



Training workshop on Multi - Hazard Early Warning Systems Italy



Patrizio Emiliani

Pula, 1-3 October 2009



The Italian National Service of Civil Protection

This Service was instituted by a specific law (n. 225) in 1992 and it involves many different Organizations:

- Public (Ministries, Regions, Provinces, Municipalities, Operational Bodies etc.)
- Scientific/Academic (Universities, Research Institutes, etc.)
- Private (mainly Volunteers...about 1,200,000)

The CivilProtection Department under the Presidency of the Council of Ministers is the headquarters of the Italian National Service of Civil Protection.

Mandate

The National Civil Protection System aims at safeguarding human life and health, goods, national heritage, human settlements and the environment from all natural or man-made disasters.

It deals with:

- Forecasting
- Prevention and mitigation
- Response to warnings and Assistance
- Emergency overcoming





National service of civil protection

COMPLEX SYSTEM

Operational Structures

(art. 11 L. 225 /92)

- National Fire Brigade
- Armed Forces
- Police
- State Corps of Foresters
- National Groups of Scientific Research
- Italian Red Cross
- National health Service
- Volunteers Organisation
- Alpine Rescue Corp.

Components

(art. 6 L. 225 /92)

- Ministries
- Regions
- Provinces
- Prefectures
- Municipalities
- Mountain Communities
- Universities
- Companies

The national ***service of civil protection***
left the model of organization
according to “competence” in
favor of a model based on
“functions”.

The Principle of Subsidiarity (Constitutional Law)

- When an emergency occurs, several administrative levels intervene; tasks and responsibilities are shared depending on the consistency of the disaster (from local to central institutions).
- In the most important and serious cases the law provides the direct engagement of the Prime Minister.....
- In these cases the Authority can manage the intervention using extraordinary, powerful, fast and flexible administrative tool: the Decree of the President of the Council of Ministers (Prime Minister).

which, because of its intensity and size, shall require extraordinary means and authorities

Law no. 225/1992

EVENT

meeting of Council of Ministers

Declaration of the " State of Emergency" and assignment of the Head Commissioner

Law no. 286/2002

EVENT

emergency state of major entity to be assessed on the basis of its life threatening potential risk

The President of the Council of Ministers
before declaring the state of emergency
decides the activation of the civil protection national system

The Head of the Civil Protection Department is in charge of
coordinating all the interventions to face the emergency



**PRESIDENCY
OF THE
COUNCIL
OF
MINISTERS**

**Department of
Civil Protection**



The Italian Institutional System

Administrative divisions

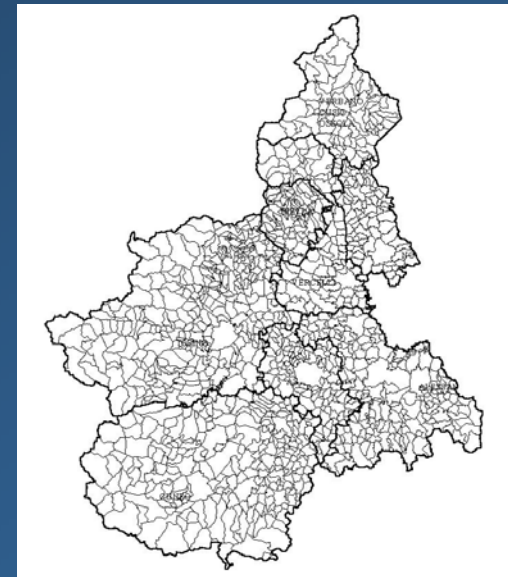
Italy is subdivided into



20 Regions



104 Provinces



8.104 Municipalities

There is no one model of regional or local system: all authorities have an adequate level of organizational autonomy within a national coordination.



Classification of Events and Competences - Act 225/92, art. 2

Italian Civil Protection distinguishes events in :

A – Natural or anthropic events (local level);

B – Natural or anthropic events (provincial and regional level);

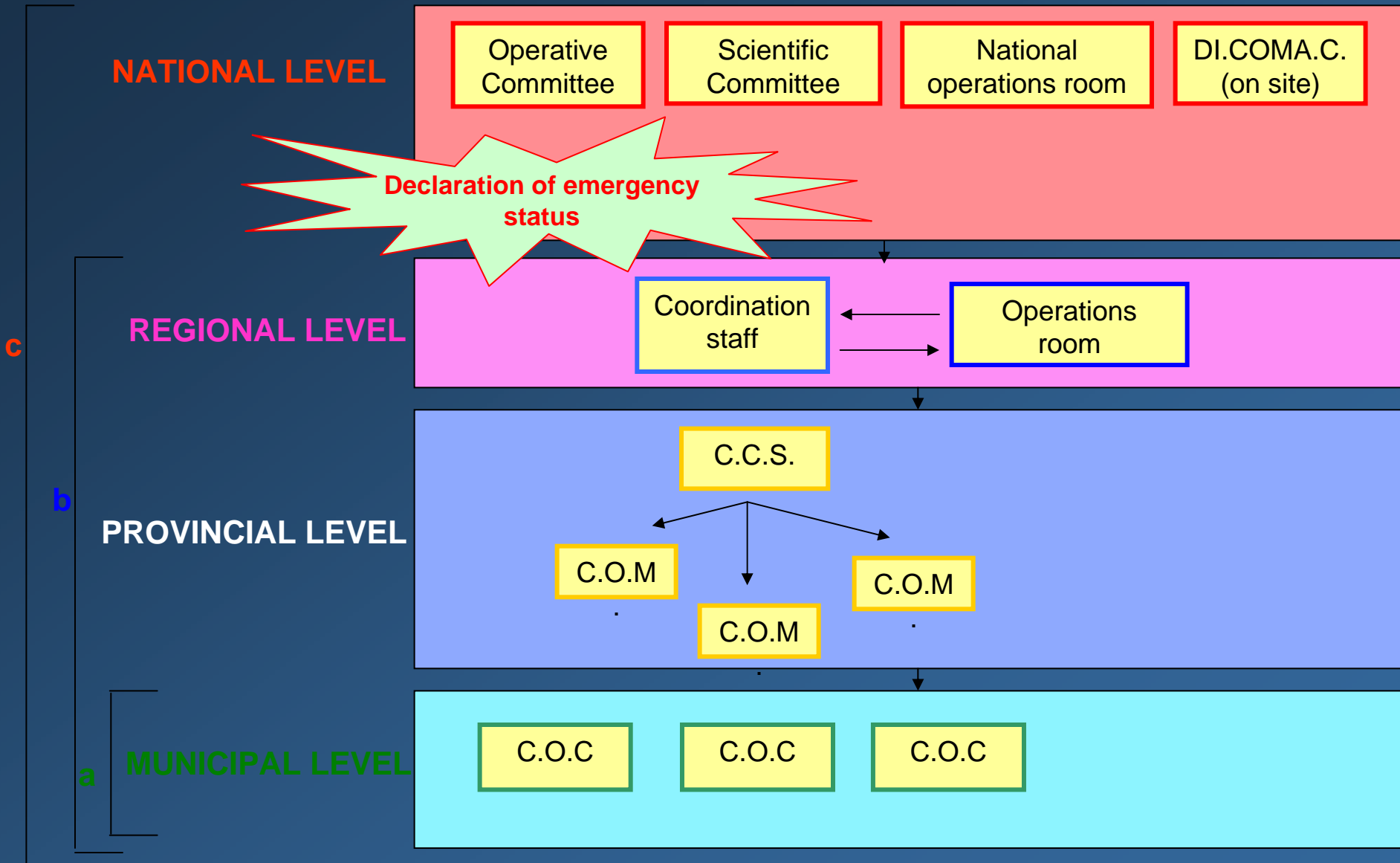
C – Natural calamities, disasters or other events (national level).

A and B events can be managed through ***ordinary interventions*** implemented by bodies and administrations.

C events must be managed making recourse to ***extraordinary means and powers***.

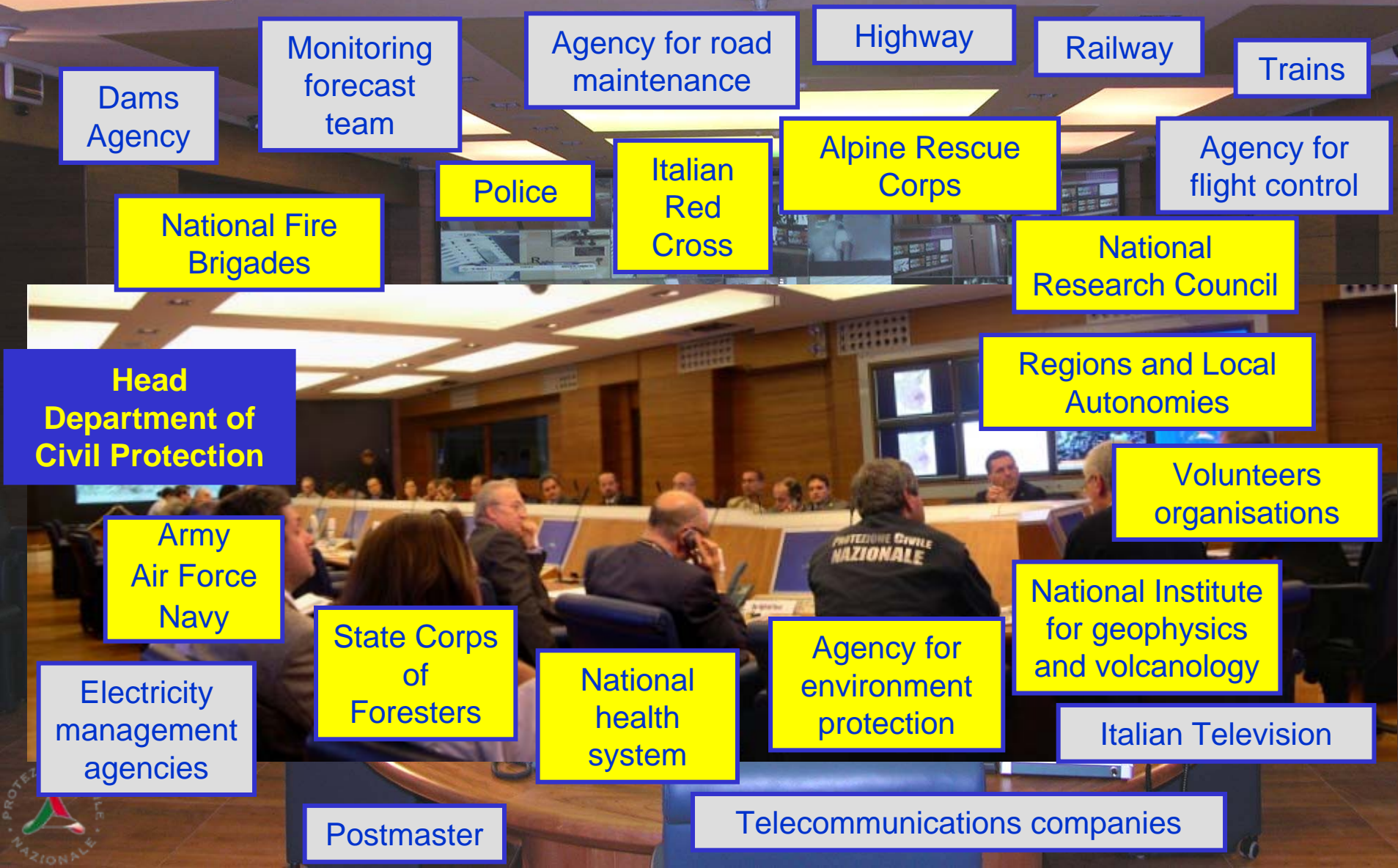


OPERATIVE ORGANIZATION



The Operational Committee

is set up within the Department of Civil Protection to ensure a unified direction and coordination of emergency management

