CIMA Research Foundation

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WHO WE ARE

CIMA Research Foundation is a non-profit private **research institution** and its research **aims at improving the knowledge in the field of natural hazards and unnatural disasters to answer the request of security and safety of the modern society**, both in developed and developing countries.
CIMA is active in promoting and supporting training, research and technological development in the fields of **hydro-geological risk reduction, forest fires and monitoring of the marine environment.**

Mission
To Protect Man and the Environment, through the development of knowledge through scientific research and the innovation capacity of our human resources.

Our Vision
Become an international reference within our research fields, translating science and knowledge into real answers concerning mankind and the environmental global challenges.

Some numbers:

- 60+ researchers
- 2 Operational offices (ITA-AL)
- 25+ active research project
- 90+ scientific pubblications

Research field:

Hydrometeorological risk

Transport risk

Fire risk

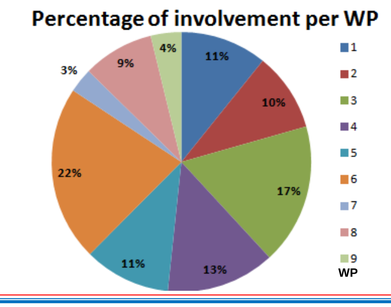
Industrial risk

WHAT ARE OUR CONNECTIONS

OUR INVOLVEMENT IN ANYWHERE

Work package No.	Work package title	Type of activity	Lead Participant Short name	Lead Participant no.	Person-months	Start month	End month
WP 1	Developing a framework for innovation co-ownership ensuring the successful implementation of the project	IA	UFZ	5	144	M01	M37
WP 2	Advanced forecasting models and tools to anticipate W&C event induced impacts	IA	WUR	4	236,5	M01	M19
WP 3	Integrating impact models and tools in a Multi-Hazard operational Early Warning System	IA	HYDS	6	176	M02	M37
WP 4	Building an operational prototype of the ANYWHERE platform for Decision support in Emergency Management Operation Services (A4DEMOS)	IA	AIRBUS	3	172	M04	M38
WP 5	Raising self-preparedness and self-protection to reduce population vulnerability	IA	UPB	7	144	M03	M38
WP 6	User-driven pilot sites implementation and demonstration	DEMO	CIMA	2	336	M13	M38
WP 7	Innovation Exploitation, Business models and Market development	IA	AIRBUS	3	63,5	M03	M38
WP 8	Dissemination, communication, training and stakeholder engagement	DISS	UPC	1	87,5	M01	M39
WP 9	Project Management	MGNT	UPC	1	102	M01	M39
			Total		1461,5		

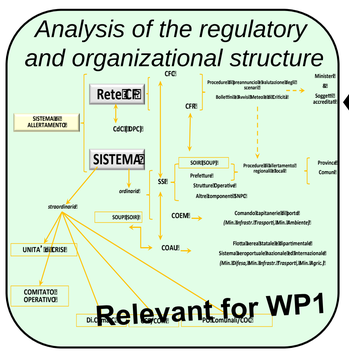
Partner:	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total PM per Participant
CIMA	8,0	12,0	16,0	12,0	8,0	38,0	1,0	4,0	2,0	101



