International conference - Public Alerting and Social Media during Crisis and Disasters - Berlin, Germany, October 30 – November 1, 2013

SICILIAN REGION
Civil Protection Department - Messina
EARLY WARNING SYSTEM - HYDROGEOLOGICAL AND HYDRAULIC RISK

NATIONAL EARLY WARNING SYSTEM

Forecasting and monitoring phase | **Emergency management**

National Civil Protection Department (DPC)

National center for forecasting and surveillance of effect (CFC)

The CFC through observation, qualitative and quantitative, direct and instrumental, of the hydrological and hydro-meteorological events in progress compiles in real-time forecasting of short-related effects.

National Weather Vigilance Bulletin

Regional center for forecasting and surveillance of effect (CFD)

The CFD efficiently interprets the meteorological data on a Regional scale, and proceed to the modeling of the different effects on the ground.

Regional Weather Alert Emission

PRESIDENZA DEL CONSIGLIO DEI MINISTRI
DIPARTIMENTO DELLA PROTEZIONE CIVILE

Forecast monitoring and survaillance ⇄ Forecast of scenarios in alert zones according to complex thresholds overcomings

CRITICALITY LEVELS

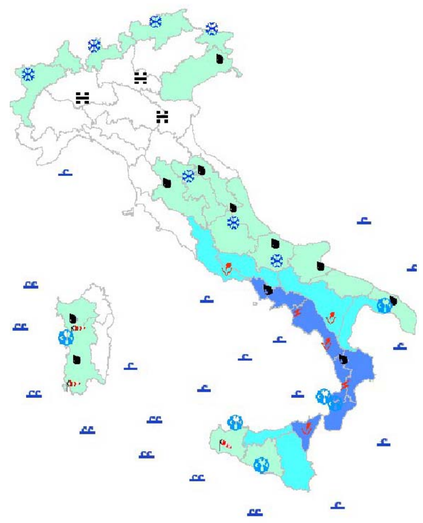
ORDINARY	MODERATE	HIGH
Configuration of civil protection system is ordinary, that is working on routine function.	In moderate conditions it is assumed that is possible that some medium damage could happen in little area like municipal area or provincial area.	Several conditions could cause critical damage on large areas like provincial area or regional area.

Model's Configuration of Civil Protection

Configuration of civil protection system is "Standard" (S0)	This configuration is called "Surveillance" (S1)	This configuration is called "Territorial Coverage" (S2)	This configuration is called "Crisis Unit" (S3)

Criticality levels are communicated to Municipalities through warnings. They activate Emergency Plans phases

PRESIDENZA DEL CONSIGLIO DEI MINISTRI
DIPARTIMENTO DELLA PROTEZIONE CIVILE



EMERGENCY ACTIVATION PHASES

PRE-ALERT
Monitoring, analisys, and studied archiviation of rainfall data.

ATTENTION
- **DPC**: - Analizes and evaluates weather events - Releases a national weather bullettin - Etc...
- **DRPC**: - Alerts voluntary organizations - Monitors regional rainfall - Warns comunal civil protection - Etc...
- **Mayor**: - Informs population - Checks previously examinated sites for Hydraulic and geomorphological critical issues - Monitors effects on territory - Etc...

PRE-ALARM
- **DPC**: - Analizes and evaluates weather events - Organizes territorial offices - Releases a national weather bullettin - Etc...
- **DRPC**: - Alerts voluntary organizations - Alerts staff - Provides technical support to the Mayor - Send staff to emergency unit located at the Prefecture - Etc...
- **Mayor**: - Informs population - Activates the Municipal Operational Center (COC) - Identifies areas of emergency verifing grade of critical issues - Etc...

ALARM
- **DPC**: - Analizes and evaluates weather events - Organizes territorial offices - If requested Provides technical support to the DRPC - Releases a national weather bullettin - Etc...
- **DRPC**: - Alerts voluntary organizations - Alerts staff - Requires support to the DPC - Provides technical support to the Mayor - Send staff to emergency unit located at the Prefecture - Etc...
- **Mayor**: - Informs population - Activates the COC. - Monitors effects on territory - Requires support to the Region - Requests status of a natural disaster - Etc...

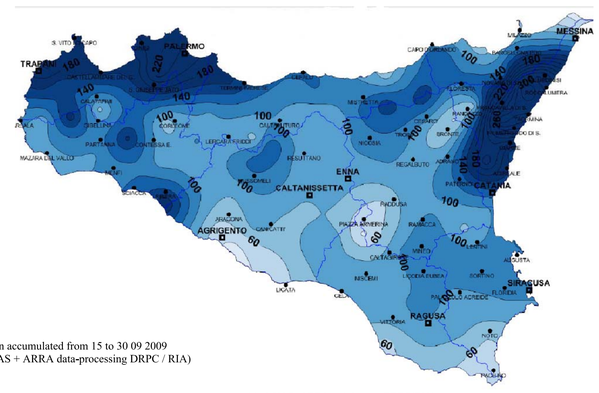
note:

DPC: National Civil Protection Department

DPRC: Department Regional Civil Protection.

