

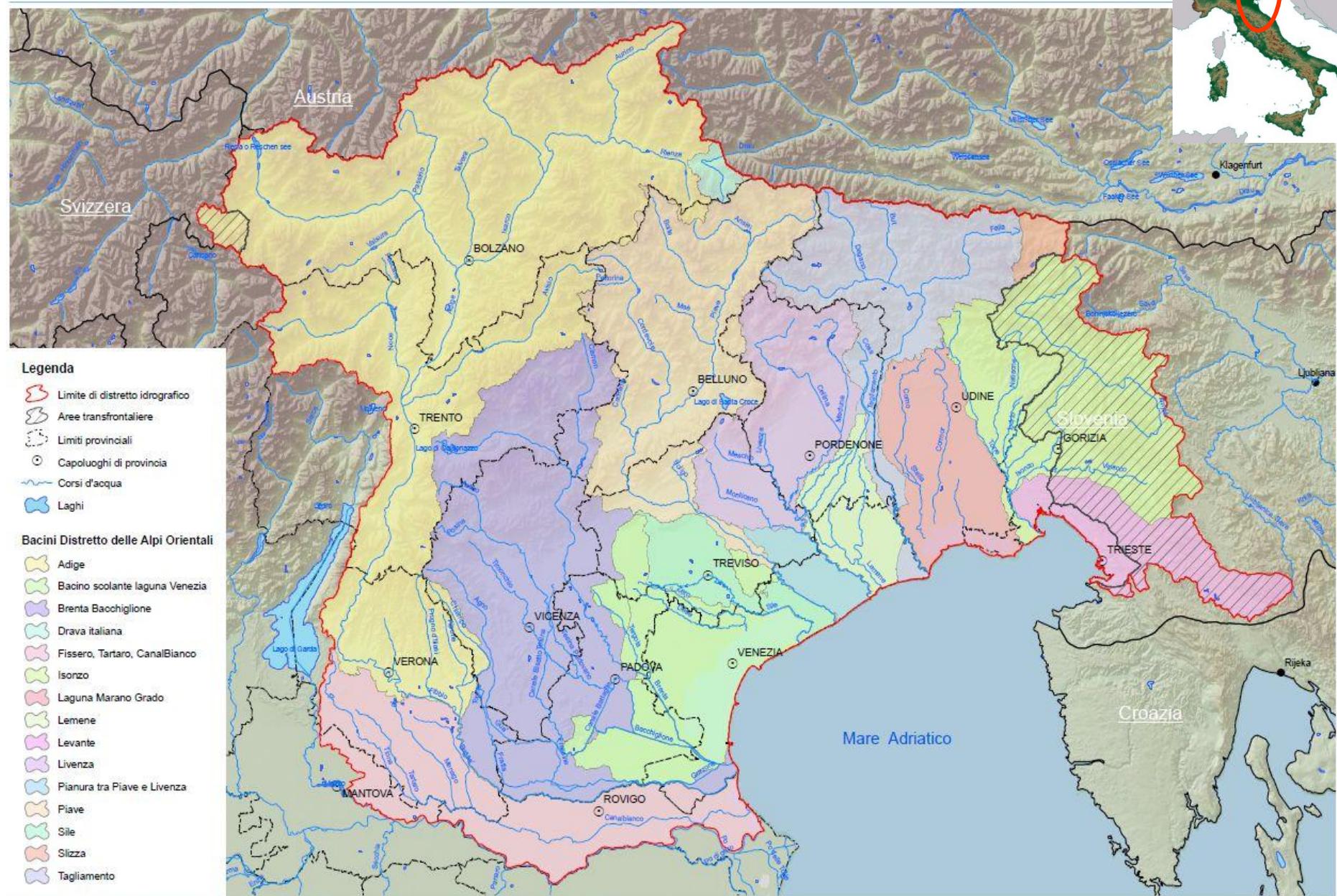
**Autorità di Bacino
DEI FIUMI ISONZO, TAGLIAMENTO, LIVENZA,
PIAVE, BRENTA-BACCHIGLIONE**

ing. Francesco Baruffi

**The implementation of EU Flood Directive in the
Eastern Alps hydrographic district**

Venice, september 2013

Eastern Alps hydrographic District: hydrographic watersheds



Fondi: Limite di distretto idrografico, aree transfrontaliere, autorità competenti: Segreteria Tecnico Operativa del Distretto delle Alpi Orientali; Capoluoghi di provincia, limiti provinciali: ISTAT 2001; Fiumi e leiti: CCR River and Catchment Database (European Commission - JRC, 2007); Fiumi italiani: reticollo idrografico, geo_forni: ISRA alla scala 1:250.000; Città: ESRi Data & Maps and StreetMap Europe B_3; Shaded Relief: gipso3_n_relief_cpt (ESRI Data & Maps and StreetMap Europe 9_3); DTM: GTOPO30 (ESRI Data & Maps and StreetMap Europe 9_3).

Vers. ottobre 2011



A horizontal scale bar with numerical markings at 0, 5, 10, 20, 30, 40, and 50. Below the scale, the word "Km" is written in capital letters.



