



from élites to collaboration

towards a resilient approach to natural hazards analysis & emergency management

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Framework

Hyogo Framework for Action

Global Platform for Disaster
Reduction, GENEVA

Global Risk Forum, DAVOS

Citizens as Sensors
[Goodchild]

“Disaster Relief 2.0”, UN
Foundation, Vodafone
Foundation, Harvard
Humanitarian Initiative, OCHA

Onegeology

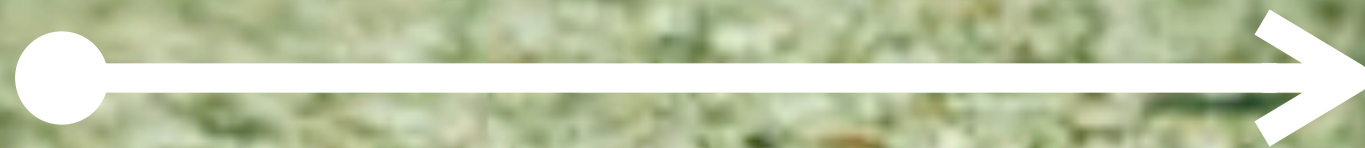
International Conference on
Early Warning



Decreasing Vulnerability

FROM
War against hazards

TO
Preparedness

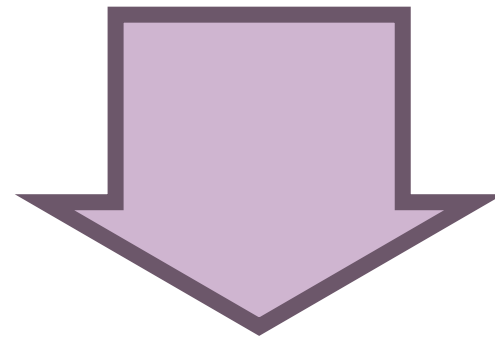


RESILIENCE



Redefining Risk

$RISK = Hazard \times Vulnerability \times Exposure$



$Risk = \frac{Hazard \times Vulnerability \times Exposure}{Resilience \text{ or coping capacity}}$

