

Comparing natural hazard and risk representations in a transboundary area to enhance civil protection international cooperation.

Federica Zambrini^{1*}, Christian Ambrosi³, Daniele F. Bignami², Ilaria Boschini¹, Dorota Czerski³, Alessandro De Pedrini³, Giovanni Menduni¹, Maurizio Pozzoni³, and Tommaso L. Sansone¹

¹ Civil and Environmental Engineering Department, Politecnico di Milano, Piazza Leonardo da Vinci 32 Milano, Italy

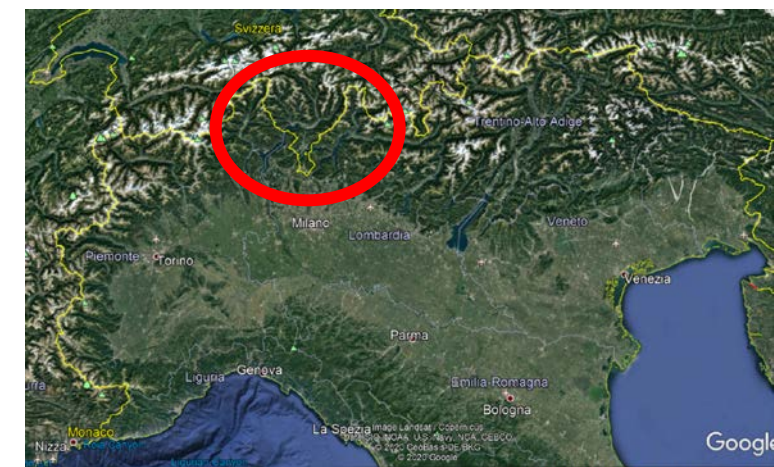
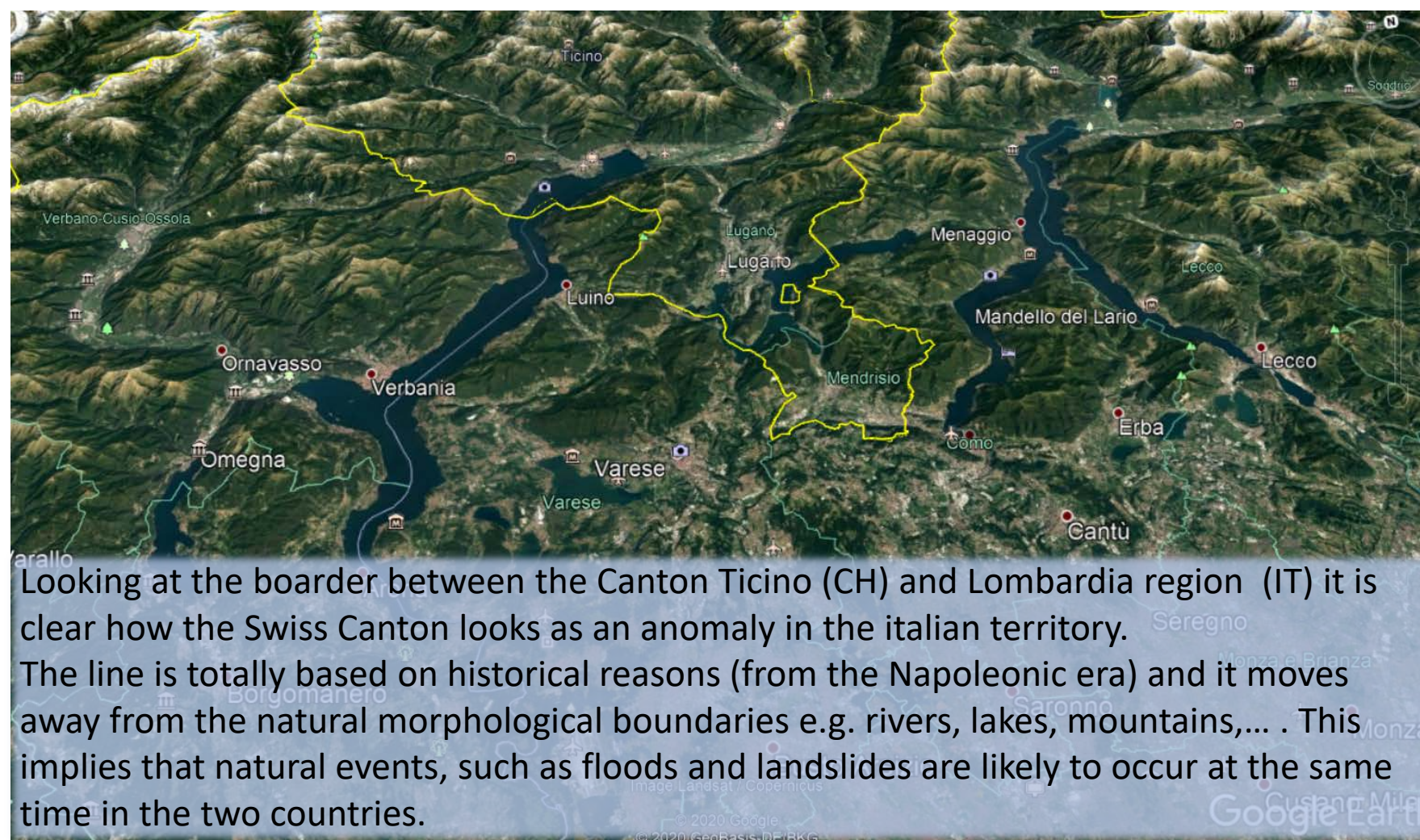
² Fondazione Politecnico di Milano, Piazza Leonardo da Vinci 32 Milano, Italy

³ Institute of Earth Sciences, University of Applied Sciences and Arts of Southern Switzerland (SUPSI), Campus Trevano, CH-6952 Canobbio

* federica.zambrini@polimi.it

GESTI.S.CO Project (Gestione delle emergenze senza confini – Emergencies management without borders) is a project funded in the Interreg program for Italy-Swiss cooperation

Managing a transboundary problem



Transboundary risk management



During the emergency phase, it is crucial to follow the procedures and norms on risk assessment and risk management.