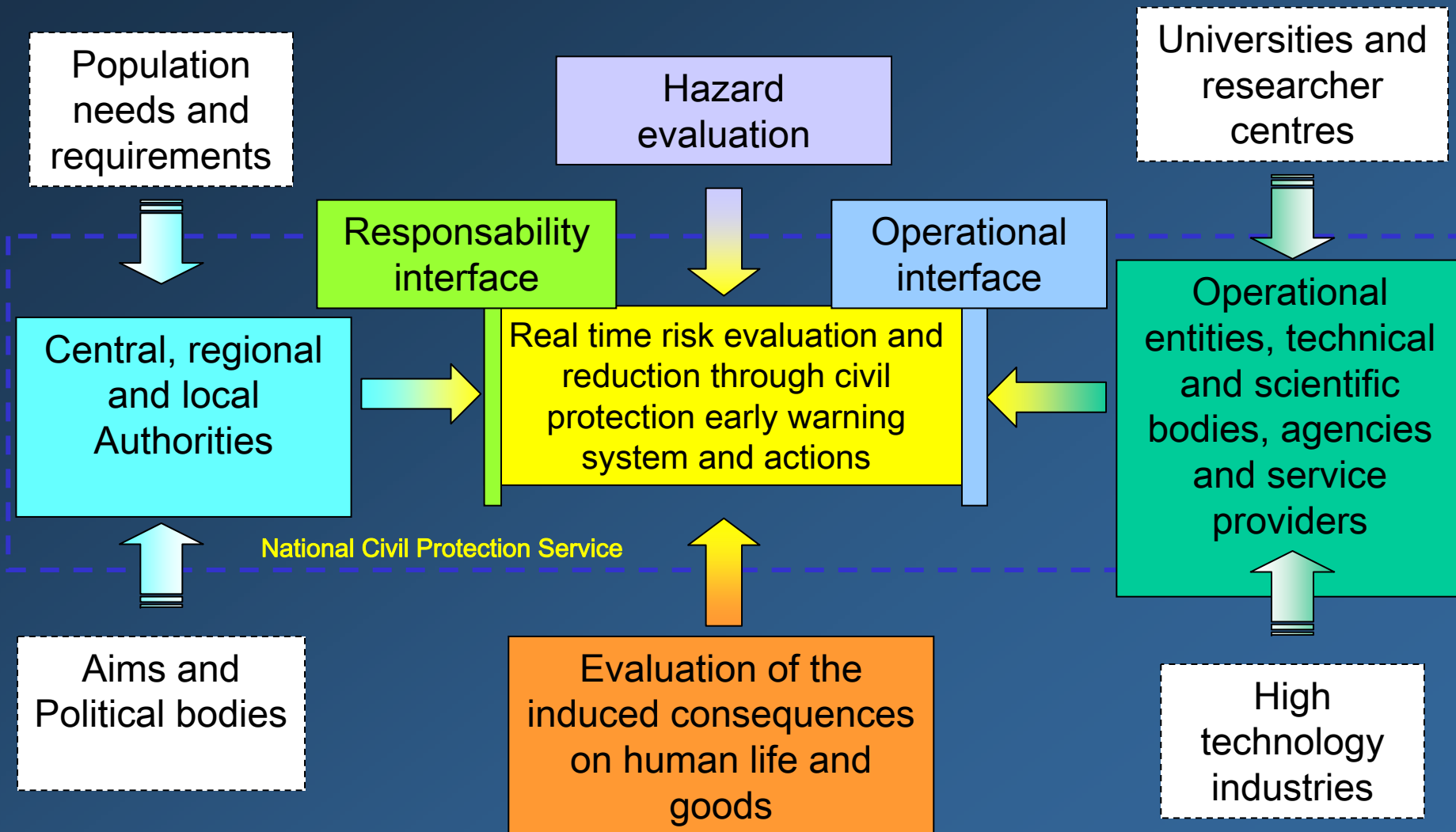




...the National Civil Protection Service is based on ... (L. n. 225/92)

- An organised and cooperative emergency management system to actuate the decided actions.**
- A “command and control” chain led by a well defined Institutional System of Authorities sharing the responsibilities of decision and action at central, regional and local level.**
- An “Early Warning System”, under the direct control of the Civil Protection Authorities.**

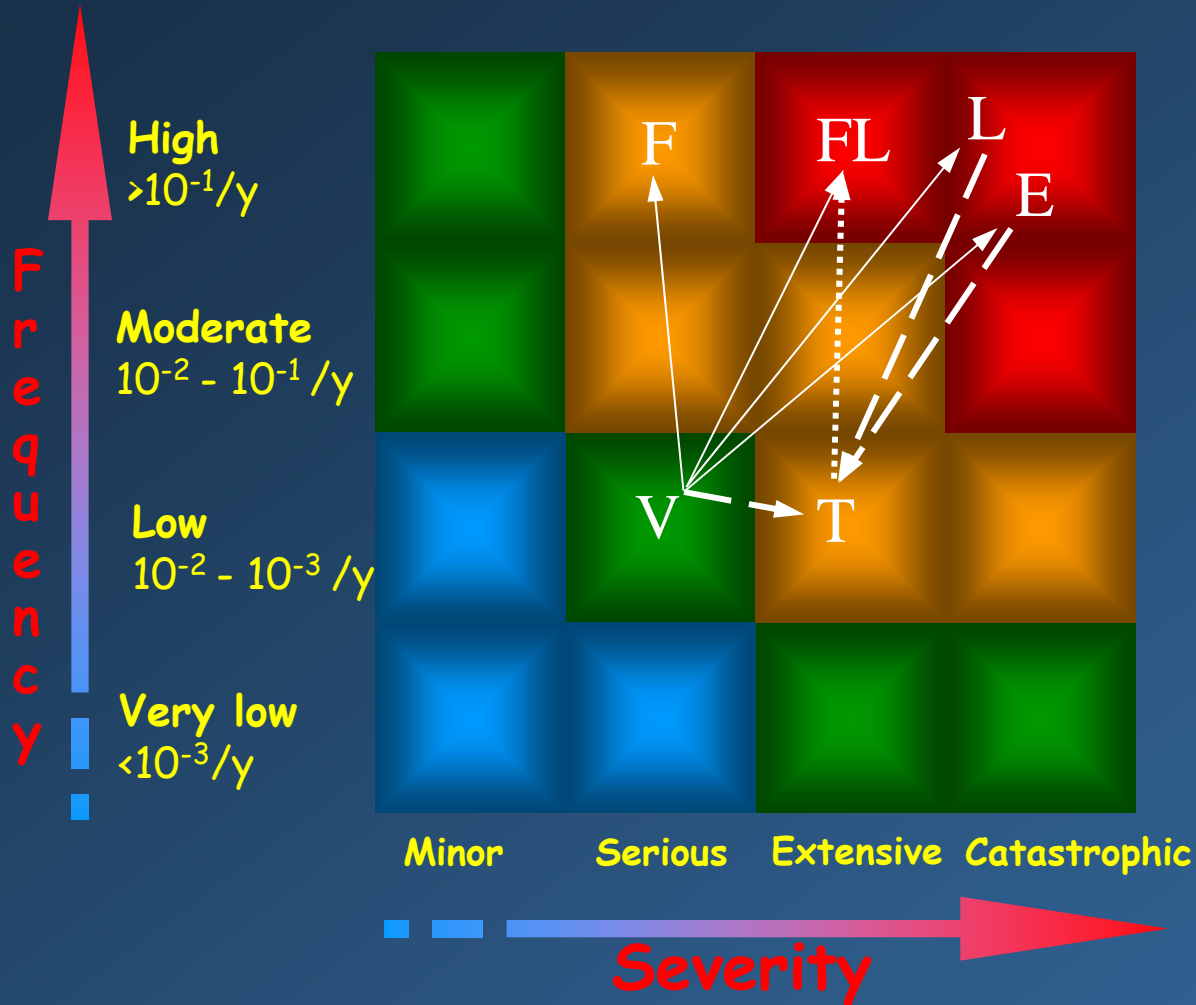
... to cope with risk assessment and management ...



Our Early Warning System ...

- **A system able to share and exchange information in real time, through common standards and procedures, targeted the general assessment of the risk.** This is done by the network of “Centri Funzionali”, **centres which are charged of the collection and operational use of all available meteorological, hydrological and geological data and provide the technical and scientific support to the civil protection decision process.**
- **The “Early Warning System” that, according to the Law DPCM 27/02/2004, is under the direct control of the Civil Protection Authorities and, basing on the network of “Centri Funzionali”, is not only addressed to the evaluation of hazards, but mainly to forecast and survey the induced effects on human life and goods.**

Risk Matrix & interactions



High-risk condition
with highest priority for mitigation and contingency planning (immediate action)

Moderate to high risk condition with risk addressed by mitigation and contingency planning (prompt action)

Risk condition sufficiently high to give consideration for further mitigation and planning (planned action)

Low risk condition with additional mitigation contingency planning (advisory in nature)

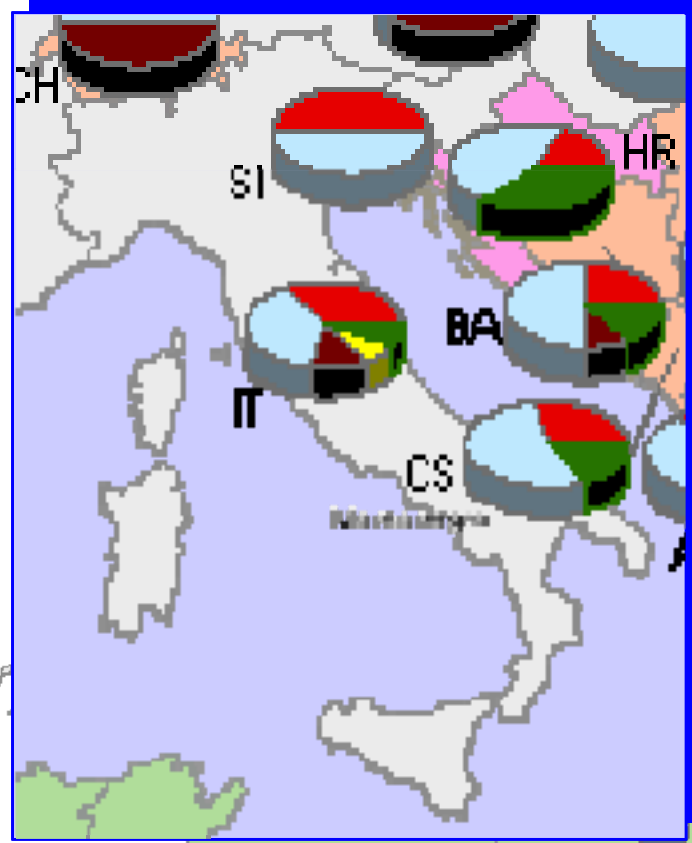
E = Earthquake T = Tsunami
 F = Forest fire L = Landslides
 V = Volcanic FL = Flood

European and Mediterranean countries percentage of events for different risks

British territories
(Fiji, Maldives)

French territories
(French Guiana, French Polynesia, Overseas Collectivities, Reunion, Wallis)

Spanish and Portuguese territories are included in Spain and Portugal pie.