Austria

Slovenia

Isonzo

Tagliamento

Livenza

Piave

Venezia

Brenta-Bacchiglione

Adige

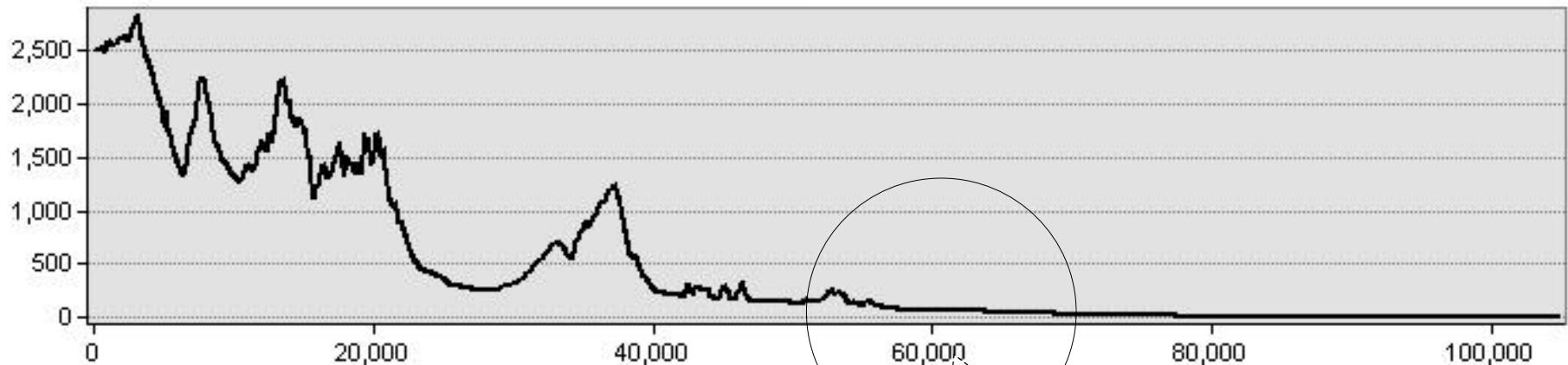
Mare Adriatico

A

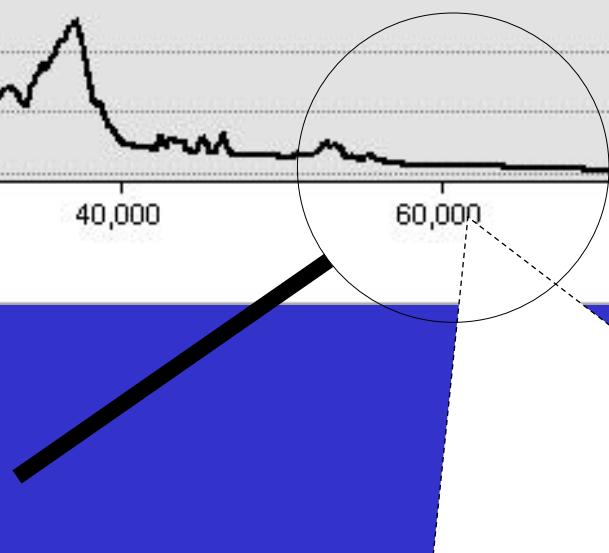
A



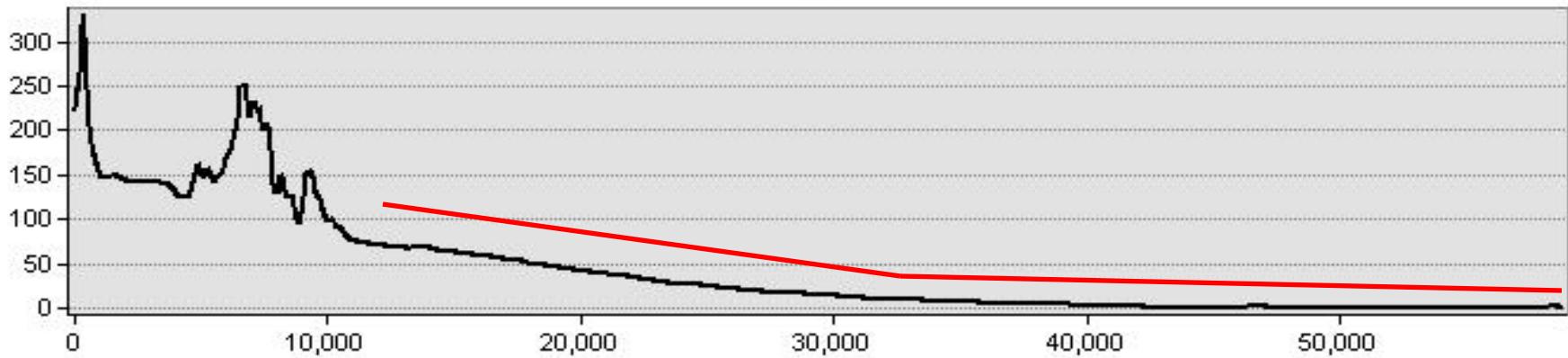
Profile A-A



Profile Graph Subtitle