WP6 LEADER - User-driven pilot sites implementation and demonstration

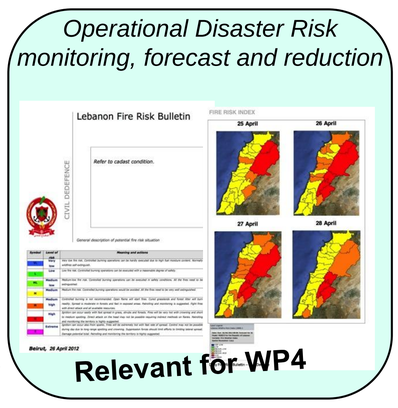
HOW CIMA OPERATES

Analysis of the regulatory and organizational structure

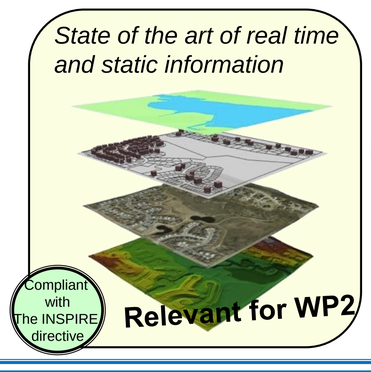


Capacity Building

Operational Disaster Risk monitoring, forecast and reduction

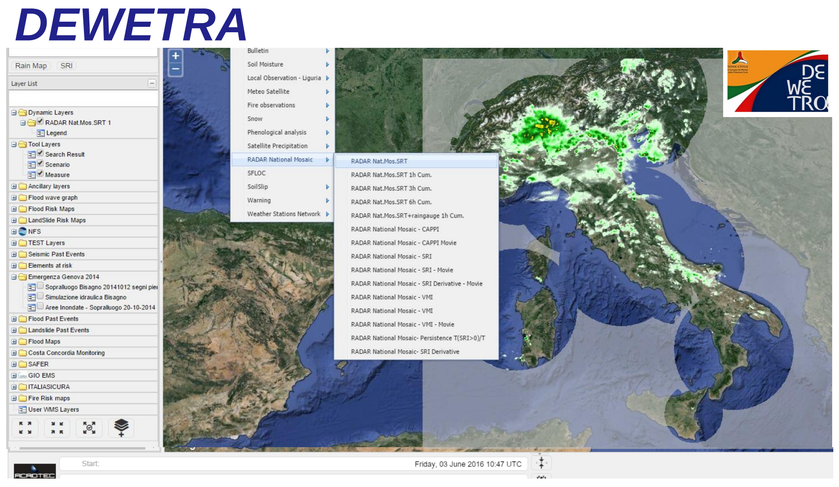


State of the art of real time and static information



Customization of the platform Integration of data and models

DEWETRA



The **DEWETRA** platform is a **real-time integrated system for hydro-meteorological and wildfire risk forecasting, monitoring and prevention.**
The system is **based on the rapid availability of** different data which help establish **up-to-date and reliable risk scenarios**.

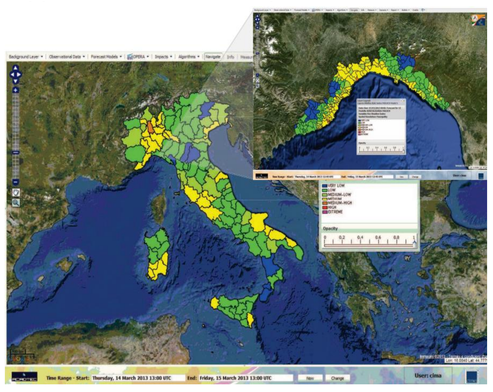
The Head of the Civil Protection Department, Franco Gabrielli, and WMO Secretary-General Michel Jarraud signed the accord, which formalizes existing collaboration in the area of natural risk reduction.

Italian expertise – in instrumental monitoring, observation and assessment of risk scenarios and their evolution – will thus be an asset shared with all WMO Members who appreciate its advantages and who choose to adapt it to their requirements, in collaboration with WMO.

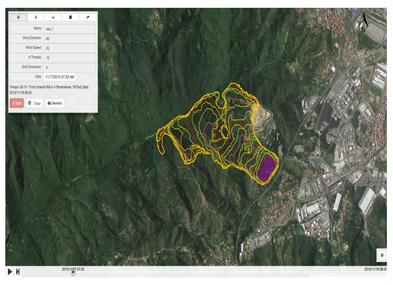
Currently, several Caribbean countries, as well as Albania, Bolivia and Lebanon, are already using the Dewetra platform, while The Philippines, Ecuador and Guyana have recently sent requests for its implementation.

ALGORITHMS & MODELS

RISICO (Fire Risk and Coordination) is a system designed to support end users in the prevention of forest fires.

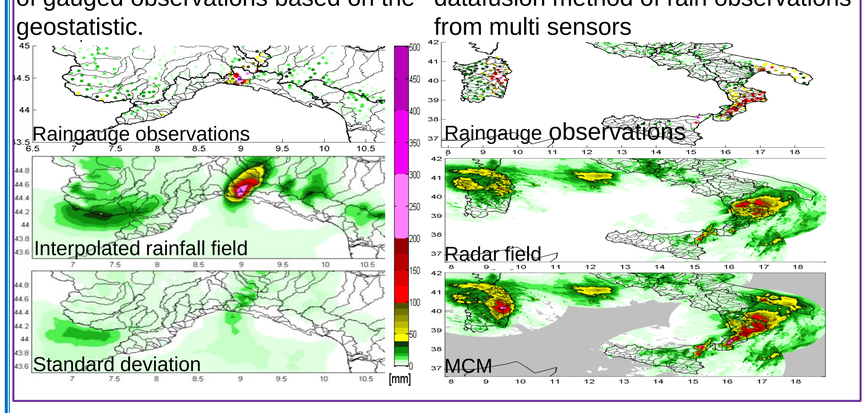


PROPAGATOR is a stochastic model predicting the propagation of a wildfire

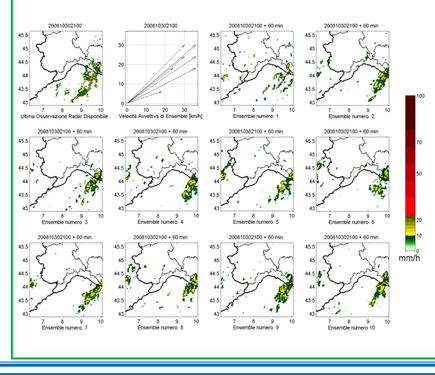


GRISO is a spatial rainfall interpolator of gauged observations based on the geostatistic.