LEGEND

Number of events pie^A

- Earthquakes
- Floods
- Fires
- War/Crimes
- Winds/Typhans
- Wild fires

Countries

- European Union Countries
- Euro European Union Countries
- Future (2007) European Union Countries
- Candidate European Union Countries
- Mediterranean Countries

0 500 1000 Km

^APie represents the percentage of single risk (number of events) in function of the total number of events for all risks. Only countries with representative data are shown

^A-For these countries see the database

Country code are from ISO 3166-alpha-2

Data from TEM-DAT the OFDINGRED International Disaster Database www-em-dat.net Université Catholique de Louvain-Bruceville-Belgium. Update 09/03/2005

Italian Risk Matrix

	N° of Events	Year (Dbase)	Frequency Event/N° Y	Killed	Total Affected	Damage M €
Earthquake	29	100	0,28	$1,5 \cdot 10^5$	$9,7 \cdot 10^5$	44.000
Flood	29	85	0,34	$7 \cdot 10^2$	$2,9 \cdot 10^5$	32.000
Landslides	13	85	0,15	$2,5 \cdot 10^3$	$20 \cdot 10^3$	1.700
Volcano	5	101	0,05	$7 \cdot 10^2$	$210 \cdot 10^2$	0,31
Wild Fires	6	24	0,25	14	300	12.000



The National Civil Protection Service

The national early warning system

(DPCM 27/02/2004) identified the activation of the **CFSE** for the hydrogeological, meteorologic and hydraulic risks

...is able to share and exchange information, through common standards and procedures and it is targeted the general real time forecast and assessment of the risk scenarios...

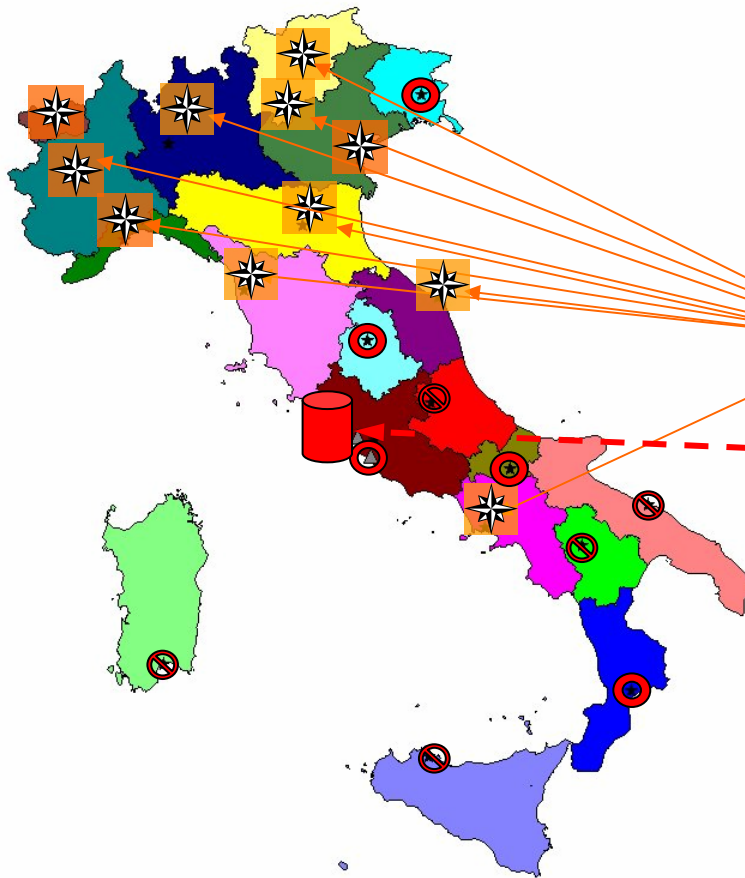
is provided by DCP and Regions by the “Centri Funzionali” National Network, along with the “Centri di Competenza” involved in hazard assessment and surveillance activities....

“Centro Funzionale” = Centre for Forecasting and Surveillance of Effects to support the civil protection Authority decisions (CFSE)

“Centro di Competenza” = Centre for Technological and Scientific services, development and transfer (CTS)

The “Centri Funzionali” National Network

(update 01-08-2009)



“CENTRI FUNZIONALI”
21 Regional + 1 National

 11 Regional already fully operative

 1 National fully operative (DPC)

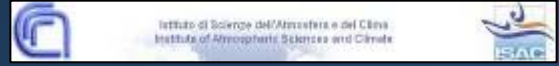
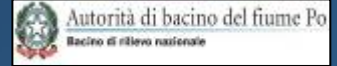
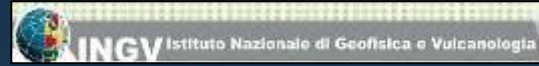
 3 Regional almost operative (2009)

 5 Regional not yet operative (2009)

... 41 “Centri di Competenza”



The community scientific network on behalf of the DPC



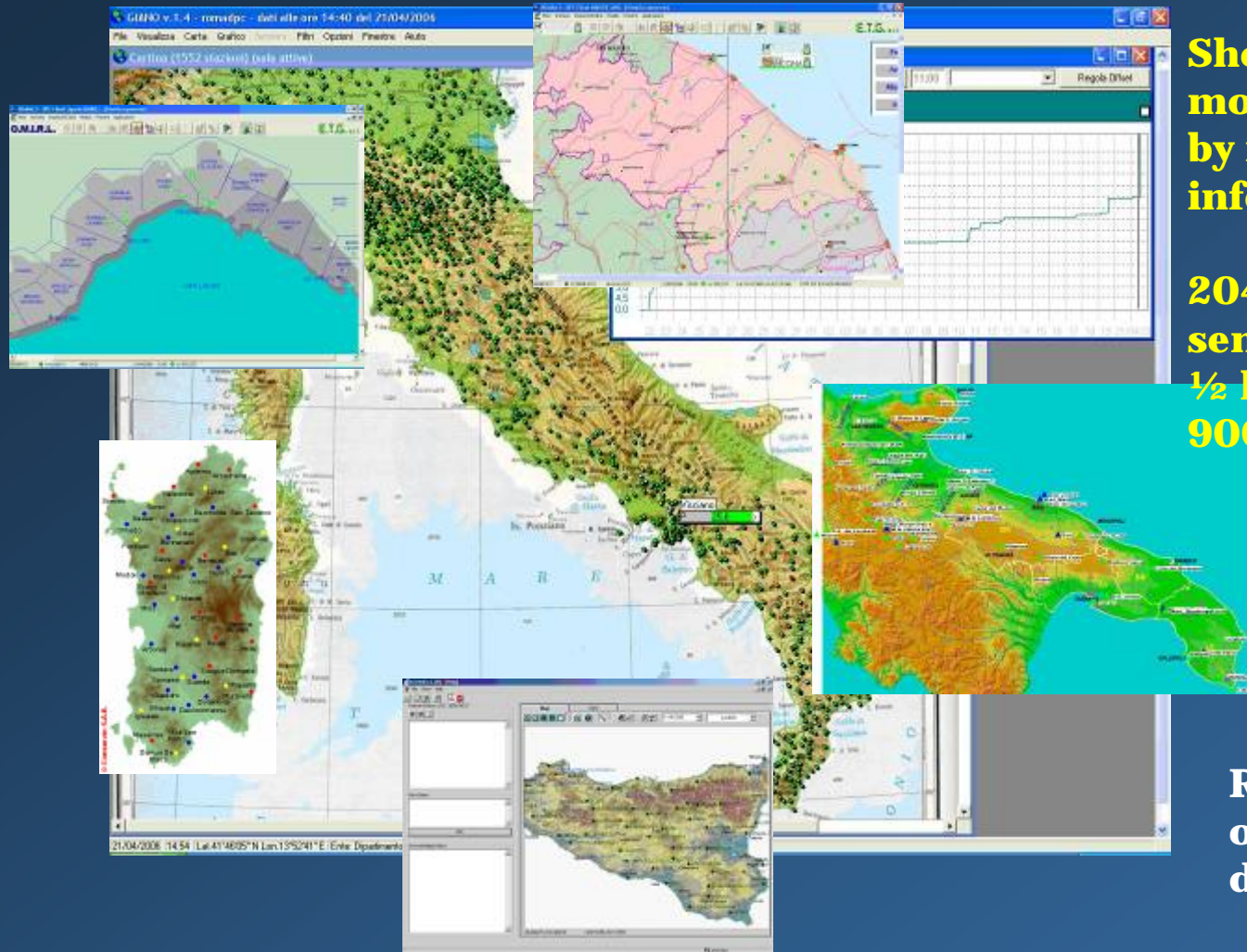
Centro universitario per la difesa idrogeologica dell'ambiente montano



Enti Regolatori dei Grandi Laghi



The goal of the “Centro Funzionale” Network is to collect and integrate the information:



Short term and real time monitoring & surveillance by in situ data and information systems.

2040 telemetric stations send data to the CFC, every ½ h : 1400 raingauges and 900 flowmeters.

Geospatial data and digital terrain model

Real Time modeling of hazard, risk and damage scenario

Weather forecast

Data from the local authorities and the local technical teams



CFSE procedures

The warning system is built with a set of organization-information procedures both national and local.

The system's efficiency is based on the internal and external coded procedures, regarding the relevant administrative offices.

Furthermore, operative standards are defined in order to get a quality certification UNI EN ISO 9001

An internal operative Manual has been made. It contains all procedures that the personnel must put in action depending on different hazard situations, in order to provide proper management of the center.

It defines the different roles that the Centre's personnel must play.

It contains all documentation for different emergency situation.

Prevention, damages reduction and risk mitigation activities

REAL TIME

ACTIVITIES, EVEN EXCEPTIONAL AND TEMPORARY, AIMED TO ENSURE THE URGENT AND NOT DELAIABLE ACTIONS FOR THE SAFETY OF POPULATION, GOODS AND ENVIRONMENT, ARISING FROM DANGEROUS EVENTS ...

