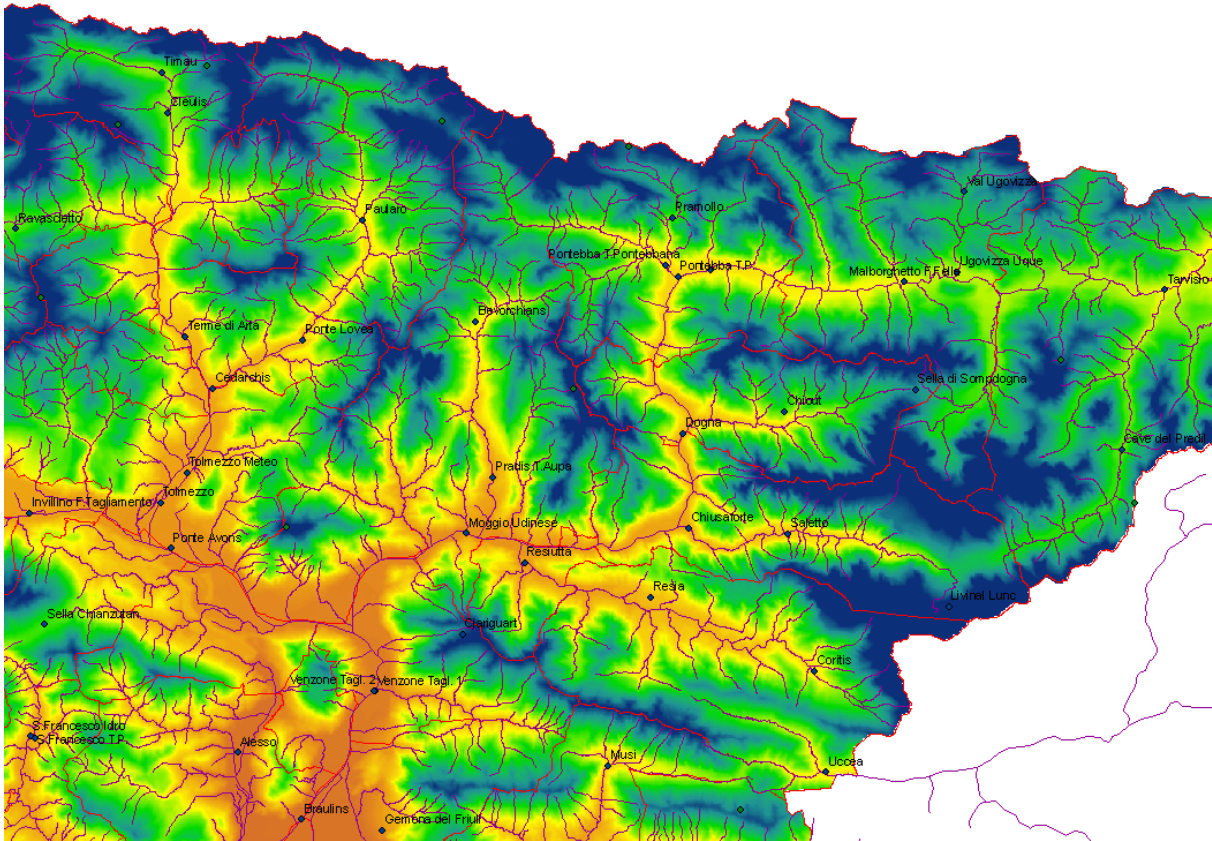


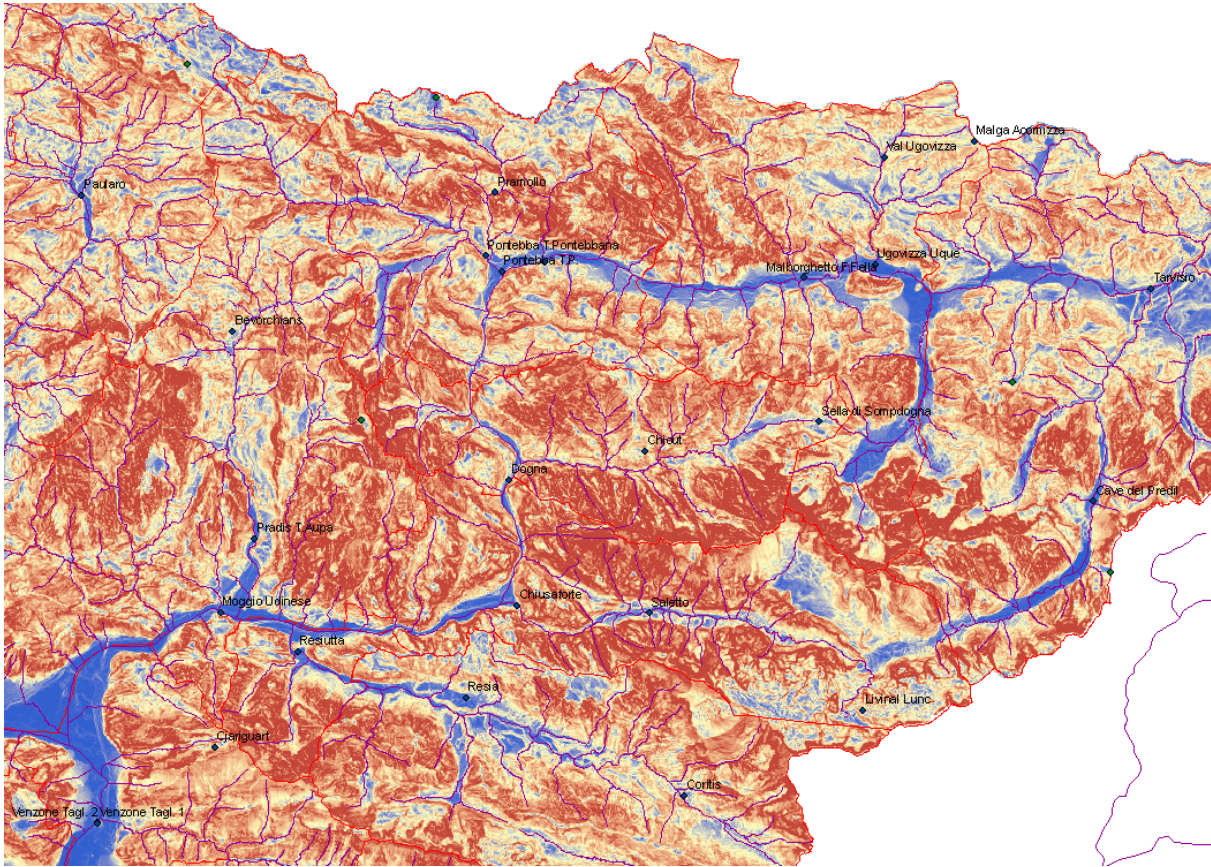
List of data requirements for Risk management

**1) Digital elevation model (ideally 5 meters resolution)**

The study area is equipped with complete coverage LIDAR and digital orthophotos from which can be extracted regular grid DEM - even at step 5 m. The considerable volume of data available requires an examination of the type of product derived from LIDAR, which is fitting to use for further processing



Example of a 40 m step DEM already available - consistent for hydrological modeling GIUH



