

REGIONAL FORUM ON SUSTAINABLE DEVELOPMENT: ADAPTATION TO CLIMATE CHANGE

Name: FRANCESCA GIANNONI **Organisation:** ARPAL

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Means for the risk reduction in the global climate change context: Meteo-hydrological forecast and warning system in Liguria region

Strumenti per la riduzione del rischio nel contesto del cambiamento climatico: Sistema di previsione e allertamento della Regione Liguria

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Autumn 2018

ISPRA points out that in the global climate change framework, starting from October, Italy and the Mediterranean area were the scene of a series of extreme weather events with serious consequences for the population, the environment and the Italian territory

from South to the North

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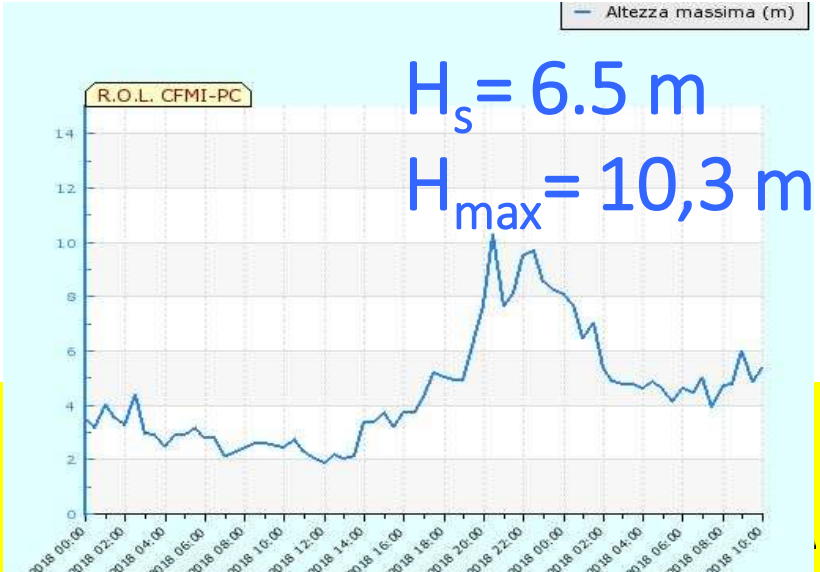
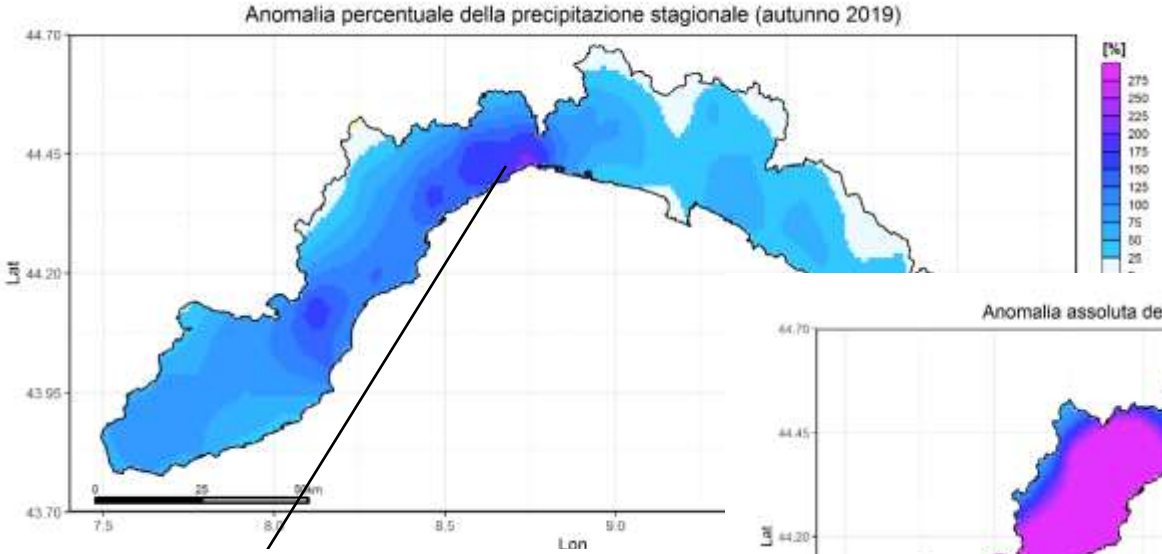
Autumn 2018 – Sea storm in Liguria 29-30 oct

