



EGIDA Project

National Use Cases Workshop

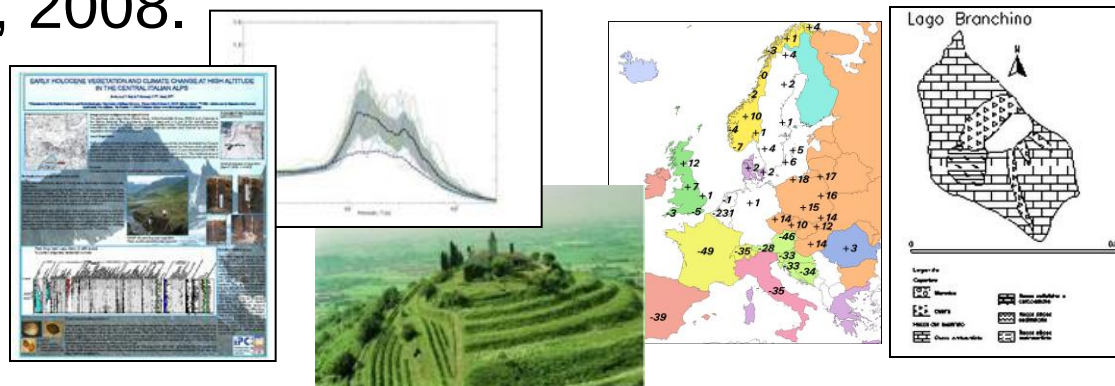
Lessons learned in the IDE-UNIVERS project

Joan Masó

Rome, Italy – April, 18-19, 2011

What is IDE Univers?

- IDE-UNIVERS is a research project aiming at creating a Thematic Spatial Data Infrastructure (**SDI**) for **Universities and Research Centers**.
- The Project, coordinated by the **STSI** of the Catalan Regional Government (Generalitat de Catalunya), is funded with the contribution of the **European Commission – Interreg III B MEDOCC Program**.
- IDE-Univers started in September 2006 and ended last March, 2008.



Objectives of IDE Univers

- 1 • Overall objectives:
 - IDE-Univers aims at facilitating access and exchange of information with a geographic reference produced by Universities and Research Centers
 - offering to users a potential **source of information** and
 - to researchers an **opportunity for disseminating** their own scientific results.
- Further objectives:
 - 1.1 – include in SDI **heterogeneous geo-information** such as photos, videos, scientific publications, sets of values, 3D models, etc.
 - 2 – **evaluate** feasibility of SDIs in the scientific/education sector in terms of efforts and costs
 - 3 – **learn lessons** for future applications

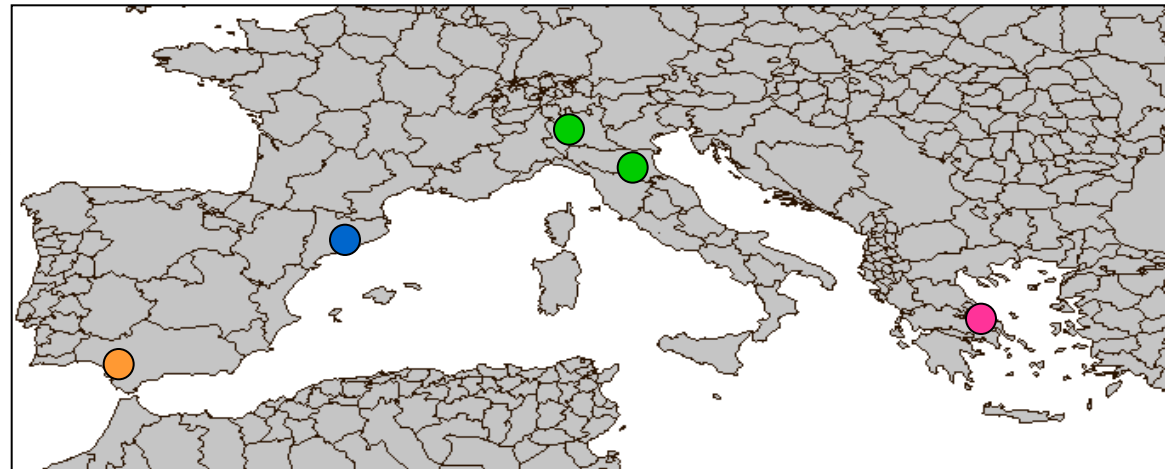


Main partners map

● **STSI, Secretaria de Telecomunicacions i Societat de la Informació**, with a strong collaboration of **ICC**, Institut Cartogràfic de Catalunya, Spain

● **CNR-IREA**, Istituto per il Rilevamento Elettromagnetico dell'Ambiente, Unità di Milano, Italy.