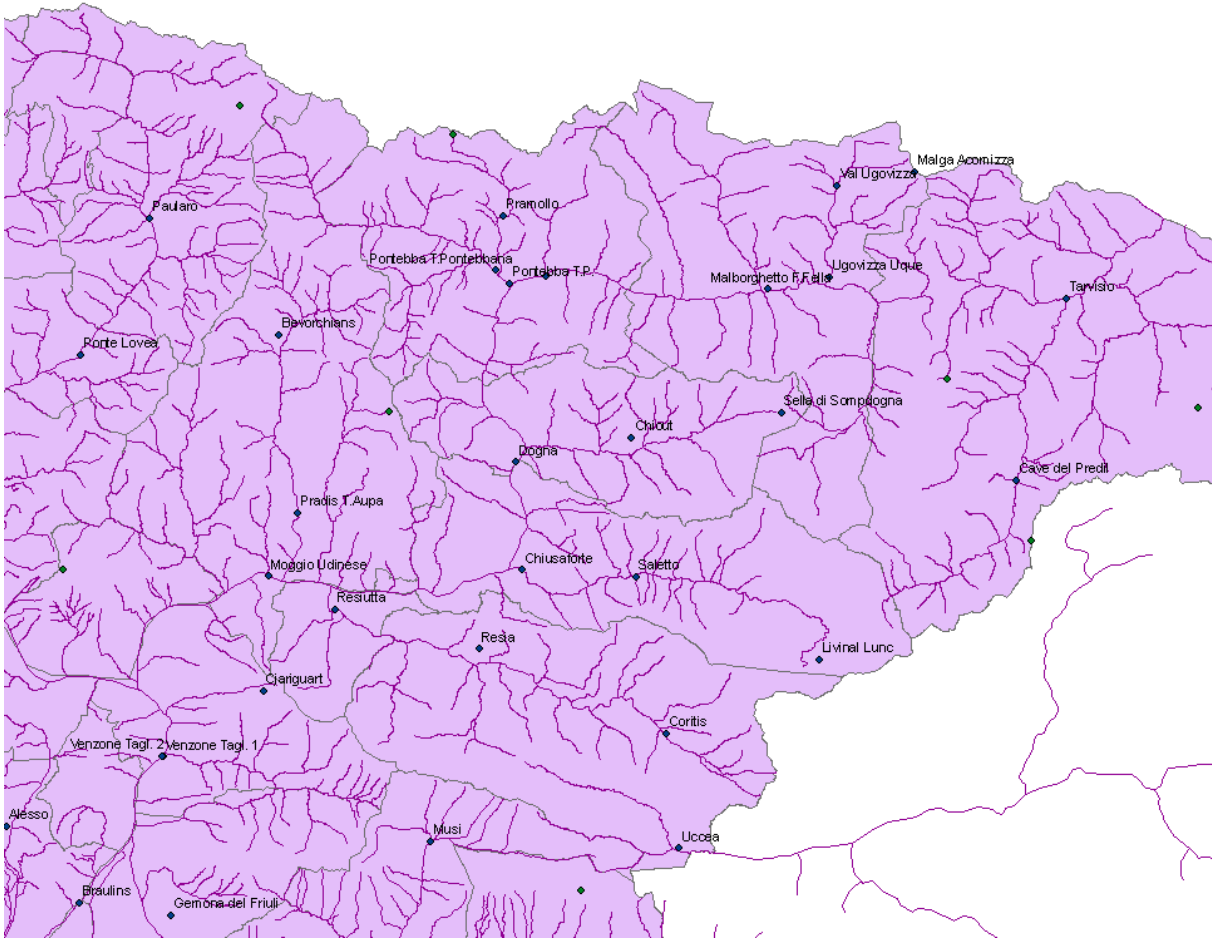
Modelling on the slopes of the basin

**2) River gauge station data (daily maximum discharge)**

Along the main rivers are the following hydrometric stations of measurement:

- 2.1) Ugozzza - Uque
- 2.2) Malborghetto Valbruna
- 2.3) Pontebba – Fella
- 2.4) Pontebba – Bombaso
- 2.5) Dogna
- 2.6) Chiusaforte
- 2.7) Saletto
- 2.8) Resiutta
- 2.9) Pradis – Aupa
- 2.10) Moggio Udinese

