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MEDCOF 7

SEVENTH MEDITERRANEAN CLIMATE OUTLOOK FORUM

Roma, November 23, 2016

The National System for Environmental Protection as producer and stakeholder of climate information

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Principal Member of the Intergovernmental Board on Climate Services

Points to be addressed by stakeholders

- Current use of climatological information based on observations
- Which time scales (from monthly to decadal) are more critical in your activity?
- Current use of climate predictions in different time scales (from monthly up to decadal).
- Are you (your sector) familiarized with the use and exploitation of probabilistic forecasts?
- What is the main reason hampering the use of climate predictions in your sector? (not enough information, lack of skill, difficult access to data, etc)

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ISPRA and the network or Regional Environmental Protection Agencies (ARPA) all together form the

National System for Environmental Protection – SNPA

Sistema Nazionale per la Protezione dell'Ambiente

recently established by the primary law n. 132 , June 28 2016
to come into force: January 14, 2017

As defined by his duties and activities, with respect to CLIMATE INFORMATION the SNPA represents both a PRODUCER and a STAKEHOLDER

ARPA, more than ISPRA, are on the side of stakeholders, due to their direct link with the regional territory, and the environmental and socio-economic sectors present in their territory.

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Example of application in Agriculture and Water Resources Management Sectors

COPERNICUS C3S

"Improved" Ensemble

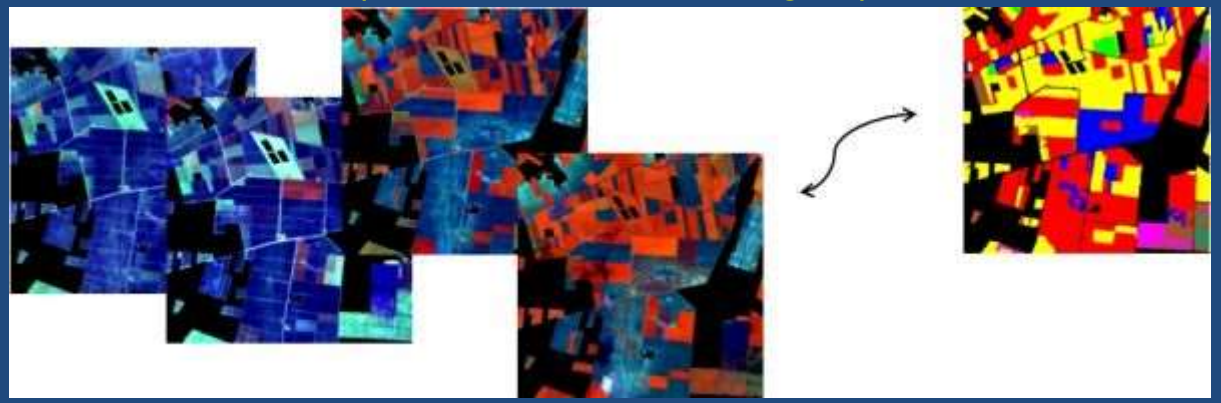
Probabilistic Seasonal Forecast

Probabilistic evaluation of potential Irrigation demand

iColt – Classification of the in-place crops

through Remote Sensing and seasonal forecast of Irrigation Requirements

(ARPA Emilia Romagna)



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The **National Climate Services Network of Italy (NCSNI)**

In answer to the need of increasing and improving the participation to **WMO** programs on operational climatology, the National Permanent Representative to WMO took the initiative of establishing a **National Climate Services Network of Italy (NCSNI)**.

It is a network of Italian public entities expressing a national portfolio of existing operational climate products and capabilities, with requirements and characteristics already adopted (or to be adopted) by territorial management entities.


