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An Open Multi-User Platform in Support of Urban Development: The DATA webGIS

RealCORP - 23rd International Conference on Urban Planning
and Regional Development in the Information Society
Expanding cities – Diminishing space

4-6 April, 2018   TU Wien, Austria

Developing Abandoned Transurban Areas

-**Regional Operative Programme 'Veneto' / European Social Fund 2014-2020**

-**Dept.s of Civil, Architectural and Environmental Engineering + Industrial Engineering**

-**6 research fellows / scientific investigators + 12 operative partner companies**

-**Goal: designing transformation pilot scenarios for abandoned transurban areas**

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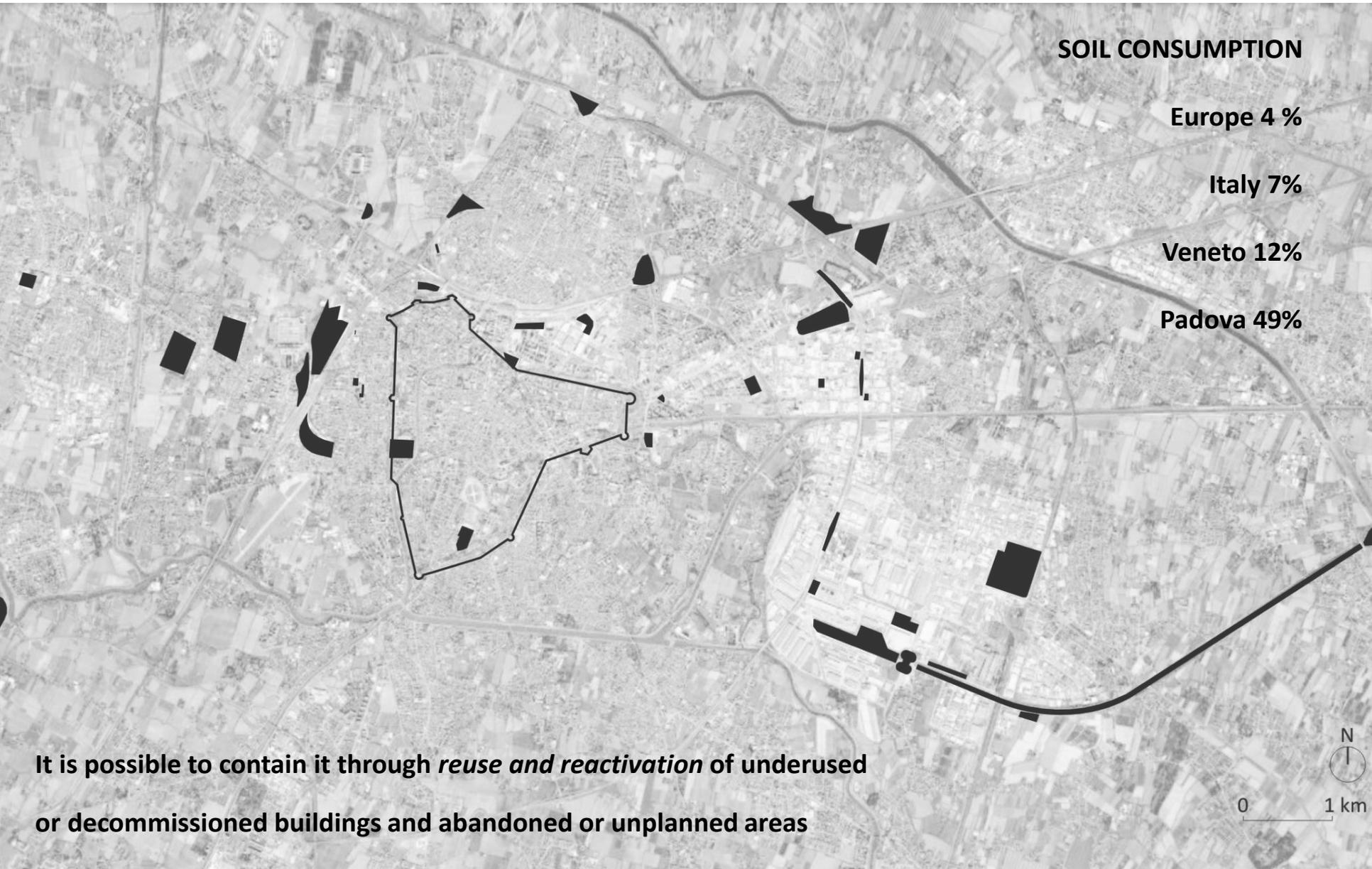
DATA project: 6 topics

