

# Taking decisions in an environment of uncertainties, are we ready?

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January 13th 2020




**PROTEZIONE CIVILE**  
Presidenza del Consiglio dei Ministri  
Dipartimento della Protezione Civile

# Managing uncertainty in a highly-technological world





# Fax vs. Twitter



[Redacted]

Deputy Head of Delegation

**European Union**

Delegation of the European Union to [Redacted]

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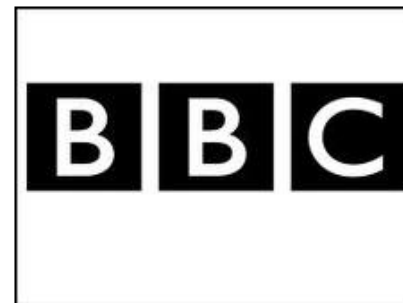
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Email: [Redacted]

Website: <http://eeas.europa.eu/delegations/> [Redacted] | Twitter: @EUin [Redacted]

# Masters of technology: The Media





# Could technology have saved lives in South-East Asia's tsunami (December 2004)?

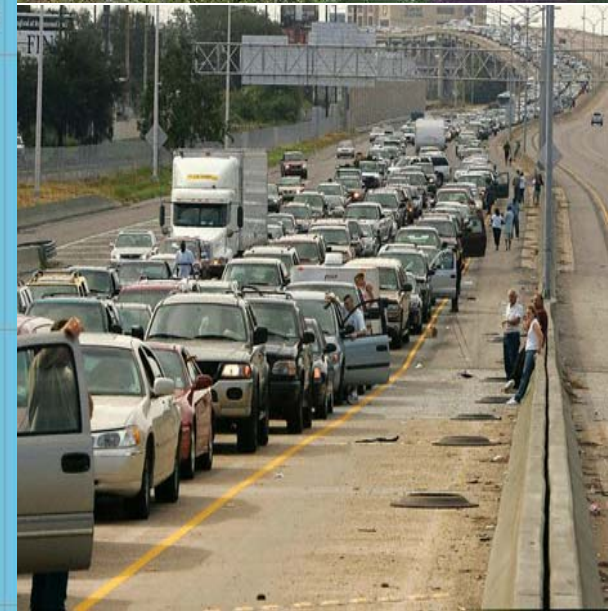
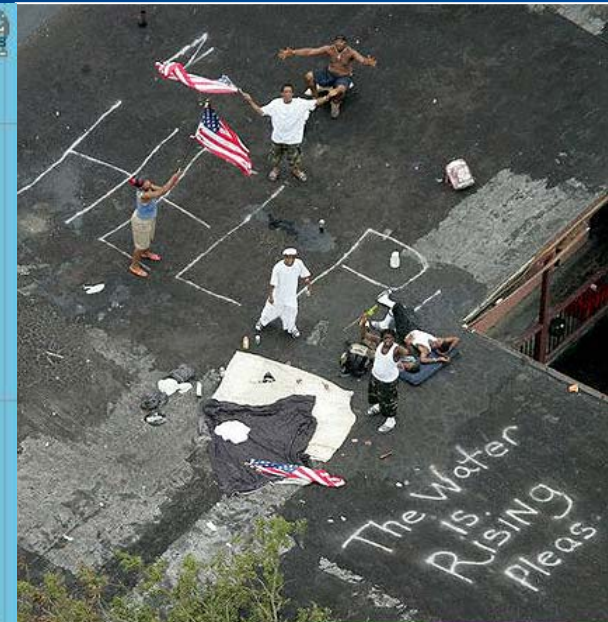
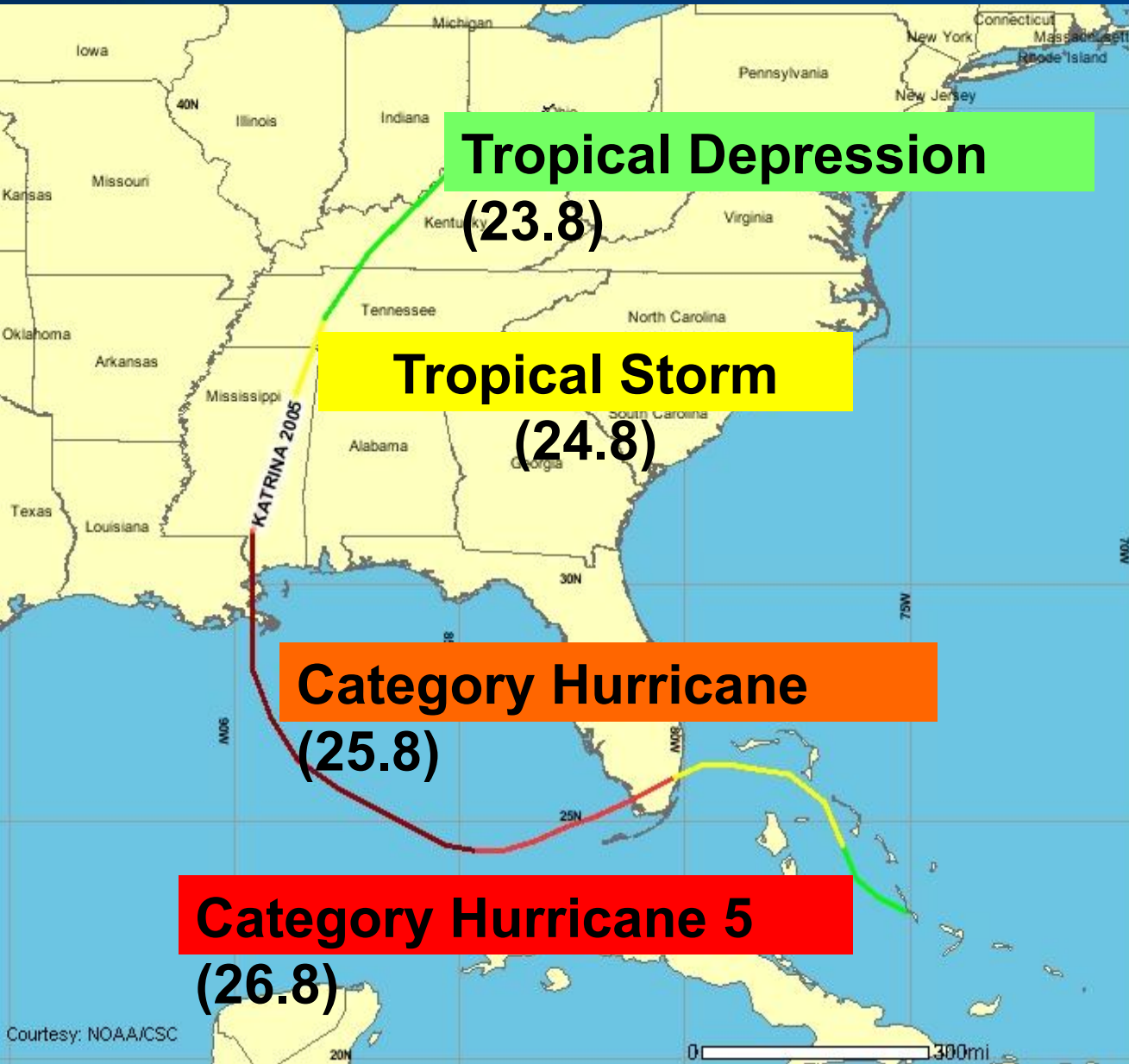


# Could technology have saved lives in South-East Asia's tsunami (December 2004)? - 2





# ...and could technology have saved lives in Hurricane Katrina in USA (August 2005)?



# What is the civil protection's mandate?

*“To safeguard human life, health, goods, national heritage, human settlements, animals and the environment from both natural or man-made disasters”.*



**NATIONAL COMMITTEE FOR THE FORECASTING  
AND PREVENTION OF MAJOR RISKS**

It is the **SCIENTIFIC TECHNICAL CONSULTATION  
BOARD** of the National Department of Civil Protection