● **Regione Emilia-Romagna** – Organizzazione, Sistemi informativi e telematica – Servizio Sistemi Informativi Geografici, Italy.



● **ICA**, Instituto de Cartografía de Andalucía, Servicio de Información Geográfica, Spain.

● **University of the Aegean** – Department of Geography, Greece.



Results of IDE Univers

IDE Univers built a thematic SDI with an architecture following guidelines and standards provided by the European Directive INSPIRE



- **In Catalonia, Andalusia, Greece, and Italy one technical partner had to:**
 - Coordinate and support several university departments
 - Create a “local” geo-portal website
 - Implement a “local” metadata catalog and OGC Map Viewer
 - Evaluate discovery and view services, using INSPIRE rules
 - Maintain contacts and coordinate with the project leaders
- **Each university department had to:**
 - Inventory its own geoinformation
 - Create ISO 19115/19139 metadata
 - Publish them within the “local” catalog
 - Install its own OGC Map Server and publish geodata
- **Partners common tasks:**
 - Create a “global” geo-portal



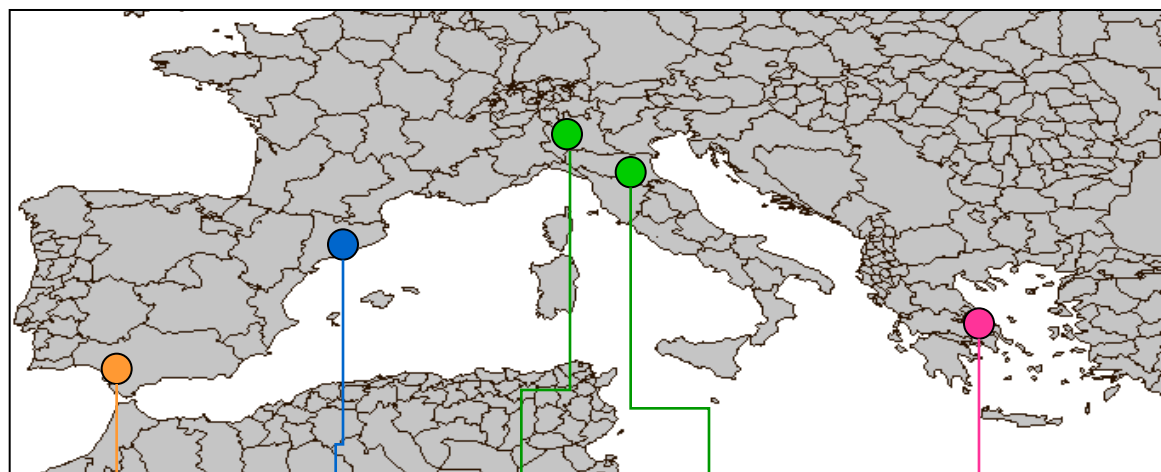
Main partners map

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University departments:

18

13

7

6

13

57

Metadata records:

1.000

7.263

900

269

1.200

10.632

Layers in WMS Services:

700

4.152

900

279

755

6.787

Total (previsions)

STSI: Catalan stakeholders

● **STSI, Secretaria de Telecomunicacions i Societat de la Informació**, with a strong collaboration of **ICC**, Institut Cartogràfic de Catalunya, Spain



