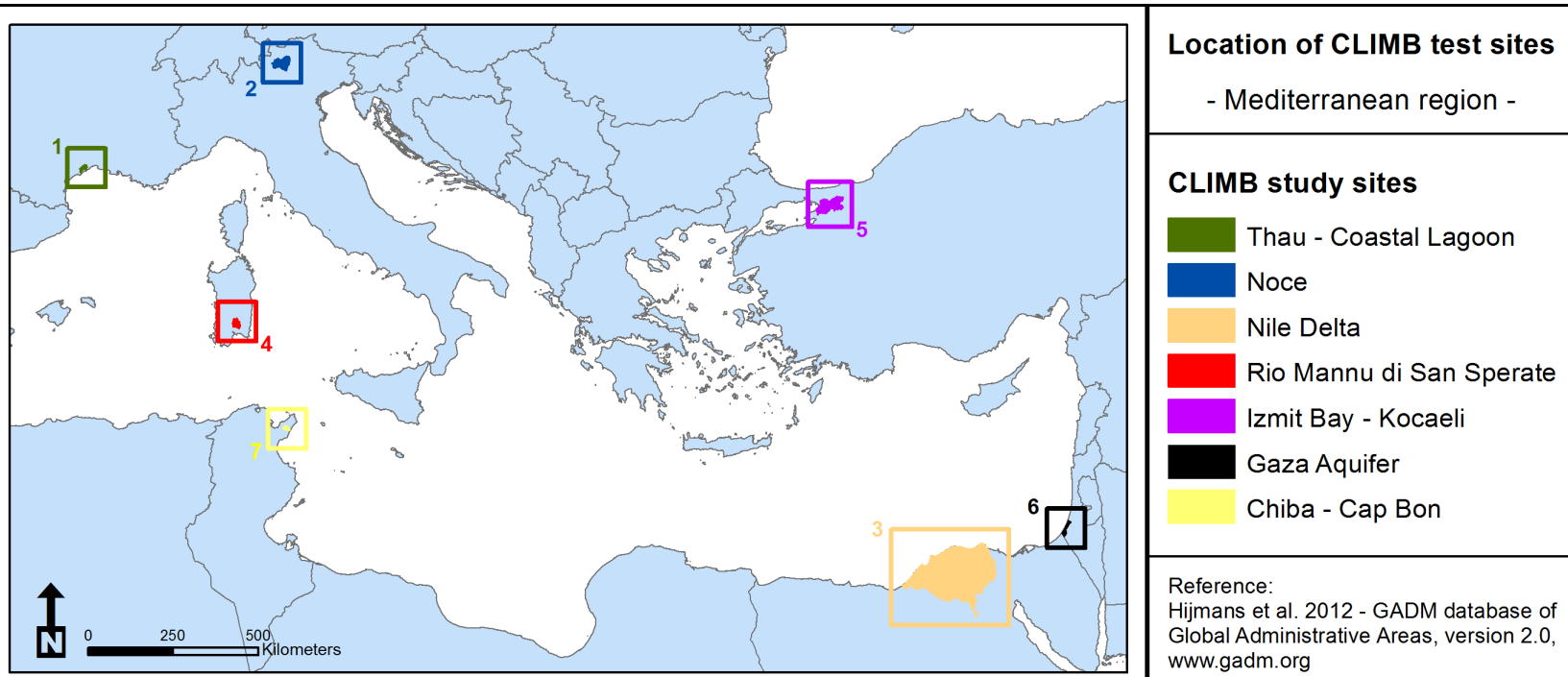
Introduction and Objectives

- Geoportals are important elements of spatial data infrastructures (SDIs) that are strongly based on GIS-related web services
- Web services are meant for distributing, documenting and visualizing (spatial) data in a standardized manner
- Development of a web-based platform for project-internal exchange of spatial data and dissemination of selected project results within the EU-FP7-project CLIMB
- Focus on easy to extend free and open-source software