DCP coordinates the regional and local civil protection structures

Crisis

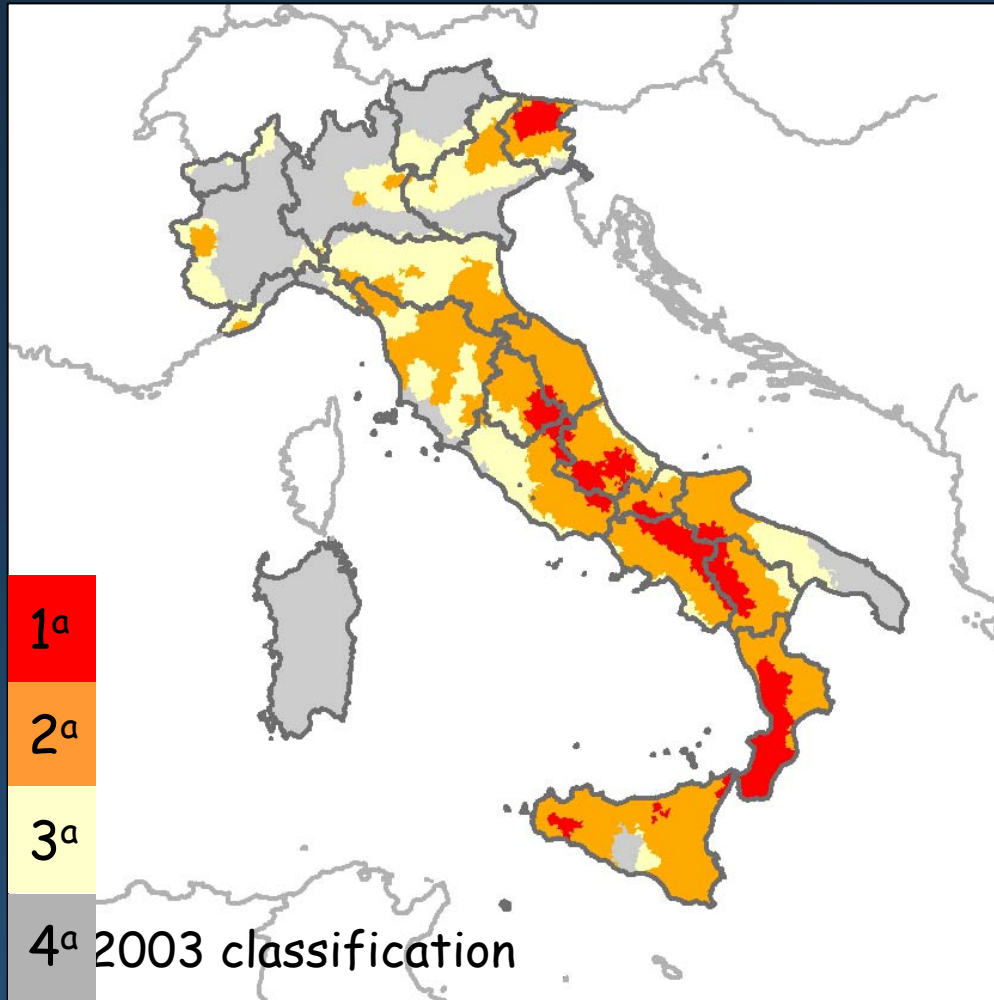
DEFERRED TIME

PLANNING OF MEASURES, EVEN STRUCTURAL, AND RUNNING OF ORDINARY ACTIVITIES AIMED TO ENSURE PERMANENT AND HOMOGENEOUS SAFETY CONDITIONS FOR POPULATION, GOODS AND ENVIRONMENT ...

DCP provides the guide lines and collaborates with Regional authorities and scientific research centres

Prevention

Earthquakes



March 2003

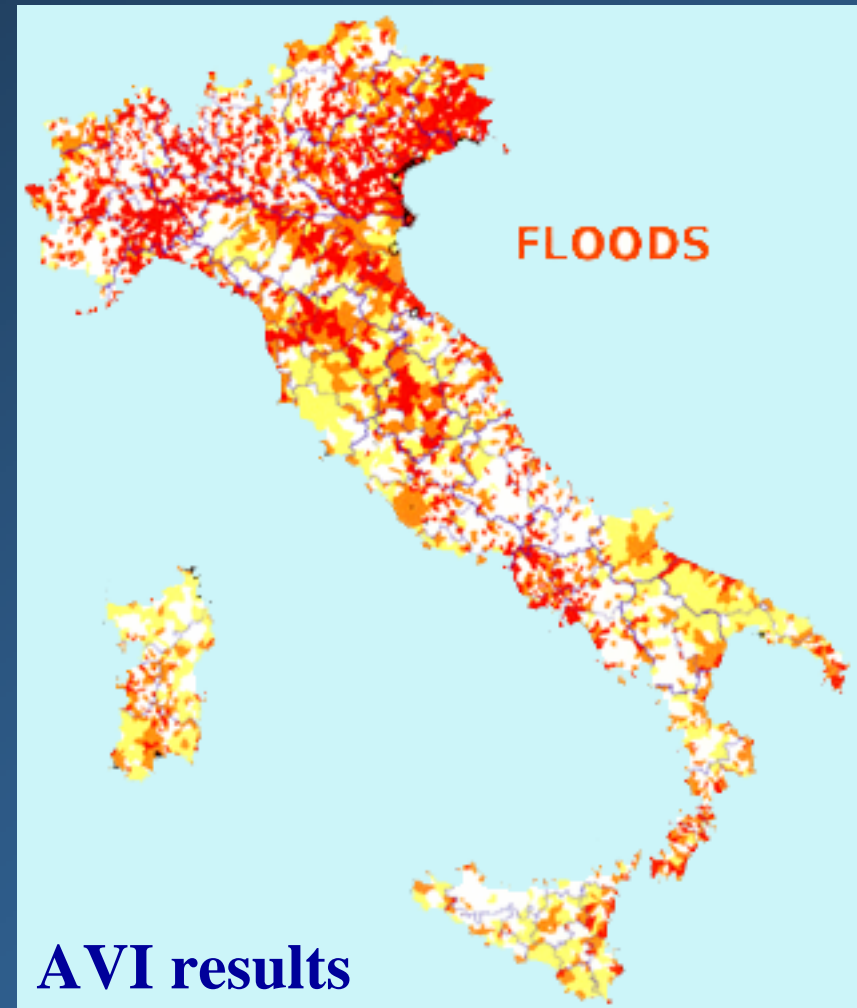
New seismic municipality classification of Italian territory

New technical criteria for the construction in seismic areas

Vulnerability assessment of schools and strategic buildings

Flood risk in Italy

- The **AVI** project: an inventory of sites historically affected by floods for the period 1918-1994.
- **Very high vulnerable sites** (L. 267/98)
- **PAI Hydrogeological Plan of Basin** (L. 267/98)



Municipality zoning based on site density
Darker colours indicate an increasing number per square kilometers of sites in each municipality

Landslide risk in Italy

- The **AVI** project: an inventory of sites historically affected by landslides for the period 1918-1994.
- The **IFFI** project: inventory of landslides in Italy
- **Very high vulnerable sites** (L. 267/98)
- **PAI Hydrogeological Plan of Basin** (L. 267/98)



AVI results

**In the last
80 years
11.000
landslides**

Municipality zoning based on site density
Darker colours indicate an increasing number per square kilometres of sites in each municipality

EARLY WARNING SYSTEM



Presidenza del Consiglio dei Ministri
 Dipartimento della Protezione Civile
 Ufficio Previsione, Valutazione, Prevenzione e
 Mitigazione dei Rischi Naturali
 Servizio Rischio Incendi Boschivi

Suscettività all'innescio di incendi boschivi

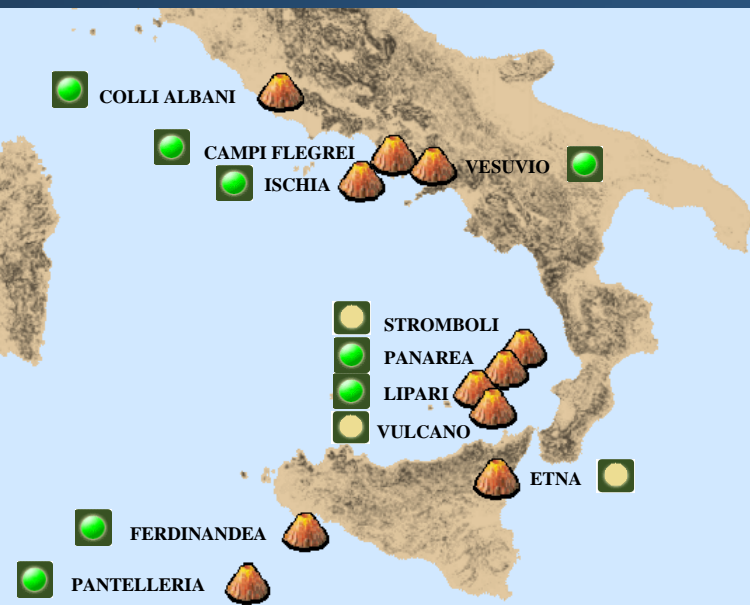
08/07/2008

Tendenza per il 09/07/2008

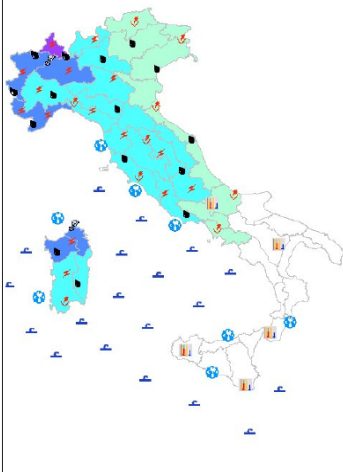


Limiti provinciali
 Limiti regionali
 Pericolosità prevista
 Bassa
 Media
 Alta

Alert level



Fenomeni meteorologici significativi previsti per il giorno 29/05/2008

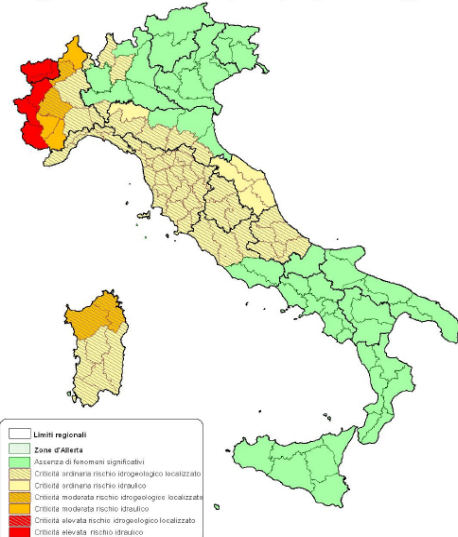


LEGENDA
 Aree meteo-climatiche
Quantitativi giornalieri di precipitazioni previsti
 Assenti o deboli (non rilevanti)
 Deboli (solo se rilevanti)
 Moderati
 Elevati
 Molto elevati
Caratteristiche delle precipitazioni previste
 Piogge sparse o intermittenti
 Nevicate diffuse e continue
 Nevicate deboli e moderate
 Nevicate abbondanti e a carattere di rovescio
 Rovesci temporali deboli e moderati
 Rovesci temporali localmente forti
 Rovesci temporali forti a carattere sparso e diffuso
Altri fenomeni meteorologici di rilievo
 Venti
 Forti
 Burrasca
 Tempesta
 Probabili raffiche
Chiuso
 Diffusa formazione notturna di ghiaccio al suolo in pianura
 Diffusa formazione persistente al suolo in pianura
Nebbia
 Foschie dense o nebbie in banchi
 Nebbie diffuse notturne in doppiamento al mattino
 Nebbie diffuse e persistenti nelle ore alpine
Mari
 Molto mosso
 Agitato o molto agitato
 GROSSO o molto grosso
Moto ondoso
 In aumento
 In diminuzione
Temperature
 In sensibile aumento
 In marcato aumento
 In sensibile calo
 In marcato calo