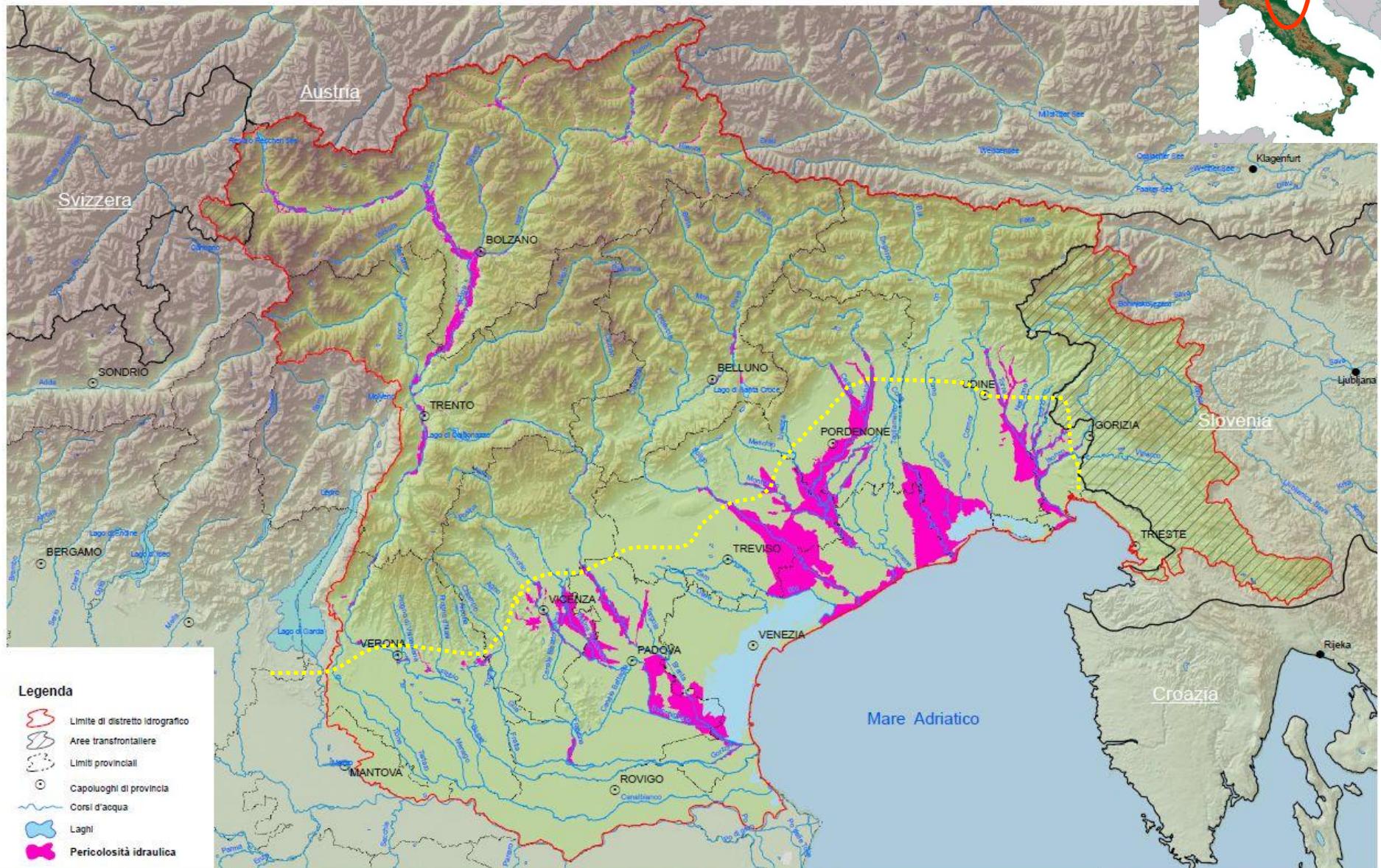


zoom Profile A-A



Profile Graph Subtitle

Eastern Alps hydrographic District: hydraulic hazard

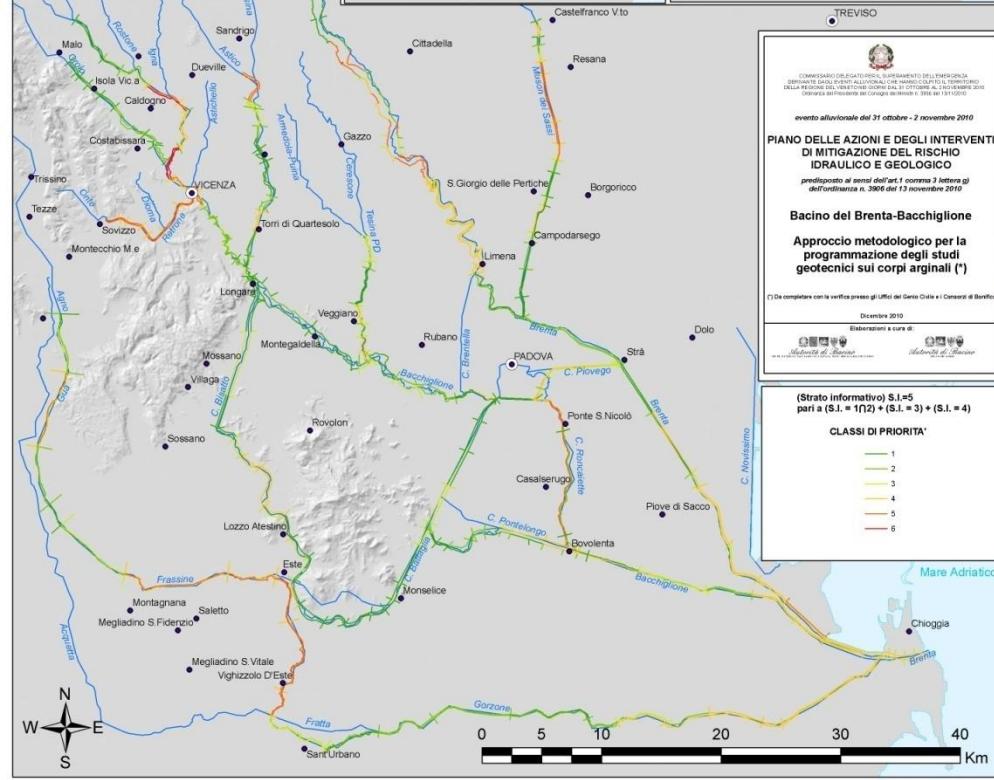
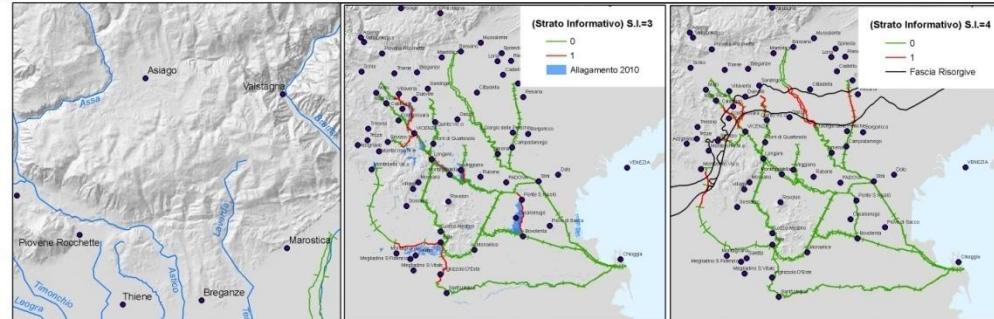
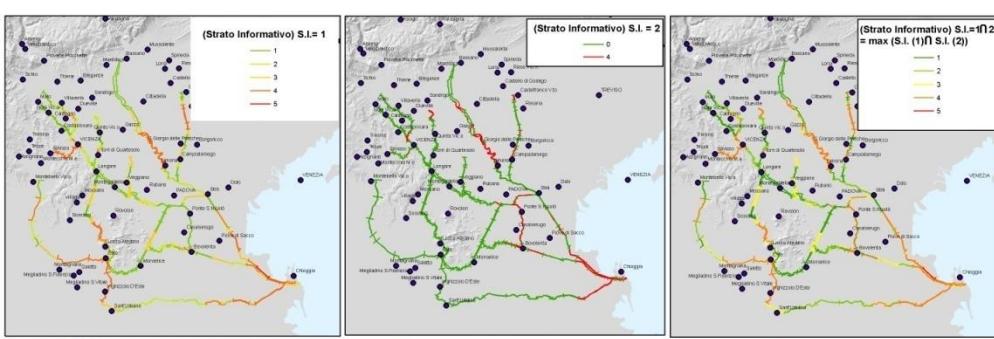


