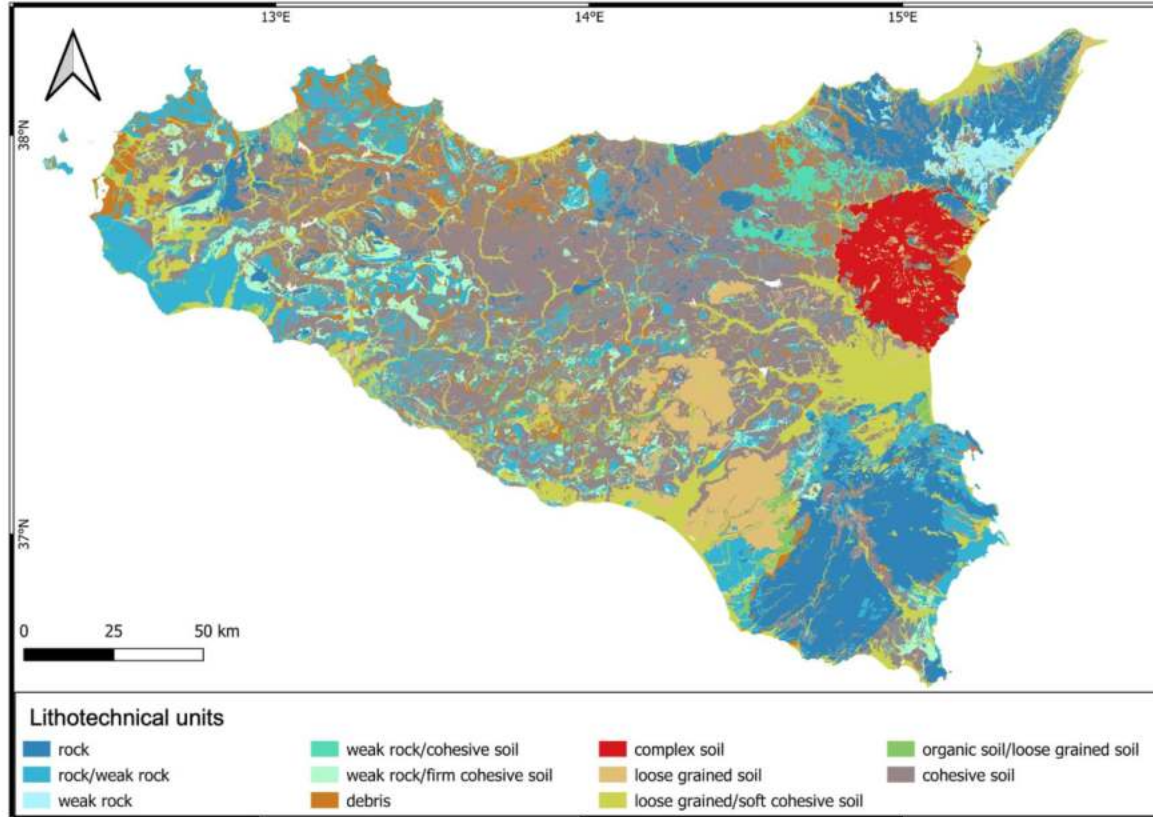


# A susceptibility-oriented approach for the implementation of regional landslide inventories

Chiara Martinello  
University of Palermo

Friday, November 17th 14.30 - 16.00  
PALAFFARI Basement HALL -1, Piazza Adua 1 Florence