Dipartimento della Protezione Civile
 Centro Funzionale Centrale

Bollettino di criticità nazionale per Rischio Idrogeologico e Idraulico

Aggiornamento Effetti al suolo previsti per il giorno 29 Maggio 2008



Limiti regionali
 Zone d'Attenzione
 Assenza di fenomeni significativi
 Criticità ordinaria rischio idrogeologico localizzato
 Criticità ordinaria rischio idraulico
 Criticità moderata rischio idrogeologico localizzato
 Criticità moderata rischio idraulico
 Criticità elevata rischio idrogeologico localizzato
 Criticità elevata rischio idraulico

ROMA

Sistema di allarme per la prevenzione degli effetti delle ondate di calore sulla salute

Data	Previsibili		
	19/07/2007	20/07/2007	21/07/2007
	Livello 3	Livello 3	Livello 3
Temperatura ore 8:00	22,8	20,9	21,7
Temperatura ore 14:00	25,6	25,5	25,3
Temperatura max percepita	36,8	36,9	37,2

Legenda

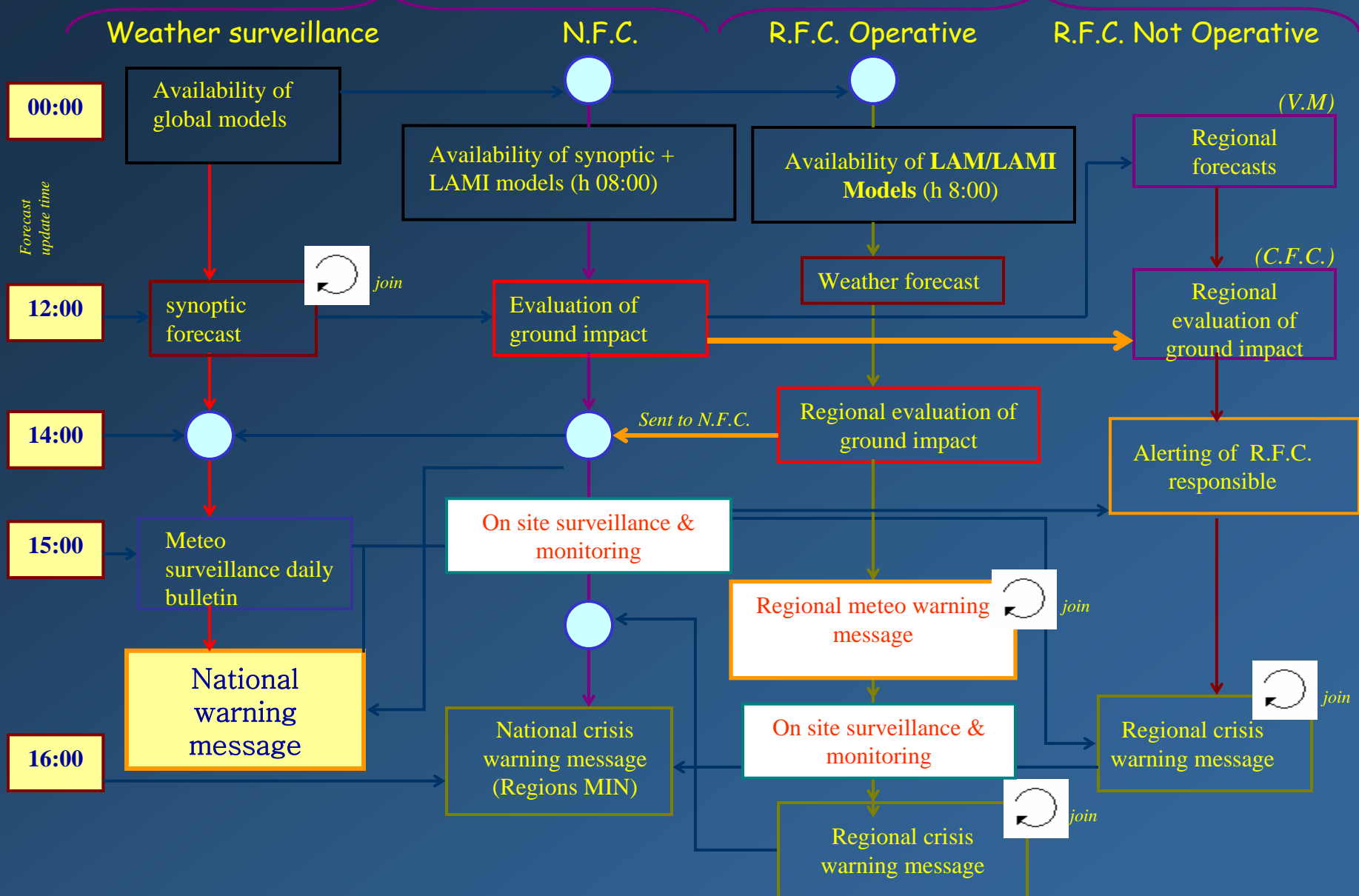
- Livello 3** (Green): Condizioni meteorologiche non a rischio per la salute della popolazione.
- Livello 2** (Yellow): Condizioni meteorologiche che non rappresentano un rischio per la salute della popolazione, ma possono essere fonte di disagio per la popolazione di età avanzata o di persone con patologie croniche.
- Livello 1** (Orange): Condizioni meteorologiche che possono avere effetti negativi sulla salute della popolazione a rischio.
- Livello 0** (Red): Condizioni di allarme (condizioni meteorologiche a rischio) che potrebbero portare a più giorni consecutivi di picchi di mortalità e morbilità in fasce della popolazione a rischio.

* Vali su questo sito il documento "Tempeste e Gole: le burrasche e le piogge eccezionali".

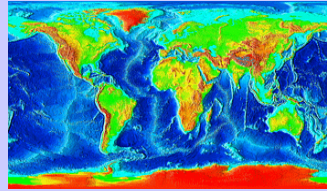
DCP

Ufficio Previsioni Valutazione Prevenzione dei Rischi

Regions

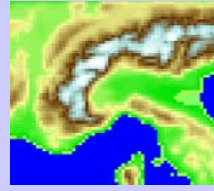


The early warning system



GCM-ECMWF

25 Km / 72 - 6



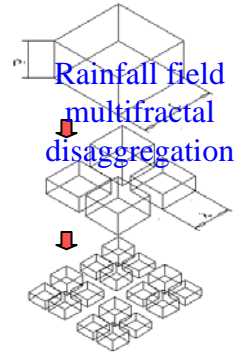
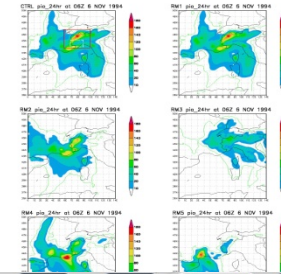
COSMO-I7

7-2.8 Km / 48 - 3

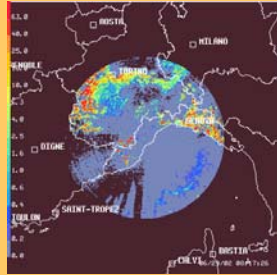
Previsioni di Ensemble - EPS

Spazio delle fasi atmosferico semplificato

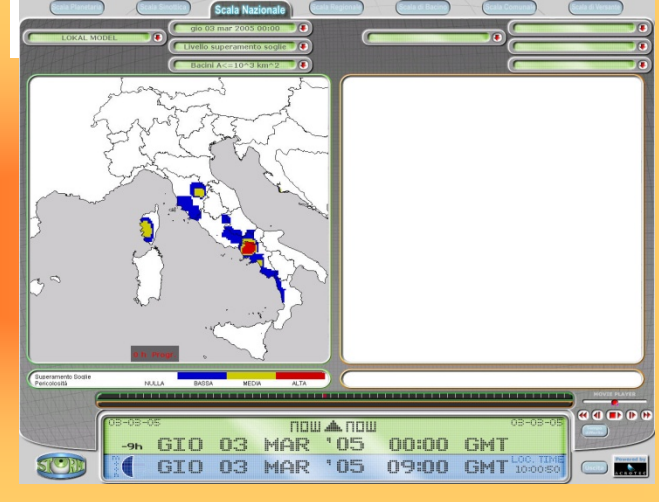
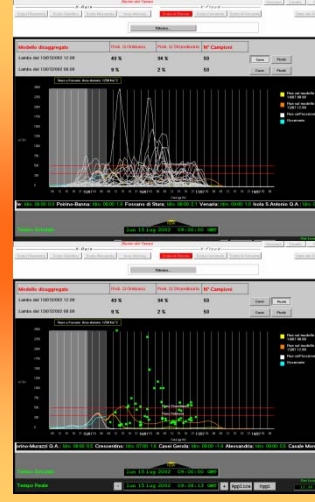
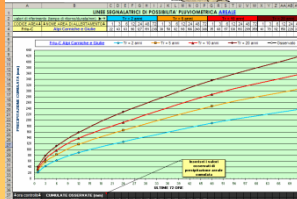
Dim 2



Rainfall field multifractal disaggregation



G.I.S.

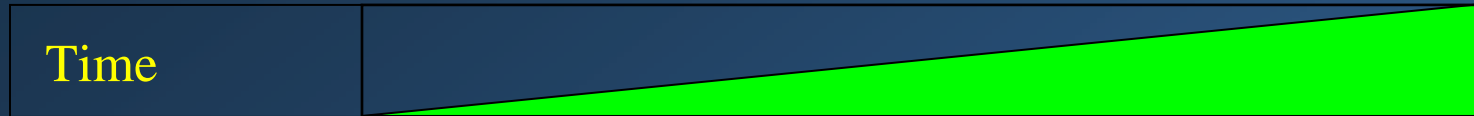


Warning!!