CFR. UNISDR – MAKE YOUR CITY RESILIENT

From Protection to Resilience

Collaboration/Shared Knowledge/Openness

Focus
Vulnerability

Focus
Preparedness



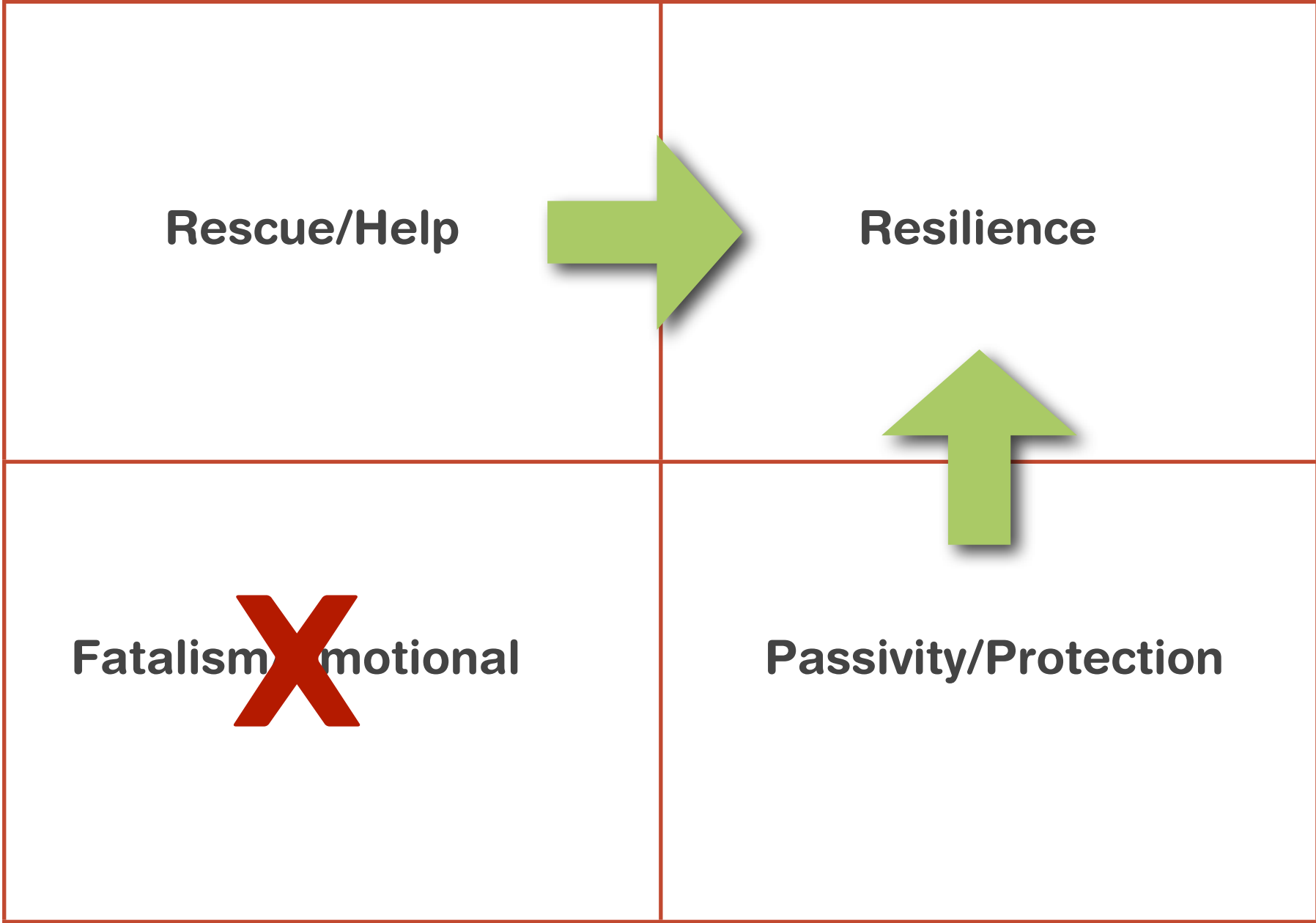
Knowledge Elites/ Knowledge Divide

From Protection to Resilience

Collaboration/Shared Knowledge/Openness

Focus
Vulnerability

Focus
Preparedness



Knowledge Elites/ Knowledge Divide

Web 2.0 Key Words

A composite image of a person's face with a world map overlay, symbolizing global connectivity. The person's eyes are green and looking forward. The world map is in shades of blue, green, and yellow, with the person's face appearing as if it's a map of the world.