Translated version of the list of data requirements for Risk management



Data available from 1992 about every ½ hour

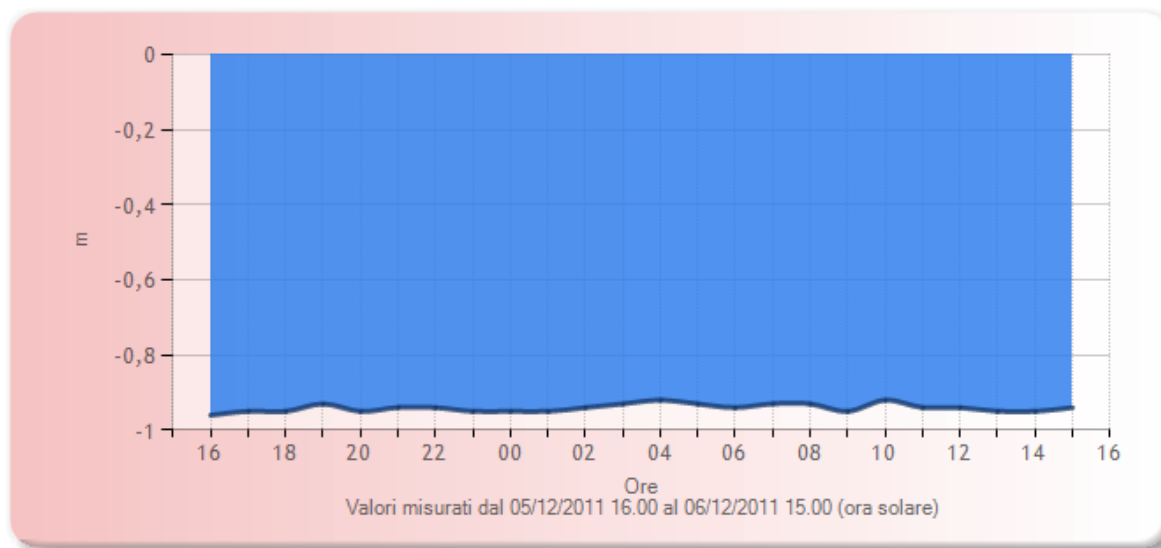
Stazione	<b>Malborghetto F.Fella</b>
Comune	MALBORGHETTO
Prov	UD
Bacino / sottobac.	TAGLIAMENTO/FELLA
Altitudine	733 s.l.m.
Sensori	Ultimo valore
Idrometro	-0,92 m - 06/12/2011 ore 15.30

**Idrometro adiacenti Malborghetto F.Fella ( in un raggio di 10 chilometri circa )**

Ugovizza Uque: -0,05 m (06/12/2011 15.30)

**Idrometro**

( Visualizza i dati numerici in forma tabellare )



**3) Rainfall gauge station data (hourly values)**

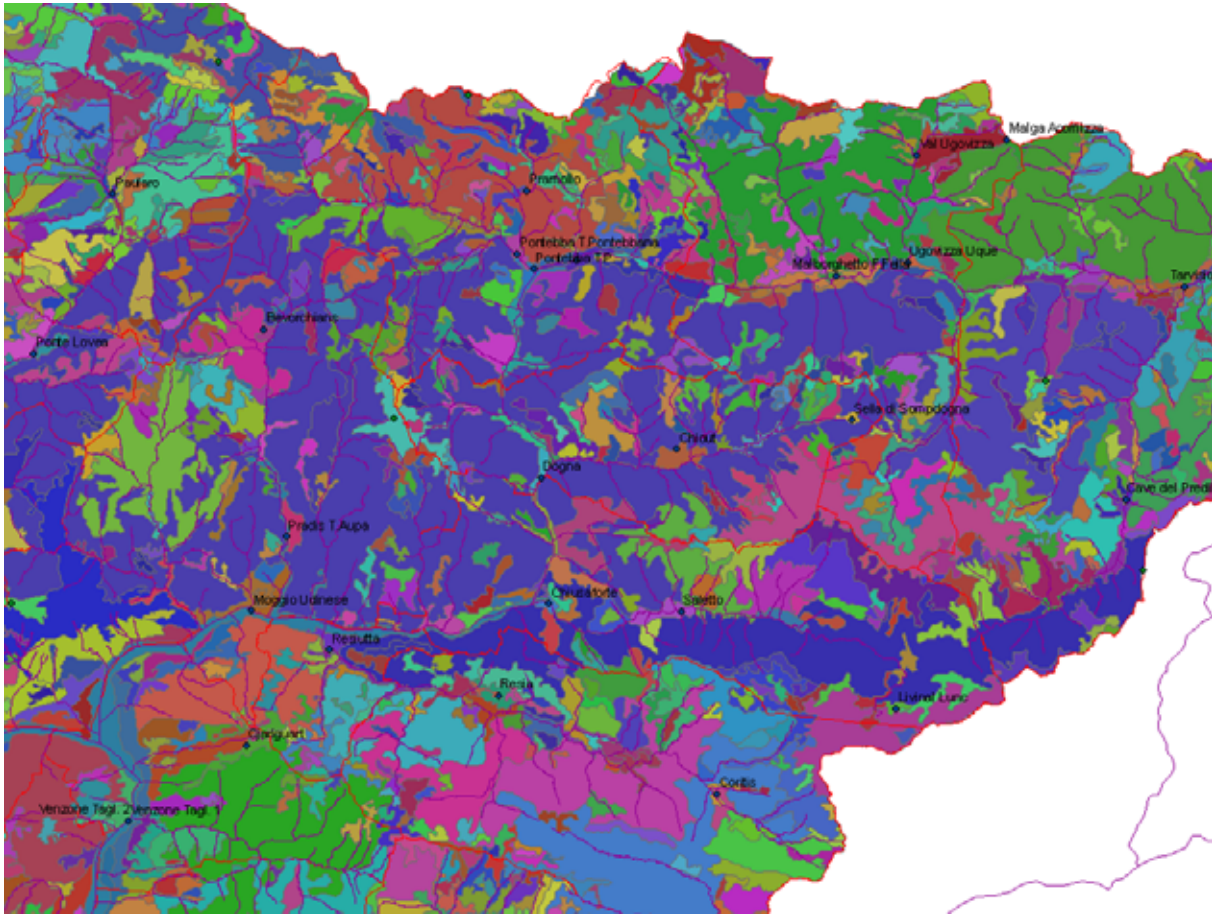
About 12 rain gauges are available in the catchment of interest with data recorded every half hour from 1992 onwards.