- 1. WebGIS and data mining

- 2. Building and land information modeling

- 3. Pilot scenarios design

- 4. Urban planning and feasibility studies

- 5. Urban mining

- 6. Data management and ICT

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Padova: abandoned areas

SOIL CONSUMPTION

Europe 4 %

Italy 7%

Veneto 12%

Padova 49%

It is possible to contain it through *reuse and reactivation* of underused
or decommissioned buildings and abandoned or unplanned areas

N

0   1 km

Research area: West Padova

STRATEGIES

-*multidisciplinary* actions

-Use of advanced technologies

-Production of *open source* knowledge

-Looks towards different possible futures

-*Interaction* with citizens and stakeholders

-Support to territorial governance

0   1 km

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Research area: West Padova

Design scenarios

ACTIONS

-Opening enclave spaces to the city

-Creating connections and urban flows

-Bringing green systems to the foreground

0   0,5   1
                        km

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Topic #1: WebGIS and data mining

1. Collection/check of **multiscale base data** useful for the project:
   - Aerial photos and historical maps
   - Cadastre and other building maps
   - Social data
   - Environmental data
   - Land use/land cover
   - Transport networks
   - Urban planning maps

2. **Processing and map production** in support of design scenarios

3. Publication and spreading on an **open source webGIS platform**
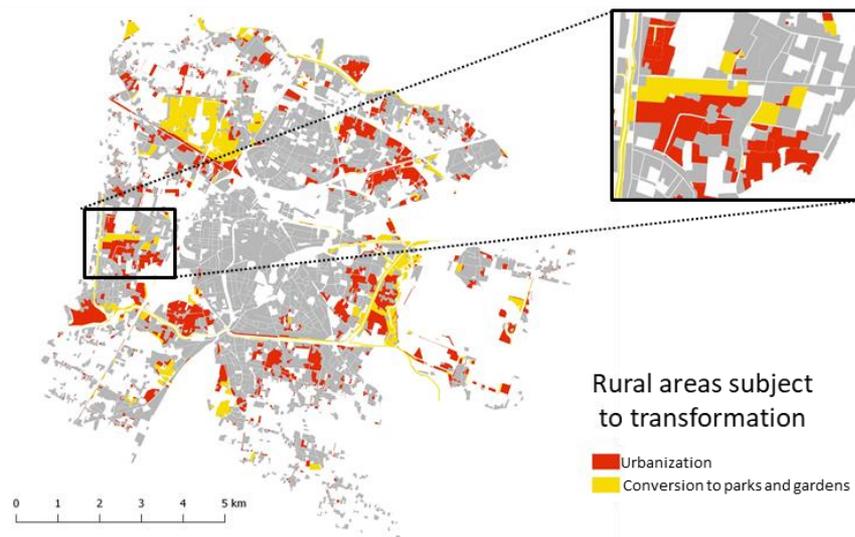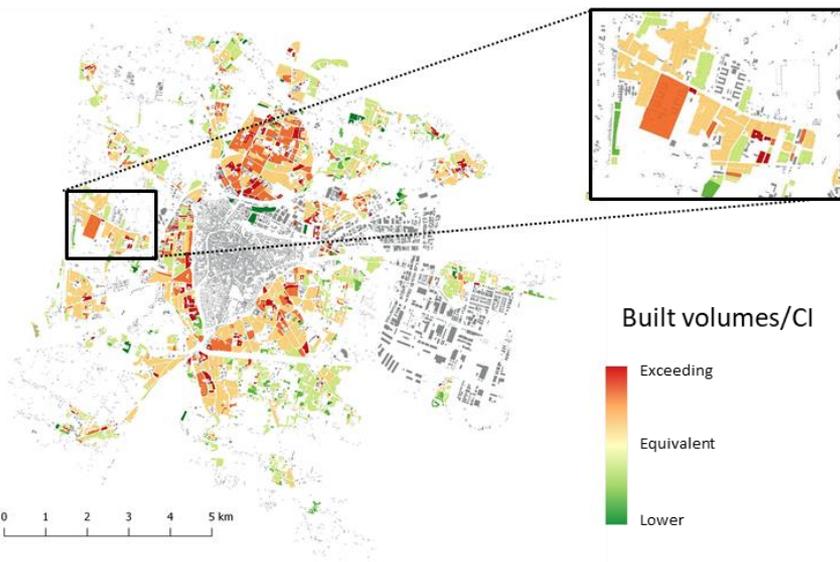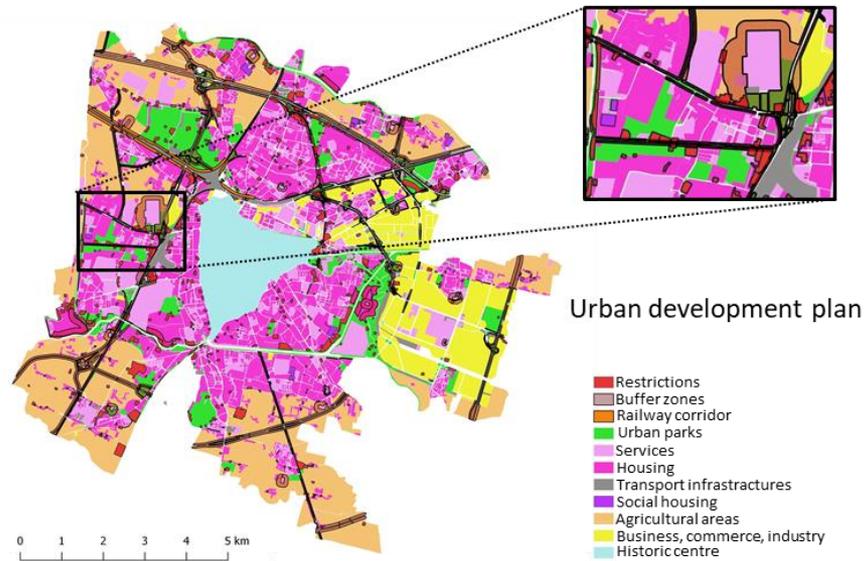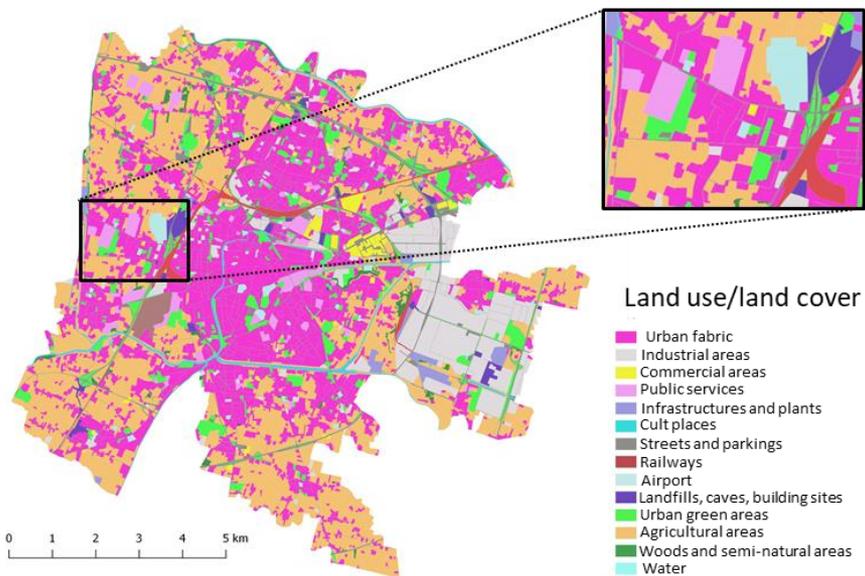
Research group