#sharing

#collaboration

#communication

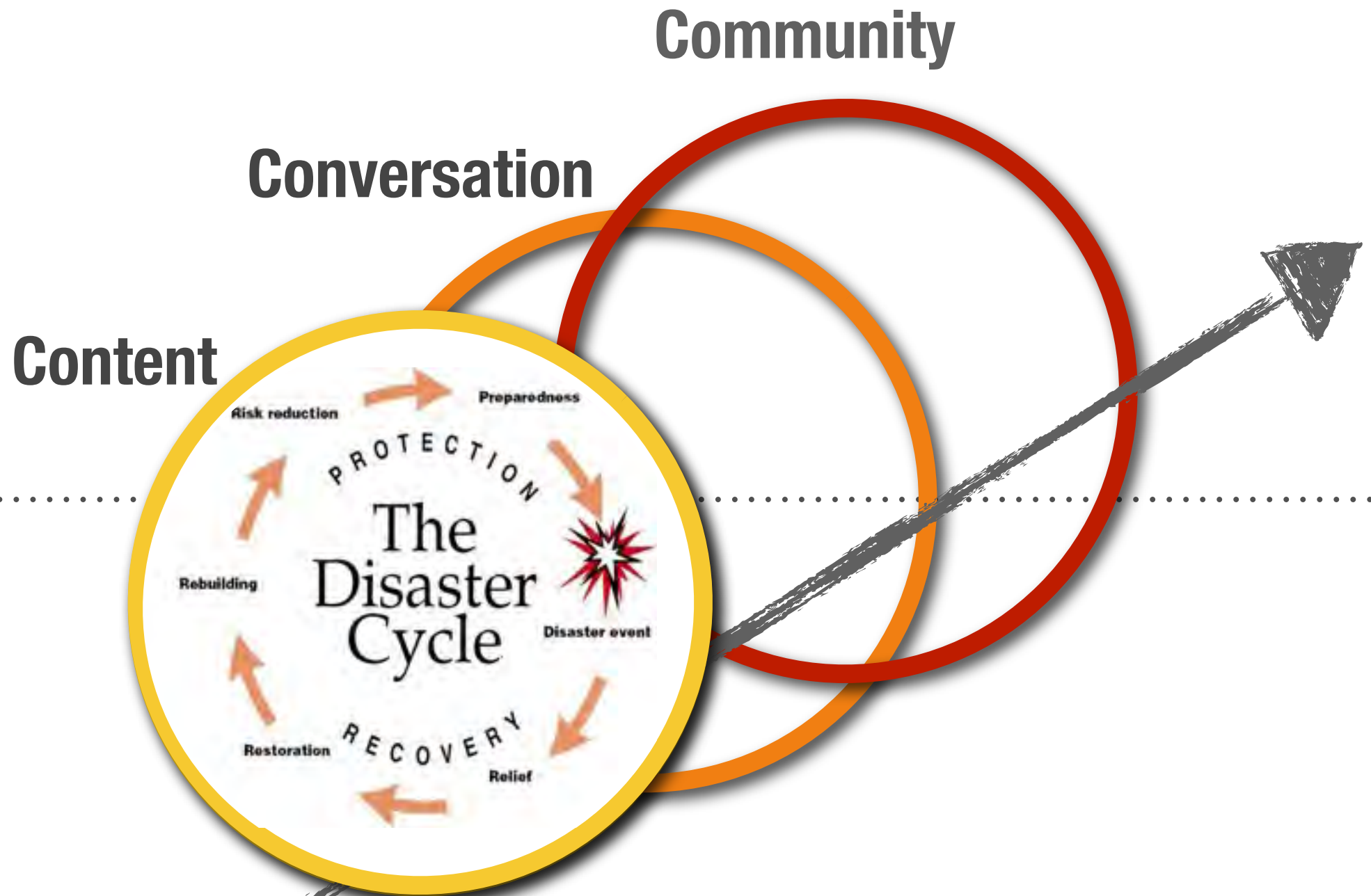
#cooperation

#open [source/data/government]

#social [& inclusion] - e.g. #diversity

100% Controlled by stakeholders/customers

POST-GUTENBERG WORLD ASSETS



100% controlled by you/insitution/organization

Resilient Ecosystem [ideal]



Resilient Ecosystem [ideal]



Resilient Ecosystem [ideal]

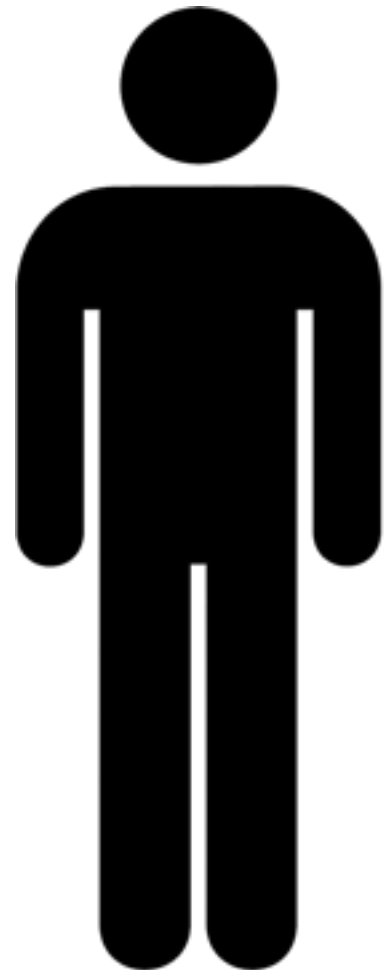


Resilient Ecosystem [ideal]



The Challenge: Citizens as Sensors

People\Users\Citizens\Volunteers.....