Ponti: Limite di distretto idrografico, aree transfrontaliere; Segreteria Tecnico Operativa del Distretto delle Alpi Orientali; Capoluoghi di provincia, limiti provinciali: ISTAT 2001; Fiumi e laghi: COM River and Catchment Database (European Commission - JRC, 2007); Fiumi italiani reticolari idrografico, geo (fonte: ISPRF) alla scala 1:250.000; Città: ESRI Data & Maps and StreetMap Europe 9.3; Shaded Relief: gtopo30_n.tif.tif_C.zip (ESRI Data & Maps and StreetMap Europe 9.3); DTM: GTOPO30 (ESRI Data & Maps and StreetMap Europe 9.3); Pericolo idrogeologico (idraulico, da frana, colata detritica): Provincia Autonoma di Bolzano, Provincia Autonoma di Trento, Regione del Veneto, Regione Autonoma Friuli-Venezia Giulia

Febbraio 2012



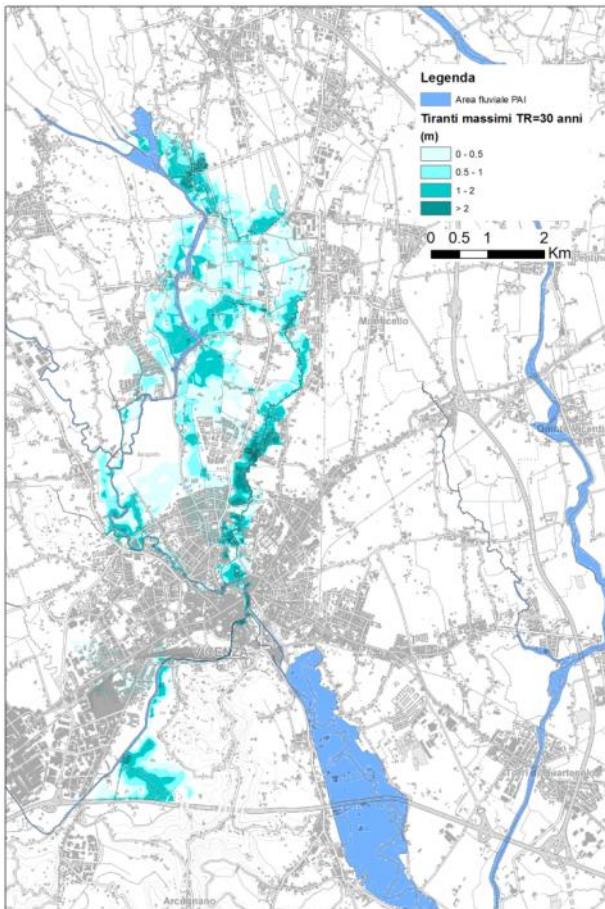
0 5 10 20 30 40 50 Km
Scala: 1:1.000.000



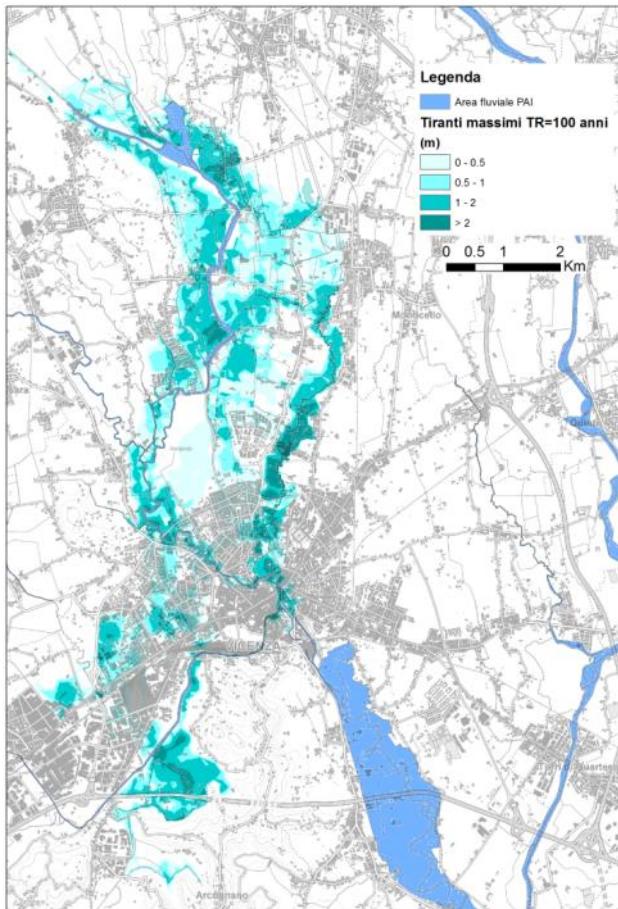
**The network of embankments....
with a development of
more than 4000
kilometers in the
Eastern Alps District's
area**

BACCHIGLIONE river (flooding maps for different frequencies)

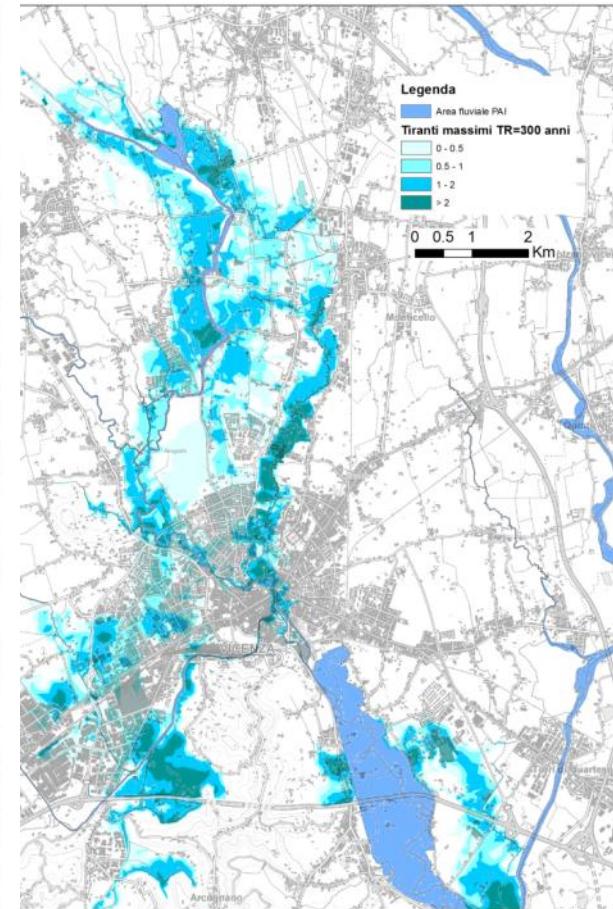
Water depth (m)