# Geomorphology and landslides



# Geomorphology and landslides

## Falls and topples



San Fratello, Messina, 2023



Monte Gallo, Palermo, 2021



# Geomorphology and landslides

## Rotational/translational slides



Caltavuturo/Scillato, Palermo, 2015



Suvari area, Palermo, 2009

# Geomorphology and landslides

Earth/mud/debris flows

Polizzi Generosa, Palermo



2003

2017

2019

2022

2023



# Geomorphology and landslides

## Deep-seated Gravitational Slope Deformation



Scopello, Trapani, 2005



# Geomorphology and landslides

## Debris flows



Giampileri, Messina,  
2009



Molino, Messina, 2009



Altolia, Messina, 2009



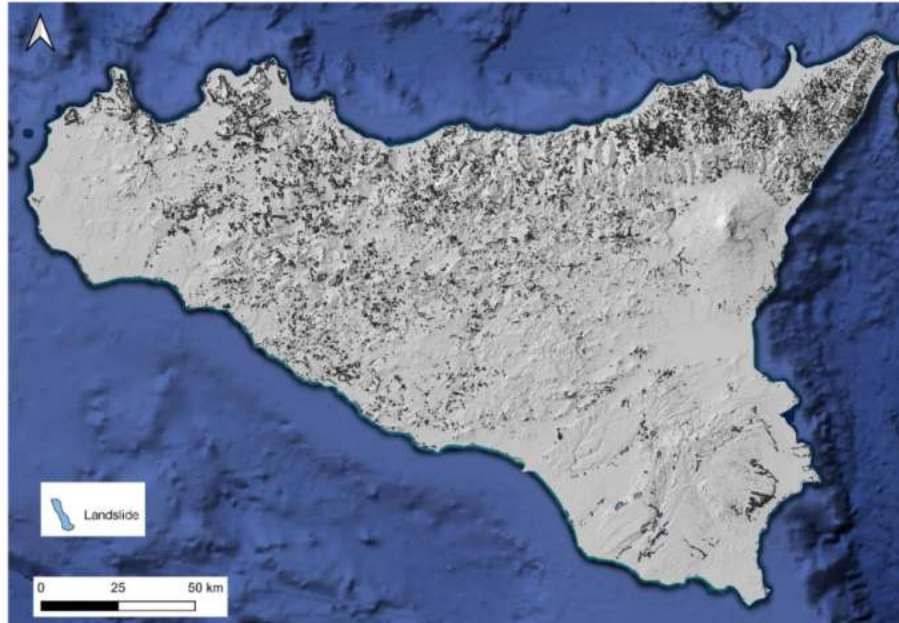
# Analysis of landslide inventory data

## Regione Siciliana

Assessorato del territorio e dell'ambiente - Dipartimento dell'ambiente

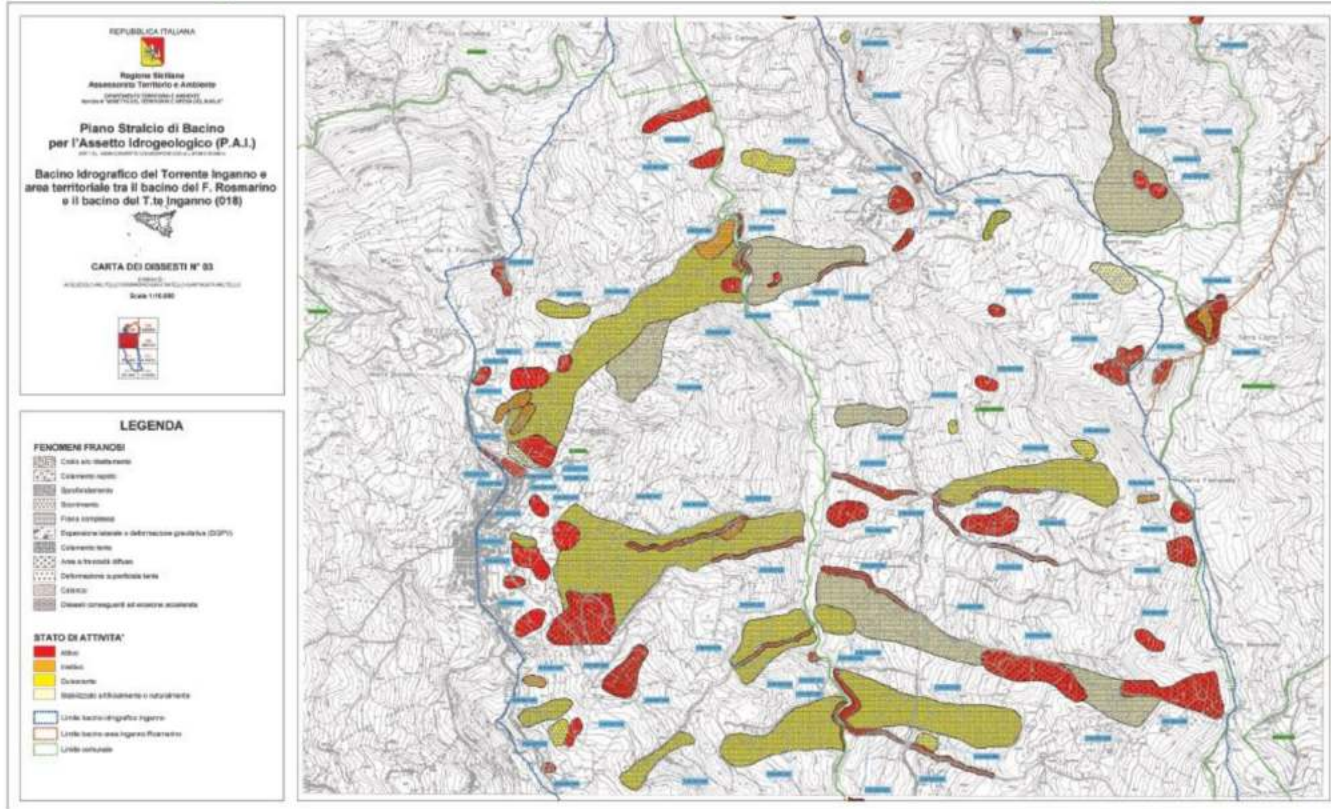
Servizio III - Assetto del territorio e difesa del suolo