**4) Rainfall radar data (15 minutes intervals)**

The Civil Protection of the Region operates the Meteorological Radar Fossalon (Grade - GO) covering the entire region of Friuli Venezia Giulia, the related data may be available intime series with the necessary verification of digital formats.

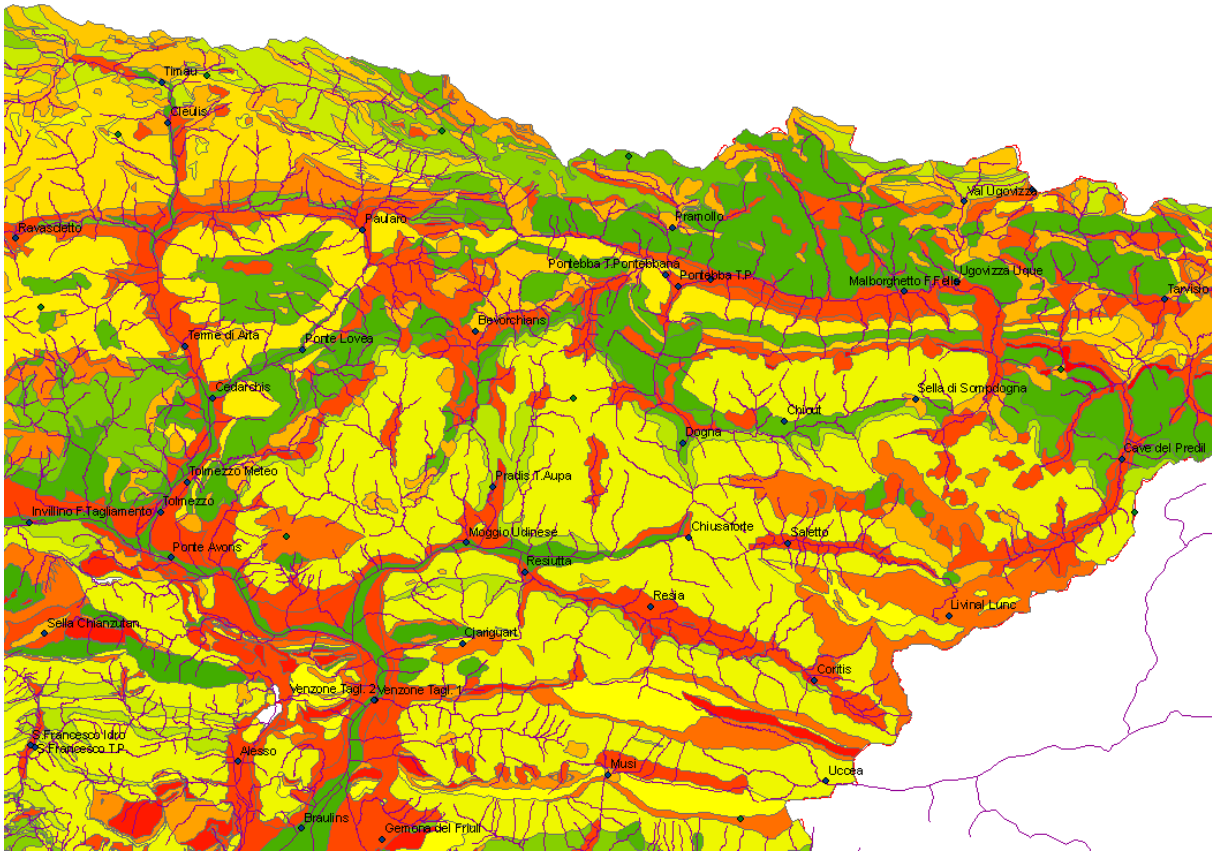
### 5) Land use information

Available coverage Corine Land Cover 2000 SHP format of Arc-Gis



### 6) Lithology

There is a map available at the scale 1:150 '000 lithological surface of the region