Urban actors

4. Arrangement of **update and maintenance plans** for the platform

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City-scale map production

Land use/land cover

- Urban fabric
- Industrial areas
- Commercial areas
- Public services
- Infrastructures and plants
- Cult places
- Streets and parkings
- Railways
- Airport
- Landfills, caves, building sites
- Urban green areas
- Agricultural areas
- Woods and semi-natural areas
- Water

0 1 2 3 4 5 km

Urban development plan

- Restrictions
- Buffer zones
- Railway corridor
- Urban parks
- Services
- Housing
- Transport infrastructures
- Social housing
- Agricultural areas
- Business, commerce, industry
- Historic centre

0 1 2 3 4 5 km

Built volumes/CI

Exceeding

Equivalent

Lower

0 1 2 3 4 5 km

Rural areas subject to transformation

- Urbanization
- Conversion to parks and gardens

0 1 2 3 4 5 km

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On field GIS mapping

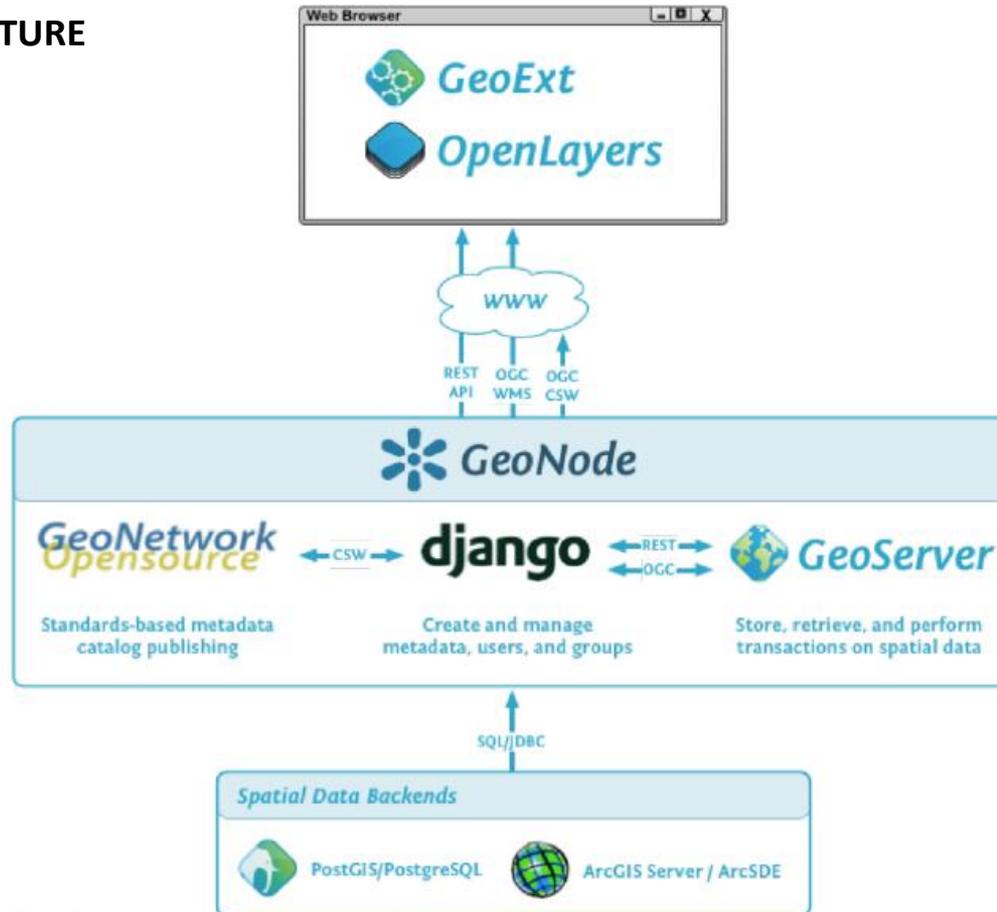Detailed field survey through mobile GIS application Qfield