High frequency



Medium frequency



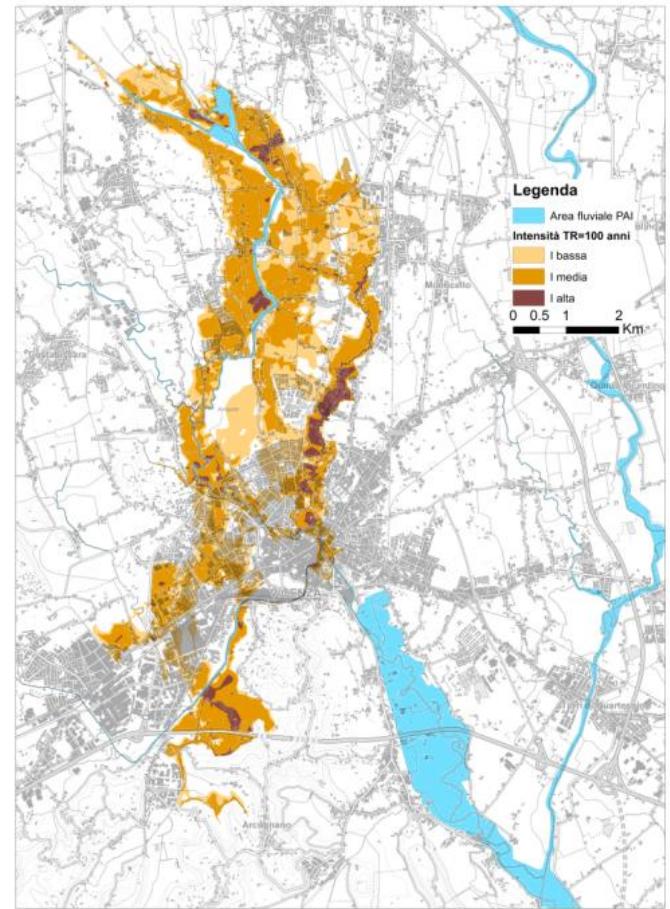
Low frequency



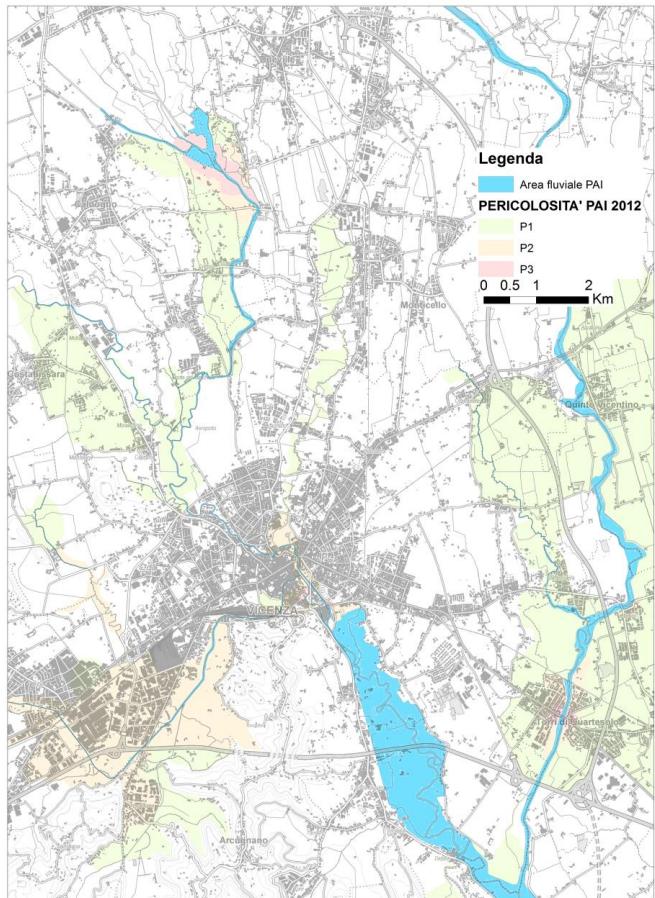
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Hazard



Medium frequency



existing planning tool - PAI



Autorità di Bacino

DEI Fiumi ISONZO, TAGLIAMENTO, LIVENZA, PIAVE, BRENTA-BACCHIGLIONE

Landslides: more than 6900 dangerous areas have been classified in the Eastern Alps District