Starting emergency procedures

Forecasting activity

Predictability: depending on the space-time scale of the event



Critical flow for catchments :



Taranto province
September 2003
85 mm/9h
Max intensity 30 mm/h
No forecast
2 casualties

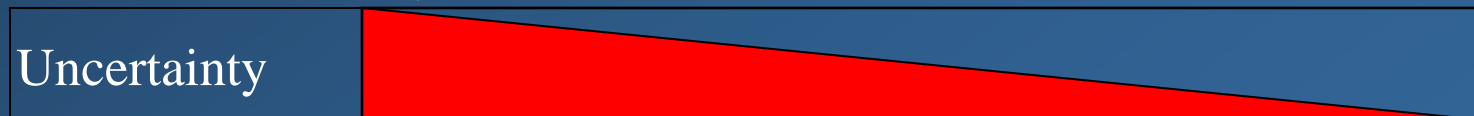
Udine province
August 2003
520 mm/10h
Max intensity 80mm/h
24 h in advance forecast
2 casualties

Piedmont region
October 2000
700 mm/4gg
3 days in advance forecast
5 casualties<

Event precursors : Meteorological (NWP/Satellites/Radar)

Rain gauges

River gauges



Civil protection procedures: time requirements

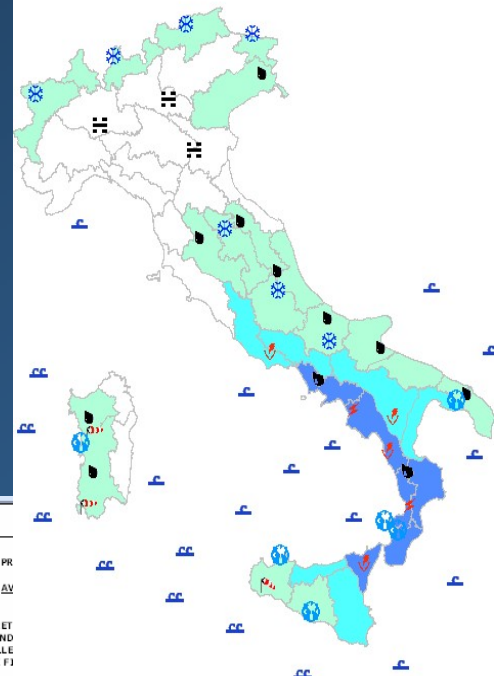
- **12 h to run emergency civil protection procedures**
- **12 h required by technical structure to produce the scenario**



precursors should be observed 24 h in advance



weather forecast daily bulletin



Moderate or high risk level

Weather warning message

PRESIDENZA DEL CONSIGLIO DEI MINISTRI
DIPARTIMENTO DELLA PROTEZIONE CIVILE

Identificativa		di			Spazio		Riferimenti		Transmissione	
Ordine	Esatto	Mittente	Ricevente	Stato	Canale	Modalità	Stato	Modalità	Canale	FAX

DA: DIPARTIMENTO PROTEZIONE CIVILE - Via Ulpiano, 11 00193 ROMA-

A RESPONSABILI PROTEZIONE CIVILE, CENTRI FUNZIONALI E SERV. METEO REGIONI:
SARDEGNA, CAMPANIA, BASILICATA, CALABRIA, E SICILIA.

LORO SEDI

ALLE PREFETTURE-UFFICI TERRITORIALI DI GOVERNO DI:
SARDEGNA, BASILICATA, CALABRIA E SICILIA.

LORO SEDI

PER CONOSCENZA ALLE PREFETTURE-UFFICI TERRITORIALI DI GOVERNO DI:
CAMPANIA.

LORO SEDI

- MIN. INTERNO
DIPARTIMENTO VV.F. SOCC. PUB. DIF. CIV. FAX 06/4814695 RM
- MIN. AMBIENTE E TERRITORIO
APAT - Agenzia per la Protezione Ambientale Servizi Tecnici FAX 06/50072929
- MIN. DOL, AGR. AL. E FORESTALI
CORPO FORESTALE DELLO STATO/ SALA OPERATIVA FAX 06/47823910 RM
FAX 06/47885280 RM
- MIN. INFRASTRUTTURE
MIN. TRASPORTI FAX 06/441251056
IAX 06/5922737
- UFF. GEN. PER LA METEOROLOGIA FAX 06/24401359
- CNMCA/SALA OP. TEL. 06/91292664 - FAX 06/91292457
- COIDIFESA COD ROMA FAX 06/46919003
06/46912043
- COM. BRIG. GR. FOPI FAX 06/4500508
- APAT - S.D. FAX 06/4466392 RM
- ENEL - (PROCIIV) FAX 06/8845844 - FAX 06/83052795 RM
- TERNA SPA FAX 06/83138154 TEL 06/83138282
- COM. GEN. CAP. DI PORTO/ SALA OP. FAX 06/5922737 FAX 06/59084793 RM
- ENAV DIR. GEN. FAX 06/8166017
- ENAV FIDUCIARIO FAX 06/63630268
- ENAV DIR. LINATE FAX 02/70143226

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autodesk

AVVISO DI CONDIZIONI METEOROLOGICHE AVVERSE:

"DALLE PRIME ORE DELLA GIORNATA DI DOMANI LUNEDÌ 26 FEBBRAIO 2007, E PER LE SUCCESSIVE 24-36 ORE, SI PREVEDONO:

- PRECIPITAZIONI DIFFUSE, ANCHE A CARATTERE DI ROVESCIO O TEMPORALE FORTE, CON QUANTITATIVI LOCALMENTE ELEVATI SU CAMPANIA, BASILICATA, CALABRIA, SPECIE SUI VERSANTI TIRRENICI E SICILIA NORD-ORIENTALE. I FENOMENI POTRANNO ESSERE ACCOMPAGNATI DA FREQUENTE ATTIVITA' ELETTRICA E DA FORTI RAFFICCHE DI VENTO;
- VENTI DI BURRASCIA NORD-OCIDENTALI SU SARDEGNA E SICILIA, CON POSSIBILI RINFORZI FINO A TEMPESTE SUI SETTORI OCCIDENTALI DELLA SARDEGNA; MAREGGIATE LUNGO LE COSTE ESPOSTE."

- PER LE REGIONI INTERESSATE SI CONFERMANO LE RACCOMANDAZIONI CONTENUTE NELLA DIRETTIVA A RIFERIMENTO.
- QUESTO DIPARTIMENTO SEGUIRA' L' EVOLVERSI DELLA SITUAZIONE, SI PREGA, QUINDI, DI PORRE ATTENZIONE AI SUCCESSIVI BOLLETTINI DI VIGILANZA EMESSI SUL SITO INTERNET <http://www.protezionecivile.it/vigilanza>
- I DIRETTI DESTINATARI DEL PRESENTE MESSAGGIO VORRANNO CONFERMARE URGENTEMENTE LA RICEZIONE, AT MEZZO FAX, NUMERO 06/68202360.

ROMA, 25 FEBBRAIO 2007

D'ORDINE
IL CAPO DIPARTIMENTO
GUIDO BERTOLASO
T.Col. Luciano Di Forti

VISTO: Autorizza trasmissione Msg
Direttore dell'Ufficio Rischi Naturali
Prof. Bernardo De Bernardinis

Risk level warning message

**PRESIDENZA DEL CONSIGLIO DEI MINISTRI
DIPARTIMENTO DELLA PROTEZIONE CIVILE**

Qualifica	Nome e Cognome	Indirizzo	Telefono	Fax

DIPARTIMENTO DELLA PROTEZIONE CIVILE NAZIONALE - Via **Vittoriano**, 11 00193 ROMA

A RESPONSABILITÀ PROTEZIONE CIVILE ET. SERVIZI METEO REGIONI DI:
CALABRIA, BASILICATA, PUGLIA LORO SEDI

CENTRI FUNZIONALI DECENTRATI DI:
CALABRIA, BASILICATA, PUGLIA LORO SEDI

ORGANISMI REGIONALI DI PROTEZIONE CIVILE DI:
CALABRIA, BASILICATA, PUGLIA

- MINISTERO DEPARTAMENTO W.F. SOCC. PUB. DEF. CIV. FAX 064814695 RM
- APAT- Agenzia per la Protezione Ambientale Servizi Tecnici FAX 06/59072929
- MIN. AMBIENTE E TERRITORIO
APAT- AGENZIA PER LA protezione Ambiente Servizi Tecnici FAX 06/59072929
- MIN. POL. AGR. E FORESTALI
CORPO FORESTALE DELLO STATO/ SALA OPERATIVA FAX 0647822910 RM
FAX 0647885280 RM
- MIN. INFRASTRUTTURE E TRASPORTI FAX 06411251056
FAX 06/24801359
- UFF. GEN. PER LA METEOROLOGIA FAX 06/91292457
- CINQUA/SALA OP. TEL. 06/91292454 FAX 06/4821714
- COL / SALA SITUAZIONE FAX 06/5912043
- COM. BRIG. GR. POPI FAX 06/4295058
- APAT - S.O. FAX 064466292 RM
- ENEL - (PROCEIV) FAX 06/8845844 FAX 06/85932795 RM
- COM.GEN. CAP.DI PORTO/ SALA OP. FAX 06/5922737 FAX 06/59084793 RM
- ENAV DER. GEN. FAX 06/8166017
- ENAV FUNZIONO FAX 06/6565288
- ENAV LINATE FAX 02/70143226

PAG. 1 di 2

N° 0012 DATATO 19 SETTEMBRE 2004

OGGETTO: AVVISO DI CRITICITA' NAZIONALE.

RIFE././ DIRETTIVA PRESIDENZA CONSIGLIO DEI MINISTRI 27-2-2004.
INDIRIZZI OPERATIVI PER LA GESTIONE ORGANIZZATIVA E FUNZIONALE DEL SISTEMA DI ALLERTAMENTO NAZIONALE E REGIONALE PER IL RISCHIO IDROGEOLOGICO E IDRAULICO AI FINI DI PROTEZIONE CIVILE.

SEGUITO: AVVISO DI CONDIZIONI METEOROLOGICHE AVVERSE PROT. N° 42249 DEL 19 SETTEMBRE 2004

ALLA LUCE DELLA SITUAZIONE OGGETTO DELL'AVVISO DI CONDIZIONI METEOROLOGICHE AVVERSE, CHE SI FA SEGUITO, DAL POMERIGGIO DI OGGE FINO ALLA MATTINATA DI DOMANI 20 SETTEMBRE, SI SEGNA LA QUANTO SEGUE:

- TENUTO CONTO DELLE CARATTERISTICHE SPAZIO TEMPORALI DELLE PRECIPITAZIONI PREVISTE E DELLA LORO INTENSITA', DELLO STATO DI SATURAZIONE DEI SUOLI E DEI LIVELLI ATTUALI DEI CORSI D'ACQUA, DELLE INDICAZIONI DELLA MODELLISTICA IDROLOGICA E IDRAULICA DISPONIBILI, POTRANNO VERIFICARSI I SEGUENTI LIVELLI DI CRITICITA':
 - MODERATA CRITICITA' PER RISCHIO IDROGEOLOGICO LOCALIZZATO:**
CALABRIA: Versante ionico meridionale, versante tirrenico meridionale;
PUGLIA: Capitanata, Terra di Bari, Penisola Salentina, Provincia di Taranto.
 - MODERATA CRITICITA' PER RISCHIO IDRAULICO:**
BASILICATA: Bacino dell'**Ohato**.
 - ORDINARIA CRITICITA' TENDENTE A MODERATO PER RISCHIO IDROGEOLOGICO LOCALIZZATO:**
PUGLIA: Gargano;
 - ORDINARIA CRITICITA' TENDENTE A MODERATO PER RISCHIO IDRAULICO:**
BASILICATA: Bacini **Bassuto**, **Bardone**, **Covone**, Bacini **Agri**, **Suoi**;
 - ORDINARIA CRITICITA' PER RISCHIO IDROGEOLOGICO LOCALIZZATO:**
CALABRIA: Versante tirrenico settentrionale calabrese, Versante ionico settentrionale calabrese, versante tirrenico centrale calabrese, versante ionico centrale calabrese.
- NEL CONFERMARE LE RACCOMANDAZIONI CONTENUTE NELLA DIRETTIVA A RIFERIMENTO, QUESTO DIPARTIMENTO SEGUIRA' EVOLVERSÌ DELLA SITUAZIONE.
- NELLE MORE DI UNA INTESA FORMALE TRA IL DIPARTIMENTO, LE REGIONI OPPURE LE PROVINCE AUTONOME, GLI AVVISI DI CRITICITA' SARANNO EMESSI SOTTO LA RESPONSABILITA' DEL DIPARTIMENTO STESSO E SARANNO DA INTENDERSI SOLO QUALE SPERIMENTAZIONE AI FINI DI UN DEFINITIVO AVVISO DELLE NUOVE PROCEDURE.