**5** Risk areas:

**Volcanic  
Risk**

**Seismic Risk**

**Chemical,  
Nuclear,  
Industrial and  
Transport  
Risk**

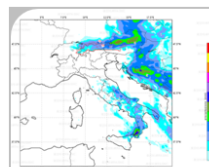
**Environment  
and Forest  
Fire Risk**

**Meteo, Hydro-  
geological,  
Hydraulic and  
Landslide  
Risk**



**MONITORING ACTIVITIES CENTER  
HYDRO-METEOROLOGICAL SECTOR**

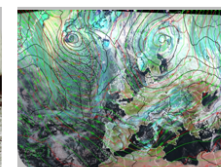
It is the **Monitoring Activities Centers network Hub**



**FORECASTING**



**HYDRO-  
GEOLOGICAL**



**WEATHER/METEO**



**MONITORING**



# DISASTER CYCLE MANAGEMENT AND MAIN ACTIVITIES

## FORECASTING

Risk scenario  
identification and study

## OVERCOMING EMERGENCY

Resumption of  
normal living  
conditions



## PREVENTION AND PREPAREDNESS

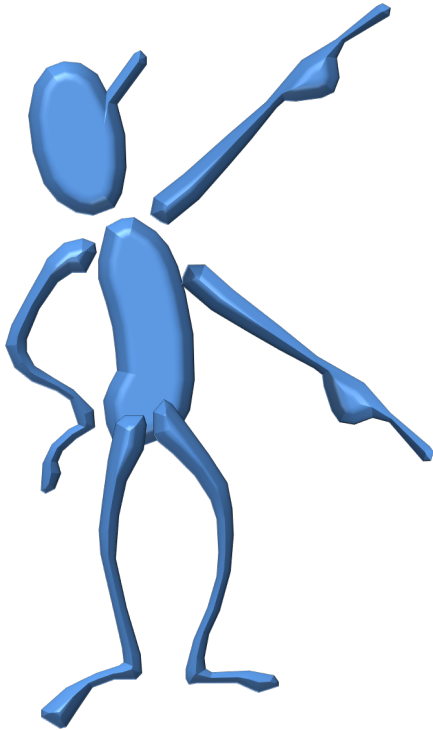
Risk reduction

## EMERGENCY MANAGEMENT

Relief and assistance

# SCIENCE AND TECHNOLOGY to be translated into right decisions

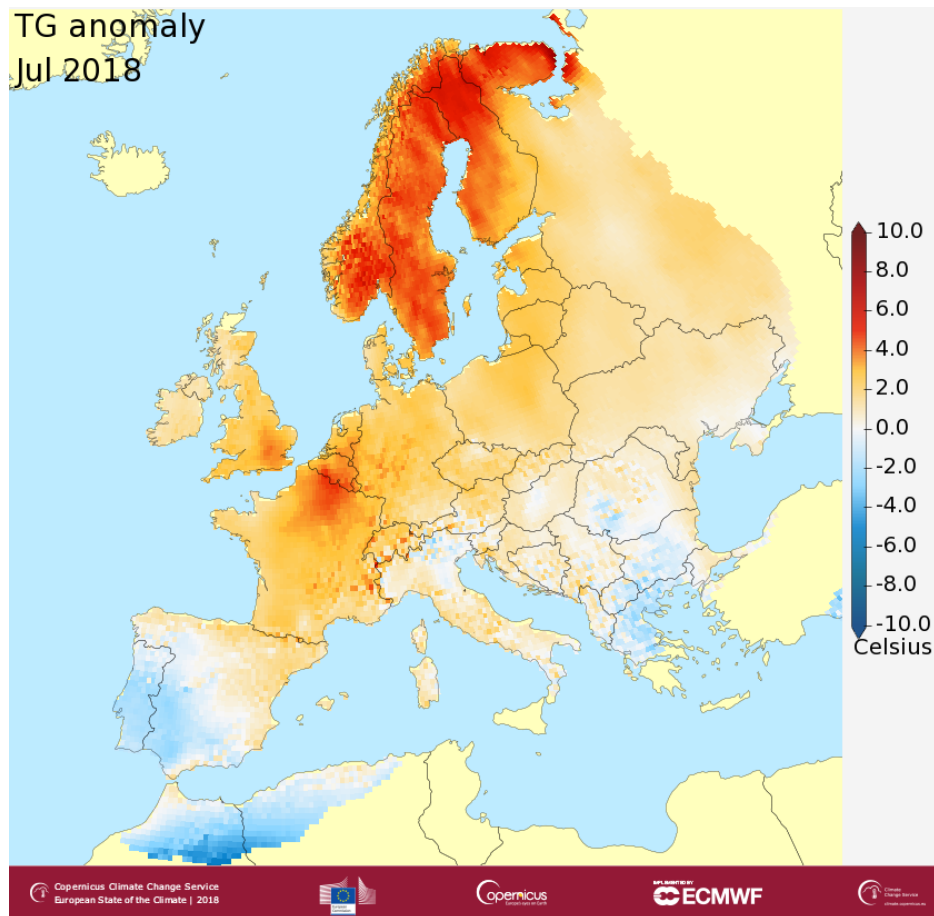
## KEY ASPECTS



- Risk assessment - awareness and knowledge of both natural and man-made risks affecting territories
- Integrated territorial planning and urban resilience
- Planning and governance



# Extraordinary forest fires (Sweden, 2018)



Mean temperature anomaly for July 2018 with respect to 1981-2010. Data source: E-OBS.  
Credit: Copernicus Climate Change Service (C3S)/KNMI.

# California: massive wildfires raging across the state every year





# Devastating fires season in Australia (ongoing)

The Sydney Morning Herald

SUBSCRIBE

EXCLUSIVE NATIONAL BUSHFIRES

## Teenager among 180 people facing legal action this bushfire season



# Was it possible to forecast Hurricane Katrina (USA, 2005)? – 2

109th Congress  
2nd Session

SPECIAL REPORT

S. Rept. 109-322

## HURRICANE KATRINA: A NATION STILL UNPREPARED

SPECIAL REPORT  
OF THE  
COMMITTEE ON HOMELAND SECURITY  
AND GOVERNMENTAL AFFAIRS

UNITED STATES SENATE  
TOGETHER WITH  
ADDITIONAL VIEWS



Printed for the Use of the Committee on Homeland Security and Governmental Affairs  
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Cover Photo: Helicopter Rescue, New Orleans (Courtesy of U.S. Coast Guard)

Special Report  
of the US  
Senate on  
Katrina  
Hurricane  
disaster  
management