## Piano Stralcio di Bacino per l'Assetto Idrogeologico





# Analysis of landslide inventory data



# Analysis of landslide inventory data

ISPRA



Isole  
**Sicilia**

Numero frane: 24.402

 24.402  
Frane\*

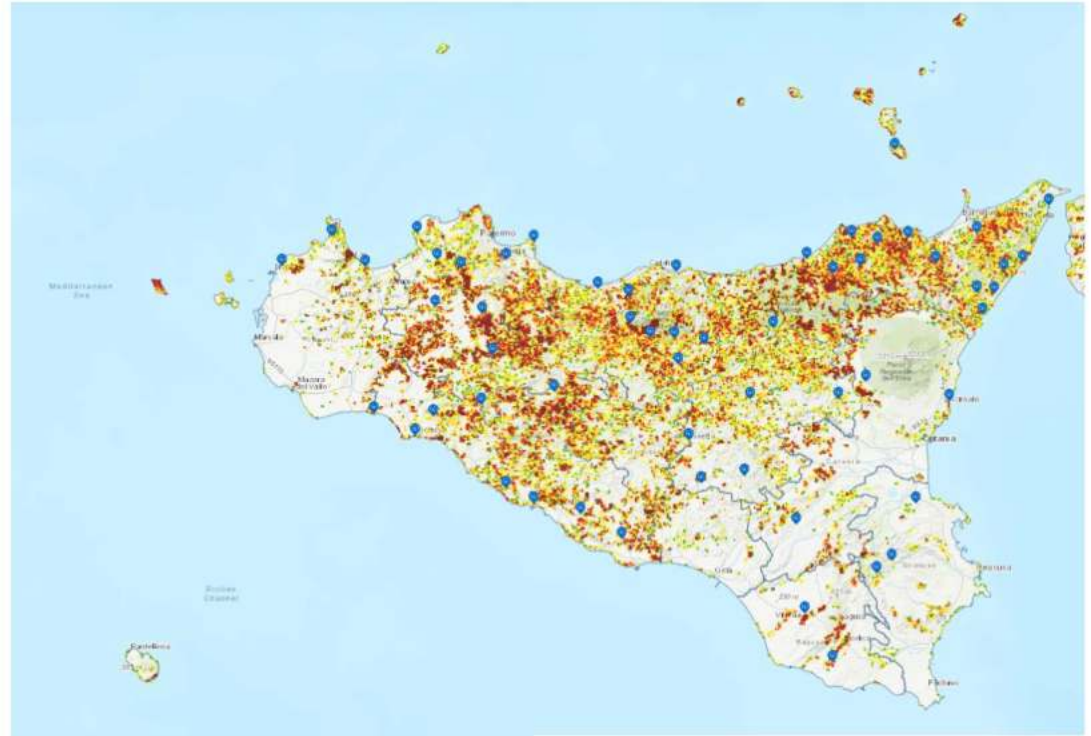
 0  
Frane monitorate

 67  
Eventi\*\*

 0  
Segnalazioni

 6  
Foto

