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Why the project PRIMES?

It is the fourth day of rain in these stretches of the Apennine, where the creeks become rivers and then flow, impetuously as now, in the waters of the Adriatic Sea. Waters still hot, after the tenth consecutive torrid summer, and days and days of temperatures above 38 degrees Celsius, without a single drop of rain. And now, after all this, it rains a lot! More than 300 mm of rainfall in just three hours, which have been added to those of the last three days. Result: flooded lands, devastated roads, bridges brushed away. Oh, yes: it's climate changed. Temperatures have increased one degree Celsius more over the last twenty years. And then the atmosphere "bubbles", like water in a pot, and creates thunderstorms in it. Long-lasting, and regenerating, thunderstorms. Citizens are in panic. They have never been made aware of the modalities to manage these risks. No one has ever told them the rules of behavior in flood cases. They do not know what they have to do. They know nothing about adaptation plans, risk reduction, emergency plans ... (October 18, 2057).



No, it's not a science fiction movie. It could be a chronicle of a newspaper, in a not too distant future. But a future like this is possible if Society will not be able to handle these new risks, driven by climate change. A future that is already showing signs of presence. Citizens themself-

ves are experiencing it in their daily lives: an increasing of extreme events, flash floods... And the data begin to support their impressions. The questions then are how to deal with these events. Is our Society sufficiently resilient? Do citizens know the tools to protect themselves by the risks? Do they have they a knowledge of early warning systems? In order not to arrive at the chaotic scenario, caused by ignorance, described by that initial "almost fiction" story, it is therefore necessary to raise awareness of the risks, in the populations, through paths in which citizens become much more protagonist. Some answers to this need are in the LIFE PRIMES project, which is a great opportunity to establish a deep dialogue, on some "pilot" areas within three Italian regions (Abruzzo, Emilia-Romagna and Marche), between technicians and citizens, through training courses, tutorials, meetings and much... much more, and that will lead to the definition of "Civic Adaptation Plans" proposed by the citizens themselves and which can be transferred to the Administrations to enrich the Municipal Emergency Plans, envisaged by the Law.





LIFE PRIMES, objectives and expected results

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In the last decades, extreme climate events, and especially flood events, have suddenly increased and are expected to further increase in the future. This has resulted in serious costs in terms of loss of human lives and damages to environment, inhabited places, productive industries, arts and agriculture, as well as in huge and serious economic relapses.

In order to face these events, the local communities have to embrace a huge challenge: becoming more and more active in the creation of efficient adaptation strategies and alert systems.

LIFE PRIMES - a LIFE14CCA/IT/001280 project approved within the LIFE 2014-2020 programme concerning the adaptation strategies to climate change - wants to face the problem in a fresh way.

PRIMES stands for Preventing flooding risk by making resilient communities. This project aims at reducing land and population damages caused by events like floods, inundations and sea storms which depend on intense meteorological phenomena, through the strengthening of the alert systems in three pilot areas, by developing homogeneous and integrated informative procedures and systems on an interregional level, defining risk scenarios and creating a shared web platform in collaboration with the local communities.

Particularly, the objectives of the project are the following:

- homogenization of the procedures on an interregional basis, by strengthening the coordination between the local systems of the Civil Protection;
- strengthening of the monitoring systems and integration of the alert procedures, in order to react more effectively to these events, in terms of response time too;
- creation of a shared web platform aiming at a better knowledge circulation and a more effective management of the interventions for the protection of the land;

- awakening of the population to problems connected to the adaptation to climate changes, and promotion of their participation in the hazard prevention and management.

These objectives will be achieved through a series of measures that will expectedly have been performed by July 2018. The first preparatory measure has consisted in analysing the land context, collecting data and knowledge about the local plans and defining integrated reference scenarios.

The measures planned for this project, which in some cases are fundamental to achieve the above-mentioned objectives, are the following:

- A.1 - preliminary actions for the definition of integrated reference scenarios of climate changes and their impact on the three pilot areas
- C - implementation actions that will concern:
 - C.1 - the homogenization of the alert systems
 - C.2 - the creation of a shared web platform
 - C.3 - the development of dialogue and awakening measures for the community through the implementation of local civic plans.
- D.1 - the monitoring of the impact of the project actions in order to evaluate risk perception and resilience analysis and analyse the expected impacts on the local economy and the environment
- E.1 - the communication and circulation of the results of the project through digital activities, media relation and events
- F.1 - project reporting and networking activities. 



The partners of the project

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The LIFE PRIMES project is run by a lead partner in a synergistic collaboration with five more partners.

The leading partner is the **Department for Territorial Safety and Civil Protection of Emilia-Romagna**. The Department coordinates emergency interventions on a regional scale. Moreover, it is responsible for the preliminary investigation of urgent intervention plans of the Civil Protection; the issue of attention, pre-alarm and alarm warnings in case of disastrous events; and activities connected to the organization, use and training of the civil protection voluntaries on a regional basis. Within the project, it is responsible for Actions C.3 and E.1.