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PROTEZIONE CIVILE
Presidenza del Consiglio dei Ministri
Dipartimento della Protezione Civile
AERONAUTICA MILITARE
SERVIZIO METEOROLOGICO
1923
2008
cmcc
Centro Euro-Mediterraneo sui Cambiamenti Climatici
Sistema Nazionale per la Protezione dell'Ambiente
National Climate Services Network of Italy (NCSNI)
crea
Consiglio per la ricerca in agricoltura e l'analisi dell'economia agraria
Consiglio Nazionale delle Ricerche
ENEA
Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile

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A **CONCEPT PAPER** of the **NCSNI** has been adopted, which contains a description of the objectives and user's needs, and a list of operational products in the fields of:

- Climate monitoring
- Climate variations and trends estimate
- Seasonal forecasting
- Climate projections
- Example of sectoral applications in:

  agriculture and water resources, flood risk, energy, health, etc.

The **NCSNI** is going to play the role of national focal point for WMO programs and activities in operational climatology and has been recently introduced at the WMO – RA VI RCC Workshop in Belgrade.

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WMO – RA VI Regional Climate Center

WMO RA VI RCC Network Product summary

- **RCC Network De Bilt Node on Climate Data Services (RCC-CD):**
  - various data sets for Europe, both station data and gridded data (ECA&D, MILLENNIUM, ENSEMBLES, BALTEX, SHARK), indices and various sub-regional data sets;
  - Services: Archiving functions, data management & visualisation tools.
- **RCC Network Offenbach Node on Climate Monitoring (RCC-CM)**
  - Maps and gridded data for reference climatologies, anomalies, indices, trends, statistics;
  - reports, significant weather event data base, Climate Watch Advisories.
- **RCC Network Toulouse and Moscow Node on Long-range Forecasting (RCC-LRF)**
  - Maps and graphs on model performance, gridded data;
  - Seasonal forecast bulletins, seasonal outlooks, consensus statements (RCOFs), model verification.

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Climate monitoring products - RA VI Bulletin