But what happens when the criteria behind them are not the same?

We have seen that the two countries share a similar territory and risk scenario, they may be asked to face together the emergency but they are not sharing the same directives, since Italy belongs to the European union while Switzerland does not.

DIRECTIVE 2007/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL

of 23 October 2007

on the assessment and management of flood risks

(Text with EEA relevance)

**Regolamento
della Legge sui territori interessati da pericoli naturali
(RLTPNat)
(dell'11 luglio 2017)**

IL CONSIGLIO DI STATO
DELLA REPUBBLICA E CANTONE TICINO

MAPPING ISSUE

Maps are a fundamental tool for the risk assessment and management phase: they are a powerful decision support system which allows to have clear in mind the possible occurring scenarios.

During the emergency, operators have to be able to understand the maps of the neighboring country. One of the outputs of the project consists in helping them with such issue.

Two strategies are possible:

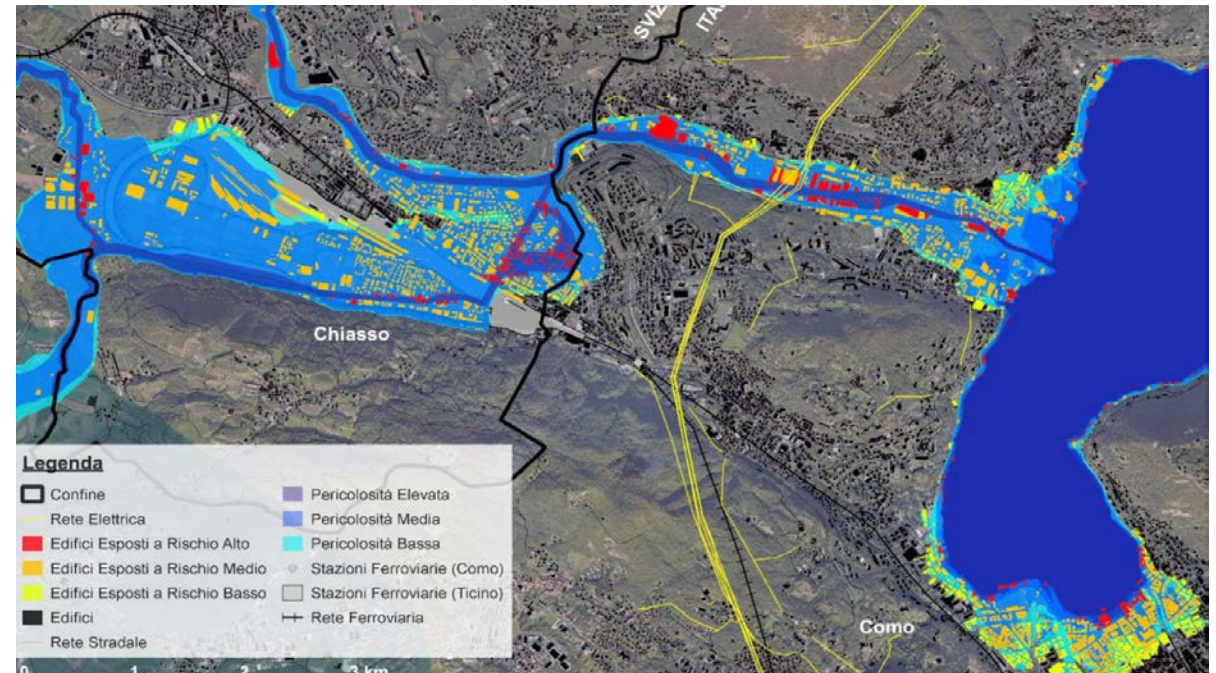
1. To operate a comparison and unification of the legend in order to have a unique map with a common legend for the two countries
2. To create a brand new map, to be used only for understading transboundary events (without legal force).

Standardisation

Example regarding Floods:

the european directive requires the identification of three classes of events while Switzerland has four of them.

The standardisation implies that the classes are investigated and put together.



Draft Map

New Maps

Another option consists in creating a new map, that can help technicians to interpret the situation.

It is important to underline how this tools have to be used carefully and always combined with the official national maps, which have legal power.

To do so, an option is to create a *susceptibility map*, two choices are possible:

- Build a map that exclusively considers geomorphological and climatic parameters
- Also add a set of **predisposing factors**

New maps in a transboundary environment

A key factor consists in building a dataset which is as homogeneous as possible.

A unique DTM has been created, resampled from two input datasets with a different resolution

Some data are natively transboundary: Open Street Map layers can be used for the project

THANK YOU FOR YOUR ATTENTION!



If you are interested in the project and its upcoming development, do not hesitate to write us an e-mail and do not forget to follow us on Facebook ([Here the project's page](#))