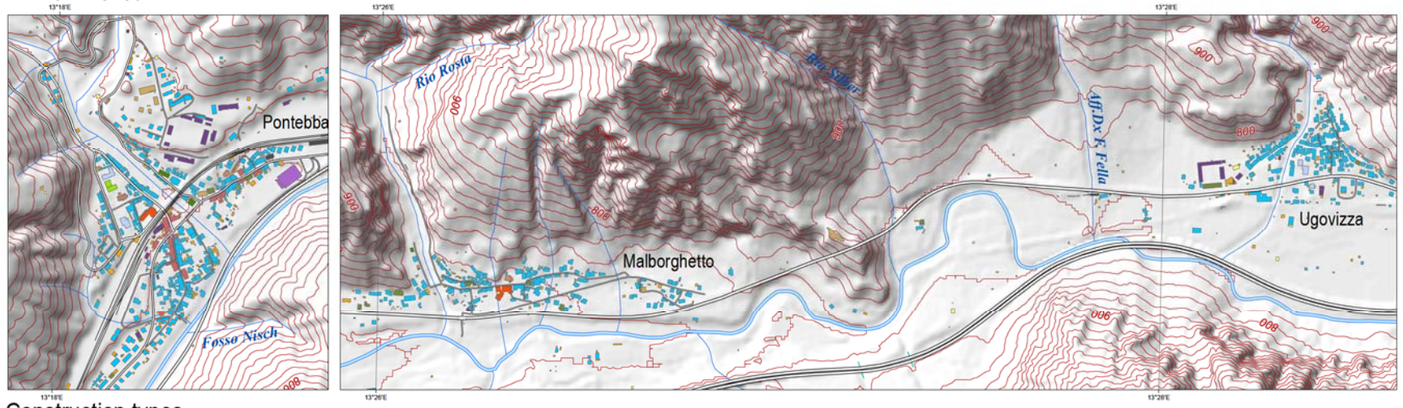
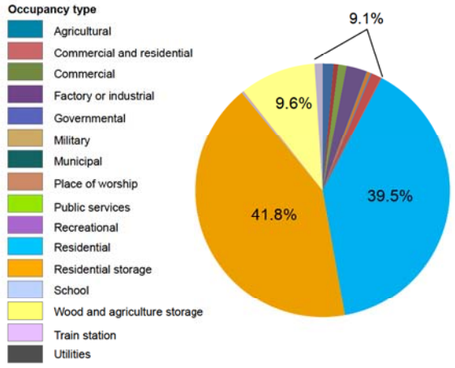
Elements-at-risk map