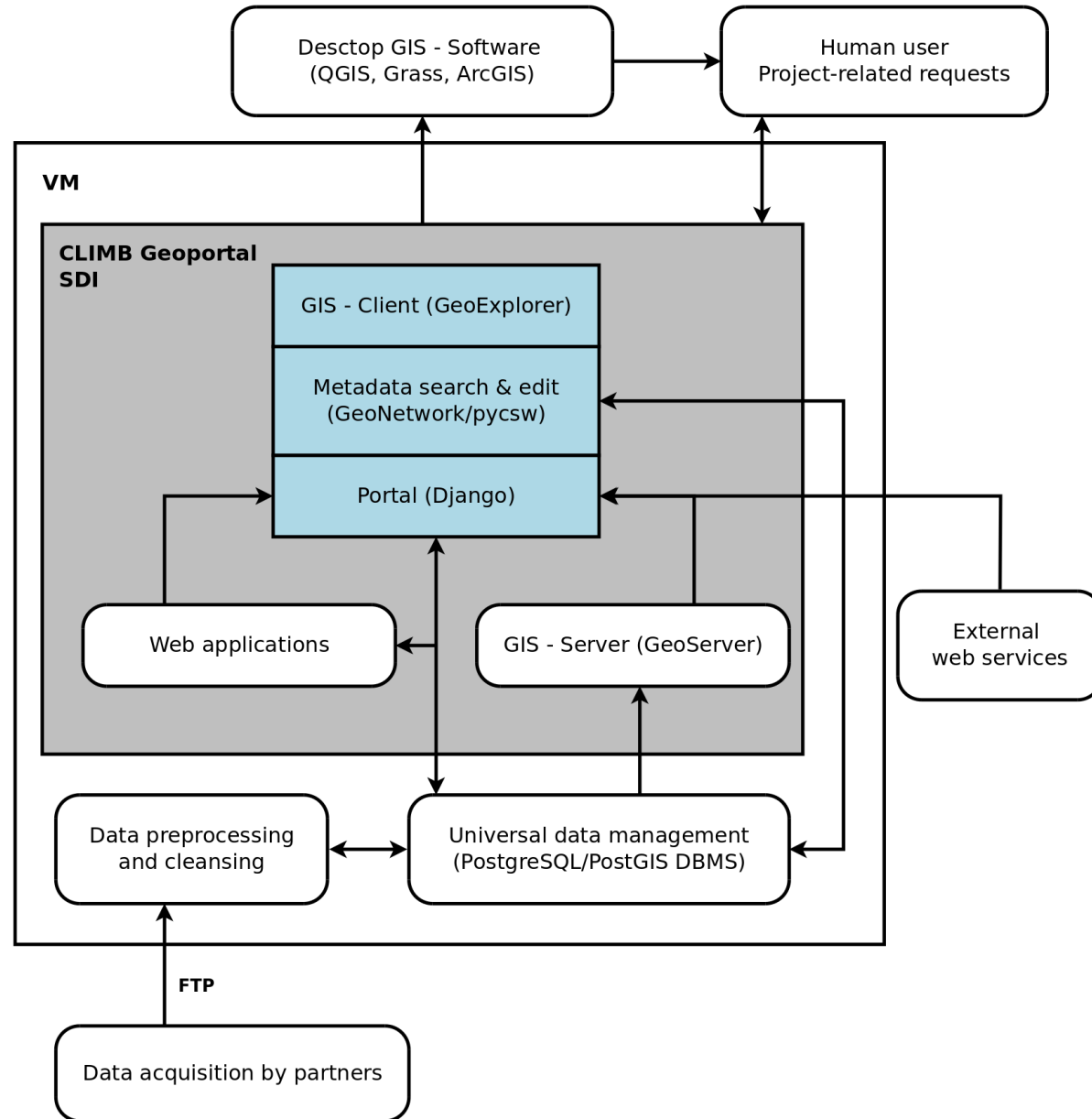


The CLIMB project

- CLIMB-FP7: Climate Induced Changes on the Hydrology of Mediterranean Basins, www.climb-fp7.eu
- International scientific project with 21 partner institutions from 9 countries



Final architecture: CLIMB Geoportal/SDI



**The CLIMB
project -
WP2:
(spatial)
data
management**



The CLIMB project - Challenges

- High number of data suppliers and producers
- Varying national standards in (spatial) data handling
- Special data requirements from different disciplines (e.g. climate, soil, hydrology)
- Diverse (hydrological) model-dependent data formats and specifications
- Low level of cooperation with regards to metadata collection



