L’utilizzo dei dati e dei risultati attraverso la data platform del progetto ORIENTGATE

The use of data results through the data platform of the ORIENTGATE project

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1. The ORIENTGATE data platform: main objective
2. Climate datasets
3. Impact indicator datasets
4. Main services and exploitation examples
ORIENTGATE data platform: main objective

Service Registry

Data Browsers

FTP THREDS GEONETWORK GEOSERVER

Export

Mount

FTP

HTTP

Apache Tomcat

ESGF Data Node

Orientgate Storage

Service Architecture

NFS

Internet

OpenID Authentication

Username Password

Username Password

Username Password

Username Password

Username Password

Username Password

OPeNDAP/THREDDS

Monitoring Dashboard

GeoNetwork

GeoServer

Username Password

Username Password

Username Password

Username Password

Indice di ftp://orientgate02.cmcc.it/impacts/

Vai alla cartella superiore

Nome

adaptivecapacity_IPCC-AR4

exposure_IPCC-AR4

exposure_UN-DRR

hazard_UN-DRR

potentialimpact_IPCC-AR4

risk_UN-DRR

sensitivity_IPCC-AR4

vulnerability_IPCC-AR4

vulnerability_UN-DRR

Dimensione

Ultima modifica

1/10/12 00:00:00

2/4/14 20:50:00

30/4/14 08:55:00

30/4/14 09:16:00

18/12/13 00:00:00

11/10/13 00:00:00

11/10/13 00:00:00

11/10/13 00:00:00

18/12/13 00:00:00

Export

Orientgate Storage
The data platform gadget will be reachable under the section "Data" of the Orientgate website: http://www.orientgateproject.org/.
Climate datasets

Climate datasets are output of climate simulations within the Work Package 3 and they will be taken in input by the pilot studies.

A dataset is composed by a series of NetCDF files, one for each year of simulation, and are encoded following the rules that we know:

\[\text{institutename}_{-}\text{forcinginfo}_{-}\text{modelinginfo}_{-}\text{geographicalinfo}_{-}\text{resolution}_{-}\text{temporalsubset}\]

Example of dataset:

\[\text{RHMSS\_ERA40\_NMMB\_Balkan\_8km\_1971-2000}\]
Impact indicator datasets

Impact indicator datasets, instead, are the output of the pilot studies and consist of different kind (vector or raster, excel, table, netcdf, etc.) of files related to a specific indicator.

Notice that more than one dataset can refer to a single indicator.

Similarly to climate datasets, impact indicators are uniquely identified.

They are encoded in the following way:

\(<\text{indicator_identifier}>\_\text{time_frequency}>\_\text{spatial_resolution}>\_\text{temporal_subset}>\)

Example:

\(\text{APA}_\_30y\_8km\_19762005\)
1. FTP (File Transfer Protocol)
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2. GeoNetwork

GeoNetwork is a catalog application to manage spatially referenced resources.

It provides:

• Search & Discovery in multiple catalogs through a website
• Data download
• Users and Group management
• Access to interactive maps
• Support for multiple metadata standards
• Metadata editing tool
2. GeoNetwork

FIND INTERACTIVE MAPS, GIS DATASETS, SATELLITE IMAGERY AND RELATED APPLICATIONS

**IDENTIFICATION INFO**

- **Title:** SDI_30y_300000_19762005_BASE
- **Date:** 2014-06-19T13:00:00
- **Creation:** Date identifies when the resource was brought into existence

**Cited responsible party**

- **Individual name:** Maria Santini
- **Organization name:** Centro Euro-Mediterraneo sui Cambiamenti Climatici
- **Position name:** Researcher

**Abstract:**

Digital map: Map represented in raster or vector form

This dataset represents the frequency of classes of the Streamflow Drought Index (SDI; Mailhot and Tsokos 2008) calculated for six significant hydrographic basins in Puglia (IT), namely Foggia, Candelara, Coratino, Carpechi, Otranto, Bradano. The frequency was calculated for multi-month periods (3, 6, 9, 12 months) along a 30-year time frame from 1976 to 2005 being the baseline of Piot 3. Streamflow data were derived from...
2. GeoNetwork
3. THREDDS (Thematic Realtime Environmental Distributed Data Services)