Focusing on building inventory

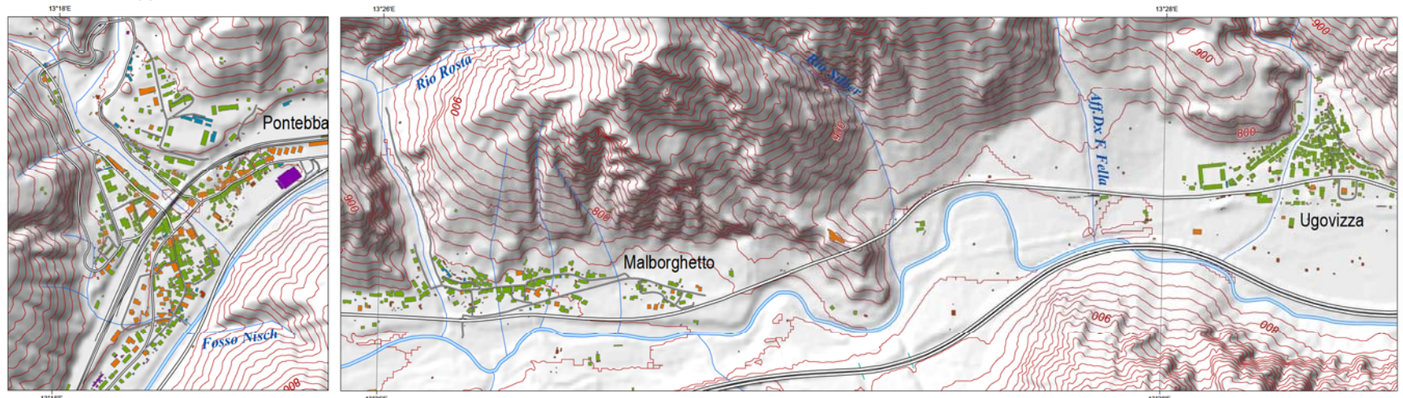
Fella River/ Italy

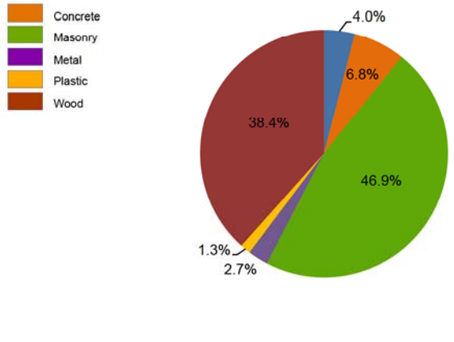
Occupancy types



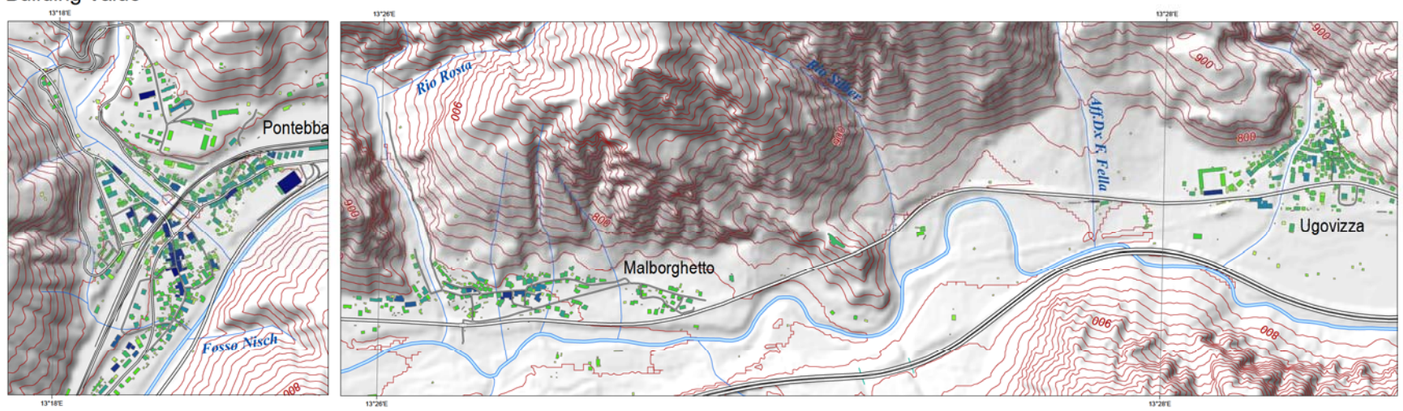


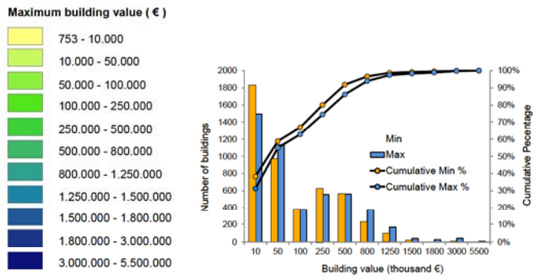
Construction types



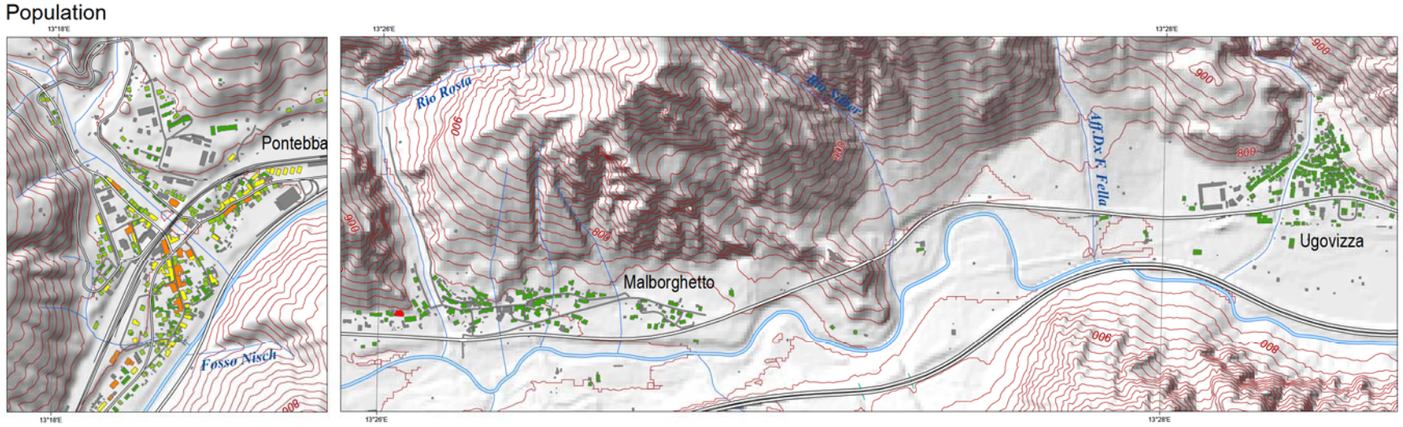


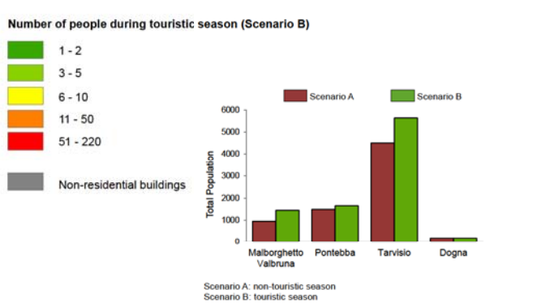
Building Value





Population

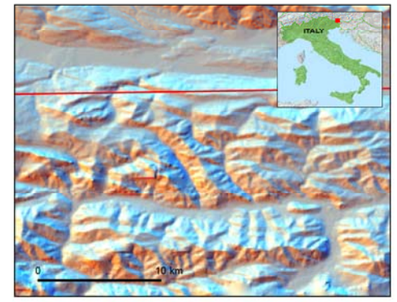




Scale 1:10,000

0 0.25 0.5 1 Kilometers

Overview map



Legend

Population
- Settlement

Hydrology
- River
- Stream
- Normal Contourline
- Index Contourline (Contour Interval 20 meter)

Infrastructure / Transport
- Motorway
- Primary road
- Secondary road
- Residential road

Interpretation

These maps display the information related to the elements-at-risk in the Fella area. The elements-at-risk considered are buildings and population. The administrative units overlapping the study area are: Malborghetto-Valbruna, Pontebba, Tarvisio, and Dogna communes. The following procedure was used to generate this information:

Building occupancy type:
Initially, the original building inventory contained information about the location, geometry (height, area, volume, base and top elevation) and type. Consequently, the inventory was updated using Open Street Map and Google Street View, with the following attributes: number of floors, material of construction, landuse and type. Based on this information, a detailed building classification was created. Lastly, field work was performed along the main valleys for validation.
In the study area, the inventory contains 4778 buildings.
The building landuse types are categorized in 16 classes. The most frequent building occupancy types are residential (39.5%) and residential storage (41.8%), the latter being used as sheds, cabins, or garages.

Building construction type:
The building material of construction and number of floors was estimated based on individual survey of buildings using Google Street View. Consequently, the information was validated through field work along the main valleys. The majority of buildings are pertaining to the masonry (46.9%) and wood (38.4%) construction types.

Building value:
The buildings' value was obtained from the Italian Revenue Agency, for the second semester of 2013. The buildings were classified per cadastral zones (B1 Central, B2 Area external to center, D1 peripheral, R1 rural and forestry) according to the Real Estate Observatory data (Osservatorio del Mercato Immobiliare, Agenzia Entrate – OMI). The minimum and maximum market value for each building was obtained by multiplying the corresponding landuse value (€/msq) with buildings' area and number of floors. The variation in price (minimum - maximum) for buildings corresponding to the low value category (10.000 - 50.000 Euro) is higher than the variation in price for buildings corresponding to the high value category (3.000.000 - 5.500.000 Euro). The value map shows the maximum market value for each building type.