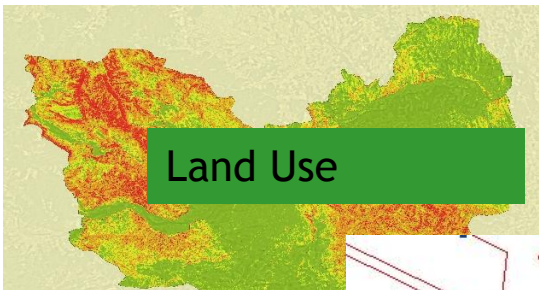
- **CREAF, Centre de Recerca Ecològica i Aplicacions Forestals** - <http://www.creaf.uab.es>
- Universitat Autònoma de Barcelona (UAB), Departament de Geografia - <http://mediterrani.uab.es/web/>
- Universitat Autònoma de Barcelona (UAB), Departament de biologia Animal i Vegetal i Ecologia - http://einstein.uab.es/suab52w/catala/cat_recerca/cat_recerca_bot.htm
- LIGIT, Universitat Autònoma de Barcelona (UAB), Laboratori d'Informació Geogràfica i de Teledetecció - <http://ligit0.uab.es/web/>
- ICTA, Universitat Autònoma de Barcelona (UAB), Institut de ciència i Tecnologia Ambientals - <http://antalya.uab.es/icta/inici/index2.asp>
- ETC-LUSI, Universitat Autònoma de Barcelona (UAB), European Topic Centre – Land Use and Spatial Information - <http://terrestrial.eionet.europa.eu/>
- SIGTE, Universitat de Girona (UdG), Servei de Sistemes d'Informació Geogràfica i Teledetecció – <http://www.sigte.udg.es>
- CPSV, Universitat Politècnica de Catalunya (UPC), Centre de Política de Sòl i Valoracions - <http://www.upc.edu/cpsv/>
- LIM, Universitat Politècnica de Catalunya (UPC), Laboratori d'Enginyeria Marítima - <http://lim-ciirc.upc.es/>
- ETSEQ, Universitat Rovira i Virgili, Escola Tècnica Superior d'Enginyeria Química - <http://www.etseq.urv.es/index/>
- Universitat de Barcelona (UB), Departament de Biologia - <http://www.ub.es/bioveg/>
- Universitat de Lleida (UdL), Departament de Geografia i Sociologia - <http://www.geosoc.udl.es/>
- Estudis d'Informàtica, Multimèdia i Telecomunicació, Universitat Oberta de Catalunya (UOC) – <http://www.uoc.edu>

Numerical results in Catalonia

STSI (Catalonia)	
Universities	13
Metadata	7263
Map servers	105
WMS layers	4152



WMS content



Land Use

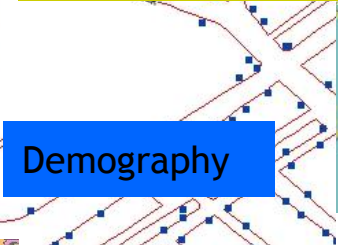
Satellite data (LandSat)

Geology



infraestructures

University facilities



Demography

Corine Land Cover



Urban land



Pollution



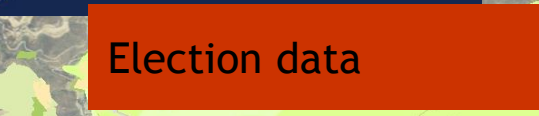
Urban planning and
land registry

Costal data

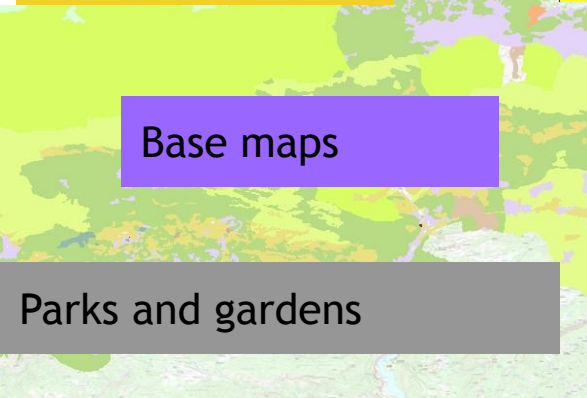


Heritage

Base maps



Election data



Parks and gardens



Climatic atlas

Turist information

The web side and catalogue client (a single system)

IDEUnivers

Programme Interreg III B
MEDOC
Pour la cohésion des territoires de l'Europe du Sud

IDEIC
Infraestructura de Dades Espacials de Catalunya



cerca...

- Inici
- Geoportal Global
- Projecte IDE Univers
- Serveis
- Catàleg de dades
- Servidor de mapes
- Informació
- Normativa
- Documentació
- Enllaços
- Descàrrega
- MetaD v3.0.4
- Contactar
- Contactar

Projecte de recerca finançat per la Generalitat de Catalunya i la Unió Europea

DESCRIPCIÓ

IDE Univers és un projecte de recerca per dinamitzar l'accés, l'intercanvi i la producció de dades espacials a les universitats i centres de recerca.

OBJECTIUS

El projecte està coordinat per la Generalitat de Catalunya, i fins ara es va iniciar durant el setembre del 2008.