DATA COLLECTED
- Number of dwelling units
- Numer of stages
- Maintenance state
- Business activities
- Number of private car places
- Presence of gardens

Collected data were combined to elaborate an **attractiveness index**

0	
1	
2	**Maintenance state**
3	
4	
5	

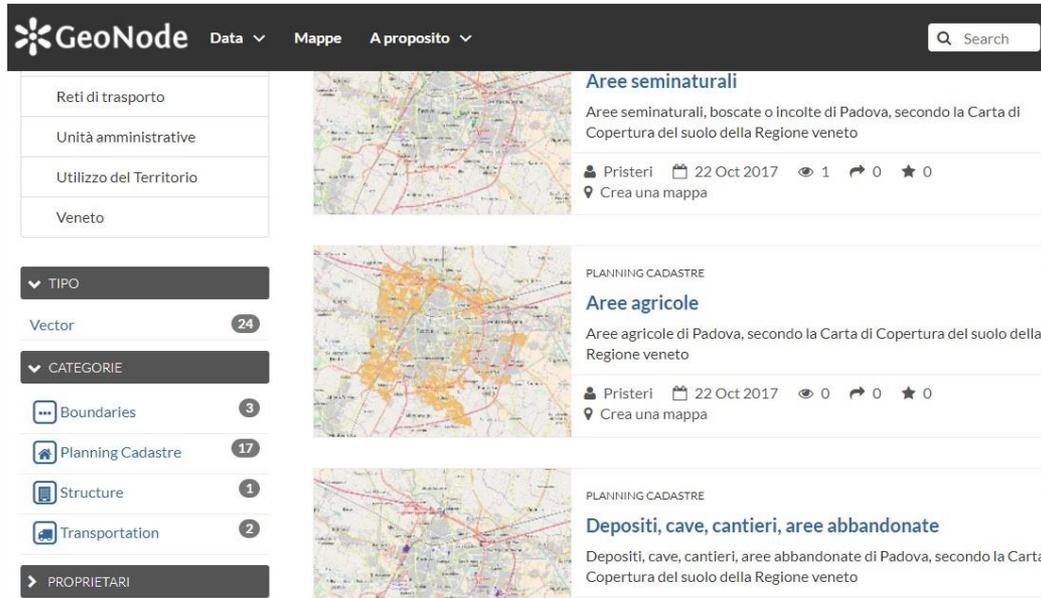# WebGIS platform: web architecture and functions

GEONODE ARCHITECTURE

WHAT IT IS POSSIBLE TO DO

- Publish vector and raster layers
- Edit graphic styles
- Create maps
- Set up and manage metadata

- Upload documents
- Consult features
- Edit and download data
- Comment and give feedbacks on content quality

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WebGIS platform: use and interaction