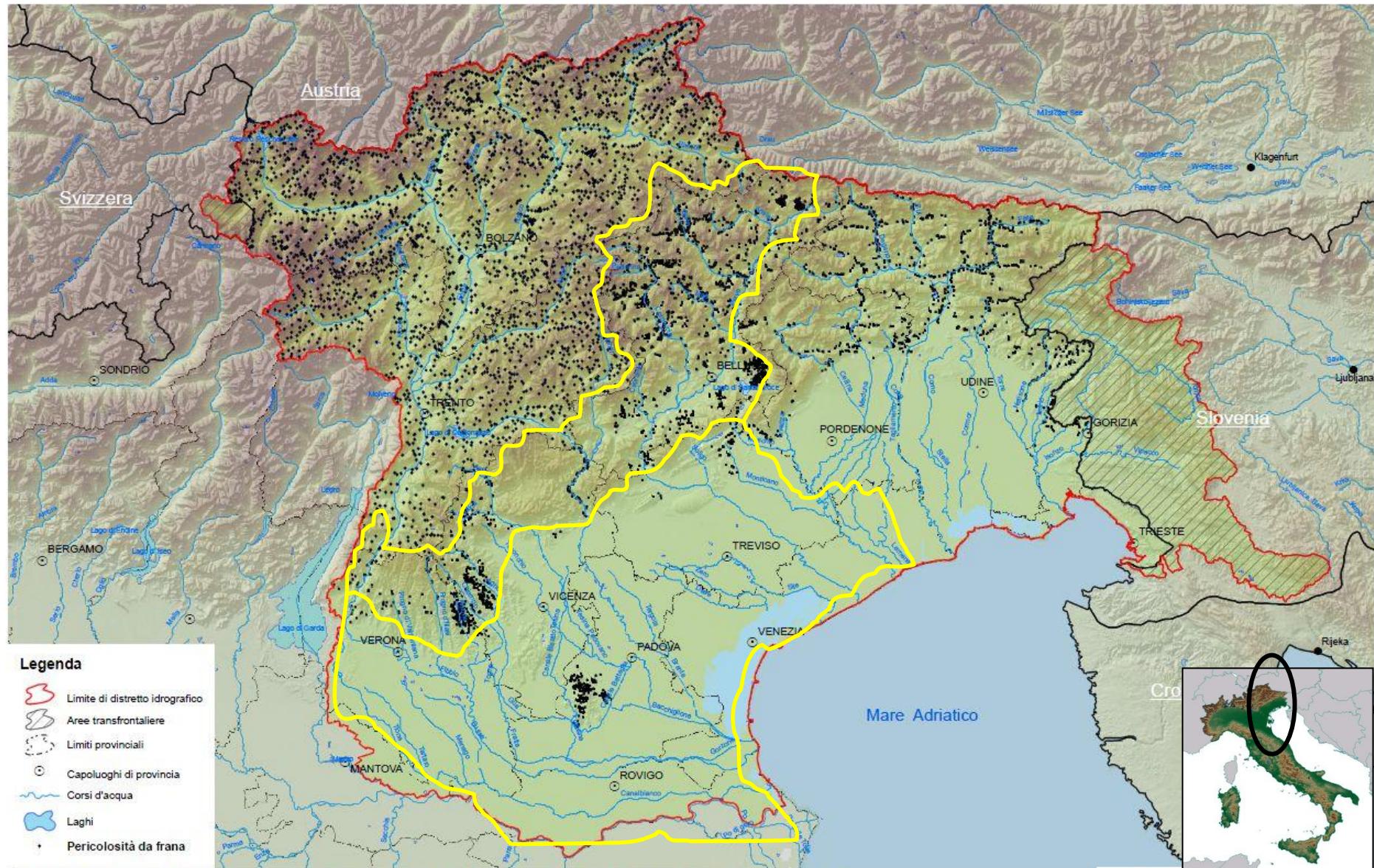


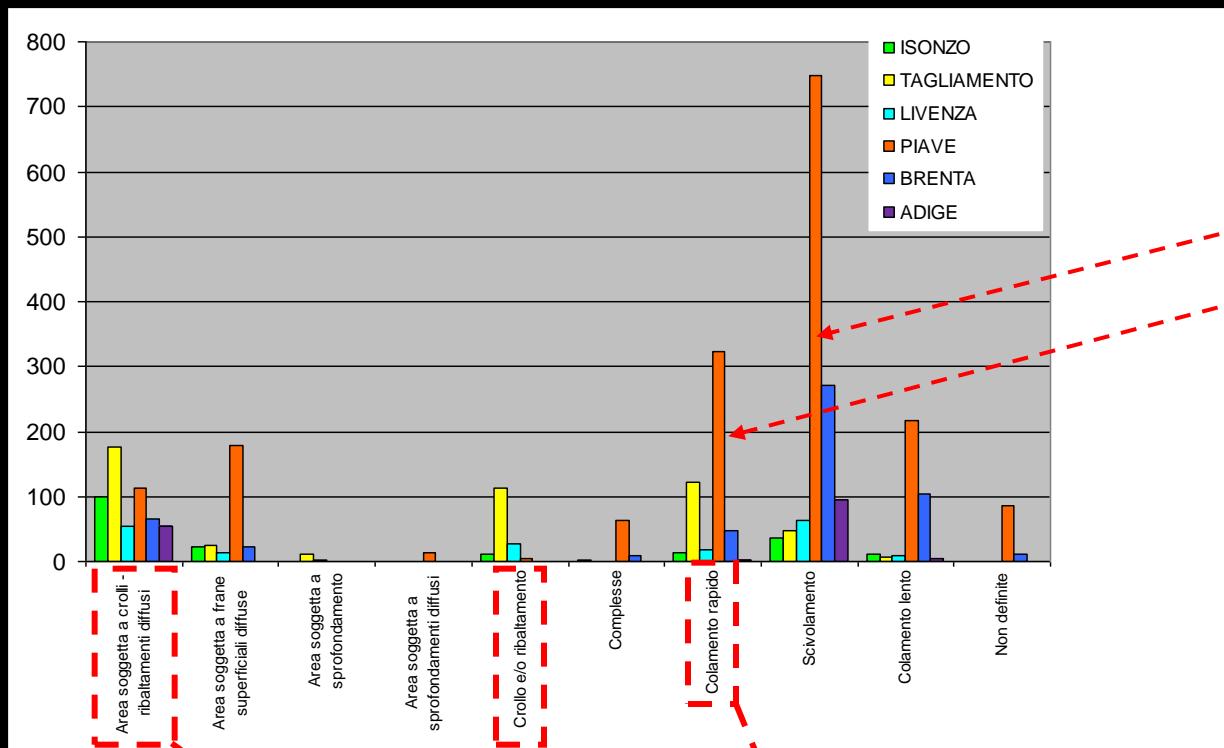
Foto: Limite di distretto idrografico, aree transfrontaliere: Segreteria Tecnica Operativa del Distretto delle Alpi Orientali; Capoluoghi di provincia, limiti provinciali: ISTAT 2001; Fiumi e laghi: COM River and Catchment Database (European Commission - JRC, 2007); Punti italiani: reticol_idrografico.geo (fonte ISPRA alla scala 1:250,000); Città: ESRI Data & Maps and StreetMap Europe 9.3; Shaded Relief: gispo30_n_relief_c.zip (ESRI Data & Maps and StreetMap Europe 9.3); DTM: GTOPO30 (ESRI Data & Maps and StreetMap Europe 9.3); Pericolo idrogeologico (idraulico, da frana, costa detritica): Provincia Autonoma di Bolzano, Provincia Autonoma di Trento, Regione del Veneto, Regione Autonoma Friuli-Venezia Giulia