Dades

Serveis

1. QUÈ

Cerca Ràpida

Temes
(Tots els temes) ▼

Paraules Clau
(Totes les paraules) ▼

Nom de l'organització
(Totes les organitzacions) ▼

Tipus
(Tot Tipus) ▼

2. ON

Nord

Dest Est

Sud

Ordenar per títol ▼

Unió Europea

Ajuda



© Institut Cartogràfic de Catalunya

Municipis ▼ ☐ Veure Capa

Estat actual (22 Sep 2008 12:31:32 GMT)



WMS client

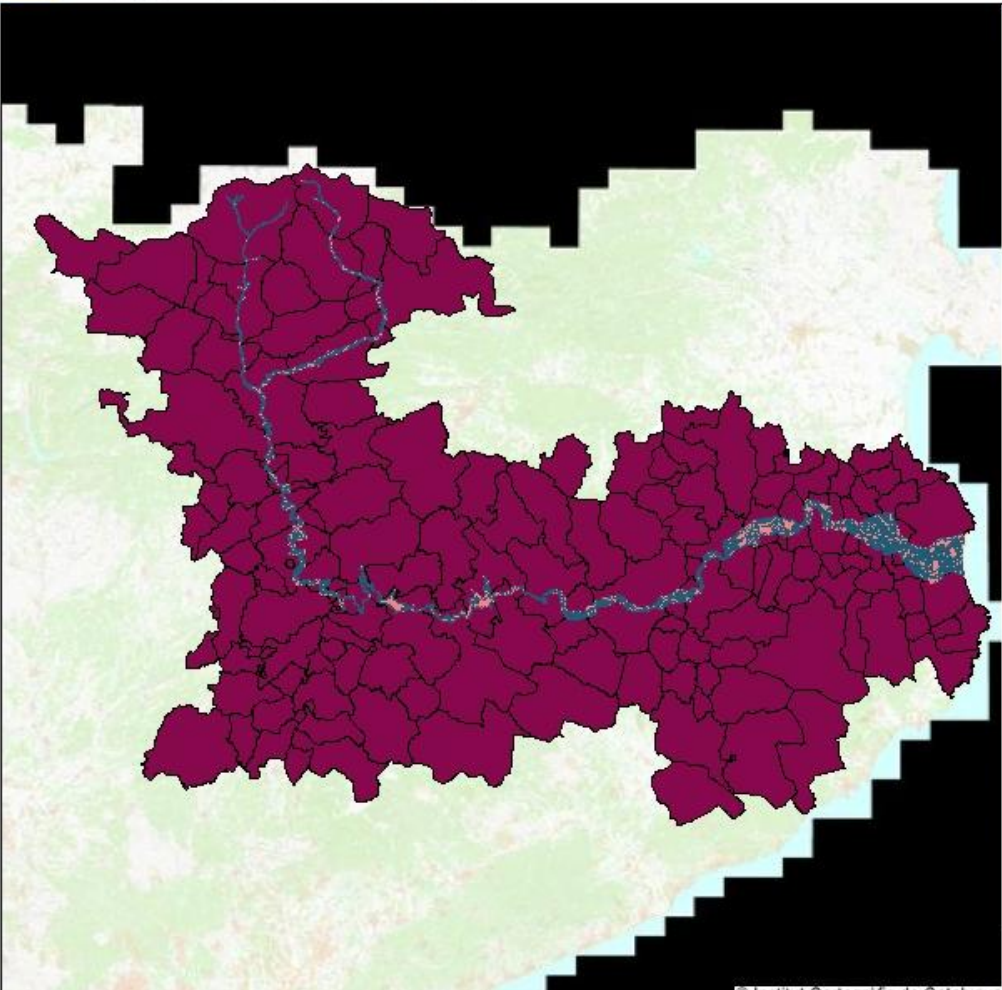


Visor de mapes WMS





x: 461633.635
y: 4698954.798



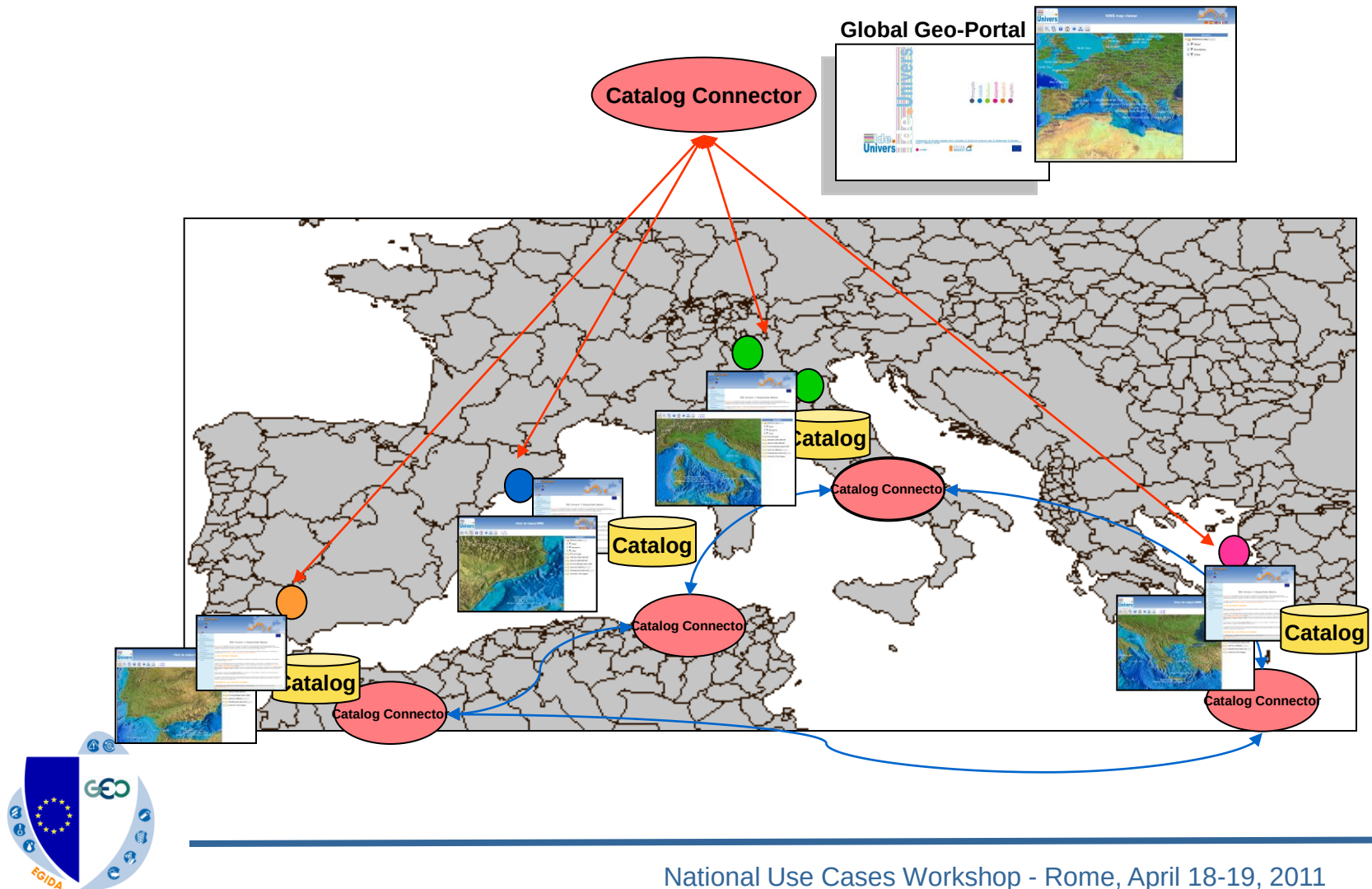
Servidors

- Ortofotomtatges (ICC)
 - ☐ Satèlit
 - ☐ 1:25000
 - ☐ 1:5000
- Topogràfics (ICC)
 - ☐ 1:250000
 - ☐ 1:50000
 - ☒ 1:5000
- Centre temàtic europeu en Usos del sòl i informació espacial(ETC-LUSI)
- Cobertures del sòl (CREAF)
- Terres agrícoles i àrees antròpiques(UB-Botànica)
- Protosistemes i Sistemes Locals (1996-2001)(CPSV)
- Projecte Sig Albater(SIGTE)
 - ☒ Pòm de l'àmbit fluvial de la conca del Ter
 - ☒ Municipis de la conca del Ter
 - ☒ Risc de degradació (RIBUR)
 - ☐ Medi natural. Hàbitats del baix Ter
 - ☐ Pòm de l'àmbit dels municipis consorciats de la conca del riu Ter
 - ☐ Pòm del Baix Ter i municipis consorciats
 - ☐ Pòm de l'àmbit fluvial de la conca del Ter