### 7) Information on historical flood events

At the event of 29/08/2003 have been mapped all the vulnerable areas (landslides and flooding areas) derived from LIDAR survey with a special digital orthophotos. The relevant data are available. The hydro-meteorological information have been detected by remote sensing network already operational at the time.








PROTEZIONE CIVILE  
DELLA  
REGIONE AUTONOMA FRIULI VENEZIA GIULIA



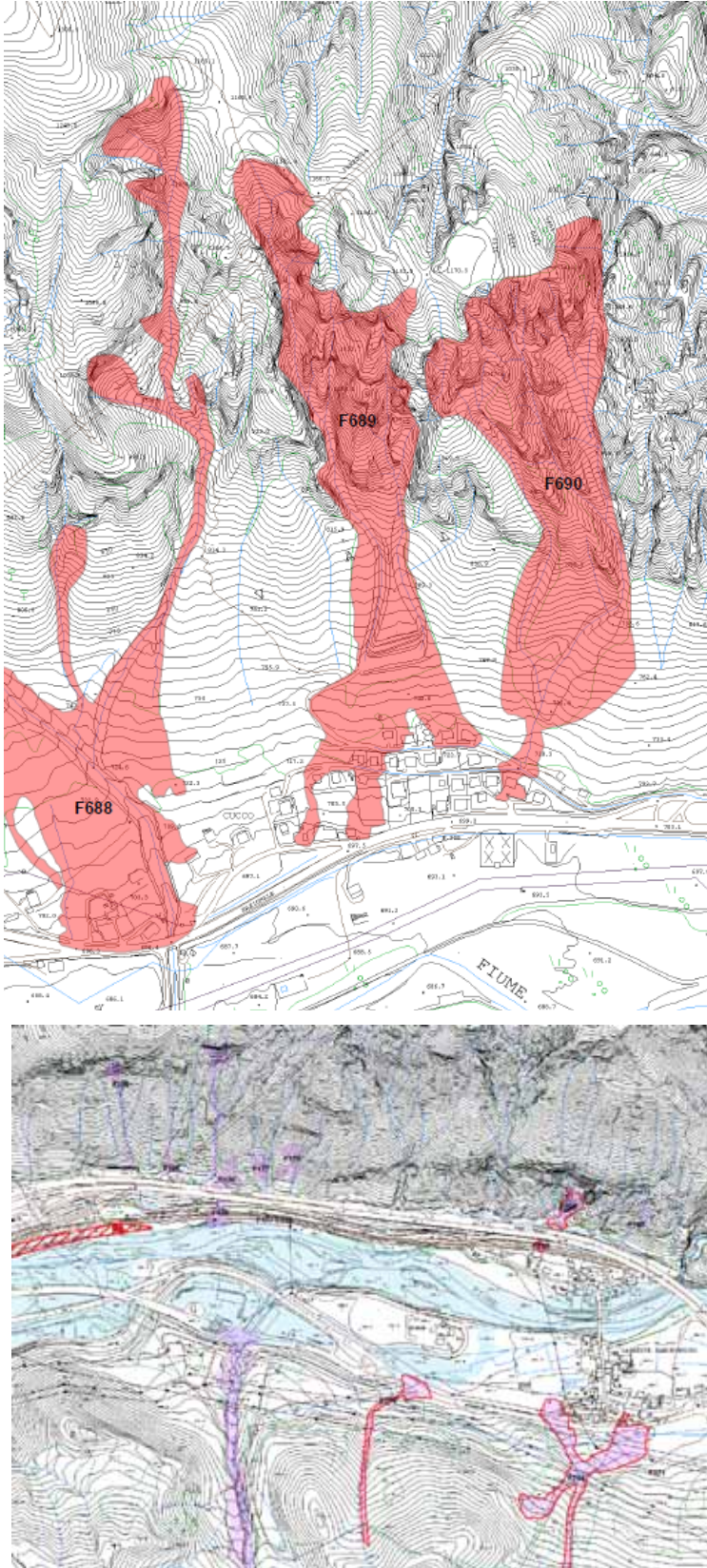
## Evento alluvionale 29 agosto 2003 Carta dei dissesti Tavola 5