Febbraio 2012

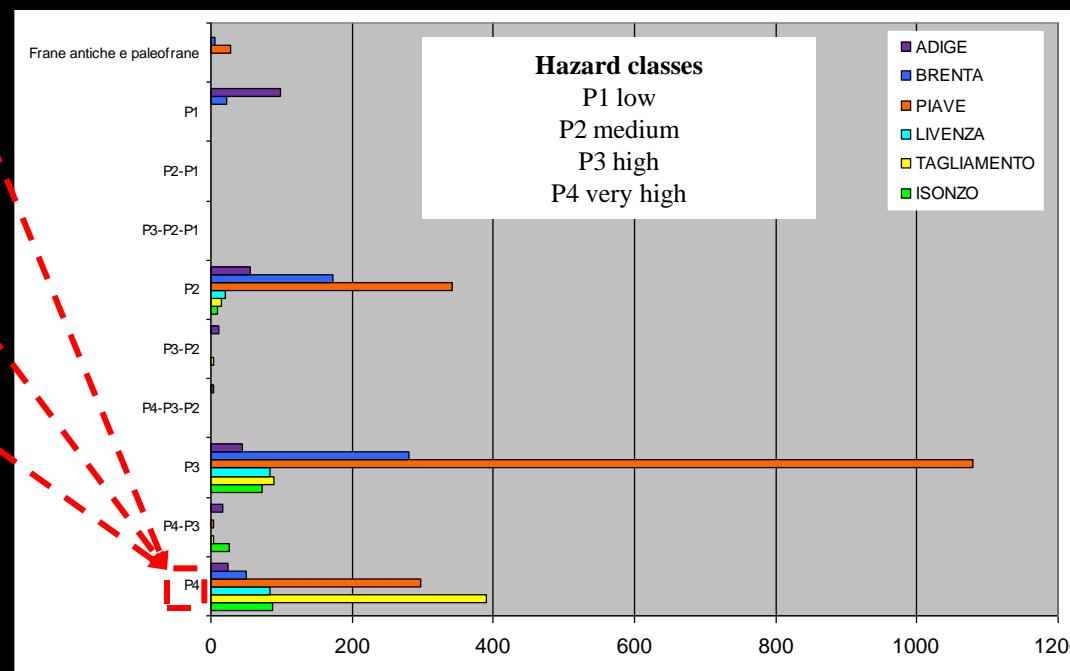


0 5 10 20 30 40 50 Km
Scala: 1:1.000.000

Landslides and debris flow are the phenomena that occur with greater frequency



Rock fall and debris flow characterize the class of very high hazard (P4)



How much does the vulnerability of the territory cost in the Eastern Alps district's area ?

About **5000 million €** {

- flood defense 4000 milion €
- geological defence 1000 milioni €



LABORATORIO LABORATORIJ VIPACCO VIPAVA

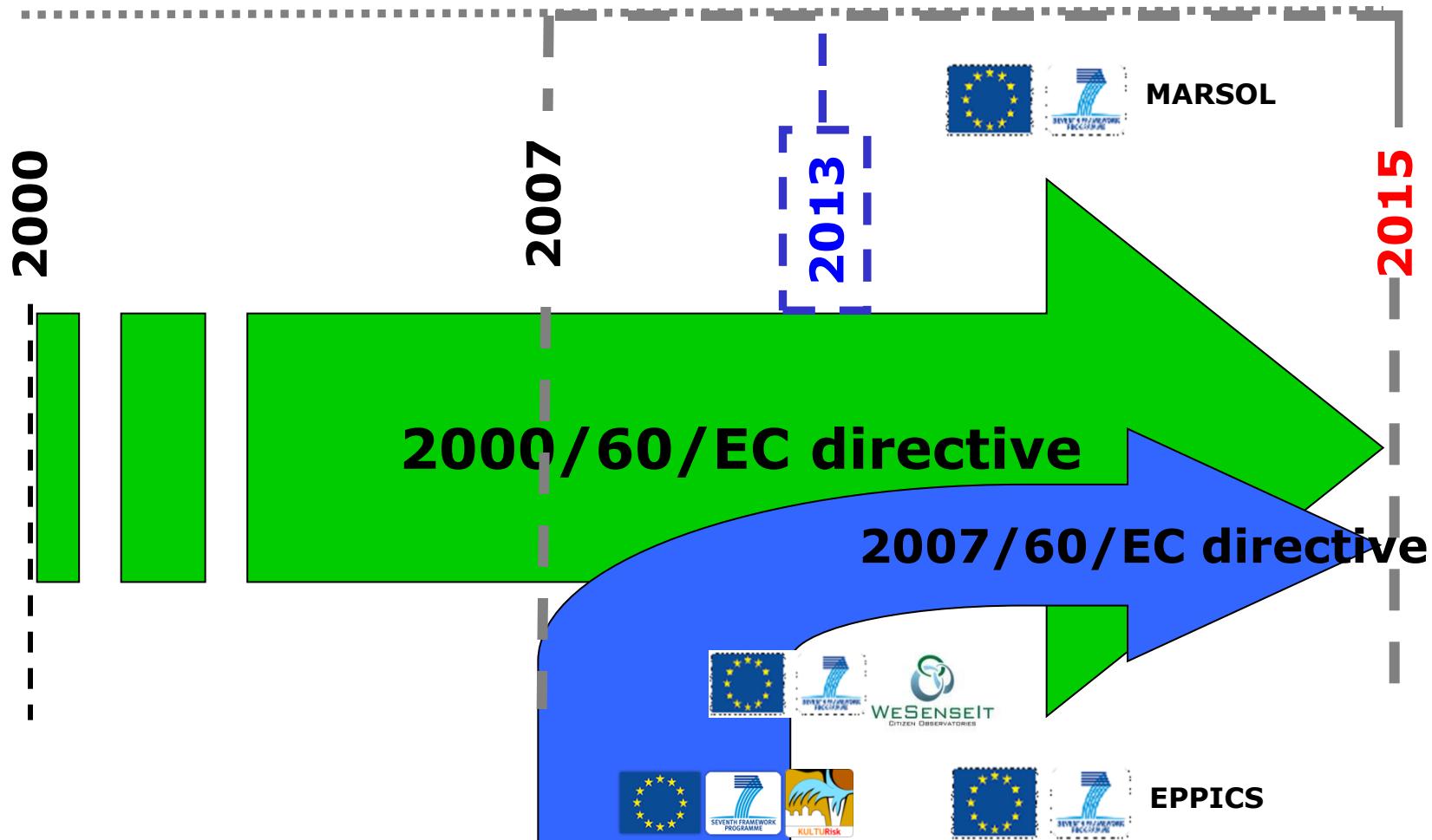
Percorso partecipato per sviluppare e sperimentare approcci innovativi per la prevenzione del rischio idraulico