Afegir Servidor +



Global geo-portal and catalogue of the SoS



Software used or developed

- **Metadata editor: MetaD**
 - *Implements ISO19115/ISO19139 metadata*
 - *Free software*
 - *Multilingual*
- **Map server: MapServer**
 - *Implements OGC WMS /WFS*
 - *OpenSource*
 - *MultiPlatform (MS Windows, Unix, Linux)*
- **Catalog: GeoNetwork OpenSource (ICC: Indicio)**
 - *Implements OGC CSW*
 - *Supports ISO19115 and ISO19139 metadata*
 - *OpenSource*
 - *MultiPlatform (MS Windows, Unix, Linux)*
- **jMeter as testing discovery and view services tool**
 - *Performance test*
 - *Availability test*
 - *Capacity test*
 - *Retrieval quality tests*
- **CSW Client as catalog connector**
 - *Implements OGC CSW*
 - *Connection among catalogs (ISO profile & ebRIM profile)*
 - *Connection with WMS Client*
 - *Global and local versions*
- **WMS Client as map viewer**
 - *Implements OGC WMS*
 - *Connection with Catalog (Geonetwork & Indicio)*
 - *Add WMS facility*
 - *Global and local versions*
 - *Coordinate transformations*



Objective 1.1 More that datasets in the catalogue

The screenshot displays the IDE Univers website interface. At the top, there is a navigation bar with 'Home | Links | Help' and a search bar. Below this, a large map of Europe is visible on the left side. The main content area shows search results for the query 'poster'. The first result is titled 'MORPHODYNAMIC CHARACTERISTICS OF TWO ACTIVE ROCK GLACIERS IN THE ADAMELLO-PRESANELLA GROUP (ITALIAN ALPS)'. The abstract describes rock glaciers as widespread permafrost-related landforms. The second result is titled 'THE PILE-DWELLING SITE OF PALU' DI LIVENZA (FRIULIAN PLAIN, NORTHEASTERN ITALY): VEGETATION HISTORY, HUMAN IMPACT AND LAND-USE CHANGES DURING THE LATE-NEOLITHIC'. This result includes a detailed introduction, a map of the site, and a pollen analysis diagram. The website also features a sidebar with 'CATEGORIES' and a footer with logos for the European Union and EGIDA.

Home | Links | Help

What? Where?

Home | Links | Help

English | Français | Español

Username Password Login

Aggregate Results matching search criteria : 11-12/12 (page 2/2), Sort by Relevance

MORPHODYNAMIC CHARACTERISTICS OF TWO ACTIVE ROCK GLACIERS IN THE ADAMELLO-PRESANELLA GROUP (ITALIAN ALPS)

Abstract Rock glaciers are the most widespread permafrost-related landforms in high alpine environments. Active landforms typically creep downslope with velocities ranging from few cm/year to more th...

Keywords Northern Italy, Italy, seppi_10agm_2006.pdf, Adamello massif, Camonica valley (BS, Italy), Regione Lombardia

THE PILE-DWELLING SITE OF PALU' DI LIVENZA (FRIULIAN PLAIN, NORTHEASTERN ITALY): VEGETATION HISTORY, HUMAN IMPACT AND LAND-USE CHANGES DURING THE LATE-NEOLITHIC

Roberta Pini

CNR - Istituto per la Dinamica dei Processi Ambientali at Dept. of Geological Sciences and Geotechnologies University of Milano - Bicocca, Piazza della Scienza 4, 20126 Milano (I)

Introduction

The pile-dwelling site of Palù di Livenza offers the opportunity to analyse in detail the history of vegetation and land-use changes during the Late Neolithic in the northeastern sector of Italy, thanks to the abundance and preservation of pollen and macrobotany (Pini, submitted). This site is known since the 19th century thanks to the casual findings of artifacts. In the 1960s a preliminary work through the mire led to the discovery of abundant remains of Late Neolithic age (wooden structures, fossil bones, pottery, and lithic artefacts). Extensive archaeobotanical, archaeozoological and anthropological investigations were carried out. As for the wooden structures, vertical piles and horizontal beams represent the remains of huts built up in an area with low water level. In the northeastern sector of the mire, remains of the pile-dwelling system are abundant and scattered over more than 60,000 m². In 1999 a core was drilled by CNR (Milano) and sampled for pollen analysis and ¹⁴C dating.

Pollen analysis and ¹⁴C dating

39 samples were analysed. ¹⁴C dates were linearly interpolated. Ages for the base of the studied section (165 cm depth, ca. 6,590 cal BP) and for the boundary between pollen zones 1 and 2 (110 cm depth, ca. 5,960 cal BP) were estimated.