Rilevi effettuati da:  
Direzione regionale dell'ambiente  
e dei lavori pubblici  
Direzione regionale delle risorse agricole,  
naturali e forestali  
Protezione civile della Regione

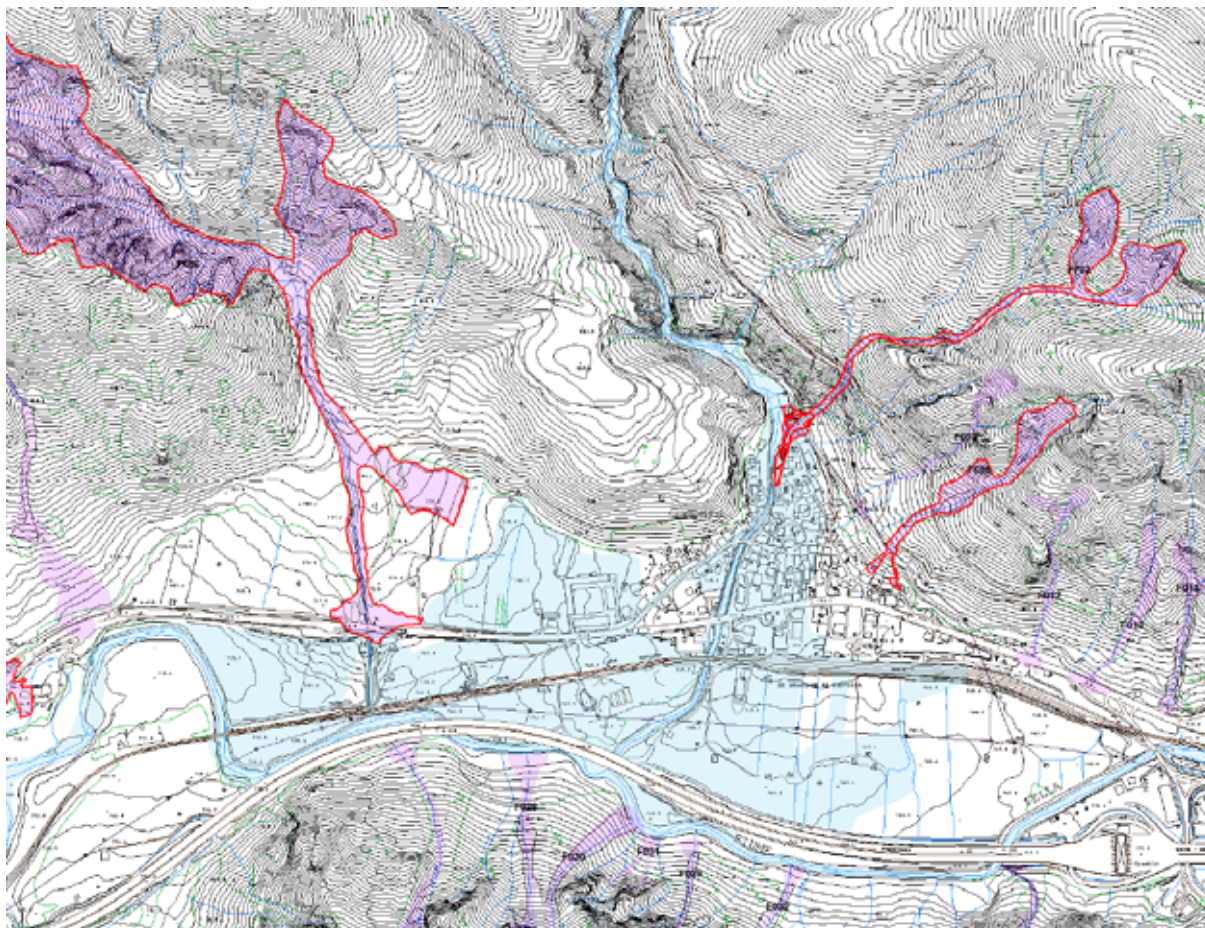
Legenda	
	Aree a dissesto geologico prevalente
	Aree a dissesto geologico prevalente con edifici coinvolti
	Aree a dissesto idraulico prevalente
	Aree nelle quali il costo degli interventi di riduzione del rischio non è compatibile col valore degli edifici coinvolti
	Edifici di valore non compatibile con il costo degli interventi o con le dinamiche dei fenomeni geologici e/o idraulici
<b>F001</b>	Dissesti perimetrati mediante ortofoto ad alta risoluzione e sopralluoghi
<b>MA001</b>	Dissesti perimetrati mediante sopralluoghi