The THREDDS service aims at bridging the gap between data providers and data users. The goal is to simplify the discovery and use of scientific data and to allow scientific publications and educational materials to reference scientific data.
3. THREDDS (Thematic Realtime Environmental Distributed Data Services)

THREDDS is a web server providing features of metadata and data access using:

- **HTTP**, to download the data using a web browser
- **OPeNDAP** protocol, to subset data with the web browser without downloading the entire file
- **WMS** and **WCS**, XML file to be used by visualization tools
- **NetCDF subset service**, a web service for subsetting data in order to allow partial download of huge climate datasets and permit users to get exactly what they need.
THREDDS also offers the possibility to visualize the data, through some integrated viewers:

- **IDV (Integrated Data Viewer)**
- **Java Tools UI**
- **GODIVA 2**
THREDDS viewers example

Catalog http://orientgate02.cmcc.it:8009/thredds/catalog/orientgate/impacts/hazard_UN-DDR/3_puglia_italy/single_indicator/APA_30y_8km_19712070/APA_30y_8km_19762005/catalog.html

Dataset: APA_30y_8km_19762005/APA_30y_8km_19762005.nc

- Data size: 1.303 Mbytes
- Data type: GRID
- ID: orientgate_catalog/impacts/hazard_UN-DDR3_puglia_italy/single_indicator/APA_30y_8km_19712070/APA_30y_8km_19762005/APA_30y_8km_19762005.nc

Access:
1. OPENDAPI: thredds/dodsC/orientgate/impacts/hazard_UN-DDR/3_puglia_italy/single_indicator/APA_30y_8km_19712070/APA_30y_8km_19762005/APA_30y_8km_19762005.nc
2. HTTPServer: thredds/fileServer/orientgate/impacts/hazard_UN-DDR3_puglia_italy/single_indicator/APA_30y_8km_19712070/APA_30y_8km_19762005/APA_30y_8km_19762005.nc
3. WCS: thredds/wcs/orientgate/impacts/hazard_UN-DDR3_puglia_italy/single_indicator/APA_30y_8km_19712070/APA_30y_8km_19762005/APA_30y_8km_19762005.nc
4. WMS: thredds/wms/orientgate/impacts/hazard_UN-DDR3_puglia_italy/single_indicator/APA_30y_8km_19712070/APA_30y_8km_19762005/APA_30y_8km_19762005.nc
5. NetcdfSubset: thredds/hcss/grid/orientgate/impacts/hazard_UN-DDR3_puglia_italy/single_indicator/APA_30y_8km_19712070/APA_30y_8km_19762005/APA_30y_8km_19762005.nc

Dates:
4. GeoServer

GeoServer is an open-source software allowing users to share, process and edit geospatial data.

It allows data publication from any major spatial data source using open standards, such as WMS (Web Map Service), WFS (Web Feature Service) and WCS (Web Coverage Service)

- GeoServer reads a variety of data formats, including:
  - Shapefile
  - GeoTIFF
  - GTOPO30
  - ECW, MrSID
  - JPEG2000
  - Post GIS
  - MySQL
  - DB2
  - ArcSDE
  - Oracle Spatial

- Output formats: KML, GML, Shapefile, GeoRSS, PDF, GeoJSON, JPEG, GIF, SVG, PNG and other more formats.

- Integrated OpenLayers client for previewing data layers.

- Efficient publishing of geospatial data to Google Earth, using KML language.
List of all layers configured in GeoServer and provides previews in various formats for each.

<table>
<thead>
<tr>
<th>Type</th>
<th>Name</th>
<th>Title</th>
<th>Common Formats</th>
<th>All Formats</th>
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<tr>
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<td>SDE_30y_300000_19762005_BASE</td>
<td>OpenLayers KML, GML</td>
<td>Select one</td>
<td></td>
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<tr>
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<td>SDE_30y_300000_20212050_RCP45</td>
<td>OpenLayers KML, GML</td>
<td>Select one</td>
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<td></td>
</tr>
</tbody>
</table>
GeoServer example
Thank you!

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