Pollen zone 1 reflects the presence of dense broad-leaved forests around the mire of Palù di Livenza between ca. 6,590 - 5,960 cal BP. Trees of deciduous Quercus, Fagus, Corylus, and Alnus glutinosa type were abundant, together with sporadic Pinus ponderosa, Tilia, Ulmus, and Betula. Well-developed wetlands were locally present. This phase is interpreted as preceding the local settlement of the pile-dwelling.

Pollen zone 2 is coeval with the development of the human settlement in situ, dated to ca. 5,960 cal BP. Pollen data indicate a reduction of forests (to gain wood for construction and fuel), a sharp contraction of wetlands and the expansion of herbaceous communities with cultivated species (Cerealia, Lactuca sativum), infertile weeds (Cirsium, Galium, Convolvulus, Polygomon persicaria group, etc.), ribworted and natural herbs (Urtica, Chenopodiaceae, Brassicaceae), plants of pastures and wet meadows. Crop cultivation can be estimated for a radius of several hundred meters around the site.

Start GeoNetwork... Posta in arri... Microsoft Po... F

Categories

- Applications
- Audio/Video
- Case studies, best practices
- Conference proceedings
- Datasets
- Directories

Posters in IDE Univers Catalogue

Link to a scientific paper in IDE Univers

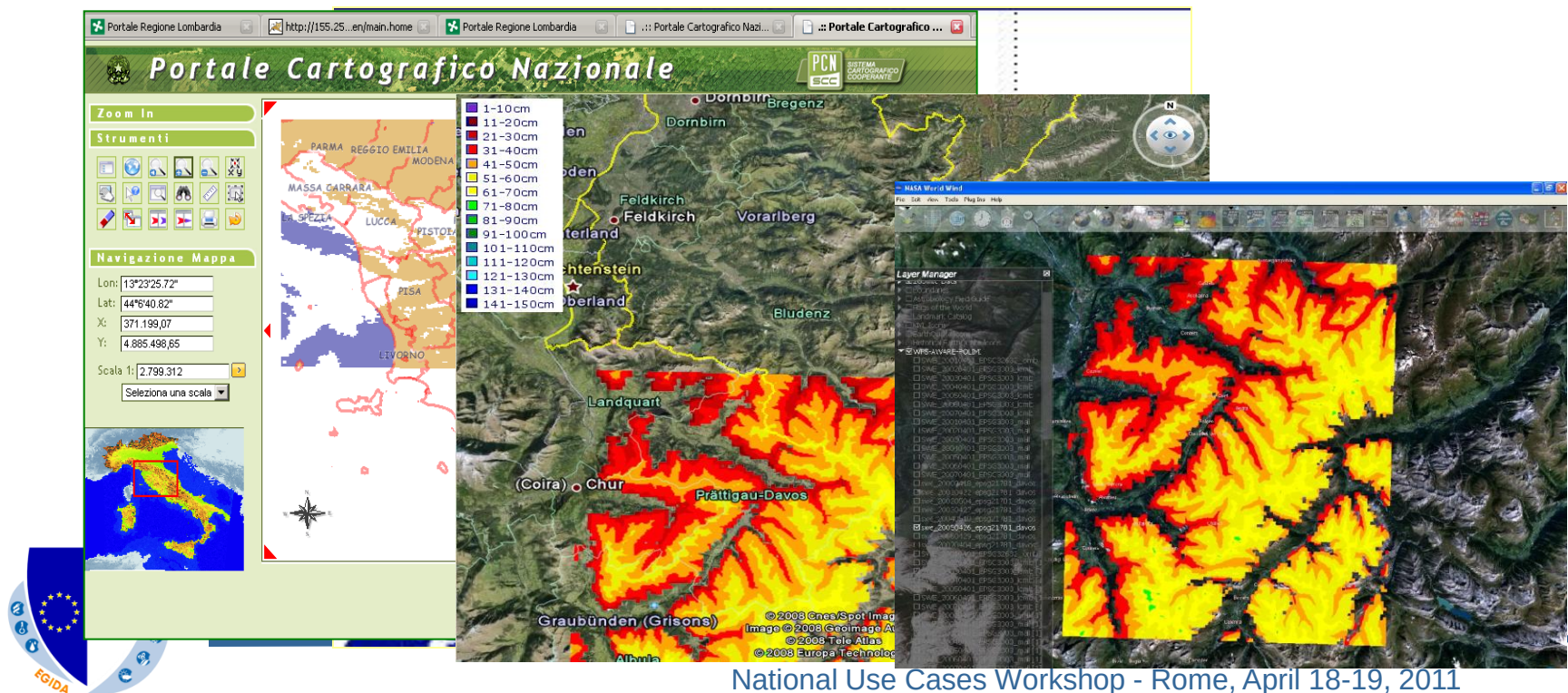
Objective 2: evaluate SDIs in the research sector in terms of efforts/costs