**IL DIPARTIMENTO DELL'UNICO SPERIMENTAZIONE
VALUTAZIONE E PERIZIAZIONE DEI RISCHI**
Prof. **Bernardo De Bona** e s. c.

ROMA, 19 SETTEMBRE 2004

VISTO: Autorizza trasmissione **859**

**Dipartimento della Protezione Civile
Centro Funzionale Nazionale**

Bollettino di criticità nazionale

Effetti al suolo previsti per il 18 settembre 2004

Zone di Allerta

- Assenza di fenomeni significativi
- Criticità ordinaria fenomeni localizzati
- Criticità ordinaria fenomeni diffusi
- Criticità moderata fenomeni localizzati
- Criticità moderata fenomeni diffusi
- Criticità elevata fenomeni localizzati
- Criticità elevata fenomeni diffusi

SI POTRANNO VERIFICARE LIVELLI DI MODERATA CRITICITA' PER RISCHIO IDROGEOLOGICO LOCALIZZATO SU:

- ABRUZZO: tutte le zone di allerta;
- LAZIO: Appennino di Rieti;
- CAMPANIA: tutte le zone di allerta, tranne il Bacino del Calore.

ORDINARIA CRITICITA' PER RISCHIO IDROGEOLOGICO LOCALIZZATO

- PUGLIA: tutte le zone di allerta;
- BASILICATA: tutte le zone di allerta;
- MOLISE: tutte le zone di allerta;
- CAMPANIA: Bacino del Calore;
- SICILIA: Val di Mazara;
- LAZIO: Marsica, Ciociaria, Bacino del Sisto.

SI POTRANNO ANCHE VERIFICARE LIVELLI DI ELEVATA CRITICITA' PER RISCHIO IDROGEOLOGICO LOCALIZZATO SU:

- SICILIA: tutte le zone di allerta, tranne Val di Mazara;
- CALABRIA: tutte le zone di allerta.

Dissemination

Weather warning message:

- **Civil protection public web site;**
- **Televideo;**
- **Isoradio;**
- **Civil protection operational network**

Civil Protection warning message:

- **Civil protection operational network**



For all customers

Settore Meteo – CFC

Benvenuto nel sito - Protezione civile.it - Microsoft Internet Explorer

File Modifica Visualizza Preferiti Strumenti ?

Indietro Cerca Preferiti

Indirizzo <http://www.protezionecivile.it/> Vai Collegamenti



DIPARTIMENTO DELLA
PROTEZIONE CIVILE



PRESIDENZA DEL CONSIGLIO DEI MINISTRI

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cerca > vai

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IN EVIDENZA

- [Classificazione sismica](#)
- [Registrazioni accelerometriche RAN](#)
- [Protezione civile in famiglia](#)

BOLLETTINO DI VIGILANZA METEO NAZIONALE

NAVIGAZIONE

- [Il Sistema nazionale di protezione civile](#)
- [Attività del sistema](#)
- [Rapporti di attività](#)
- [Il volontariato di protezione civile](#)
- [Legislazione](#)
- [Informazioni](#)

UTILITÀ

- [Iscrizioni newsletter](#)
- [Incontri](#)
- [Risorse](#)

ULTIME DAL DIPARTIMENTO

[Emergenza Sudan](#)



In una classifica dei Paesi più a rischio del mondo oggi il Sudan, il Paese più esteso del continente africano, probabilmente sarebbe candidato a conquistare il primo posto...



RASSEGNA STAMPA

[Miniere, centro nazionale](#)

peso 33kb
NAZIONE ed. AREZZO *Giorgio Grassi*

[Viaggio al centro della Terra, dove nascono i terremoti](#)

peso 147kb
STAMPA - TST *Gabriele Beccaria*

[Operazione ambientale 'fiumi puliti' Nel week-end 300 volontari a lavoro](#)

peso 20kb
GIORNO ed. VARESE

<http://www.protezionecivile.it>

FALSE WARNING MESSAGES: Connected problems

✓ Credibility toward citizens and personnel involved in emergency management

✓ **MONEY (NOT UNLIMITED)**

Development: Monitoring network available on the WEB

Including

- Rivergauges
- Raingauges
- Webcam
- Meteostation

Information on statistics, previous events, damages occurred, warning areas, flood exposition, ... are also available



MODWIP project – developed by DCP

40 M€ improvement – 3 M€ mantainace



National Radar Network



OPERATIVE DPC RADARS

4 plants



INCOMING RADARS
DPC

6 plants



REGIONAL RADARS

10 plants



AIR FORCE RADARS

4 plants



ENAV (National
Administration for
Civilian Flights)
RADARS

2 plants



40 M€ improvment – 1 M€ mantainace

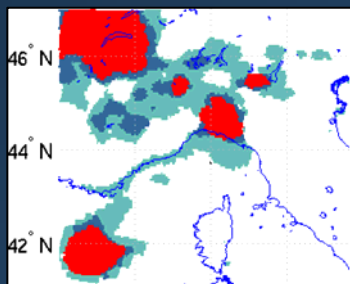
Use of EO satellite data for Hazard&Risk forecast, assessment and surveillance

There have been research and operational demonstrations that illustrate the potential usefulness of EO satellite data for a broader range of hazards, and DPC is started to use EO data for its activities, even if “... *the operational application of these data is still quite limited.*” (*)

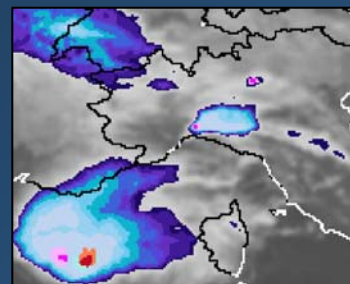
DPC target is to foster improved utilization of existing and planned Earth Observation (EO) satellite data integrated with in situ data to support users in every phase of risk management cycle (Pre-disaster, Emergency response, Post Disaster).

IMPROVING SATELLITE ESTIMATION

Rain Rate

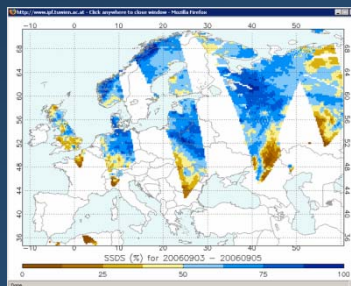


Zoom in North of Italy of the Estimated Rain Rate Classes from AMSU on MSG grid 2006-8 -16 starting at 01:52 ending at 02:05



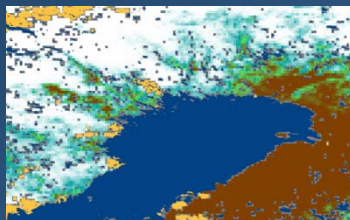
Zoom in North of Italy of Convective Detection Cloud by SEVIRI data 2006- 8 -16 at 02:00.

Soil Moisture



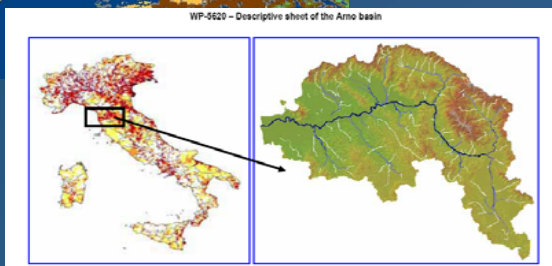
ASCAT:25 Km Res - Typical large-scale soil moisture product

Snow parameters



fraction of Snow Covered Area, derived by Terra/MODIS level 1B data, around Bay of Bothnia

Hydrological validation

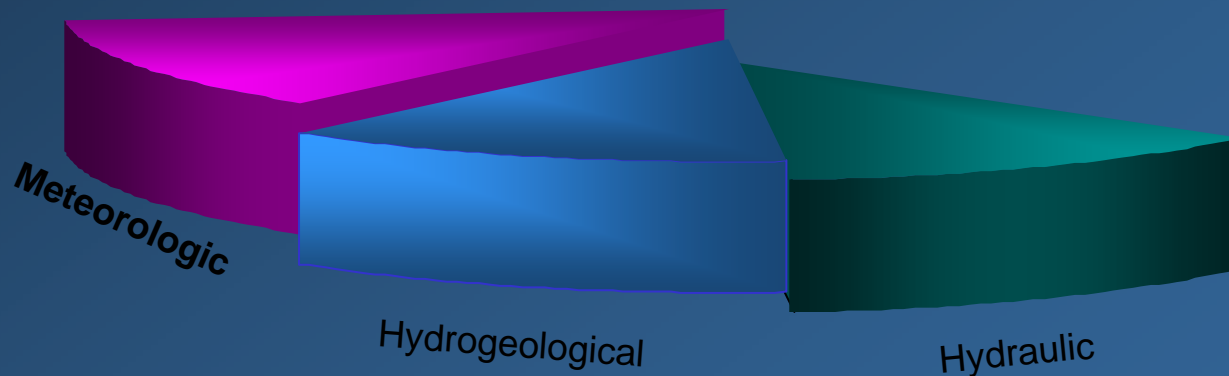


Impact on hydrological forecast

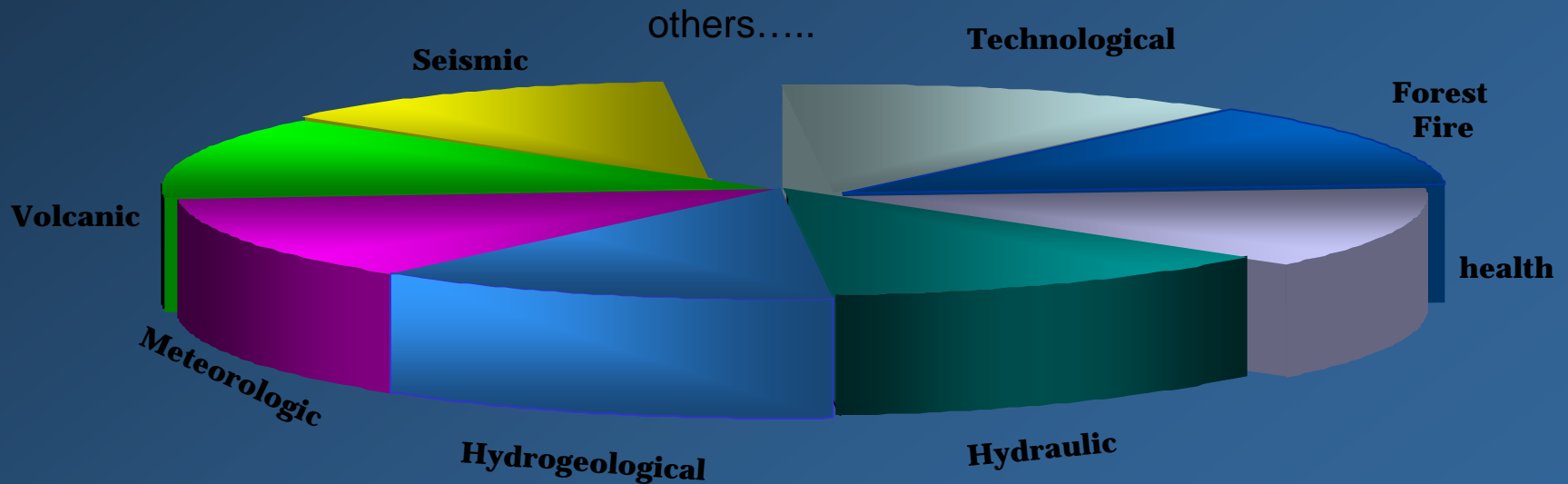
HSAF Project 1.2 M€5years

So, we start in the 2004 ...

and the Directive (DPCM 27/2/04) identified the activation of the Functional Centres for the hydrogeological, meteorologic and hydraulic risks , but.... now



.. other sectors are added and, actually, we have a true multirisk center to support the activities of monitoring, forecast and emergency.