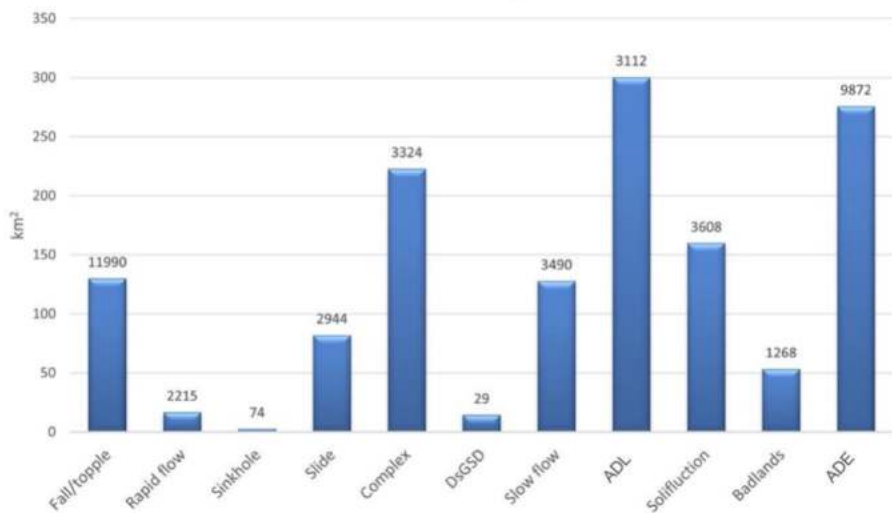
 1  
Video



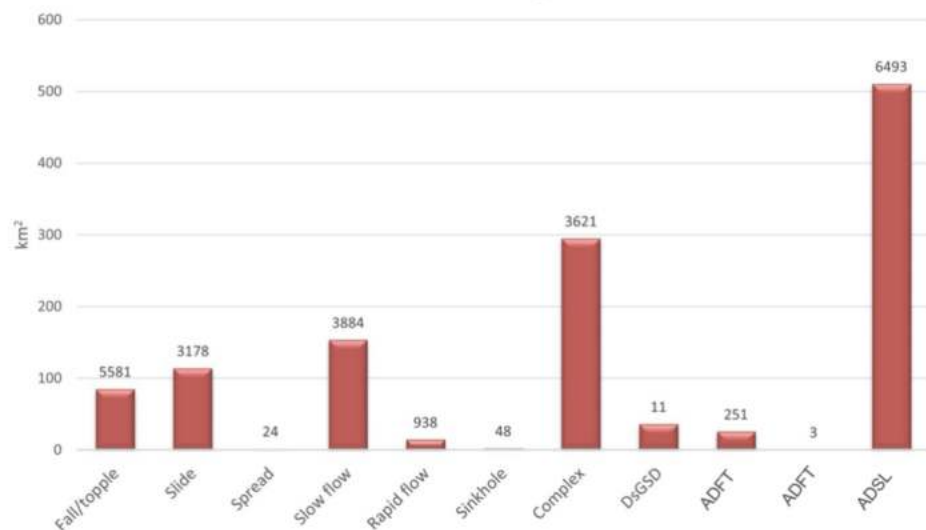


# Analysis of landslide inventory data

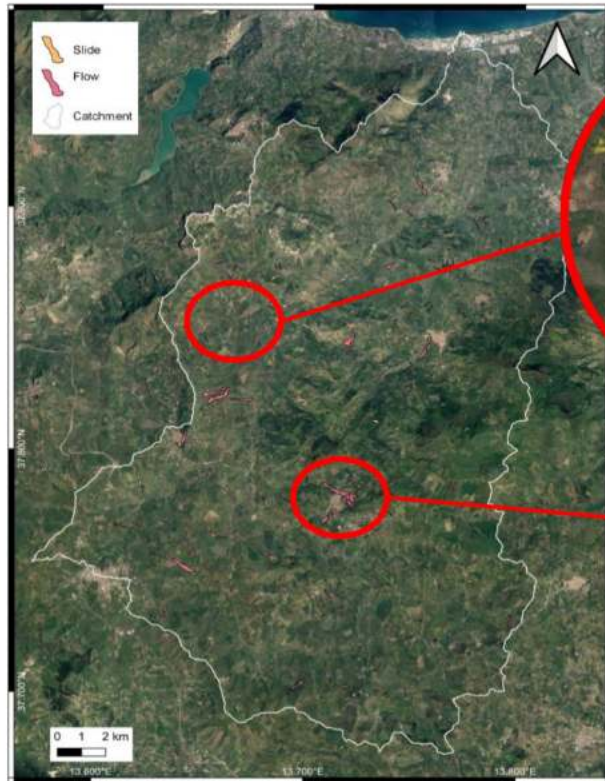
PAI inventory



IFFI inventory

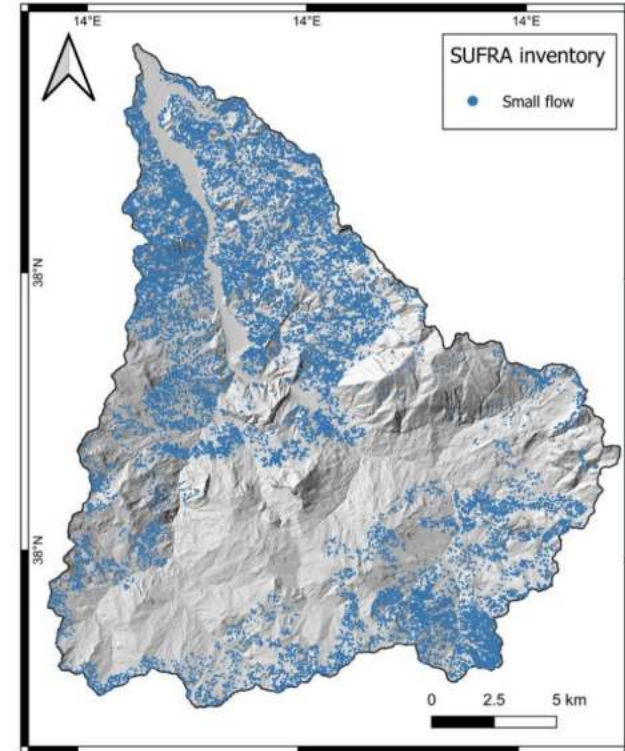
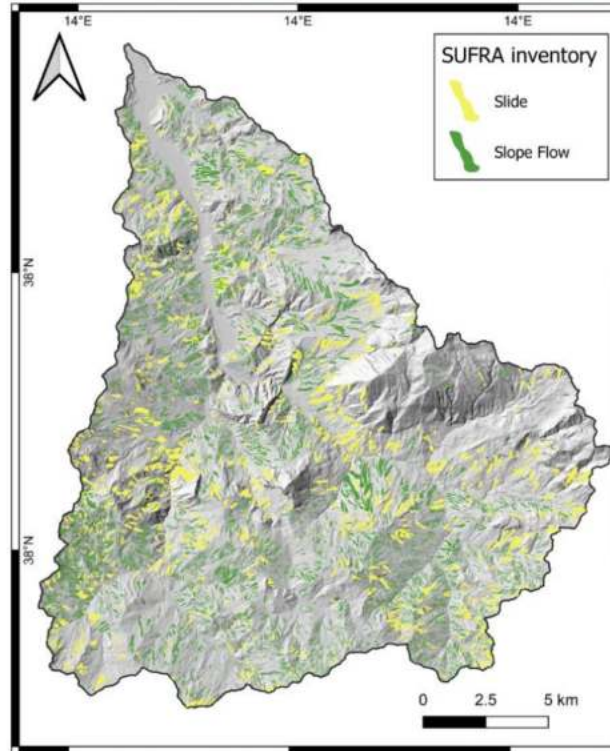
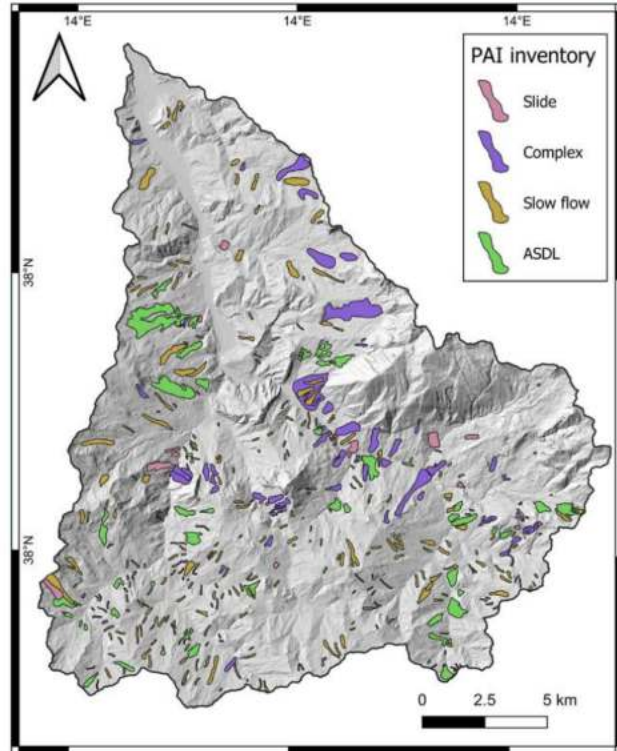