Damages related to the intense gusts of wind from the S-SE and the storm that affected the entire Ligurian arc with a rough sea state from the South, South-East



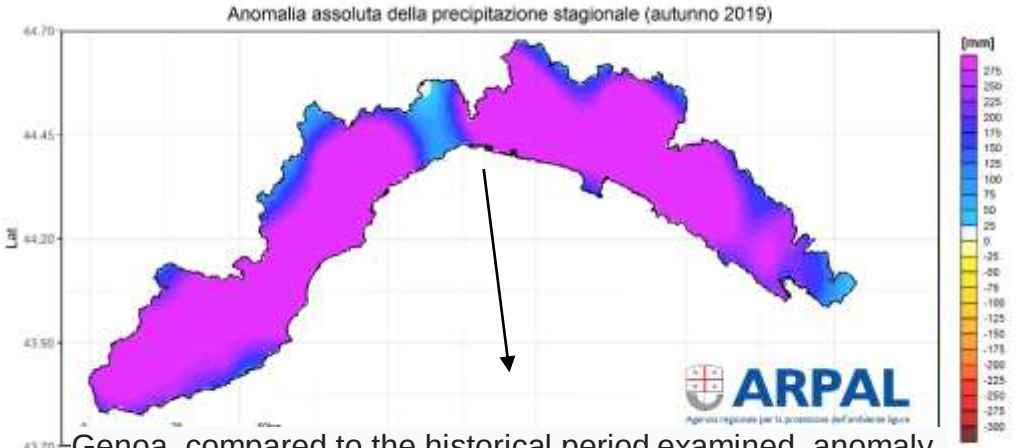
Autumn 2019 the rainest since last 50 years..

Genoa, where compared to the historical period examined, there was + 223 mm of rain over the expected, ie 44%



Urbe 3404 mm/y
Mele 3093,2 mm/y
Fiorino 3040,2 mm/y
Prai 3039 mm/y

Savona, where the greatest damage occurred, had 864 mm in 3 months (anomaly +507.7 mm) + 142.3% compared to the period 1961-2010



Genoa, compared to the historical period examined, anomaly + 223 mm of rain over the expected, + 44%

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Autumn 2020: Storm Alex

IL SECOLO XIX

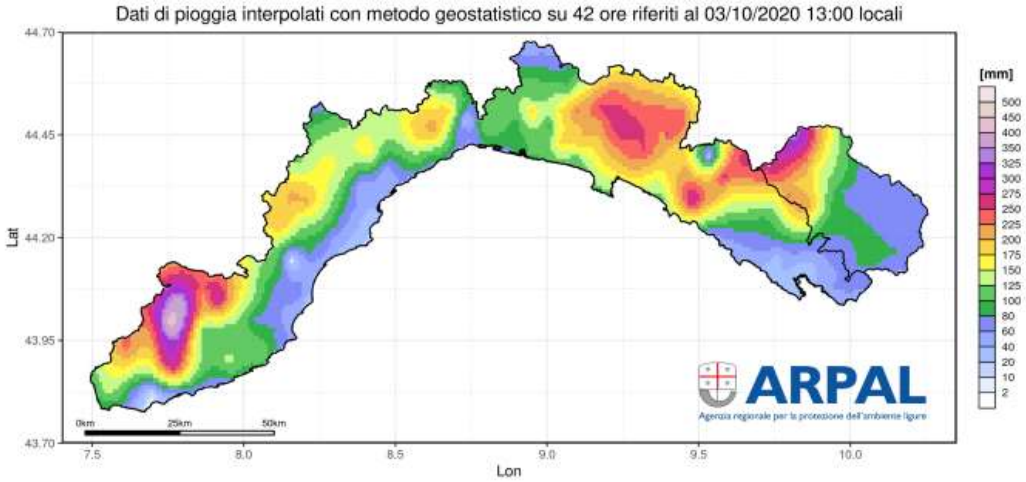
05-OTT-2020
da pag. 5
foglio 1 / 2

Dir. Resp.: Luca Ubaldeschi
www.datastampa.it Tiratura: 44175 - Diffusione: 31802 - Lettori: 308000: da enti certificatori o autocertificati Superficie: 91 %