Geoportal implementation - GeoNode

- 'GeoNode is a web-based application and platform for developing geospatial information systems (GIS) and for deploying spatial data infrastructures (SDI).'
(<http://geonode.org>, visited on 05/04/15)
- Allows every registered project partner to manage their associated portal content individually
- Extensible → Integration of project-specific functionality
- Offers a SDI-package suitable for beginners
- Now available in version 2.4b18; CLIMB uses 2.0c5



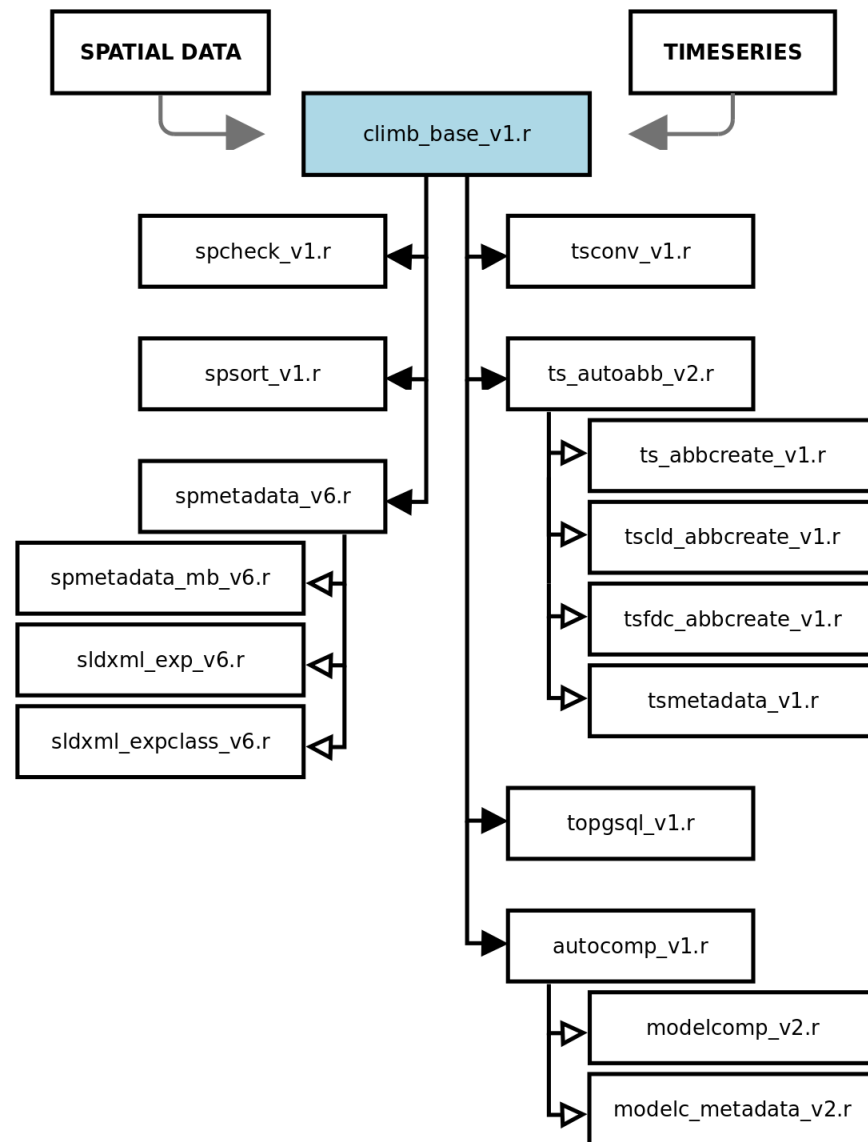
GeoNode2.0 - software components

- GeoServer → providing OGC-compliant web services
 - pycsw → OGC CSW server implementation
 - GeoExplorer → built-in WebGIS-client based on GeoExt
 - Python (Django) and JavaScript → web applications
 - PostgreSQL and PostGIS → database backend
- in addition:
- R → data preprocessing