Population:
Population distribution was calculated taking into account the use, area and number of floors of residential buildings (single and multiple-household buildings), the average area per house, and the total number of residents within a commune. Two scenarios were taken into account (Scenario A: non-touristic season, Scenario B: touristic season) for the calculation of population distribution. The average area per house was used to calculate the number of dwellings in a multi-storey apartment buildings. The number of residents per building was calculated by dividing the number of residents per commune (separate for each scenario) to the number of dwellings. Finally, the number of residents per building was calculated by multiplying the number of dwellings with the number of residents per dwelling. For all communes (Malborghetto Valbruna, Pontebba, Tarvisio) except Dogna, the calculated number of residents increases during the touristic season (Scenario B), as expected due to the addition of touristic accomodation establishments. The population map shows the spatial distribution of residents during the touristic season (Scenario B). Non-residential buildings are not included in the calculation.

Data Sources

The initial building inventory was provided by CNR-IRPI (2012) through CHANGES Project. Building landuse, material of construction and number of floors was obtained from Google Street View (2014) and validated through field work. Building value was obtained from the Italian Revenue Agency (Agenzia delle Entrate) Information about the capacity of touristic accomodation establishments was obtained from the Italian National Institute of Statistics (ISTAT, http://www.istat.it/).
Data collection was coordinated by Simone Frigerio and Alessandro Pasuto (CNR-IRPI)

Framework

This project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration under grant agreement n° 312461 (Increasing Resilience through Earth Observation - IncREO - www.increo-fp7.eu). The IncREO project is coordinated by Airbus Defence & Space (Spot Image S.A.).

Work package partners:

The building inventory at regional scale was updated by Lixia Chen, Haydar Hussin, and Jian Huang (UT-ITC) through desktop mapping and field work validation.
Calculation of building value and population distribution modelling was performed by Roxana L. CIUREAN (UNIVIE).
Map produced by: Koert Sijmons (GeoMapa) © 2014