# Analysis of landslide inventory data





# Analysis of landslide inventory data



# Implementation of regional landslide inventories

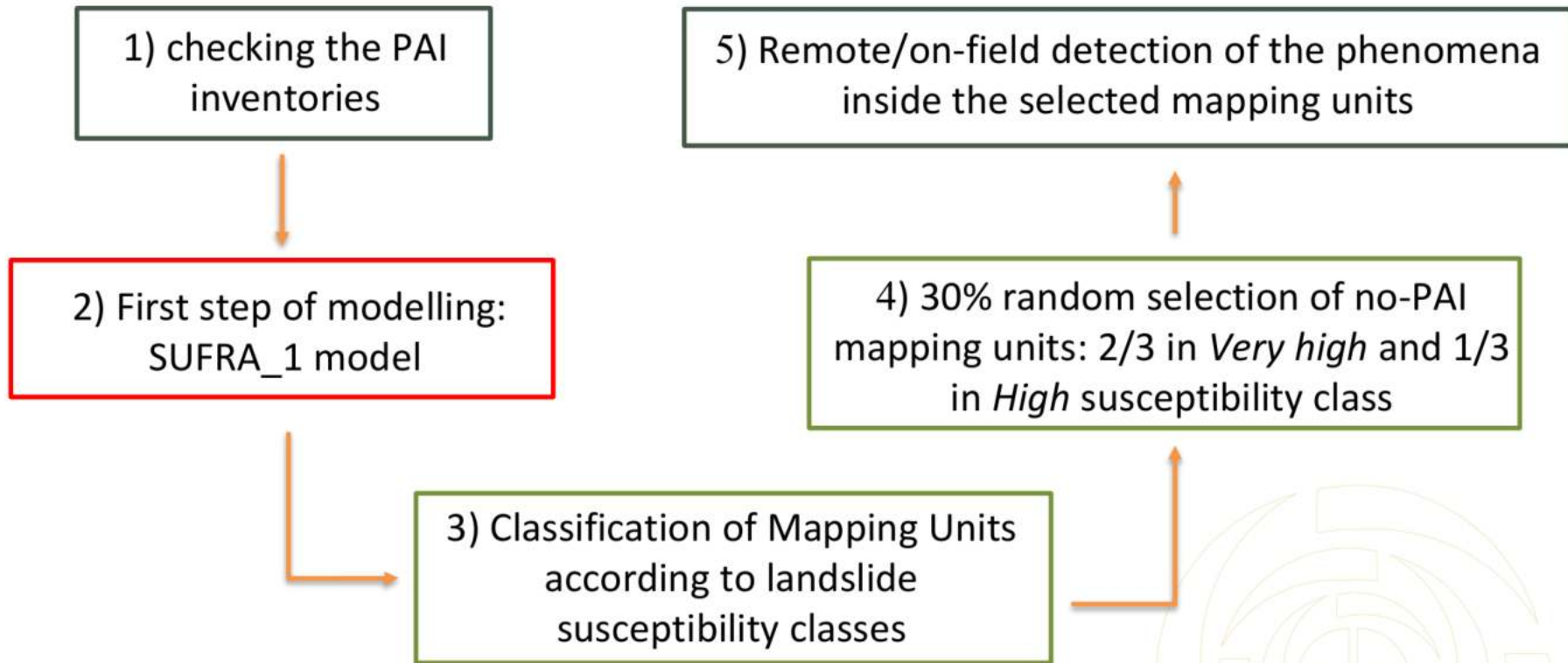


~ 21000 km<sup>2</sup>

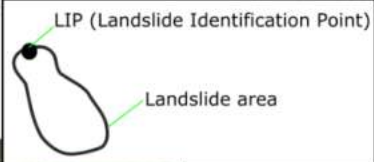
Slide  
Flow  
Rapid flow  
Fall – Topple  
Lateral spread



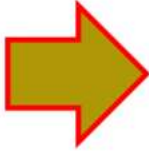
# Implementation of regional landslide inventories



1) checking the PAI inventories

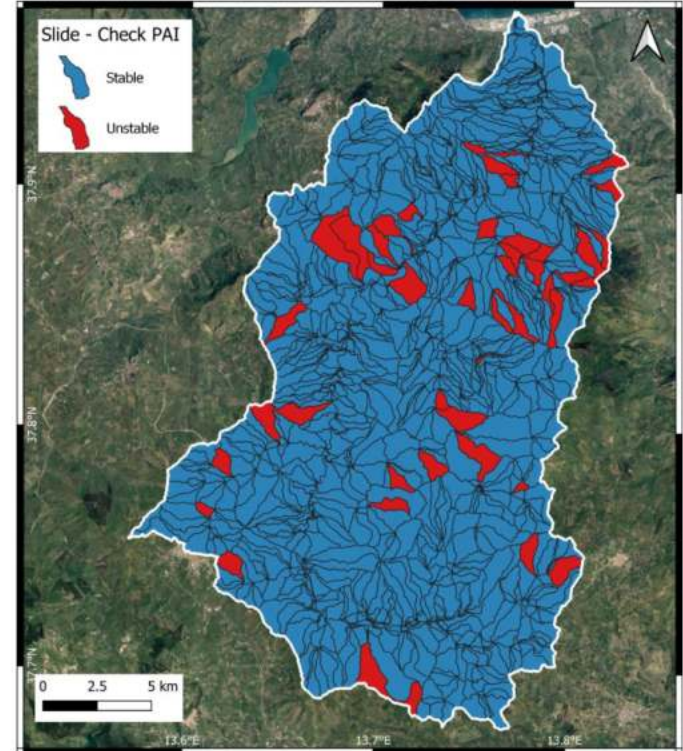
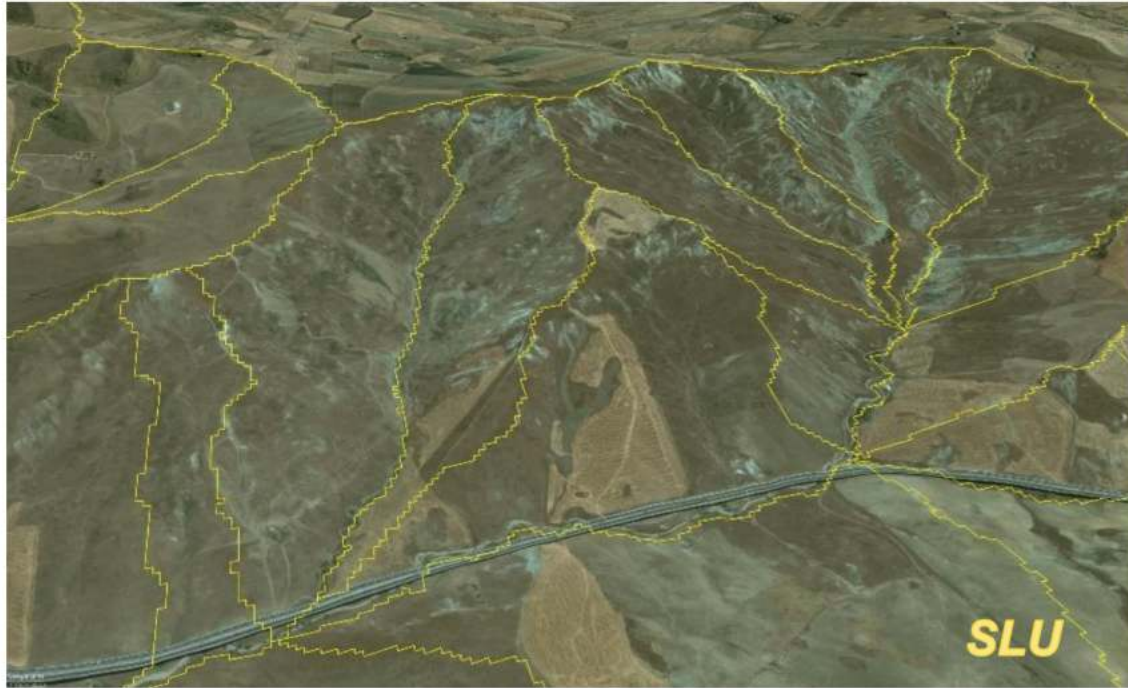


