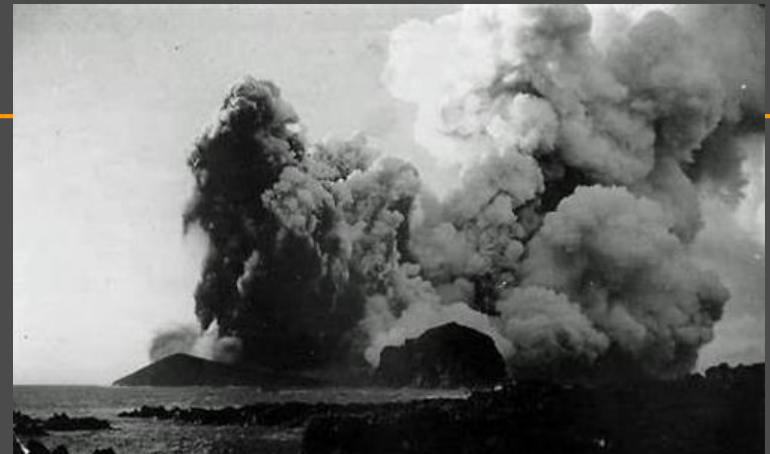


How to prepare for, respond to and recover from an earthquake?

Seismic risk perception in the Azores.

Isabel Estrela Rego
Ana Cristina Palos
Ana Moura Arroiz

University of the Azores



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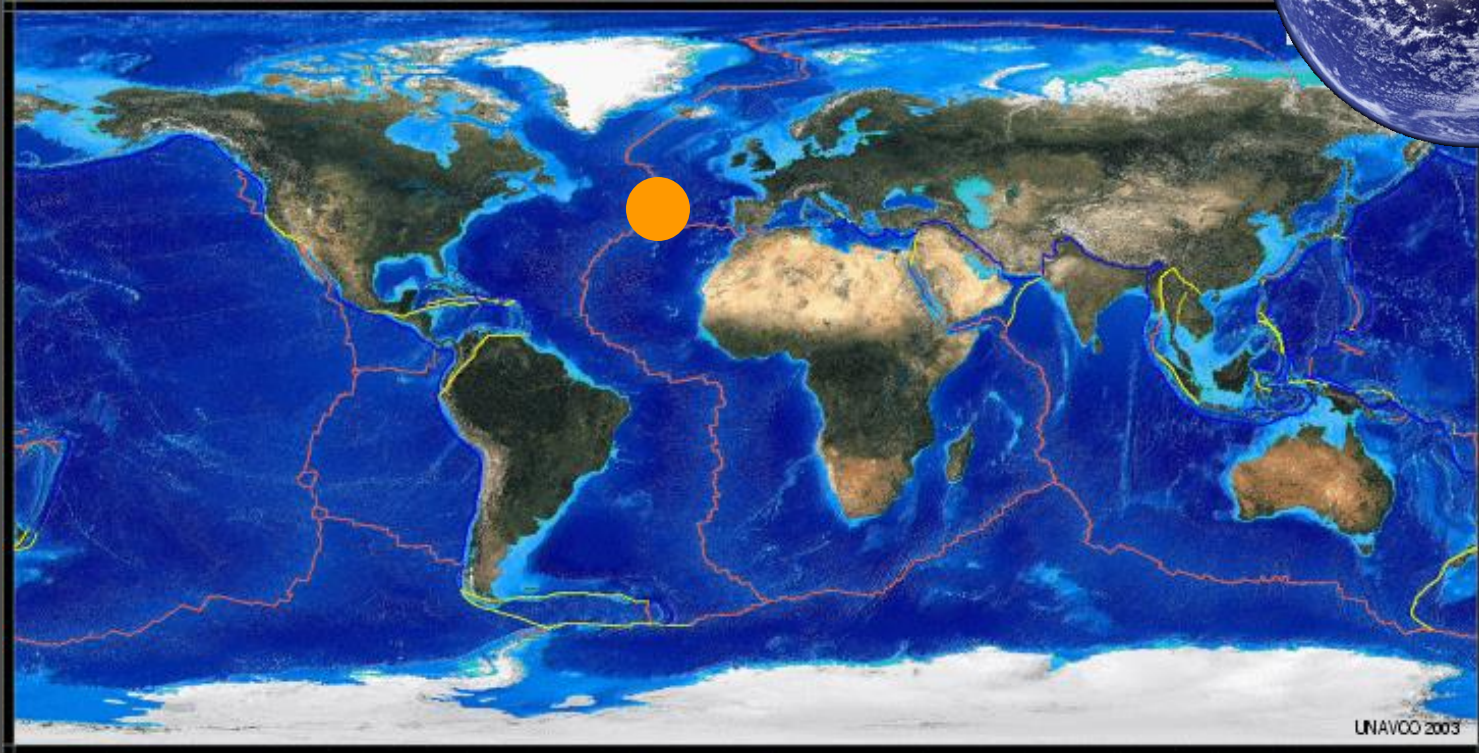