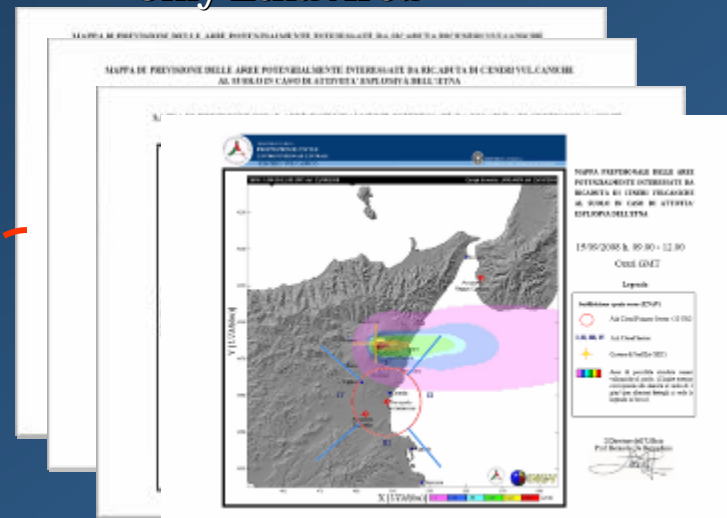


Products of Functional Centre

Forest Fire daily surveillance bulletin



Forecast maps of ash fallout – only Etna Area

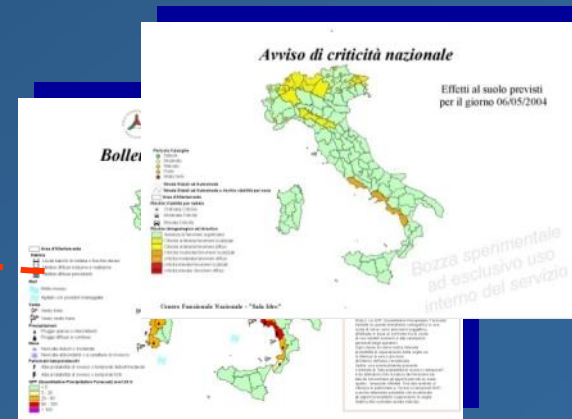


Volcanic daily surveillance bulletin



**Ministry
Regions
Prefecture**

Meteo daily surveillance bulletin

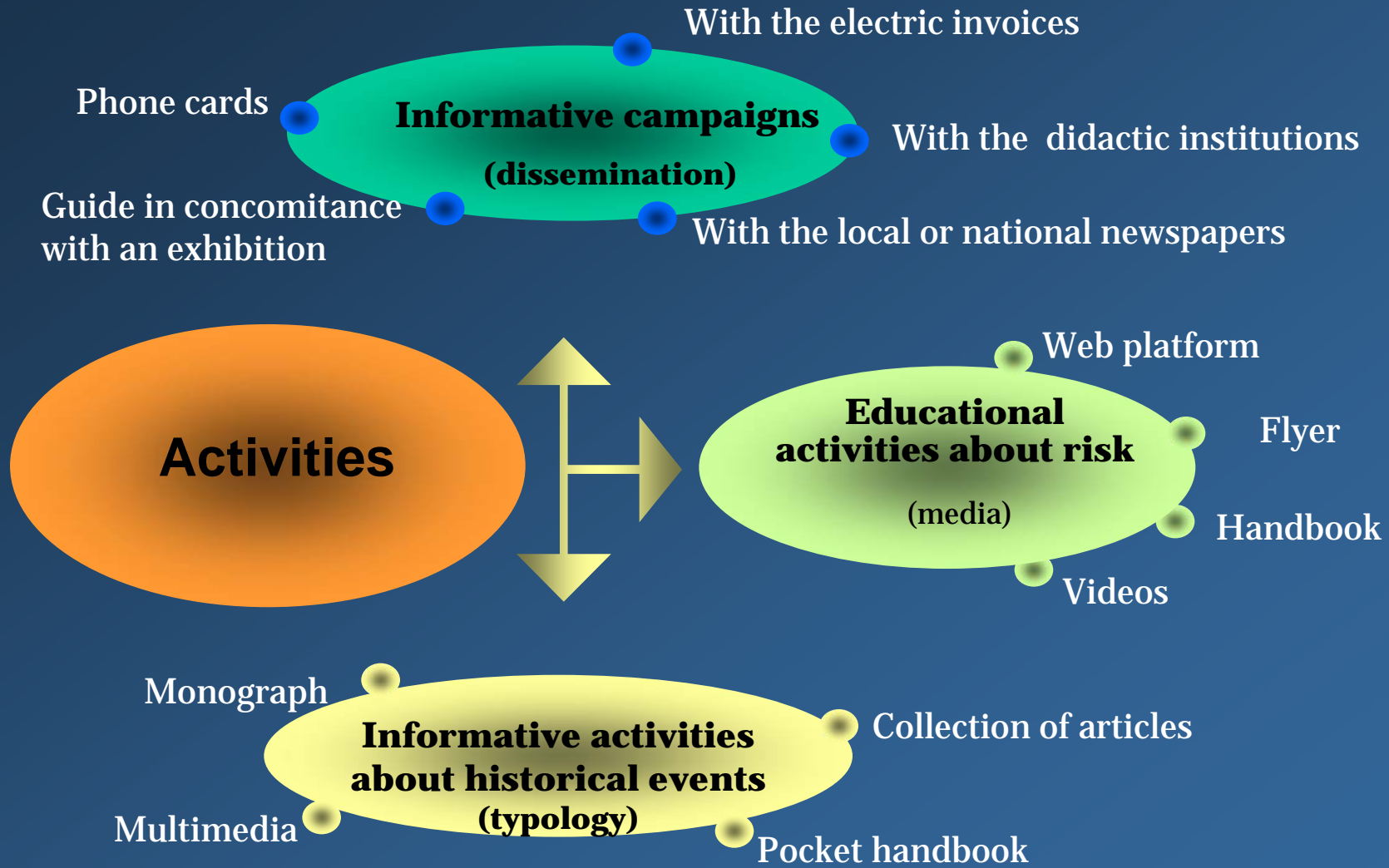


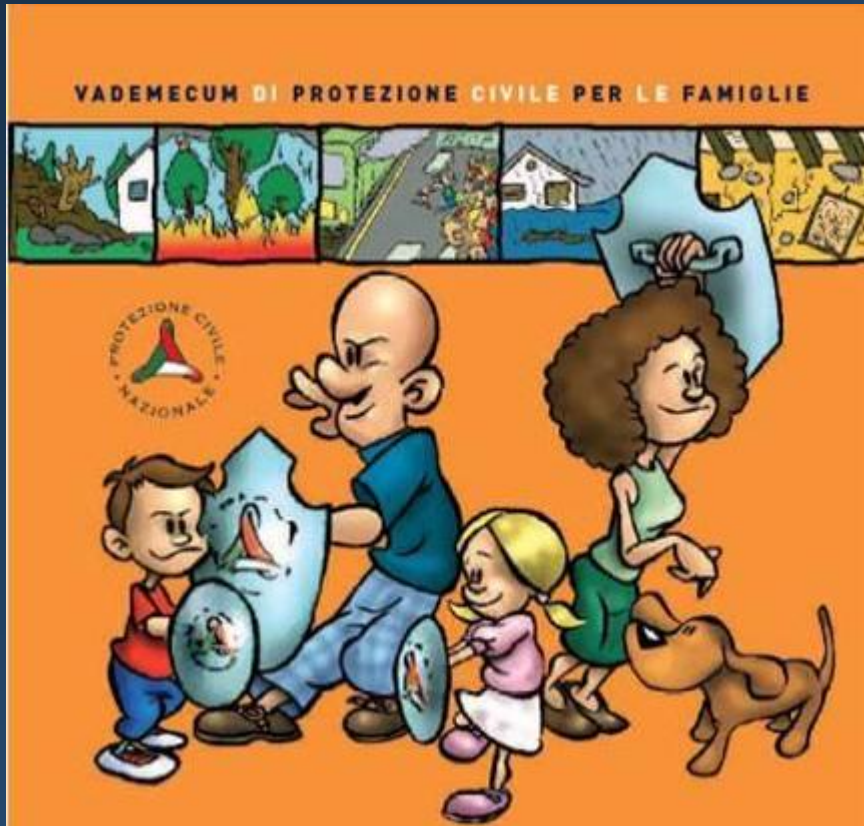


Early warning systems

..... **educational and Informative activities**

during a warning or a catastrophe,
citizens behaviour
is too much important to be forgotten!!!!





2006

“Vademecum di Protezione Civile”

“Civil Protection in our family”

Promoter bodies:
DPC

Formative activities:

The Civil Protection Department realized a vademecum about our Country's main risks: earthquakes, volcanoes, management of new types of emergency like terrorist attacks, heat waves and epidemics. About 5.000.000 copies of this vademecum were distributed together with the main **national newspapers.**

WELCOME TO STROMBOLI

One of the most beautiful and fascinating islands in the Mediterranean sea

The Island of Stromboli is special and unique and its ecosystem is an enchanting mix of beautiful coasts, volcanic sand beaches, wonderful sea and typical vegetation.

But Stromboli is... also an active volcano

In order to let you enjoy in safety the island and its fantastic beauties, we remind you that - due to the recent intense activity of the volcano - in accordance with ordinance n. 121/02 of December the 30th 2002, excursions to the top of the volcano are strictly forbidden. Do not enter in the area bounded by the blue line on the map. There is no restriction regarding the beaches and the residential areas.

In the very exceptional event of tidal wave, an alarm siren will warn of the danger. Please leave the seaboard as soon as you can and go inland. The inhabitants of Stromboli will indicate you the safety areas.

To make your journey more pleasant and interesting, contact the official guides. They know the beauties of the island and the dangers of the volcano, and will advise you, give all the information you need and escort you in your safe exploration of this extraordinary world.

Enjoy your stay in STROMBOLI!

Info:
 City of Lipari - District of Stromboli - ph.: 090 9865-730
 Volcanological Guides Office of Stromboli - ph.: 090 9865-768
infostromboli@protezionecivile.it



Folder for tourists



Training workshop on Multi - Hazard Early Warning Systems



**Thanks for
your attention**



Patrizio Emiliani – patrizio.emiliani@protezionecivile.it

Pula, 1-3 October 2009