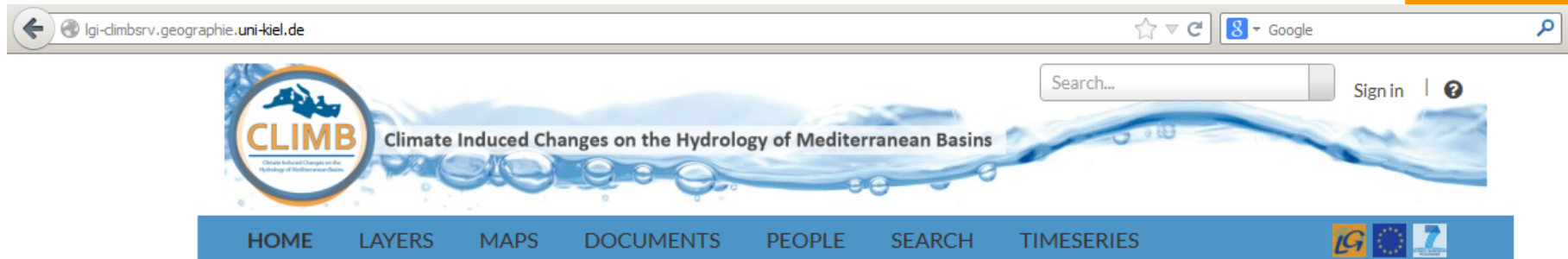


R - data preprocessing

- checking file names
- converting files
- transferring data
- creating figures
- generating metadata
- producing styled layer descriptor files



The CLIMB Geoportal - Impressions



WELCOME

to the WebGIS-Server of the EU-FP7-project CLIMB - Climate Induced Changes on the Hydrology of Mediterranean Basins. This platform is meant for publishing (hydrological) modelling results produced by several project partners during the four-year timeframe of CLIMB.

For more information on the project, click [here](#) or visit [our main website](#).

Need help [Getting Started?](#)

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Total: 3



◆ CLAY content in %

Layer from mblaschek, 50 minutes ago

4
views

★★★★★
Average rating (0 votes)

[Create a map](#)

LATEST MAPS



📍 CLAY content, Rio di Costara

Map from mblaschek, 36 minutes ago

5
views

★★★★★
Average rating (0 votes)

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▼ CATEGORIES

All Categories

Rio Mannu di San Sperate

788

Rio di Costara

4

Maso Maiano

0

Thau

0

Chiba

0

Gaza

0

Kocaeli

0

Noce

2

Nile

0

► DATE

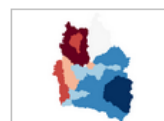
▼ KEYWORDS

HadCM3 RCA

196

Water balance

56



◇ RMT_CSM_BTH_M12_WAS_HRC_BDM_250_LMU

Layer from mblaschek, 3 days, 2 hours ago

This layer displays the relative change in volumetric soil moisture within the Rio Mannu di San Sperate test site for the future (2041-2070) and re...

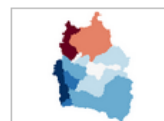
4

views

★ ★ ★ ★ ★

Average rating (0 votes)

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Layer from mblaschek, 3 days, 2 hours ago

This layer displays the relative change in volumetric soil moisture within the Rio Mannu di San Sperate test site for the future (2041-2070) and re...

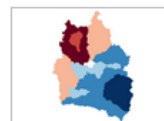
1

view

★ ★ ★ ★ ★

Average rating (0 votes)

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◇ RMT_CSM_BTH_M12_WAS_ERE_BDM_250_LMU

Layer from mblaschek, 3 days, 2 hours ago

This layer displays the relative change in volumetric soil moisture within the Rio Mannu di San Sperate test site for the future (2041-2070) and re...

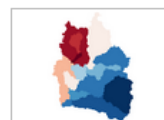
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views

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Average rating (0 votes)

Create a map



◇ RMT_CSM_BTH_M12_WAS_ERC_BDM_250_LMU

Layer from mblaschek, 3 days, 2 hours ago

This layer displays the relative change in volumetric soil moisture within the Rio Mannu di San Sperate test site for the future (2041-2070) and re...