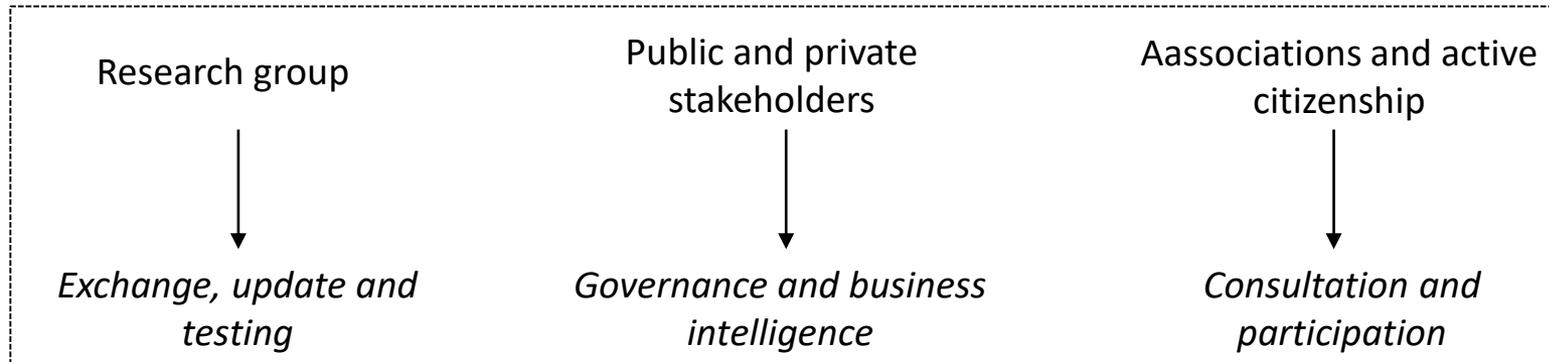## GEONODE: USER INTERFACE

EXTERNAL USERS ACCESSIBILITY LEVELS

A. Data viewing, interrogation and download

B. Data viewing and interrogation

C. No access to data
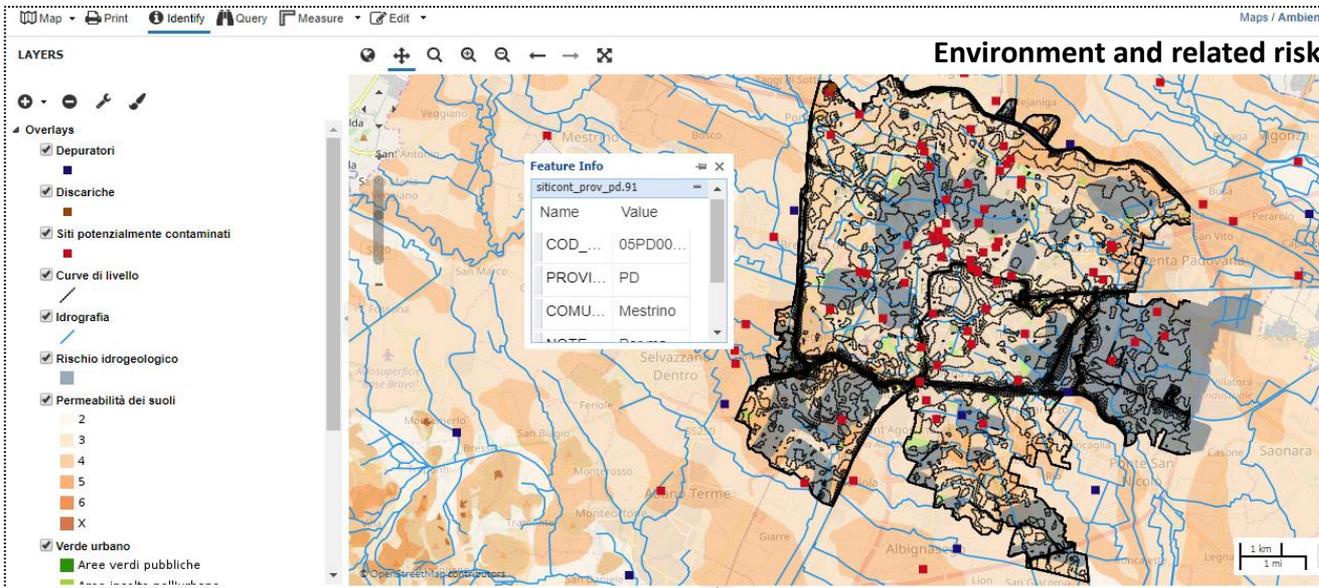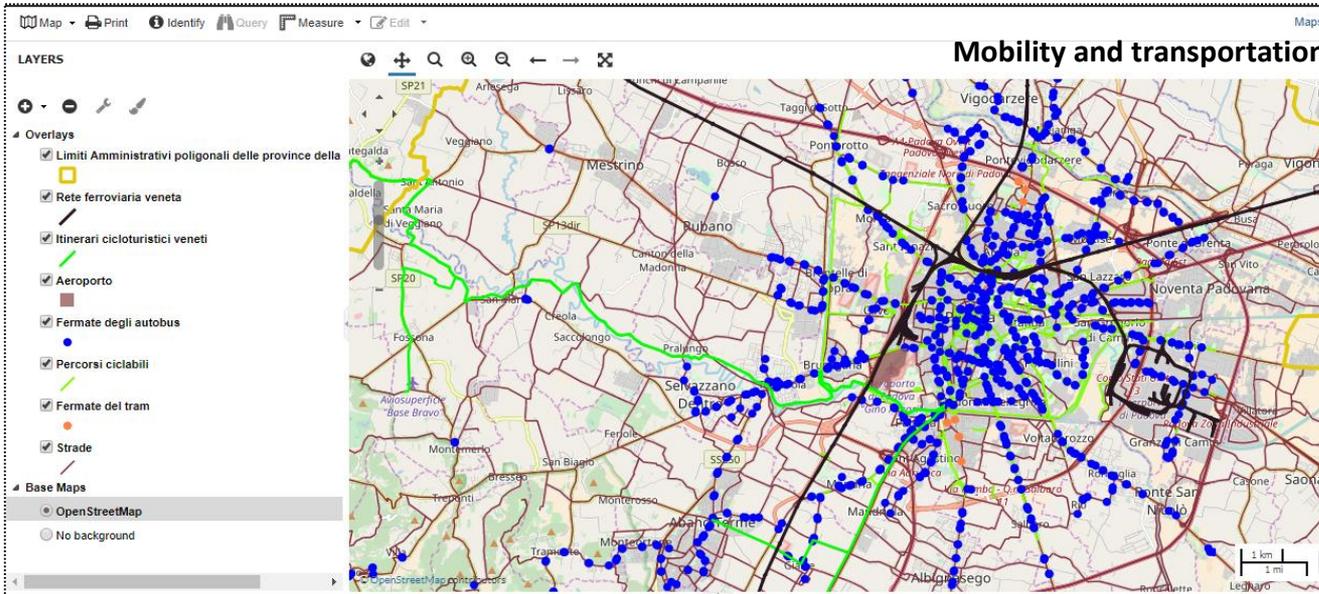
USERS' CATEGORIES

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↓

Exchange, update and testing

Public and private stakeholders

↓

Governance and business intelligence

Aassociations and active citizenship

↓

Consultation and participation

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WebGIS platform: map creation and consulting

Mobility and transportation

Environment and related risk

GeoNode allows to create **maps** by overlaying two or more layers.

One can insert:
-layers from local database;
-external layers, through wms services.

For all layers and maps it is possible to:
-consult feature attributes
-measure distances
-write queries
-view metadata.

Maps on DATA platform include :
-land cover
-Intervention Plan
-mobility and transportation
-environment and related risks

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WebGIS platform: future development

- Integration with further data and analysis

- Public release of the platform and spreading campaign

- Platform update and maintenance

- Presentation of the project's final results

- Integration into a connected management system

- Future maintenance plans (beyond DATA)

Thank you for listening

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