È l'ultimo capitolo di una storia che da anni penalizza la viabilità nell'estremo Ponente ligure
Danneggiato il cantiere del nuovo traforo: ci vorranno mesi solo per mettere tutto in sicurezza

Crolli, fango e devastazione
Sul Tenda non c'è più la strada

Area	mm/6h	mm/12h	mm/24h
A	220 Triora 02/10/2020 22:45	361 Triora 03/10/2020 00:00	426.2 Triora 03/10/2020 04:30



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October, 4th 2021..Allerta Rossa…
we are at the beginning of the fall…

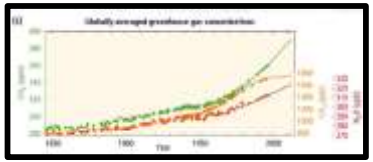
	mm/1h	mm/6h	mm/12h	mm/24h	mm/evento 58h
B	118 Sciarborasca	243.8 Sciarborasca	276.6 Colle di Cadibona	298.6 Colle di Cadibona	301.2 Colle di Cadibona
D	178.2 Urbe - Vara Sup.	496 Montenotte Inferiore	740.6 Rossiglione	883.8 Rossiglione	927 Rossiglione

IPCC Sixth Evaluation Report (AR6) – August 2021

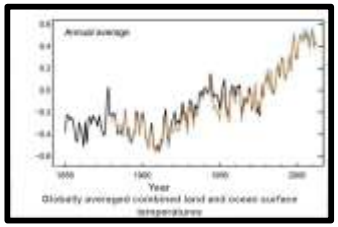
CLIMATE CHANGE 2021 – main messages of the report:

- improved estimates based on observations and information from paleoclimatic archives,
- New simulations of climate models,
- new analyzes and methods that combine numerous evidences,
- better understanding of human influence on a wide range of climatic variables, including extremes.

The unequivocal influence of human in the global warming



Increasing in greenhouse gas concentrations since 1750 unequivocally caused by human activities at an ever-increasing rate.



Increasing global surface temperature in the 2001-2020 period was 0.99 ° C higher than that of the 1850-1900 period, at an ever-increasing rate with higher increases on land (1.59 ° C) than in the ocean (0.88 °).

Increasing average global rainfall since 1950, and more rapidly since the 1980s

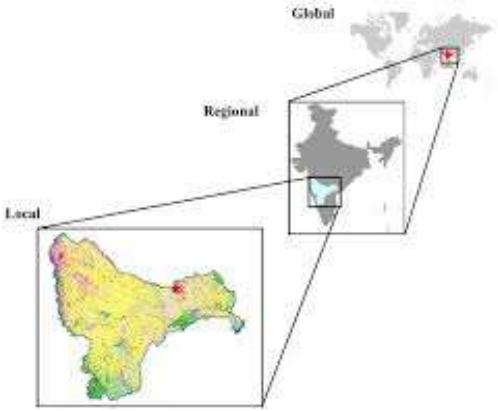
Increasing global mean sea level between 1901 and 2018 at an ever-increasing rate. Recently between 2006 and 2018 the rate of increase reached 3.7 mm per year.

Influences on the extremes

Climate change is already affecting many meteorological extremes strengthened since the previous IPCC Assessment Report (AR5).

- **Heat waves** - more frequent and more intense in most of the lands that have emerged since the 1950s,
- **Cold waves**: Less frequent and less severe;
- **Marine heat waves** doubled in frequency since the 1980s;
- intense precipitation events: increased frequency and intensity (since ‘50s)
- **Increased agricultural drought** due to increased evapotranspiration over land;
- **Strong tropical cyclones** (category 3-5) likely to have increased. The percentage of strong over the past four decades, and the latitude at which tropical cyclones in the western North Pacific peak in intensity shifted north.