Overview

- The *Topoi Metus Study*
 - geographical & theoretical background and goals
 - methods and phases
 - data and findings
- The construction of an instrument sensitive to the “voice” of lay people



GEODINAMISM OF THE AZORES



The Azores are nine islands, located over a triple junction of three large tectonic plates: the North American Plate, the Eurasian Plate and the African Plate.



Volcanic Eruptions ■

Earthquakes ■

Events with the most serious impacts throughout history.



Earthquakes & Volcanic Eruptions

Earthquakes & Volcanic Eruptions



1957-1958 - Capelinhos Eruption,
Faial island



1980- Earthquake - Terceira,
S. Jorge, Graciosa



1998- Earthquake - Faial, Pico
e São Jorge

- A submarine eruption 1 Km away from the Faial island was active for over a year. To help the victims, United States created specific legislation, and a emigration flow started to take place.
- Mass destruction, 71 deaths, over 400 wounded and 15 000 homeless.
- Mass destruction in many villages in Faial, big landslides on the coastal areas, 8 deaths and over 400 wounded and 1700 homeless.

Recent events in the memory of Azoreans

What is the *scenario* of knowledge on seismic and volcanic risks in the islands?

- Lack of information regarding the social dimension of situations – how people perceive and deal with situations
 - ↓
 - ↓
 - ↓
 - ↓
 - ↓
- Management of risks has not taken into consideration the analysis of the **social and cultural factors** which frame people's perceived risks, their **perceptions**, and their **behaviour** in those risk situations

Research on risk perception and risk communication in the University of the

Azores

since 2006 ...

a multidisciplinary team began to develop:

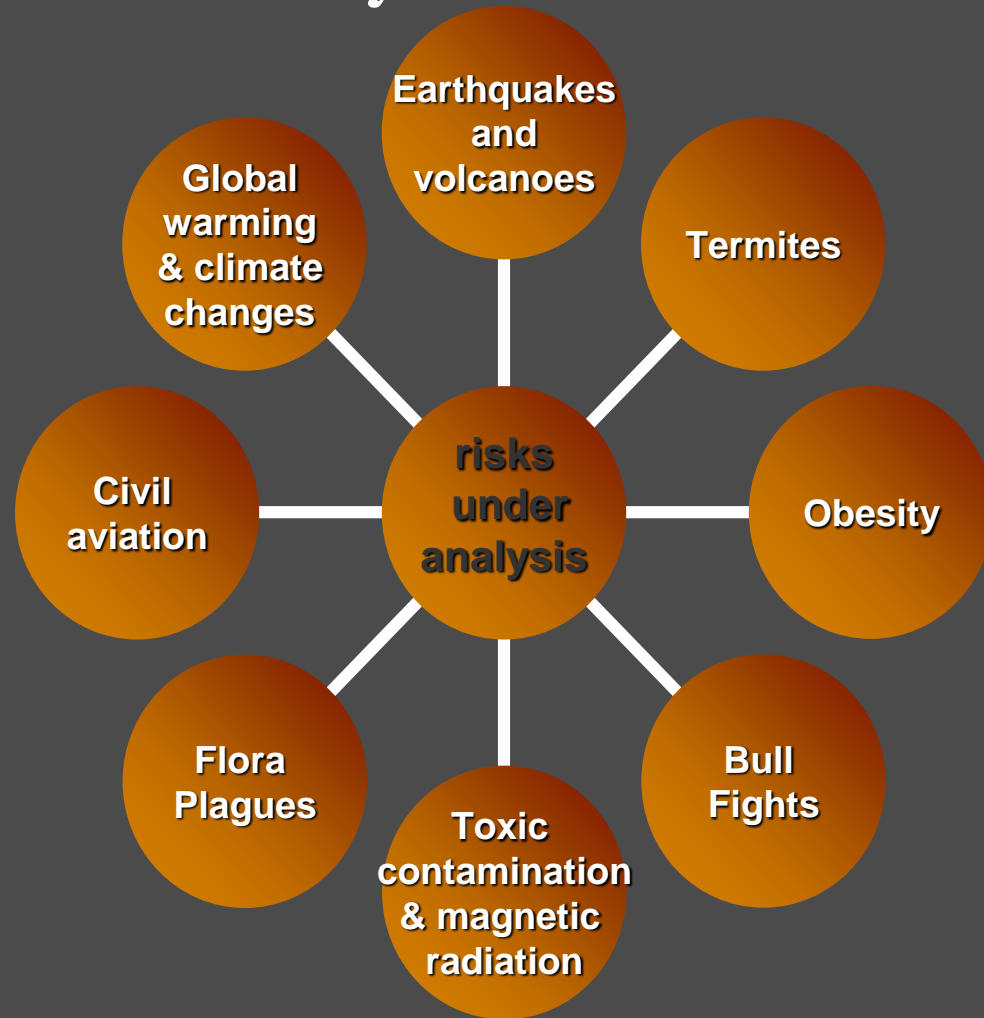
■ Research:

Funded Projects:

- Termipar (DRCT)
- Africa Annes (FCT)
- Topoi Metus (DRCT)

8 Masters' Thesis

■ Masters' degree Program in Environmental Education



The team aims to

- Contribute to bring researchers, decision-makers, the media, and citizens closer in the management of risk situations
 - ... creating knowledge on the social dimension of risk situations;
 - ... creating communication devices to support decision and action regarding the mitigation of risk sources and/or consequences (videos, web, video games, cartoons, flyers, etc)

The *Topoi Metus* Study

- **Phase 1- Exploratory study** - to explore personal narratives of natural disaster situations
 - **Participants – 30**
 - 5 islands: S. Miguel, S. Maria, Terceira, Faial, Flores;
 - 3 age groups: 16-25 (N=10); 26-55(N=10); +56(N=10);
 - gender groups: ♀ (N=15); ♂ (N=15);
 - **Data production:**
 - An Semi-structured Interview – average duration 60 minutes
 - Individual
 - Category system - 6 dimensions / 14 sub-dimensions
- **Phase 2- Construction and validation of a questionnaire**
 - Construction and facial validation
 - Distribution and psychometric study of the questionnaire

CONCEPTUAL DIMENSIONS

- Risk characterization

e.g.: *What causes earthquakes/volcanoes in the Azores?*

- Risk profile evaluation

e.g.: *Have all the islands been equally affected by those natural events?*

- Systems' vulnerability evaluation

e.g.: *Who has been more affected by earthquakes/volcanoes? Has anyone benefited with those events?*

- Risk management - before, during, and after the crisis

e.g.: *What should people do to prepare themselves for earthquakes/volcanoes?*

- Trust – in processes/people responsible for risk management;
in information processes;

e.g.: *How much do you trust the entities involved in crisis management?
Who do you trust more and who do you trust less to inform citizens?
How much do you trust the information given to citizens during a crisis?*

-
- “Who do people trust?”
 - “What forms, strategies, and means of communication do people value most?”