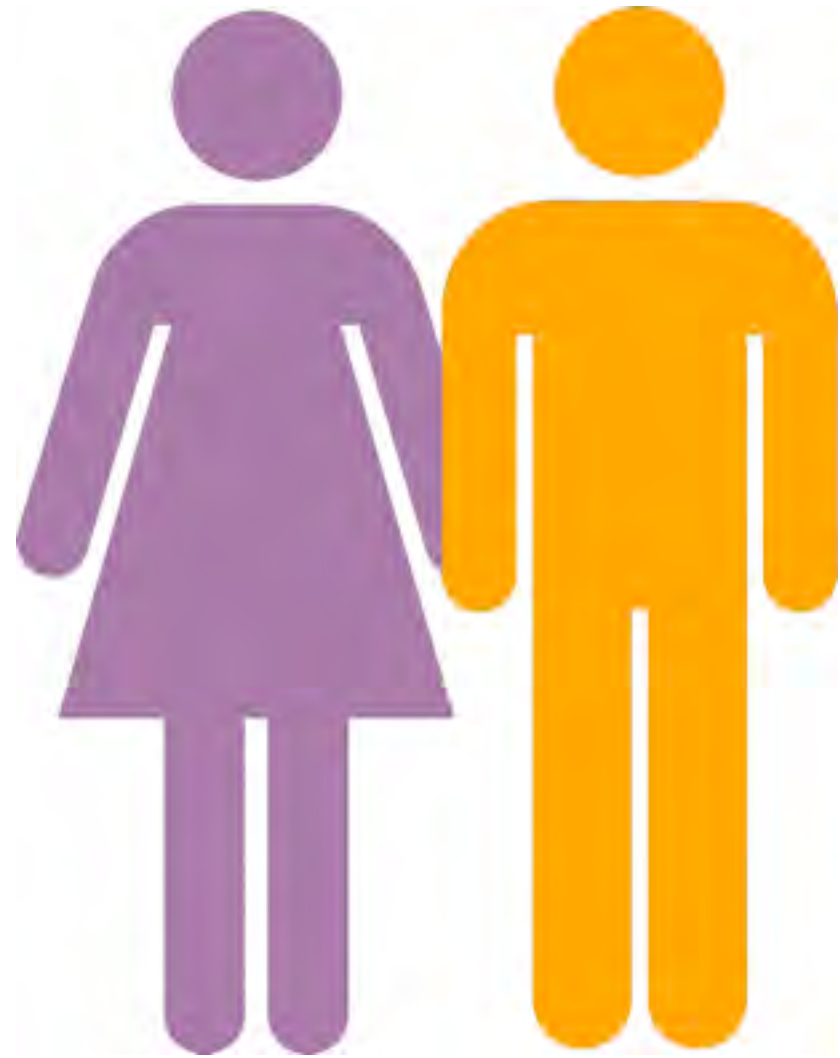
«emotional» participation



proactive collaboration



The Challenge: Citizens as Sensors



The “Did you feel it” Model

e.g. INGV, GIS Corps...

“Social” Feed

social media mining, e.g. US RED CROSS, ESA-AWTM*

Resilient Communities [trust networks**]

e.g. farmers, associations, arts&crafts, local communities.

* Cameron, Power, Robinson, Yin, *Emergency Situation Awareness from twitter for Crisis Management*, SWDM’ 2012 Workshop,

**Charles Tilly, *Trust and Rule* (Cambridge Studies in Comparative Politics) [2005]

SWOT: Web 2.0 and Risks

OPPORTUNITIES

STRENGTH

Local Social Ties
 Web Community & Networks
 Technology Innovation
 Connected World
 Web Mapping
 Neogeography
 Volunteers Commitment
 Web 2.0 Community (VTC)

WEAKENESS

Remake
 Reuse (OS)
 Low Scientific Litteracy
 Risk Knowledge Demand
 Low Budget
 Free web 2.0 platforms
 Specialist SW
 OS & web 2.0 platforms

THREATS

Focus on Technology
 Focus on Cultural Diversity
 Resilient Local Communities
 Lack of Collaboration/Coordination
 Crowdsourcing - Social Media
 Redundancies, Reliability & Validation
 Scientific Knowledge Demand
 Scientific and Experts élites

Low Collaboration
 Resistance / Past Dependencies
 Low Budget
 Lack of Continuity
 Speed of Social Media
 Slow Insitutional Information
 High Penetration of “Social” Information
 Weak Social Penetration of Insitutions

The image is a reproduction of the famous woodblock print 'The Great Wave off Kanagawa' by Katsushika Hokusai. It depicts a massive, curling blue wave with white foam, about to crash over three small fishing boats. In the background, the snow-capped peak of Mount Fuji is visible under a dark, stormy sky. The text 'THE RESEARCH PROJECT' is written in a smaller, white, sans-serif font above the word 'COLLABORATION', which is written in a much larger, bold, white, sans-serif font. The text is centered over the right side of the image.

THE RESEARCH PROJECT
COLLABORATION

Situation Awareness

October 2011 Flash Floods - Italy | Data Collection Exercise Cassas Landslide (UNITO-VVF)



Data Collection

Citizens Crowdmap

+Elena Web Images Videos Maps Shopping Gmail More - Elena Rapisardi Share...

Google

Get directions My places Save to My Places

Alluvione a Genova - Cosa è successo

Public · 6,848 views
Created on Nov 4 · By Luciano · Updated yesterday
Rate this map · 2 comments · KML

- Allarme Sestri Ponente**
Prevista l'esondazione del torrente Chiaravagna - Leggi tutto su panorama.it
- Stadio allagato**
Un metro e mezzo d'acqua sul manto erboso dello Stadio di Marassi A rischio la partita Genoa-Inter di domenica - Leggi tutto su panorama.it
- 7 vittime**
Sarebbe una donna albanese di 28 anni la prima vittima dell'alluvione che ha colpito Genova Nell'arco delle ore successive il bilancio è salito a quota sette morti, tra quali tre bambini - Leggi tutt...
- Scuola evacuata**
Evacuato istituto scolastico "Fanciulli" in viale Bracelli - Leggi tutto su panorama.it
- Esondazione del torrente Scrivia**
Altezza di Isola del Cantone - Leggi tutto su panorama.it
- Scuola evacuata**
Evacuato l'istituto Vittorio Emanuele in Largo Zecca - Leggi tutto su panorama.it

10 km 5 mi

Data Collection

Scientific Community | Media | Citizens

The screenshot shows a web interface for data collection. At the top, the header reads "IL TIRRENO LIVORNO" with a "CHIUDI FINESTRA" button. Below the header, there is a navigation bar with "CONDIVIDI" and a "Login" link. The main heading is "Alluvione 25 ottobre 2011: la mappa delle vostre segnalazioni", followed by a sub-heading "Aiutateci a documentare i danni causati dal maltempo in Liguria e Toscana e il tipo di evento che li ha provocati" and a link "Tutti gli articoli - Foto e video".