PAI...



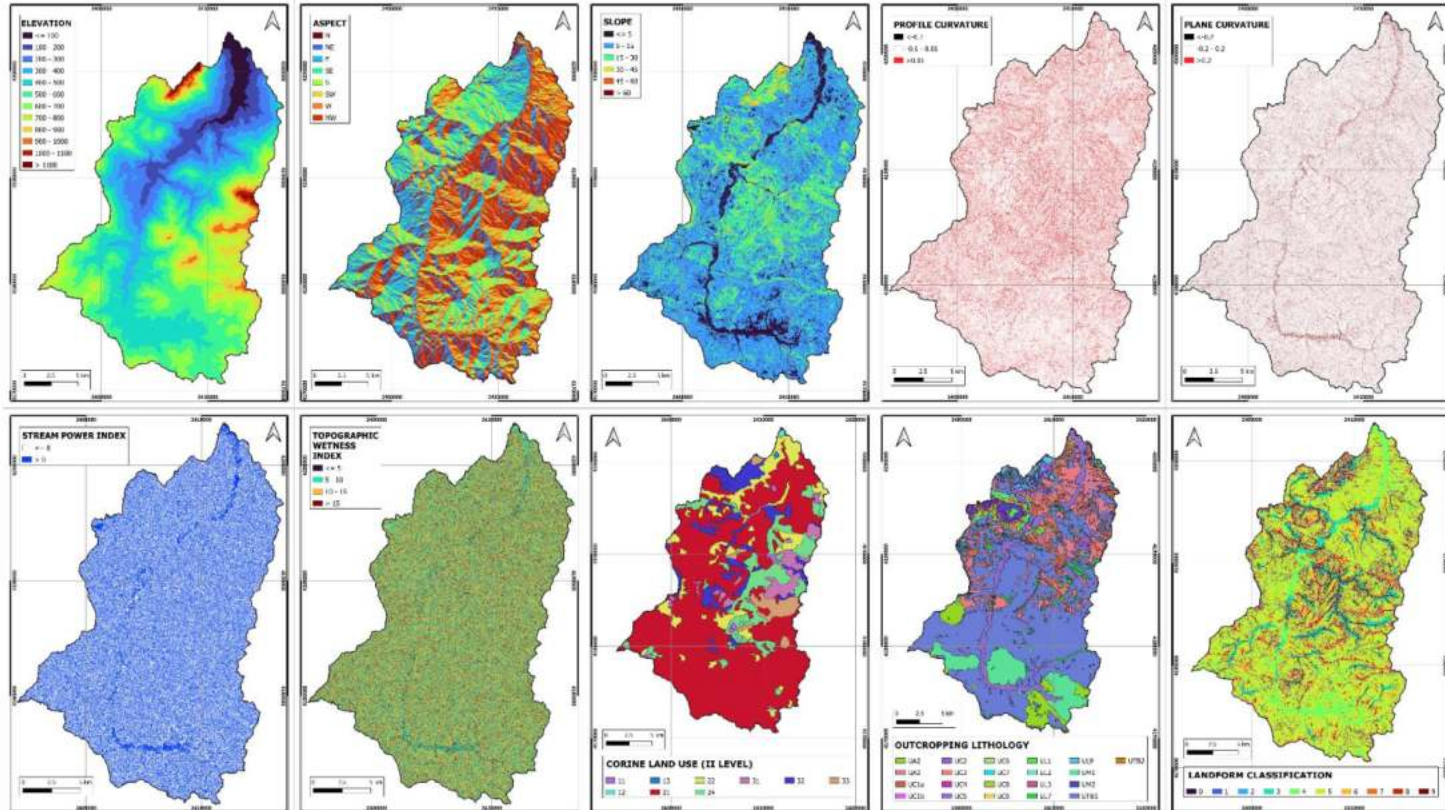
With first check...