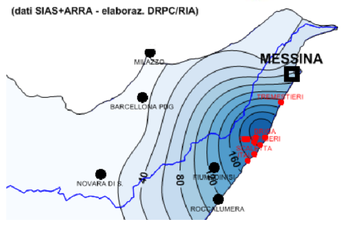
COC: Municipal Operational Center

Activation phases: they lead to the implementation of prevention and emergency management actions scheduled in the Emergency Plan



Rain accumulated from 15 to 30 09 2009
(SIAS + ARRA data-processing DRPC / RIA)

(dati SIAS+ARRA - elaboraz. DRPC/RIA)



Total daily rains from 1October 2009
(SIAS + ARRA data-processing DRPC / RIA)

OPERATION MODEL

Developed during the Giampilieri's events of 2009

ORDINARY
Monitoring

- **COC**: Systematic, punctual and visual monitoring of slopes at risk with the collaboration of technical and scientific geologists and engineers belonging to the **Function 1 of the COC**.

ATTENTION
Alert adverse weather

- **Mayor**: Enables the response of Civil Protection's system and the support functions of the Municipal Operational Center (COC)
- **COC**: Support functions include:
  - Technical scientific Function
  - Volunteer Function
  - Basic Services Function
  - Transport and traffic circulation Function
  - Function relative to materials and means

PRE-ALARM
Overcoming first rainfall threshold

- **Mayor**: Orders the sound of the first siren with intermittent pulses of duration of 15 minutes. Instructs the police about behavior as to keep, inviting the population to prepare for eventual abandonment of the areas affected by the event.
- **COC**: Support functions include:
  - Operative Structures
  - Volunteer Function
  - Basic Services Function
  - Transport and traffic circulation Function
  - Health care Function

ALARM
Overcoming second rainfall threshold

- **Mayor**: Sound of the second siren with continuous pulses. Start evacuation according to the planning.
- **COC**: The Municipal Operational Center moves to Base Camp, provided by planning. Support functions include:
  - Operative Structures
  - Function relative to materials and means
  - Transport and traffic circulation Function
  - Health care Function

note:

COC: Municipal Operational Center.

Function 1: Technical scientific Function

Threshold	Pcum (mm/h)	Alert Code
		C0 Alert Code
K1	35	
		C1 Pre-Alert
K2	70	
		C2 Attention
K3	104	
		C3 Pre-Alarm
K4	155	
		C4 Alarm

Threshold	Pint (mm/h)	Alert Code
		L0 Alert Code
Y1	10	
		L1 Pre-Alert
Y2	25	
		L2 Attention
Y3	40	
		L3 Pre-Alarm

Threshold values □□of cumulative and intense rainfall for the definition of the degrees of warning for the scenarios of events of the Ionian coast of Messina. (Dott. Geol. G. Basile - Regional Civil Protection of Palermo)

EFFECTIVENESS OF INFORMATION SYSTEM

- THE RESPONSIBLE INSTITUTIONS INFORM → **WHO**
- FOR EVERY TYPE OF RISK → **WHY**
- FOR EVERY STAGE OF ALERT → **WHEN**
- PEOPLE SHOULD BE INFORMED → **WHO TO**
- IN THE AREAS OF INTEREST → **WHERE**
- WITH DIFFERENT CONTENTS OF INFORMATION → **WHAT**
- WITH APPROPRIATE MODE OF COMMUNICATION → **HOW**

WHO: Local Institutions ⇄ Central Institutions

WHERE: In areas of interest where is expected or there has been an event

WHY: Seismic Risk; Fire Risk; Hydrogeological Risk; Environment Risk; Industrial Risk; Anthropic Risk; Vulcanic Risk; Etc.

WHO TO: Population distinguished by: Age; Eventual Disability; Language; Education Level; Etc.; Institutions

WHEN: Early Alert; Warning; Attention; Early Warning

HOW: TV- Radio; Newspapers; Phone - SMS-Fax; Internet - Mail - Social Network; Etc.; Informative Panels; Acoustic Systems (Sirens - Speakers - Bells); Door to Door

WHAT: Actions to perform ⇄ Type of event

Ing. Bruno Manfrè, Head of the Regional Civil Protection of Messina. **Ing. Concetta Marletta**, Responsible of the hydrogeologic risk staff of the Regional Civil Protection of Messina.