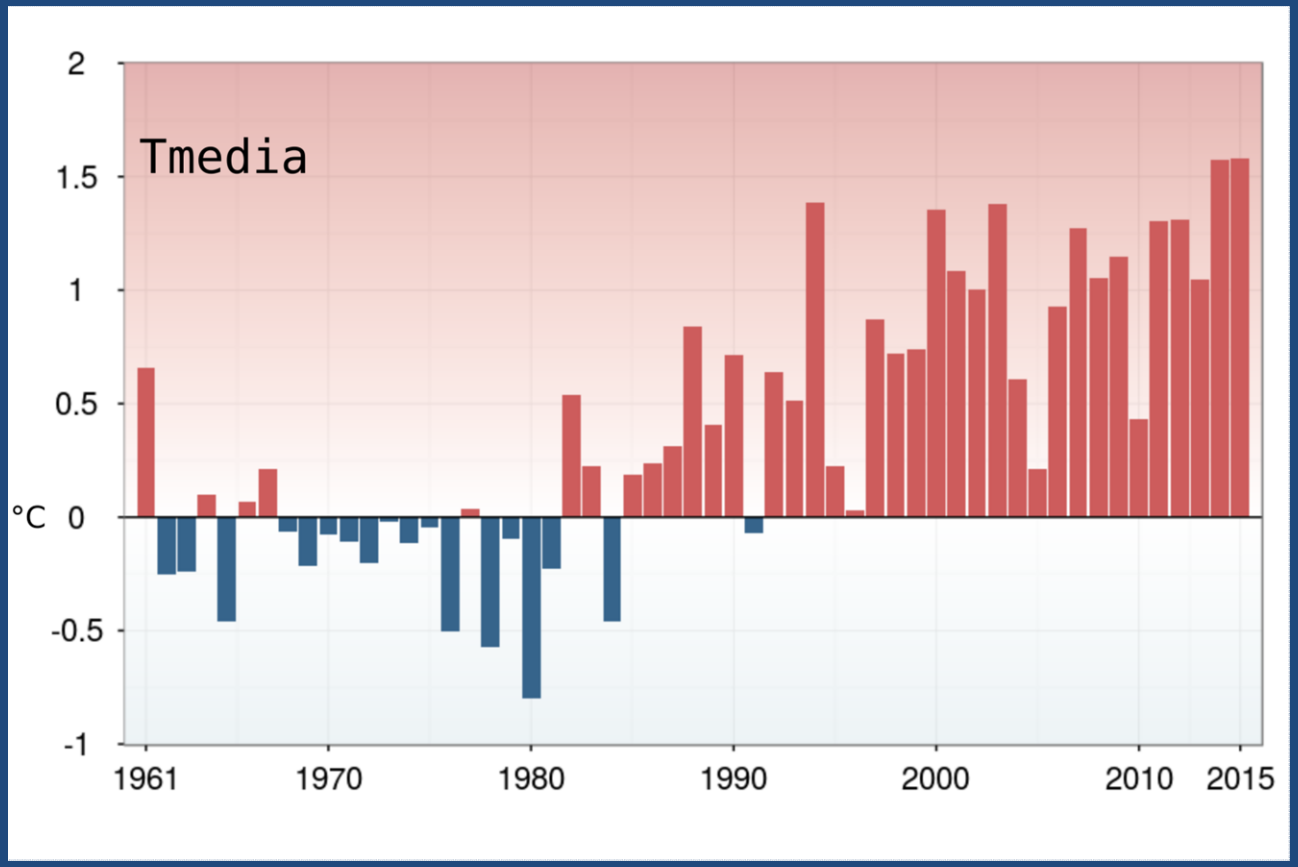

Figure 5.23: Time series of annual temperature anomalies for Italy for the period 1961-2015 (reference period 1961-1990; diagram as provided by ISPRA)