A search bar contains "Italiano (IT)" and a search icon. Below it, a box titled "Alluvione Liguria-Toscana 2011" contains the text "La mappa degli eventi e dei danni causati dall'ondata di maltempo del 25 ottobre 2011" and a green button "INVIA UNA SEGNALAZIONE".

A navigation menu includes "HOME", "SEGNALAZIONI", "INVIA UNA SEGNALAZIONE", "CONTATTACI", and "COME USARE QUESTA MAPPA".

A text box explains the project: "Il Tirreno e Repubblica Genova, con l'aiuto dei cittadini, mappano i disastri causati dalle alluvioni dal 25 ottobre ad oggi. Inviare segnalazioni e testimonianze (testi, foto, video) via web, mail e twitter, indicando il luogo, il tipo di danno e possibilmente il tipo di evento che lo ha causato. Iniziativa in collaborazione con il Dipartimento di Scienze della Terra e NatRisk - Centro interdipartimentale sui rischi naturali dell'Università di Torino. L'Università analizzerà l'insieme delle segnalazioni anche in funzione della prevenzione dei rischi naturali nell'ambito del progetto di ricerca "Collaborative management of data for geological monitoring and civil protection". Below this, a note states: "Le segnalazioni ricevute avranno scopo di studio e analisi e non sono mirate a raccogliere richieste di soccorso o intervento".

At the bottom, there are filter options: "FILTRI + SEGNALAZIONI NOTIZIE IMMAGINI VIDEO TUTTI" and "FILTRO CATEGORIE (NASCONDI)". A map shows the region with several red and green markers. A legend on the right lists categories: "TUTTE LE CATEGORIE" (red square), "EVENTI" (blue square), "DANNI" (red square), and "TRUSTED REPORTS" (green square).

Data Collection

Students

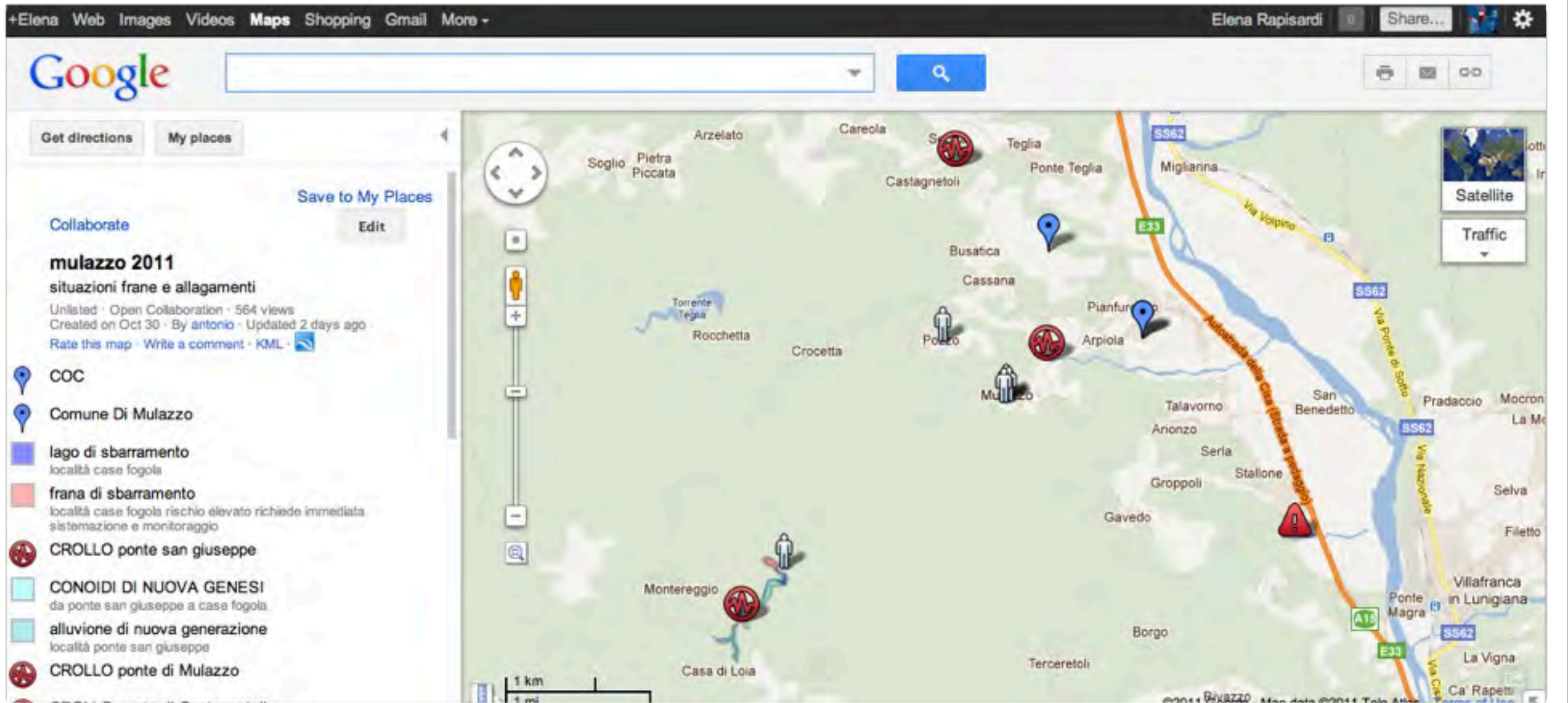
The screenshot shows a Picasa web album interface. On the left, there is a grid of photo thumbnails. The main area displays a map with several photo thumbnails overlaid on it, indicating their geographic locations. A red line traces a path across the map. On the right, a larger photo is displayed, showing the entrance to a cinema with a sign that reads "CINEMA TEATRO Città di Aulla". Below the photo, there are sharing options and a "Location" field containing the coordinates: "Latitude: 44.20792167 Longitude: 9.98428667". A red circle highlights these coordinates.