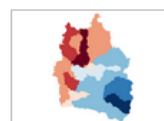
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views

★ ★ ★ ★ ★

Average rating (0 votes)

Create a map



◇ RMT_CSM_BTH_M11_WAS_HRC_BDM_250_LMU

Layer from mblaschek, 3 days, 2 hours ago

This layer displays the relative change in volumetric soil moisture within the Rio Mannu di San Sperate test site for the future (2041-2070) and re...

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views

★ ★ ★ ★ ★

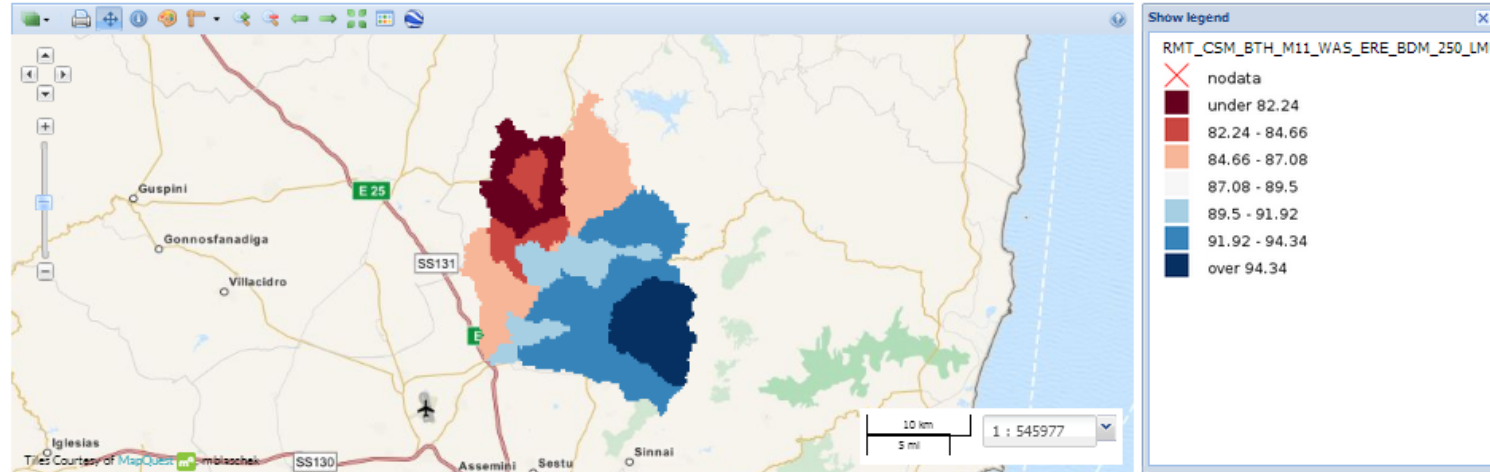
Average rating (0 votes)

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RMT_CSM_BTH_M1...

Download Metadata



Info Attributes Share Ratings Comments

Title: RMT_CSM_BTH_M11_WAS_ERE_BDM_250_LMU

Abstract:

This layer displays the relative change in volumetric soil moisture within the Rio Mannu di San Sperate test site for the future (2041-2070) and reference (1971-2000) period. It represents month November. The involved hydrological model was WaSiM, the considered climate model was ECHAM-5 REMO, applied in the form: bias corrected and downscaled using multifractal cascades method (1km). The cell size of the target grid is 250m. The presented layer covers the total study site Rio Mannu di San Sperate, Sardinia. Its visualization is based on subcatchment level.

Publication Date: Nov. 13, 2013, 10:28 a.m.

Type: Raster Data

Keywords: WaSiM Relative change in volumetric soil moisture ECHAM-5 REMO

Category: Rio Mannu di San Sperate

Owner: mblaschek

Point of Contact: mblaschek

Show/Hide

Restrictions: Restrictions and legal prerequisites for using the data set after access is granted.

Purpose:

This layer represents output created within the EU-FP7 project CLIMB - Climate Induced Changes on the Hydrology of Mediterranean Basins (Ludwig et al. 2010, www.climb-fp7.eu).

Language: English

Supplemental Information:

The relative change in volumetric soil moisture has been calculated from monthly mean volumetric soil moisture in %: Future period/Reference period * 100.

MAPS USING THIS LAYER

This layer is not currently used in any maps.

CREATE A MAP USING THIS LAYER

Click the button below to generate a new map based on this layer.