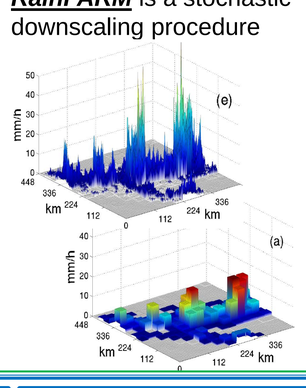
Modified Conditional Merging is a datafusion method of rain observations from multi sensors



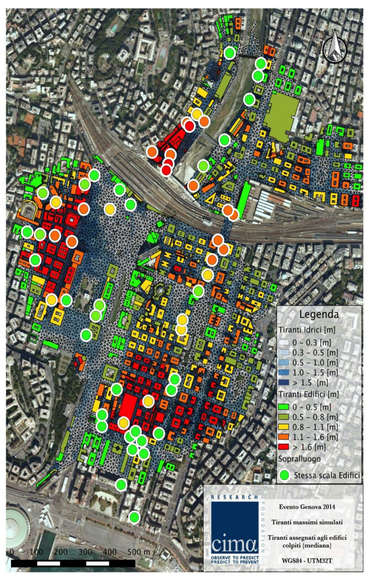
PHAST ensemble rainfall nowcasting



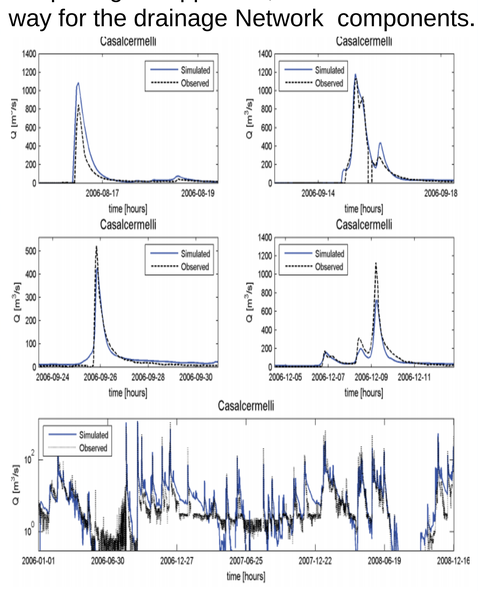
RainFARM is a stochastic downscaling procedure



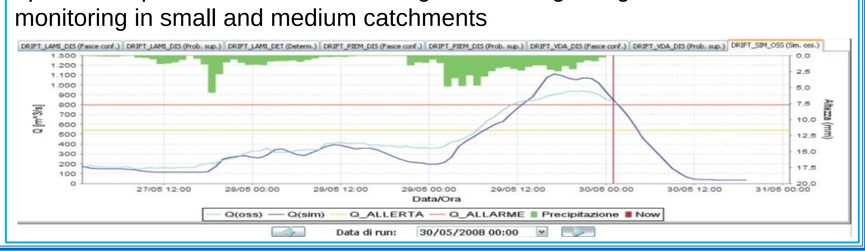
2D Hydraulic simulation of the event, especially in flood or flashflood hazard area



Continuum is a continuous distributed hydrological model that strongly relies on a morphological approach, based on a novel way for the drainage Network components.



Flood-PROOFS is a system designed to assist decision makers during the operational phases of flood forecasting, nowcasting, mitigation and monitoring in small and medium catchments



PROJECTS

The list below report all the project which CIMA is/was involved (From European to local level, as coordinator or partner)

Operational RADAR

CIMA Foundation since 2002 manages on behalf of Liguria Region and in collaboration with ARPA Piemonte Radar Monte Settepani system. This activity allowed the CIMA Foundation staff, on the one hand to be able to learn how to manage an operational radar system, the other to be able to use the data for research purposes and for the construction and operation of new algorithms for the generation of product testing useful in hydro-meteorological field. Some examples are the algorithms for estimating precipitation and the nowcasting systems.

OPERATIONS CENTER

The aim of the **operations center is to provide technical support to civil protection decision-makers in order to issue meteo-hydrological and wild fire risk warnings, through a quality certified surveillance procedure**.
All the information derived by forecast models and the ones gathered by the hydro-meteorological network in Italy (and more recently Albania, Lebanon, Lesser Antilles) are available at CIMA Research Foundation Operations Center in real time, where our staff provides the best technical evaluation with regards to:
•The possible evolution of weather conditions and its expected impacts on society;
•The wild fire risk and the possible developing scenarios;

Constant effort is put in upgrading the operational center technological tools and improving validation procedures. The evaluations are therefore based on the most advanced research and technology tools, tested in an operational environment.

Moreover, CIMA through its operations center managed all the data exchange with regional center and Civil protection department and it is the backup of data system that allow us to surveille and operate in place of civil protection departement in case of any problem in Rome center.