Shared Photo Map
Automatically from Mobile GPS
Device - Tablet Android

LAT & LONG
Automatically from
Mobile GPS Device

Data Collection

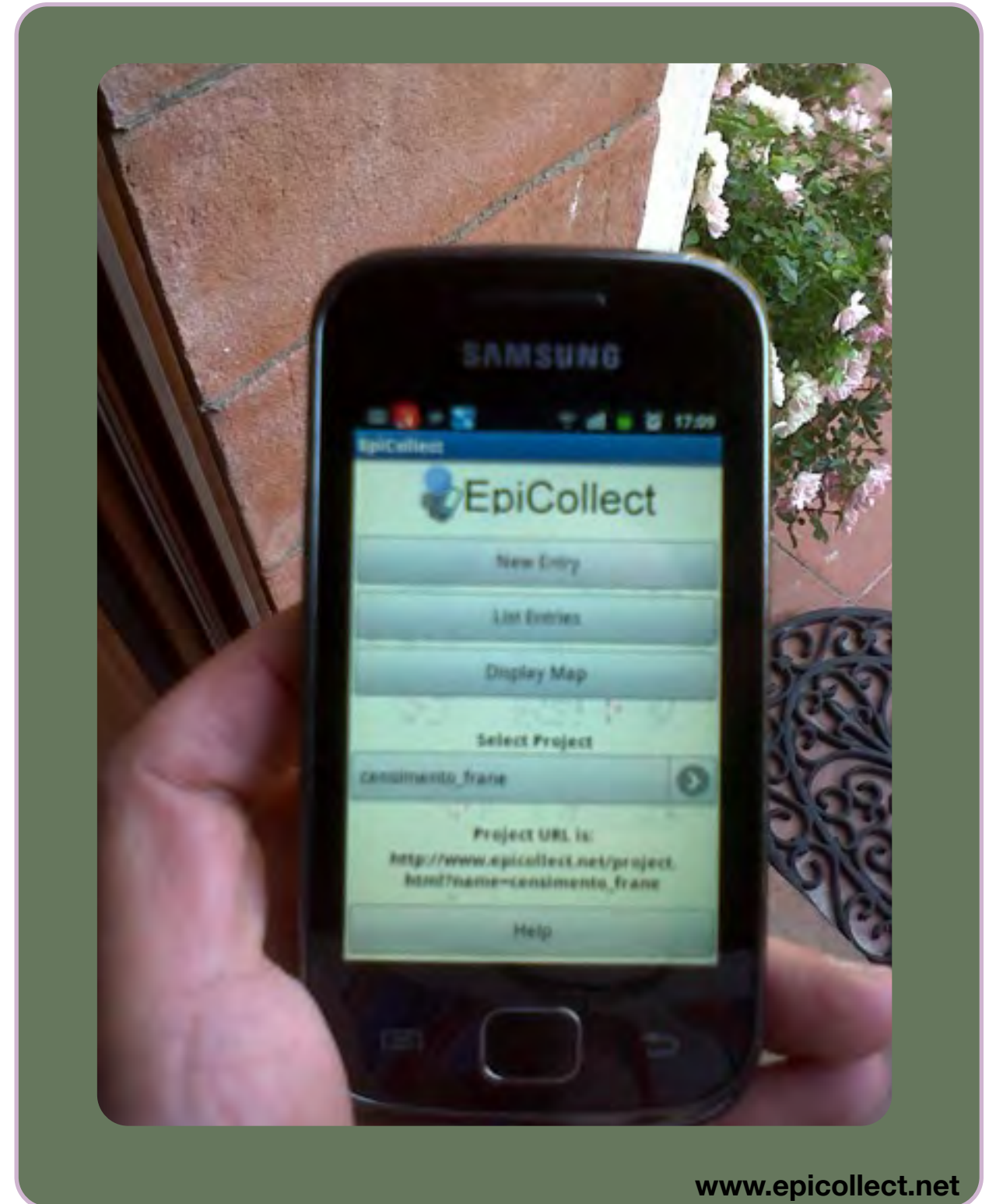
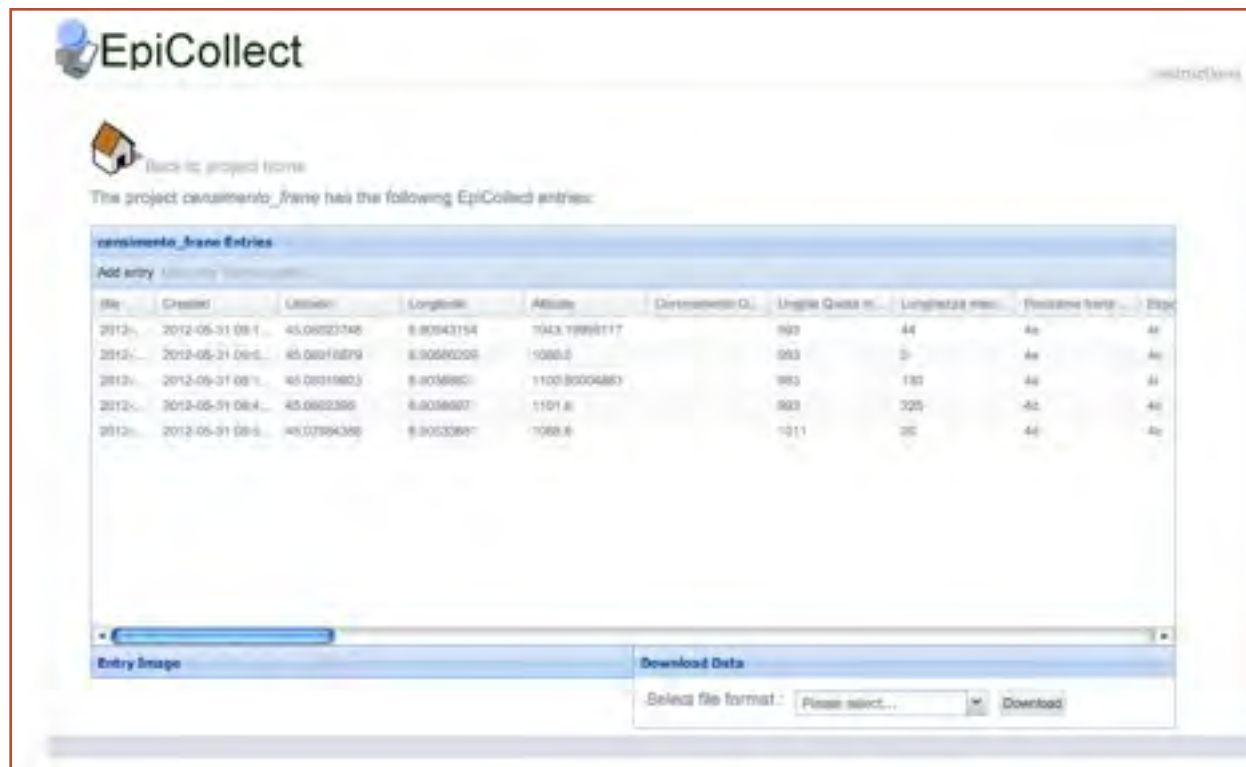
Relief Bodies | COC Mulazzo



Manual Mapping (google map) [Maps set up by Antonio Campus COI Bassa Val di Cecina]

Data Collection

Scientific Community | Relief Bodies VVF



Situation Awareness

Collaboration [research project goal]