# Was it possible to forecast Hurricane Katrina (USA, 2005)? – 3

response to Hurricane Katrina, especially in Louisiana. Therefore, there was widespread dissatisfaction with the level of preparedness and the collective response. As events unfolded in the immediate aftermath and ensuing days after Hurricane Katrina's final landfall, responders at all levels of government—many victims themselves—encountered significant breakdowns in vital areas such as emergency communications as well as obtaining essential supplies and equipment.

The causes of these breakdowns must be well understood and addressed in order to strengthen the nation's ability to prepare for, respond to, and recover from major catastrophic events in the future—whether natural or man-made. Unfortunately, many of the lessons emerging from the most recent hurricanes in the Gulf are similar to those GAO identified more than a decade ago, in the aftermath of Hurricane Andrew, which leveled much of South Florida in the early 1990s. For example, in 1993, we recommended that the President designate a senior official in the White House to oversee federal preparedness for, and response to, major catastrophic disasters.

There are several key themes that, based on our current preliminary work, underpin many of the challenges encountered in the response to Hurricane Katrina and reflect certain lessons learned from past disasters. The following three key themes seem to be emerging.

First, prior to a catastrophic event, the leadership roles, responsibilities, and lines of authority for the response at all levels must be clearly defined and effectively communicated in order to facilitate rapid and effective decision making, especially in preparing for and in the early hours and days after the event. As we recommended in 1993, we continue to believe that a single individual directly responsible and accountable to the President must be designated to act as the central focal point to lead and coordinate the overall federal response in the event of a major catastrophe. This person would work on behalf of the President to ensure that federal agencies treat the catastrophe as a top priority and that the federal government's response is both timely and effective. In cases where there is warning, such as the high probability of a major hurricane (e.g., a category 4 or 5), the senior official should be designated prior to the event, be deployed appropriately, and be ready to step forward as events unfold.