Sodelovanje za razvoj in preizkušanje inovativnih pristopov za preprečevanje poplavne ogroženosti



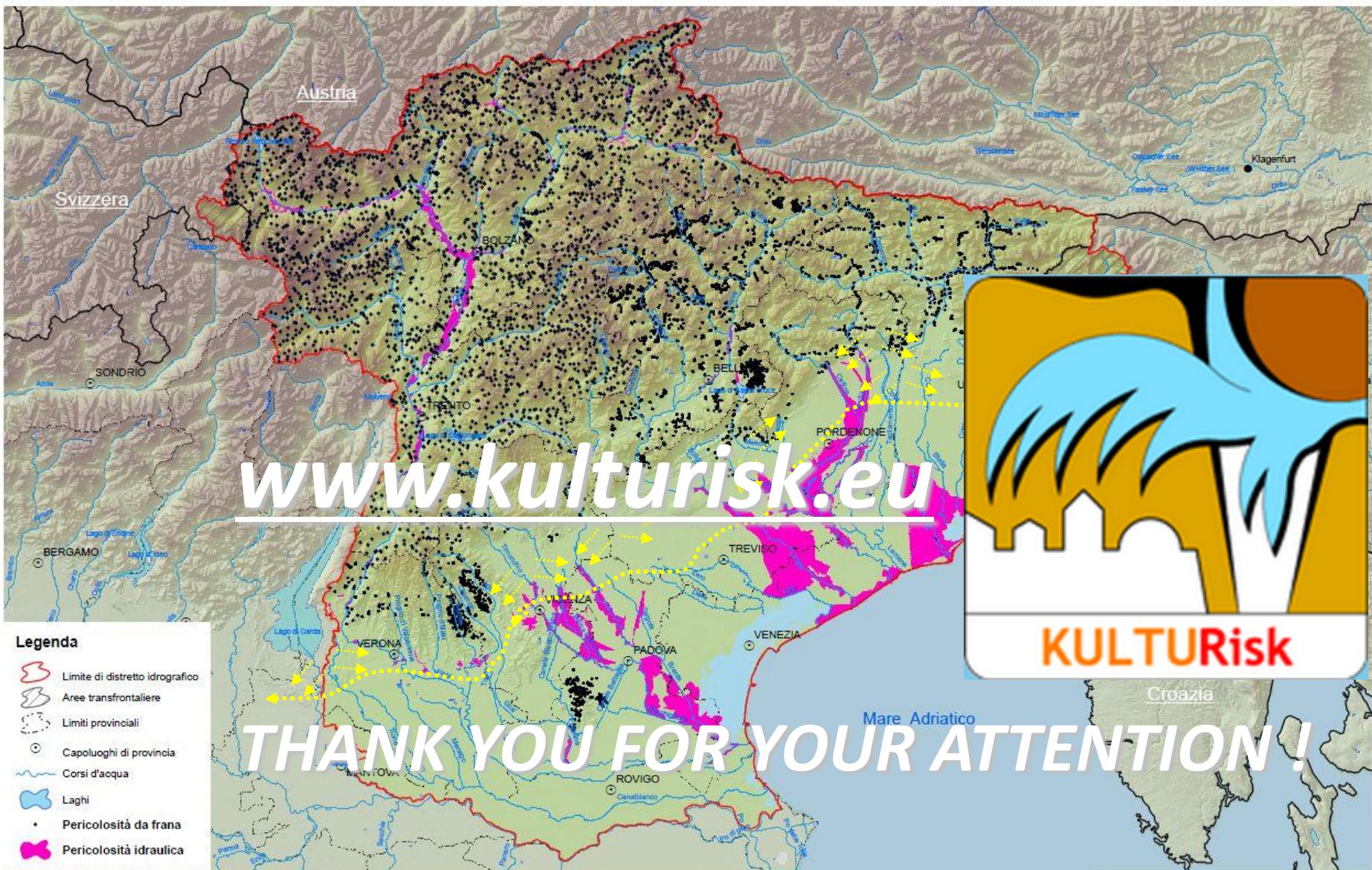
EUROPEAN FRAMEWORK

Water Framework Directive 2000/60
Flood Directive 2007/60



Eastern Alps hydrographic District: hydrogeological hazard

MAPPA N°13
<http://www.alpiorientali.it>



Fondi Limite di distretto idrografico, aree transfrontaliere. Segreteria Tecnica Operativa del Distretto delle Alpi Orientali. Capoluoghi di provincia, limiti provinciali: ISTAT 2001. Fiumi e laghi: CCM River and Catchment Database (European Commission - JRC, 2007).
Fiumi italiani: reticollo idrografico, geo fonte ISPRRA alla scala 1:250 000. Città: ESRI Data & Maps and StreetMap Europe 8.0.3. Shaded Relief: gtopo30_n_relief_c_p0 (ESRI Data & Maps and StreetMap Europe 8.0.3); DTM: CTOP030 (ESRI Data & Maps and StreetMap Europe 8.0.3).

Vers. ottobre 2011



0 5 10 20 30 40 50 Km
Scala: 1:1.000.000