The partners of the project are: Arpae, Regional Agency for Prevention, Environment and Energy of Emilia-Romagna; the Direzione Ambiente Difesa del Suolo e della Costa della Regione Emilia-Romagna (Main Direction for the Protection of the environment, land and coast of the Region of Emilia-Romagna); the Region



of Abruzzo; the Region of Marche; the Marche Polytechnic University.

Arpae is responsible for the development of forecast models in order to improve the quality of environmen-

tal systems and face climate change and the new types of pollution and deterioration of the ecosystems; moreover, it plays a key role in the study, forecast, research and development in the meteorological and climatological field. Within the LIFE PRIMES project, all activities are entrusted to the Servizio Idro-Meteo-Clima (Hydro-Meteorological and Climate Service) of Arpae Emilia-Romagna (Arpae-Simc), which performs forecast, operating and research activities in the fields of meteorology, climatology, hydrology, agro-meteorology, radar meteorology, environmental meteorology and remote sensing. Arpae is responsible for Action A.1 of the project.

The Protection of the land and coast of the Region of Emilia-Romagna aims at achieving adequate hydraulic and hydrogeological territorial safety levels in order to reduce hazard and, at the same time, protect environment and landscape, by planning a correct use of the land and protection interventions of the land, coast and reclaimed areas. It elaborates regulations, rules, guidance and control acts as far as the subjects under their authority are concerned.

The activities connected to the project are mainly focused on the technical actions for the accomplishment of the project. Particularly, the Region of Emilia-Romagna will be responsible for Action C.2, by creating a shared web platform in order to support the alert system as far as the communication with institutions and citizens is concerned.

Mainly, the Functional Centre of the Civil Protection Department of the Region of Abruzzo performs real-time prevention, monitoring and supervision activities of the events, as well as the evaluation of the consequent effects on the land; moreover, it is responsible for the management of the alert system in case of meteorological, hydrogeological, hydraulic and forest fire susceptibility risk. Furthermore, it is involved

in the emergency planning, by supporting Municipalities, free of charge, in the preparation and updating of the Municipal Emergency Plans.

The activities connected to the project are mainly focused on Actions C.2 and C.3. Within action C.3, the Region of Abruzzo will be involved in an activity carried out in the pilot areas.

During ordinary periods of time, **the Civil Protection System of the Region of Marche** carries out forecast and prevention activities as far as the territorial risks are concerned; in case of emergency, it offers the most effective possible operative response to emergencies. Particularly, the Region of Marche will be responsible for Action C.1 as far as the homogenization

of the alert systems is concerned.

The Marche Polytechnic University (UNIVPM) was founded in its current configuration on November, 1959. Among the several careers offered by this University there are a first level degree in Environmental Sciences and Civil Protection, a second level degree in Environmental Sustainability and Civil Protection, and a PhD in Environmental and Civil Protection. In terms of research, the Department of Life and Environmental Sciences includes many different laboratories, for example the Laboratory for Risk and Disaster Reduction and Civil Protection. The Marche Polytechnic University will be responsible for the activities within Action D.1 of the project. 



The pilot areas involved in the LIFE PRIMES project

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Observation and forecast systems are important to produce alert warnings in case of flood and inundation risk, and they allow us to know and evaluate how meteorolo-

gical phenomena and events evolve.

In order to be effective, these activities need to be integrated by actions that can help us to increase land and community resilience. It is therefore necessary to work and spread the risk culture, which too many times is lacking in our regional realities, through training and information activities on a local basis.

The main challenge of the LIFE PRIMES project is the homogenization of the alert systems on a trans-regional level, by deeply involving communities in everyday actions aiming at the hazard reduction.

In order to carry out this plan, three pilot areas have been identified in the partner regions, which have been selected for having common characteristics in terms of potential land hazard:

in Emilia Romagna: Imola, Mordano, Ravenna (area of Lido di Savio), Lugo, Sant'Agata sul Santerno, Poggio Renatico (area of Gallo)

in Marche: Senigallia and San Benedetto del Tronto
in Abruzzo: Scerne di Pineto and Torino di Sangro.



In some Municipalities of the pilot areas "participatory alert systems" will be tested for a more efficient spread of the alerts in situations of flash flood and sea storm, which take place very quickly. 

EMILIA-ROMAGNA

SANTERNO BASIN

Municipalities

Imola, Mordano, Lugo, S. Agata sul
Santerno

Population

69.614

Area

Kmq 204,94

Main risks: in the mountain part of the basin possibility of flash floods.
In the valley areas the main risk is connected to floods close to urban and agriculture areas.
Other risks: landslides and sediment transportation from the mountains to the valley,
which could amplify the floods' effects.

RENO RIVER, NEAR GALLO

Municipalities

Poggio Renatico (Locality: Gallo)

Population

9.894

Area

Kmq 80,65

Main risks: flooding of the drainage canal linking on the left riverbank of Reno River near Gallo
and of the channel receptor Cembalina.
Flooding in the event of the latter's inability to dispose of the hydraulic flow
and implication of larger areas in Reno right.