Create a Map

STYLES

The following styles are associated with this layer. Choose a style to view it in the preview map.

- RMT_CSM_WAS_LMU
- (default style) RMT_CSM_BTH_M11_WAS_ERE_BDM_250_LMU
- CSM_CLIMB





Climate Induced Changes on the Hydrology of Mediterranean Basins

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☒ Rio Mannu - CLIMB catchment boundaries

☒ Comuni

☐ Carta geologica - Elementi areali

☒ RMT_ETP_FUT_M04_WAS_ERC_BDM_250_LMU

- ☒ nodata
- ☐ under 97.56
- ☐ 97.56 - 105.09
- ☐ 105.09 - 112.62
- ☐ 112.62 - 120.15
- ☐ 120.15 - 127.68
- ☐ 127.68 - 135.21
- ☐ over 135.21

☐ RMT_ETP_REF_M04_WAS_ERC_BDM_250_LMU

Base Maps

- ☐ Bing Aerial With Labels
- ☐ MapQuest Imagery
- ☒ MapQuest OpenStreetMap
- ☐ OpenStreetMap
- ☐ No background

Feature Info

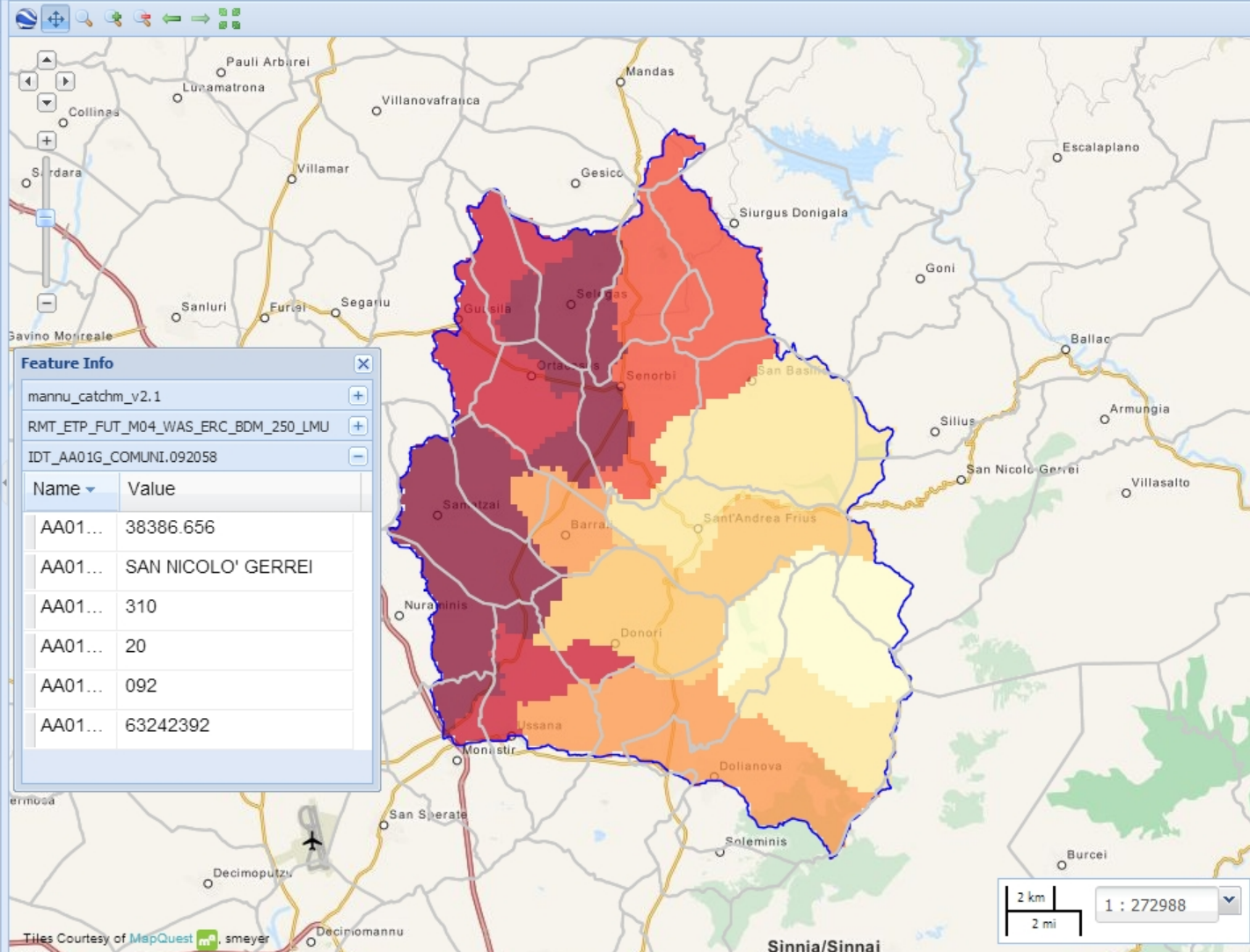
mannu_catchm_v2.1

RMT_ETP_FUT_M04_WAS_ERC_BDM_250_LMU

IDT_AA01G_COMUNI.092058

Name Value

AA01...	38386.656
AA01...	SAN NICOLO' GERREI
AA01...	310
AA01...	20
AA01...	092
AA01...	63242392





EXPLORE MAPS

Download test_map

Here you can download all the layers of this map that are hosted on this GeoNode.