Neither the DHS Secretary nor any of his designees, such as the Principal Federal Official (PFO), filled this leadership role during Hurricane Katrina, which serves to underscore the immaturity of and weaknesses relating to the current national response framework. More specifically with regard to the lessons to be learned from Hurricane Katrina:



GAO

U.S. Government Accountability Office

Enclosure I: Statement by Comptroller General David M. Walker on GAO's Preliminary Observations Regarding Preparedness and Response to Hurricanes Katrina and Rita

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# HILP Disasters.

## Fukushima (Japan, 2011)





# Fukushima. Travel advice to Japan by EU MS on 23<sup>rd</sup> March 2011

**Avoid non essential travel**



**Avoid travel completely**



**Avoid non essential travel to the affected areas**



**Avoid non-essential travels to Tokyo**



**Avoid all travel to crisis region**



**Avoid all travel to Tokyo**



**Consider leaving Tokyo and north of Tokyo**



**Leave the country or go to the South**



**Leave Northeastern regions**



**Evacuation radius: 80 km**



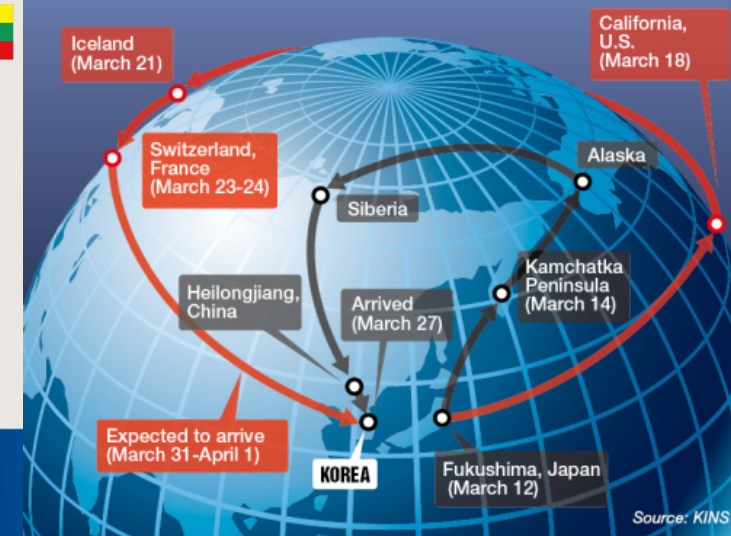
**Evacuation radius: 120 km**



**Advice to travel by commercial means**

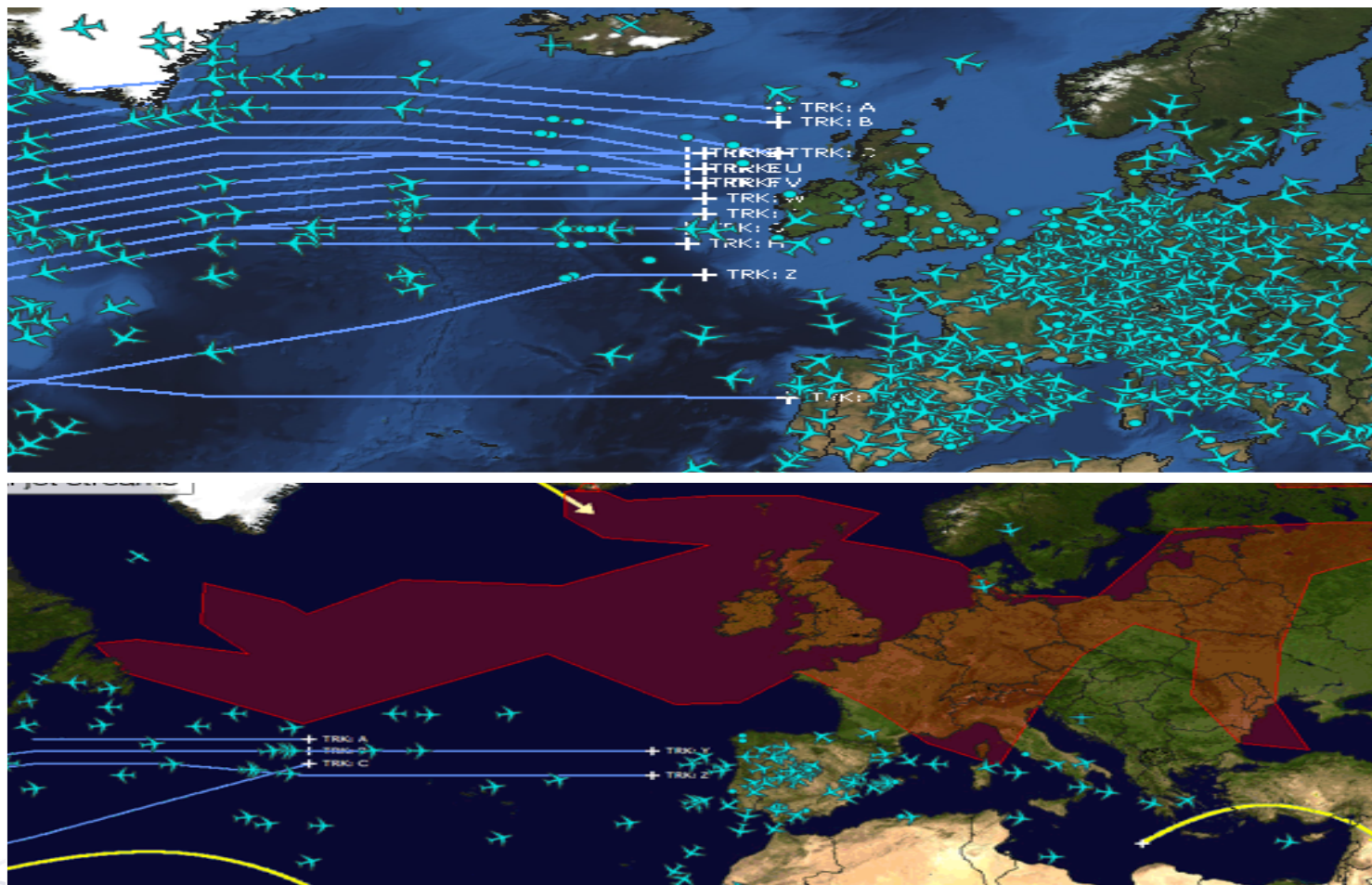


## Moving path of radioactive substance leaked from Fukushima nuclear power plant



## HILP Disasters.

# THE EYJAFJALLAJOKULL VOLCANO (Iceland, 2010)





# CIVIL PROTECTION OPERATIONAL COMMITTEE

*Scientific advice  
+ common situational awareness*

Activated in case of a state of emergency at national scale

Convened at the Headquarter Office of the Department of Civil Protection in Rome

It ensures an efficient and coordinated management of all relief operations in response to a national scale emergency.