LIDO DI SAVIO, PILOT AREA COASTAL RISK

Municipalities

Ravenna, locality Lido di Savio

Population

460

Main risks: marine ingression spread throughout the coastline in question: it is often linked with the phenomenon of overwash (transport of water and sediment) in the areas behind the beach.
Other risks: fluvial flooding due to overflowing of the river Savio; coastal erosion;
subsidence (about 6 mm/yr between 2006 and 2011).

MARCHE

MARCHE'S COAST

Municipalities

Senigallia

Main risks: fluvial flooding by overflowing of the river Misa within the city.

Other risks: marine storms

MARCHE'S COAST

Municipalities

San Benedetto del Tronto, Zone
Sentina

Main risks: marine ingression and mouth overflowing of the River Tronto. Many scattered houses in the area, presence of dense urban fabric.

Other risks: forest fire.

ABRUZZO

ABRUZZO'S COAST

Municipalities

Scerne di Pineto

Main risks: recurrent flooding due to the phenomenon of flooding of the river Vomano to the minor hydrographic network consisting mainly of closed channels within the populated area.

THE RIVER SANGRO

Municipalities

Torino di Sangro

Main risks: the effects of climate change on the coastal system increase susceptibility to flooding in the basin areas concerned. Moreover, coastal erosion and generalized marine ingression especially in the mouth of the river Sangro.



Workshop for the Mayors of the pilot areas May, 3rd, 2017, Ravenna

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Action C.3 of this project - Developing dialogue and awakening measures for the communities through the implementation of local civic plans - includes the involvement of local communities and stakeholders in order to define adaptation civic plans, through a participatory programme. This programme will include 9 workshops organized in order to allow us to reach the best results, collect and improve any possible synergy. Only this way we will be able to develop the best Local Civic Adaptation Plans possible, by involving people that live in the territory, as they are the ones who live and work there, and therefore connecting them to regional plans and strategies.

This is the objective of the LIFE PRIMES project that was reaffirmed during the last meeting occurred on May, 3rd, in Ravenna, at the Province House, that was addressed to all the mayors of the pilot areas involved in the project. The morning work session was attended by the mayors of the municipalities of the 3 Regions that will put to the test the participatory programme: Imola, Lugo, Mordano, Ravenna, Poggio Renatico, Sant'Agata sul Santerno, San Benedetto del Tronto and Torino di Sangro.

During the morning session, the objectives of the project were presented, and the climate scenarios of the three involved regions were defined homogeneously within Action A.1, together with the preliminary results of the questionnaires developed within the analysis of the risk perception (Action D.1). During the meeting, the participants shared the involvement programme for the communities, as well as the activities of the civic adaptation plan, while during the afternoon session they talked about the technical and organizational aspects of the next local workshops, as far as the Municipalities of Emilia-Romagna in the test areas are concerned.

The final objective is to give birth to an integrated bottom-up risk management process, by involving the local communities affected by the pilot test.

As a matter of fact, the planning processes based on the involvement of the communities are essential to increase the effectiveness of the alert systems, as well as to stimulate proactive risk reduction behaviours. The Civic Action Plan is meant to be an important tool based on a bottom-up approach, including an integrated set of "soft adaptation" measures and actions directly defined by citizens. ~



EVENTS

01 Jun 2017

Workshop on climate action in agriculture and forestry

The workshop is being held by the European Commission's DG Clima and the Executive Agency for Small and Medium-Sized Enterprises (EASME) and focus is to emphasize the need for the agricultural and forestry sector to take greater action to meet EU climate goals.

05 Jun 2017

3rd European Climate Change Adaptation Conference 2017 (ECCA)

The theme of ECCA 2017 is 'Our Climate Ready Future'. The vision is that this conference will inspire and enable people to work together to discover and deliver positive climate adaptation solutions that can strengthen society, revitalise local economies and enhance the environment.

12 Jun 2017

Embrace the Water – a Cities of the Future Conference

The conference aims to bring together urban planners and water professionals from around the globe to share experiences and projects on the opportunities and threats to water in modern, sustainable and innovative cities.

IWA

19-25 Jun 2017

EU Sustainable Energy Week

The event is the most important European conference dedicated to sustainable energy policy issues and offers participants a chance to debate new policy developments, best practices and sustainable energy ideas, and to build alliances and partnerships through networking.

21-22 Jun 2017

LIFE platform meeting on urban climate action

The meeting is being organised in cooperation with the Executive Agency for Small and Medium-sized Enterprises (EASME) and the Directorate-General for Climate Action (DG CLIMA) of the European Commission, with the aims to discuss specific actions to advance climate change adaptation and mitigation in the European and international urban context.

27 Jun 2017

ICEM 2017: 4th International Conference Energy & Meteorology

The main focus of the 4th conference is: Challenges in Weather, Climate and Water Services for Energy.
WEMC: World Energy & Meteorology Council

27 Jun 2017

ECBCC 2017: Biodiversity and Health in the face of Climate Change: Challenges, opportunities and evidence gaps

Joint European Conference held by the German Federal Agency for Nature Conservation (BfN) and the European Network of Heads of Nature Conservation Agencies (ENCA) in co-operation with the Helmholtz-Centre for Environmental Research (UFZ) / German Centre for Integrative Biodiversity Research (iDiv).