Preliminary data analysis:

strategies and means
do people value most

1. sensitive to

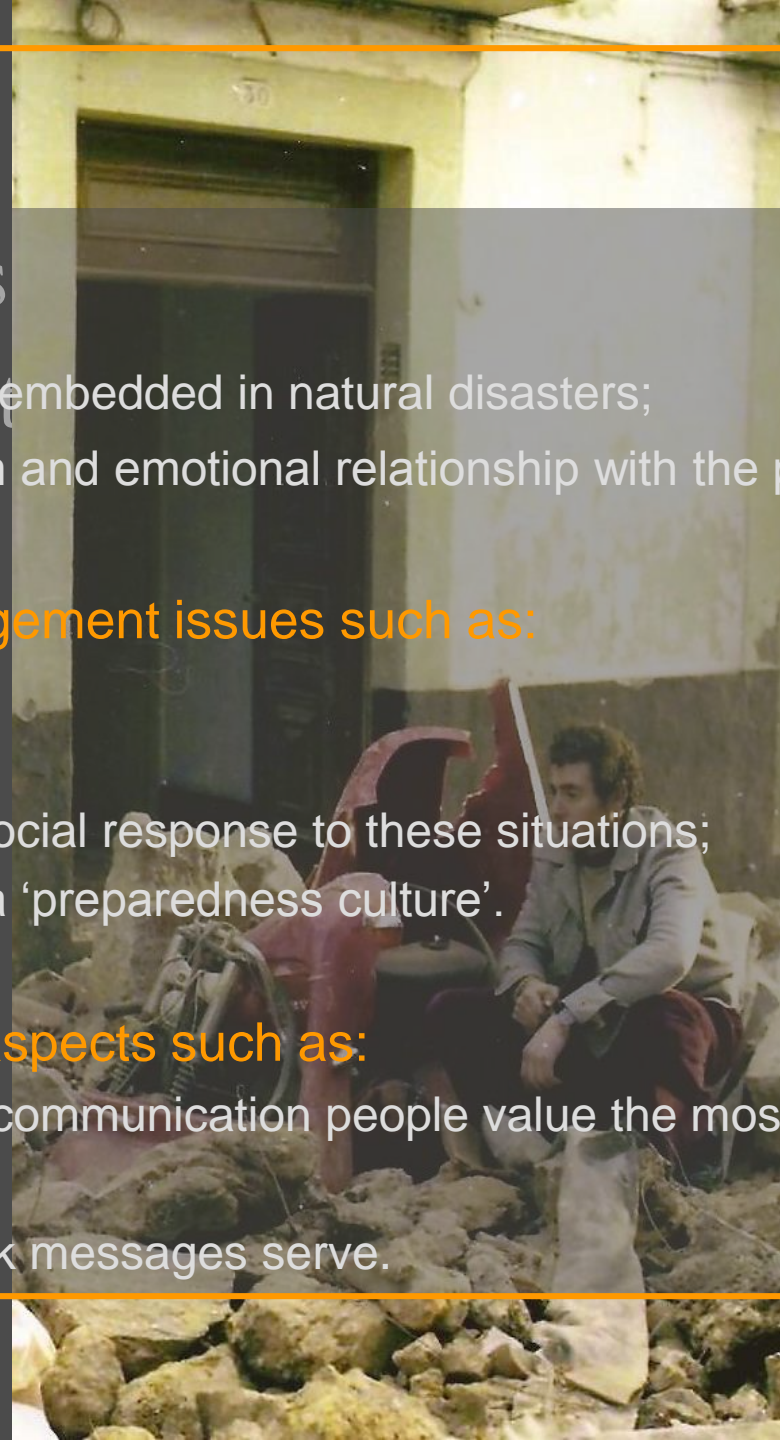
- the Azorean context;
- the mysticism historically embedded in natural disasters;
- the people's identification and emotional relationship with the place.

2. to characterize risk management issues such as:

- Lack of information;
- Risk behaviours;
- Public evaluation of the social response to these situations;
- People's commitment to a 'preparedness culture'.

3. to clarify communication aspects such as:

- Strategies and means of communication people value the most;
- Public trust;
- What functions should risk messages serve.



- Na sua opinião, a informação que tem sobre sismos/erupções vulcânicas e a forma de se preparar/proteger para eles é muita, razoável, pouca ou nenhuma?
- Mas é suficiente ou insuficiente (para as suas necessidades)?
- Onde é que aprendeu aquilo que sabe sobre sismos/erupções vulcânicas e a forma de se preparar/proteger deles?