DECISION-MAKING



**DECISIONS**

# ORGANISATIONAL STRUCTURE DURING AN EMERGENCY

**President of  
the Council  
of Ministers**

**Italian Civil  
Protection  
Department**

**NATIONAL AND  
REGIONAL  
VOLUNTEER  
ORGANIZATIONS**

**ALL MINISTRIES**

Interior

Foreign Affairs and International  
Cooperation

Environment, Protection of land and sea

Health

Economy and Finance

Defence

Economic development, employment,  
welfare

Infrastructure and Transportation

Education , University and Research

Agriculture and Forestry Departments

Cultural heritage and activities

Justice

Regions

Inter-municipal level

Municipalities

Fire Department

Police

Prefectures

ANPA

118

Financial Police

Army

Navy

Air Force

Carabinieri

GRTN

Coastal Guard

ANAS

Highway companies

Railway system

INGV

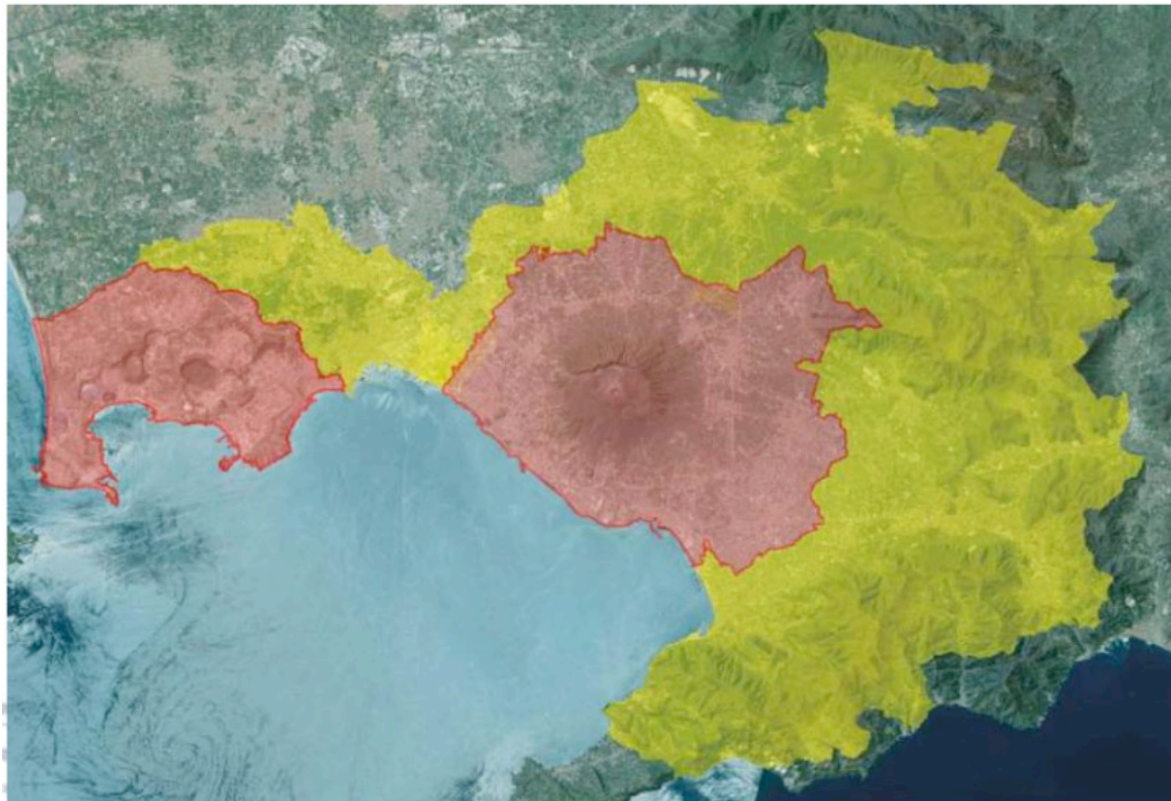
CNR

Other research Institutes

Professional Orders

Local Police

# Vesuvius and Campi Flegrei planning zones



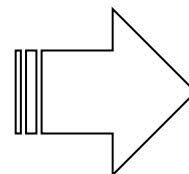
Planning zones	Municipalities	Population
Red zone Vesuvius	25 municipalities	670.000
Red zone Campi Flegrei	7 municipalities	500.000
Yellow zone Vesuvius	63 municipalities	850.000
Yellow zone Campi Flegrei	7 municipalities	840.000
-	102 municipalities	2.860.000

N. of people to  
evacuate within  
72 hours in case  
of alert



# Alert levels and Operational phases

<b><i>ALERT LEVEL</i></b>	<b><i>VULCANO STATUS</i></b>
<b>GREEN</b>	No significant change in monitored parameters
<b>YELLOW</b>	Significant change in monitored parameters
<b>ORANGE</b>	Further variation of monitored parameters
<b>RED</b>	Appearance of phenomena and/or trend of monitored parameters indicating a pre-eruptive dynamic
	Event in progress



<b><i>OPERATIONAL PHASE</i></b>
<b>BASE</b>
<b>I ATTENTION</b>
<b>II PRE-ALARM</b>
<b>III ALARM</b>
<b>IV EVENT IN PROGRESS</b>

1944

## An Italian example



2019







*Thanks for your attention*