# 1) checking the PAI inventories

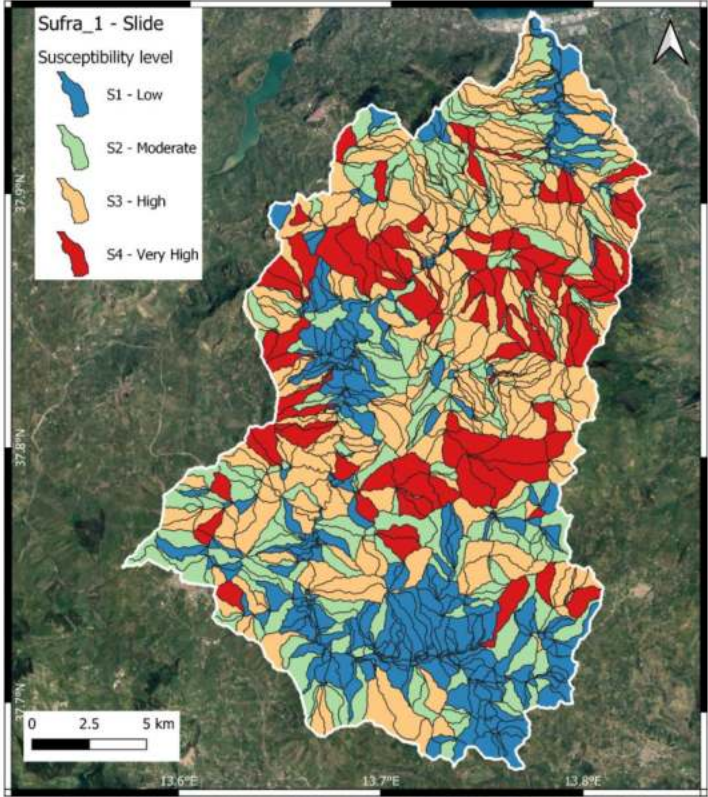
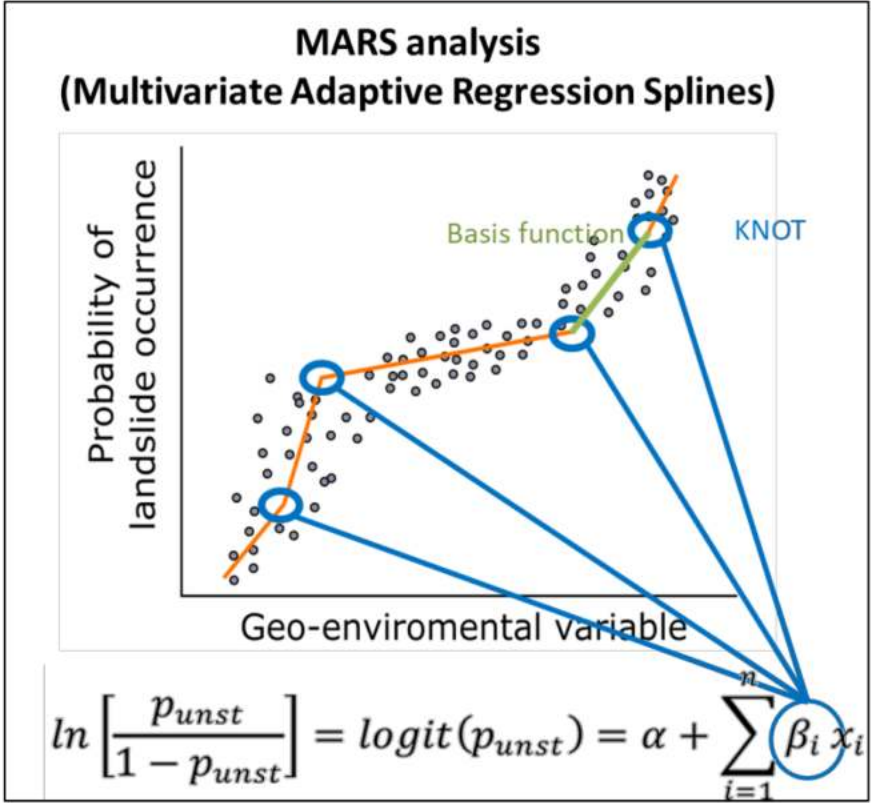