Preliminary data analysis: *Systems' vulnerability*

- Who was more negatively affected?
 - the most socially disadvantaged: aged and psychologically vulnerable persons;
 - the owners of vulnerable houses;
- Major losses:
 - Lives
 - Material - houses and property
 - Patrimony
 - Psychological/emotional
- Who benefited with earthquakes?
 - Nobody
 - Construction companies; people who get improvements in their property; people who get a new house; the most disadvantaged to the most well-off, official and non-official intermediaries; the Government.
 - Everybody

Preliminary data analysis: Risk management

- What impressed/'touched' interviewees the most?

Solidarity among people

Interpersonal conflicts resolution

- What is done by authorities/entities (e.g. Government, Civil Protection, experts, schools)?



Before a crisis, to prepare citizens: **Nothing**;



During and **after** a crisis: Ok; The Government does its share; things work because **people help each other** (TER/FAI);

- What is done by the person him/herself?

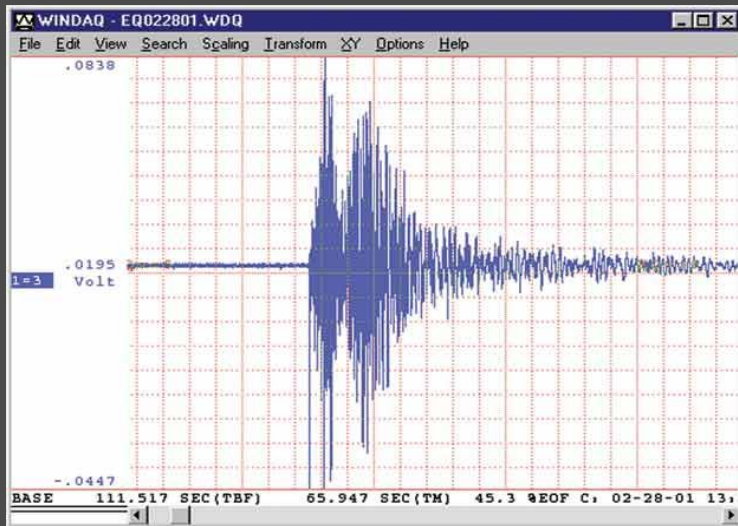


A sense of not needing more information to be better prepared, to become more resilient to crisis and crisis impacts



There is not a 'culture of precaution'

Preliminary data analysis: Public Trust



Regional Government; Local Government; Civil Protection; Fireman; Military Forces; Health System; Scientists

People do trust others...

... official and non official entities, regarding:

- Risk/crisis communication
- Risk/crisis management

Public Trust - crisis management

Trust in authorities/entities during an earthquake crisis

- a. Yes, I do basically trust people;
- b. Yes, particularly the fireman, because they have knowledge on these matters;
- c. Yes, they want to do their best;
- d. Yes, they have already proved to be able to manage appropriately similar situations;
- e. Yes, if there is a disaster the different entities – military, Government and NGOs - joint themselves and come to rescue and to help;
- f. Yes, they have the responsibility and the obligation to act in the best interest of citizens.

- g. I want to believe them, but I am not sure to what extent they tell us the truth;
- h. I basically do not trust them, but I may change my mind if it is someone fair and honorable

- i. No, most of the time they do not know about what they are talking about when they talk on TV or on the radio.
- j. No, we cannot trust anybody anymore.
- k. No, in those situations the authorities, specially the political parties, have an opportunistic attitude.
- l. No, they do not really care to help people.

- a. [I don't understand it; None of these alternatives corresponds to my perspective]

-
- In an earthquake situation, how much do you trust the following entities to deal with the crisis?

THANK YOU!



Pico

A volcano that stands 2,351 meters (7,713 ft) high

Pico Island - Azores

The highest place of Portugal

Volcanic Status: Active

(photo by Eduardo Tereso)

Preliminary data analysis: *Place attachment*



Strong attachment to the living place

- **Social - Emotional Reasons:**
 - birth place;
 - life history;
 - interpersonal relationships;
 - beauty;
- **Material/Quality of Life Reasons:**
 - owning a house;
 - having facilities near the house;
 - knowing the place;