Civil Protection Bodies

Citizens

Scholars

Environmental Monitoring Bodies

VTC's

Rescue Teams

Civil Protection Volunteers

Media

Geosciences Knowledge Sharing



Preparedness: WIKI Collaboration

Risks and Natural Hazards Wiki and Thesaurus



HYPERISPRO

Civil Protection Wiki

Ispro - G. Zamberletti



EARTH

Environmental Applications

Reference Thesaurus

CNR Istituto Inquinamento Atmosferico



WIKI Collaboration | WIREFRAME

UNITO – DEPARTMENT OF EARTH SCIENCES – NATRISK | ISPRO | CNR – IIA

RISKS AND NATURAL HAZARDS WIKI AND THESAURUS



[HOME](#) | [Cosa è](#) | [Ultime modifiche](#) | [Una pagina a caso](#) | [Aiuto](#) | [Cosa è un Wiki](#) | [Contatti](#) | [Vuoi Collaborare ?](#)

Rischio Sismico

Integer pretium vehicula nibh, sed pulvinar ligula consectetur ut. Sed semper, est eu dignissim iaculis, nunc metus interdum massa, nec gravida diam purus vel est. Phasellus sed ornare augue. Ut velit sapien, ornare at rutrum nec, aliquam a diam. Etiam pellentesque sapien nec nisl tincidunt luctus. Morbi venenatis consequat aliquet. Morbi convallis semper justo in elementum. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Nulla vel ante non ante scelerisque tempor. Etiam fermentum gravida augue, sed suscipit leo aliquet non. Curabitur non hendrerit mauris. Fusce luctus auctor enim. Aliquam erat volutpat. Donec quis tortor consequat metus molestie faucibus ut ut ligula. Donec ut porttitor nulla. Fusce pellentesque, velit sit amet cursus faucibus, dui metus dictum felis, vitae adipiscing nulla neque non lacus. Phasellus diam dui, porttitor ut fringilla vel, dignissim ut lacus. Vivamus sit amet quam et mauris malesuada dapibus nec quis elit. Cras pharetra lectus dapibus sem venenatis non dignissim diam scelerisque. Etiam id sapien turpis. Phasellus at ipsum vestibulum odio interdum lobortis sed eu ante. In diam leo, sagittis et eleifend ultrices, gravida tincidunt sapien. Cras quis vehicula tortor. Pellentesque ipsum justo, sodales id vestibulum eu, laoreet eget erat. Praesent eget purus nisl. Mauris vitae tellus tellus. Phasellus porttitor tempor nunc, egestas faucibus quam aliquet vel. Mauris tincidunt eros eget lorem posuere non tincidunt sapien dapibus. Nulla a lacus elit, eget convallis turpis. Fusce feugiat justo a lorem vehicula dictum. Proin eget hendrerit libero. Pellentesque dignissim mauris in dolor ultrices ac lacinia lacus luctus. Phasellus sagittis mi vitae quam vestibulum tempor. Sed quam libero, tincidunt quis laoreet eu, sollicitudin at mi. Nulla lacinia, massa ac pulvinar blandit, augue magna ornare quam, vel laoreet dui erat a risus. Aliquam vel erat vitae dui auctor vehicula ullamcorper nec neque. Etiam volutpat dictum felis, eget blandit odio mollis cursus. Nam sed nisl quis elit hendrerit lacinia. Curabitur tempor bibendum mauris sed semper. Sed odio est, mollis quis vulputate vitae, fringilla ac dolor. Sed convallis sodales odio, vel elementum arcu vehicula eget. In pharetra convallis laoreet. In orci lacus, dignissim eu vestibulum id, elementum lacinia massa. Cras eu dapibus arcu. Pellentesque eu nisl congue nulla convallis sagittis. Ut sodales auctor enim vel viverra. Suspendisse vel metus et odio viverra venenatis. Sed auctor eleifend felis, sit amet pulvinar diam ornare ut. Sed a lorem vitae eros porta auctor eget vitae nisl. Nam interdum, odio id hendrerit consectetur, nunc leo dapibus mauris, in varius libero urna vel tellus. Phasellus lacinia massa nec felis volutpat vestibulum. Aenean venenatis neque nec lacus dignissim dapibus.

THESAURUS



TERREMOTO

Broader term

Improvviso movimento o frattura della litosfera terrestre, seguito in superficie da una serie di scosse generate da questo movimento. I terremoti sono causati da tensioni che si accumulano all'interno delle rocce finché raggiungono un punto oltre il quale le rocce si frantumano.
(Fonte Gunn)

▼ Narrower term

- sisma a fuoco profondo G-
- terremoto storico G-
- terremoti indotti
- sisma a fuoco intermedio
- sisma a fuoco superficiale
- sisma vulcanico

► Relations

Do you «Resilience»?

massimo lanfranco

marco giardino

elena rapisardi



Università di Torino
NatRisk - Dipartimento Scienze della Terra