scala 1:10.000

Translated version of the list of data requirements for Risk management







**8) Inundation levels of historical floods**

No data are available for widespread water levels different to than those measured by the hydrometric stations

**9) Information on flood defence infrastructures**

Following the events of 29/08/2003 have been planned and implemented by several hydraulic systems and defense infrastructure protection, and present residences, both for the area of the danger of landslides that were flooded with the construction of dams filter ,embankments, catch basins of debris flow sediment transport, relocation of buildings in areas insistent "indefensible".

**10) Flood hazard maps (for specific return period)**

Already in 2003 the Friuli-Venezia-Giulia authorities of basin authorities had prepared an assessment of geological risk - PAI - in the territory of the basin of the Tagliamento - in which Fella river it is a tributary – considering that this assessment was exceeded the flood event 29/08 / 2003, it should be updated by the relevant regional offices and is still being completed.

### **11) Upgrade of knowledge**

With the completion of the activities for controlling the hydraulic regime and defense the settlements, the new hydrodynamic structure of the main rivers and tributaries of the Fella basin is profoundly altered, therefore, it requires the reconstruction of the hydraulic modeling even then processed with the new morphology of the current channel.

Additionally, there is a lack of a significant forecasting tool in real time that allows to assess the hydraulic condition of the rivers to generate, in conjunction with intense weather events, a tool that support decisions about the flood hazard in Fella and its tributaries. This in order to execute actions and strategies aimed for the preservation of human life, the building and the environment in general.

### **12) Procedural approach at emergency**

In the Friuli-Venezia-Giulia region, CPA is the authority that organizes and coordinates the civil defense service for natural emergencies and beyond. In the field of hydro-meteorological the emergency is managed since before its ultimate expression with a "Weather Alert" sent out to all the mayors of the municipalities concerned and the authorities.

At the regional operation room is established the service of "Weather Watch" performed by trained technical personnel, who evaluate the development of the territory of phenomena expected through the various monitoring networks. When certain critical thresholds (rain or water levels) as established the "Full Service" conditions, it aims to monitor the functionality and integrity of the main hydraulic structures (dams classified) to prevent collapse or flooding.

During the event, weather measures are taken to mitigate the effects through the operation of certain structures (dams) to maintain a value of acceptable risk in relation to the vulnerability of the neighboring territories of the river.

In the event of major disasters (landslides and / or flooding) the activity of the Civil Protection is focused in emergency interventions to contain the problems and / or restoration of some services to the community or roads, and, if appropriate evacuate the population also through the cooperation of civil defense volunteers.