- **Map server WMS evaluations** (WMS ~148 layers):
- **Performance:** ok for 90.3 %
- **Visualization:** ok in all clients for 41.9 %
- **Overlay:** ok in all clients for 48.4 %
- **Difficulties:** correct setting of EPSG codes (in particular in relation to the mapfile tag "wms_srs")/editing a correct mapfile is hard and error prone/hard layer symbols management/lack of experience and supporting editing-debugging tools
- **Needs:** mapfile editors and debuggers, transfer of know-how from more experienced team, tutorials
- **Time:** required to install a WMS with ~100 layers: 2 weeks-4 months
- **Cost:** to install a WMS of about 100 layers: 1000-8000 Euros



Objective 3: Lessons learned

- Main SDI advantages for researchers:
 - maintain geodata at their own premises
 - announce their presence through catalogues
 - Their data can be shown in any standard map viewer without any adaptation



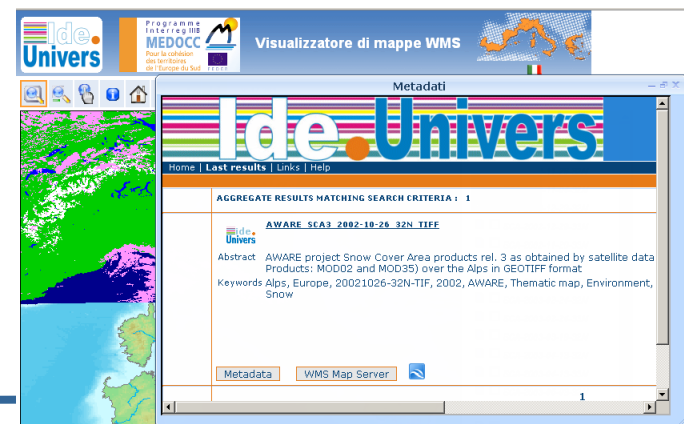
Objective 3: Lessons learned

- Need of **knowledge-enriched enabling tools**: ex.
 - metadata entry tools + examples, templates, gazetteers, controlled dictionaries, FAQs, online guides, etc.;
 - maintenance tools to ease and fast updating/aligning catalogues
 - e.g. utility for creating metadata archives in the Metadata Exchange Format (MEF), suitable for a massive metadata-import in Geonetwork;
- Need to support an **easier WMS server configuration**:
 - need of implementation rules to assure visualisation, reference system (EPSG) codes definition is crucial
 - Lack of easy WMS service configuration with diagnostic (ex. Map Windows GIS + MapServerGenerator plug-in)
- Need of **helpdesk units of personnel** to support the development and maintenance of the metadata/wms services of Universities



Objective 3: Lessons learned

- Suggestions:
 - Metadata creation/data publishing should be think as an **overall process**, with special focus on the **linking** points (ex. WMS service URLs, layers' names)
 - **Visual symbols and colors** of data features should be defined when planning publishing geodata through geoservices and map service clients should provide the necessary tools to easily exploit these features
 - To manage multiple *no-map* files IDE Univers suggests a solution based on **shapefile** data realisation and benefits of the simple-query capability of the MapServer platform, without requiring a geospatial database set-up



Conclusions

- Motivate people
 - They need to know the advantages of being integrated in a SoS
 - Do it simple
 - Metadata catalogue + WMS server is a good start
 - Be sure that you allow access to the real data (important in GEOSS)
 - Adapt scientific maps to become part of an infrastructure requires money and time. Mitigation:
 - Money: Use Open Source Software
 - Open source is not easy to use and can have limitation
 - Time: Prepare a team to support that people (courses and face2face assistance).
 - Give them some money in exchange for items?
 - Some universities and research centers work for the administration and public centers:
 - Metadata is ok but, show data in WMS clients (and download) has licensing concern in some cases
 - Allow stuff that aren't maps
 - Pictures, posters, scientific papers, tables, sensor logs
- Details are important
- Adapt to the good/generic projection, have a good symbology, achieve good performance, ensure interoperability.



EGIDA Project

Thanks!
Joan.Maso@uab.es