- [RMT_ETP_REF_M04_WAS_ERC_BDM_250_LMU](#)
- [RMT_ETP_FUT_M04_WAS_ERC_BDM_250_LMU](#)

Finally, the map contains these layers which will not be downloaded because they are not available directly from this GeoNode:

- <http://webgis.regione.sardegna.it/geoserver/ows?service=WMS&request=GetCapabilities?layers=dbu:GEOLOGIAAREALI>
- http://webgis.regione.sardegna.it/geoserver/ows?service=WMS&request=GetCapabilities?layers=ras:IDT_AA01G_COMUNI
- http://ukzfg-s11.gis.uni-kiel.de/geoserver/sarbase/ows?version=1.1.1?layers=mannu_catchm_v2

Start downloading this map

CLIMB Partners:



Powered by [GeoNode](#) version 2.0c5 | [For Developers](#) | [About CLIMB](#)

Language English

The CLIMB Geoportal - Extension



TIME SERIES - HYDROLOGY

Choose the details for the time series you want to view or download:

Study site:

Hydrological model:

Time horizon:

Hydrological indicator:

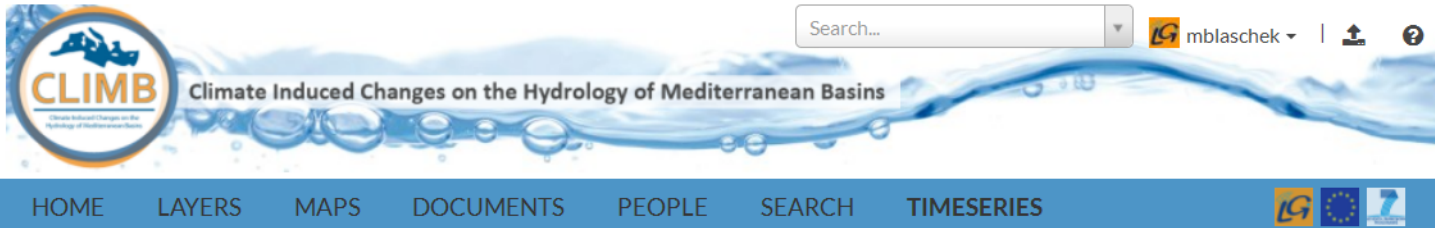
[Submit selection](#)

CLIMB Partners:

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- UNIVERSITY OF TRENTO
- JÜLICH
- UNIVERSITÄT PARIS-SACLAY
- CRS4
- AGRICOLA
- AGRICOLA