## 2) First step of modelling: SUFRA\_1 model

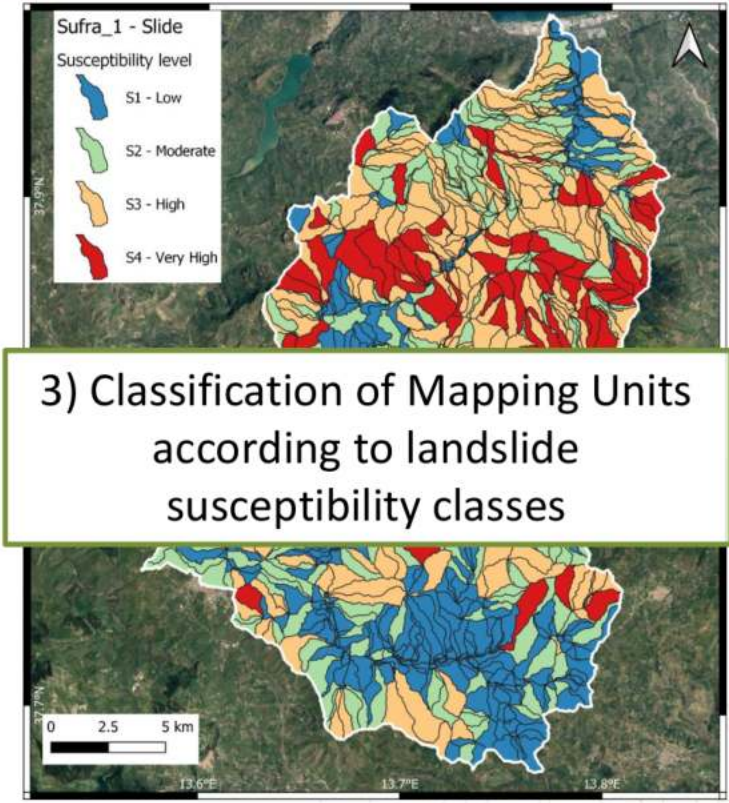
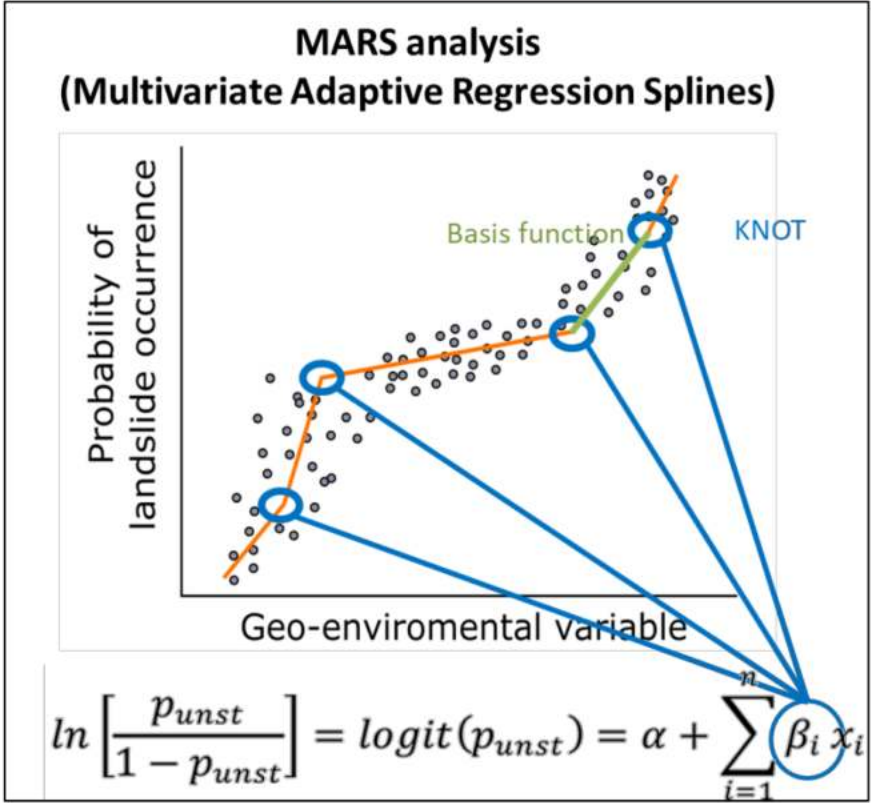


2) First step of modelling: SUFRA\_1 model



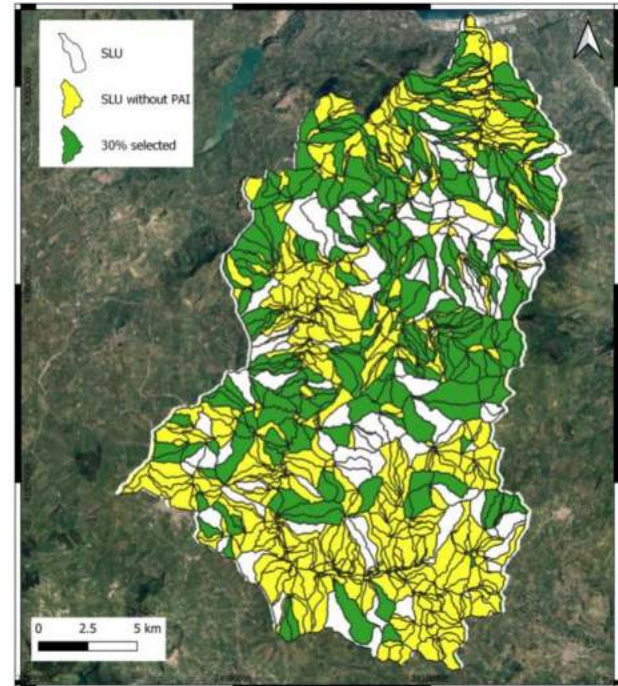
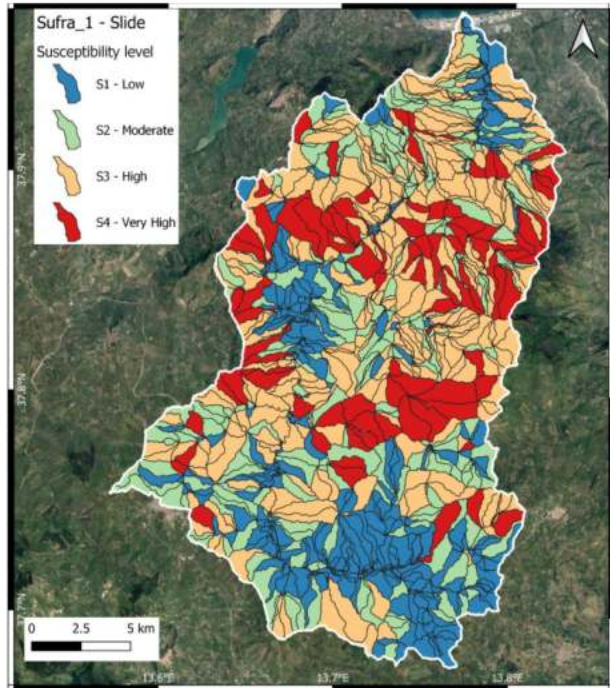


2) First step of modelling: SUFRA\_1 model





4) 30% random selection of no-PAI mapping units:  
2/3 in Very high and 1/3 in High susceptibility class













# Thanks for the attention

<https://geosciences-ir.it>



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