Strategies – Good Practises



PREVENT hydrogeological instability

On a **global scale (MITIGATION)**: limit global warming

On a **local scale (ADAPTATION)**: limit damages to an already vulnerable area and ... avoid new ones! Everything passes through the awareness, the awareness that today's actions determine the conditions of tomorrow (even distant ones)

Strategies – Good Practises - ADAPTATION

ADDRESS the hydrogeological instability

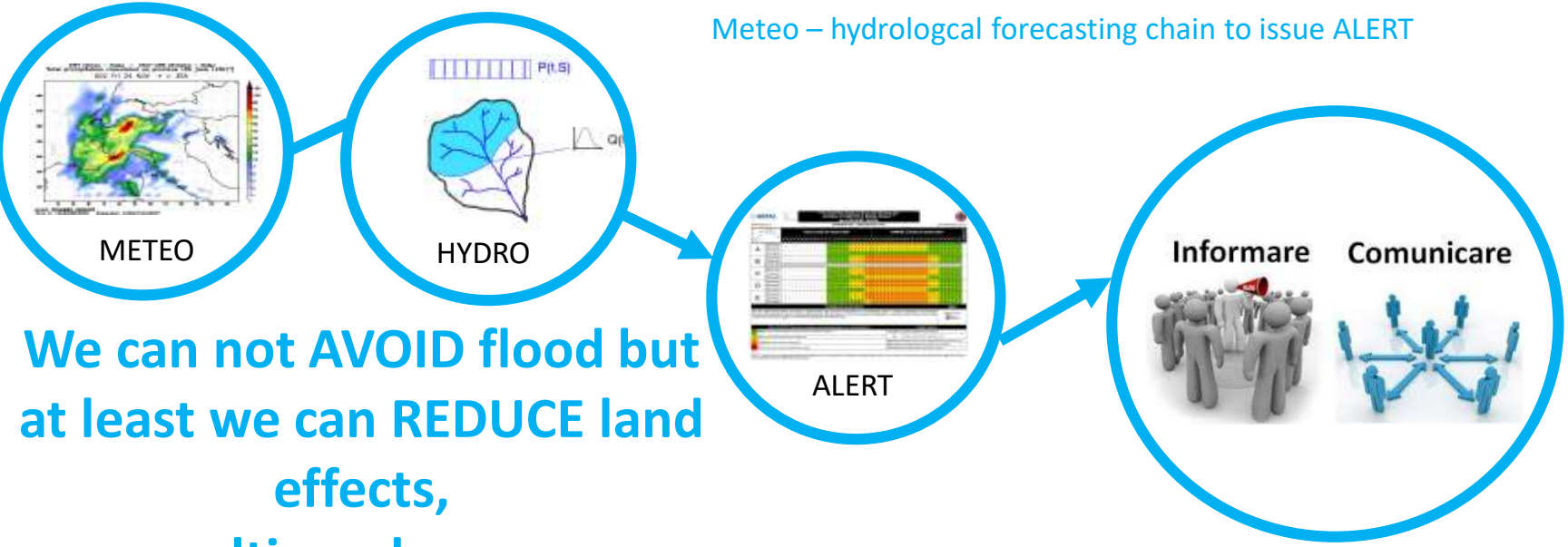
Increasing knowledge and technology (predict and monitor)

organization and communication (the civil protection system)

awareness and resilience (the society of tomorrow)

Good Practises: Warning System

Meteo – hydrologcal forecasting chain to issue ALERT



We can not AVOID flood but at least we can REDUCE land effects, casualties…damages…

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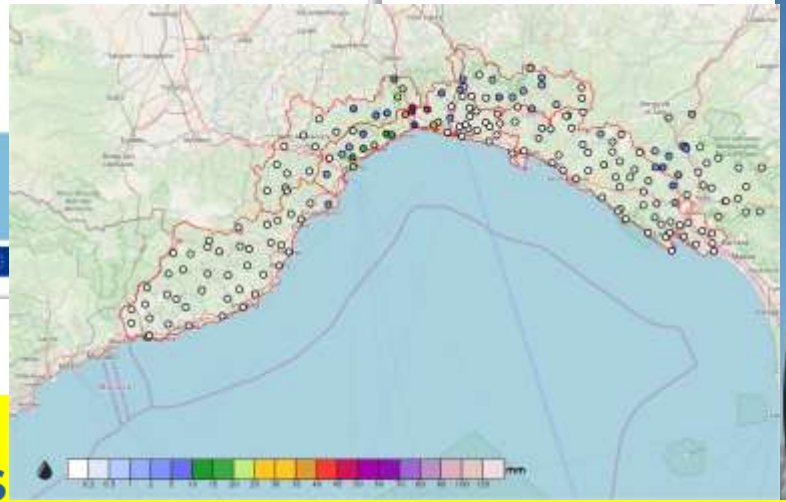
Good Practises: Monitoring & data analysis - ADAPTATION

www.omirl.regione.liguria.it



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