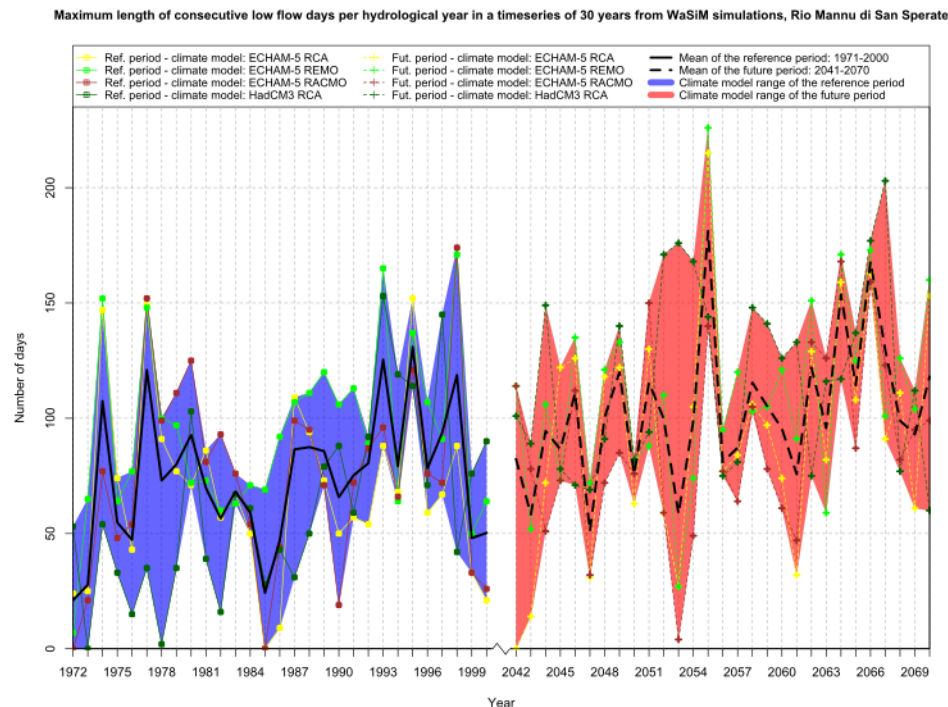


The CLIMB Geoportal - Extension



This graphic displays results from simulations using the hydrological model WaSiM within the Rio Mannu di San Sperate test site. It shows the maximum length of consecutive low flow days per hydrological year in a timeseries of 30 years for both, the reference (1971-09-01 to 2000-08-31) and future (2041-09-01 to 2070-08-31) period. Four different climate models are compared, each of them applied in the form: bias corrected and downscaled using multifractal cascades method (1km). The presented results cover the total study site Rio Mannu di San Sperate, Sardinia. For further information consider our partners from Ludwig-Maximilians-University Munich, Department of Geography in Munich.

[New selection](#) [Download time series](#)



CLIMB Partners:



The CLIMB Geoportal - Extension

```
/usr/local/lib/python2.7/dist-packages/timeseries
├── admin.py
├── forms.py
├── __init__.py
├── modelOutput.py
├── models.py
├── static
│   ├── timeseries
│   │   └── js
│   │       ├── choices_agri.js
│   │       ├── choices.js
│   │       └── choices_tourism.js
├── templates
│   ├── base_timeseries.html
│   └── timeseries
│       ├── ts_result_agri.html
│       ├── ts_result.html
│       ├── ts_result_tourism.html
│       ├── ts_select_agri.html
│       ├── ts_select.html
│       └── ts_select_tourism.html
├── utils
│   ├── put_describing_text_into_db.py
│   └── styleloader.py
└── views.py
```



The CLIMB Geoportal - Some numbers

- 3080 WMS layer from 7 test sites and 13 hydrological model runs
- Each layer with 3 different stylings (sld) and specific metadata (xml)
- 1576 database tables representing up to 13 time series indicators
- 197 svg-images illustrating time series indicators
- 70 model comparison plots (time series) from 4 test sites
- 23 registered user profiles



The CLIMB Geoportal - Conclusions

The CLIMB Geoportal solved:

- The problem of heterogeneous data and file formats
- The missing of ISO-compliant metadata
- The lack of a uniform presentation of model results

The CLIMB Geoportal offers:

- Maps/Plots of easy-to-interpret hydrological indicators
- Access to underlying data for registered users

→ A free and open-source solution for long-term visibility of project-specific results



The End

Thank you for your attention!

lgi-climbrsv.geographie.uni-kiel.de

www.climb-fp7.eu

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We thank Michael Nolde and Volodymyr Borovkov for support with regards to the implementation of the portal.