Climate monitoring products - RA VI Bulletin

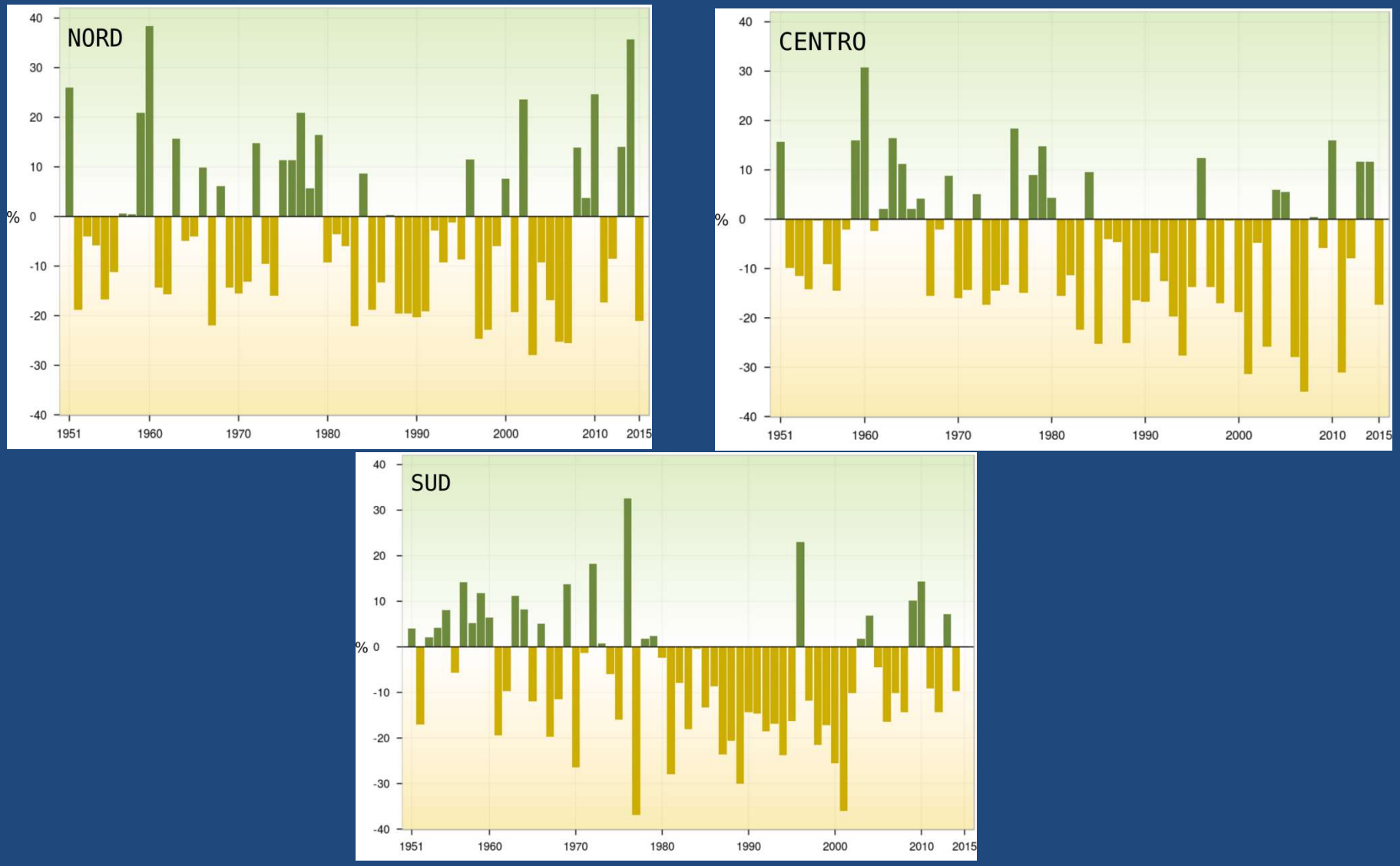

Figure 5.42: Time series of annual precipitation anomalies in relation to the mean of 1961-90 for north (top), Central (middle) and southern Italy (bottom, diagram as provided ISPRA)

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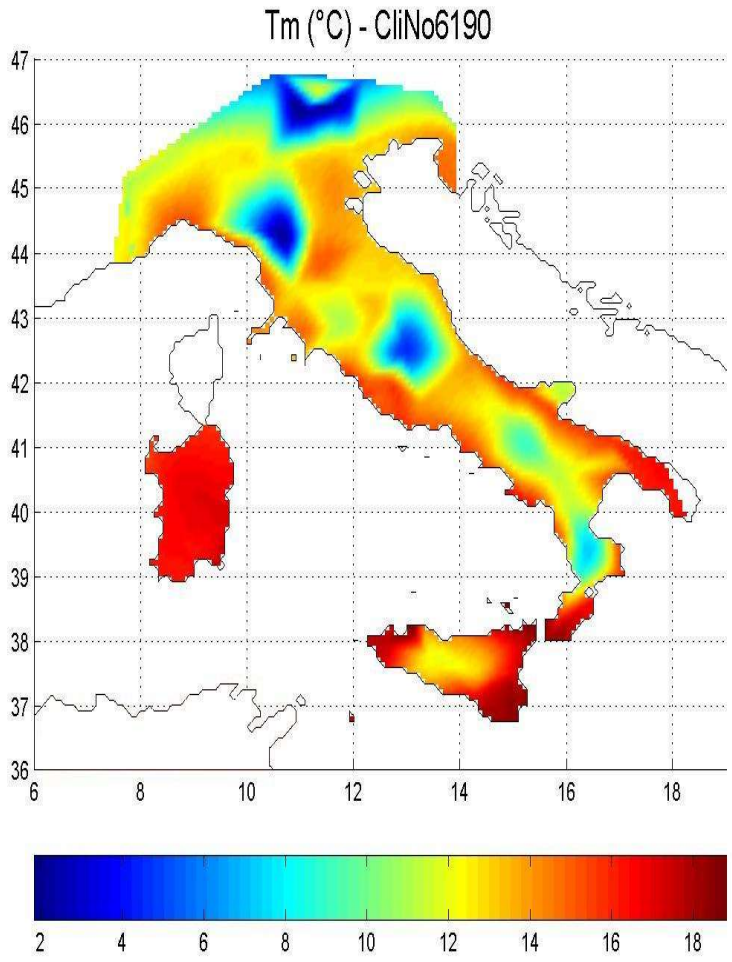
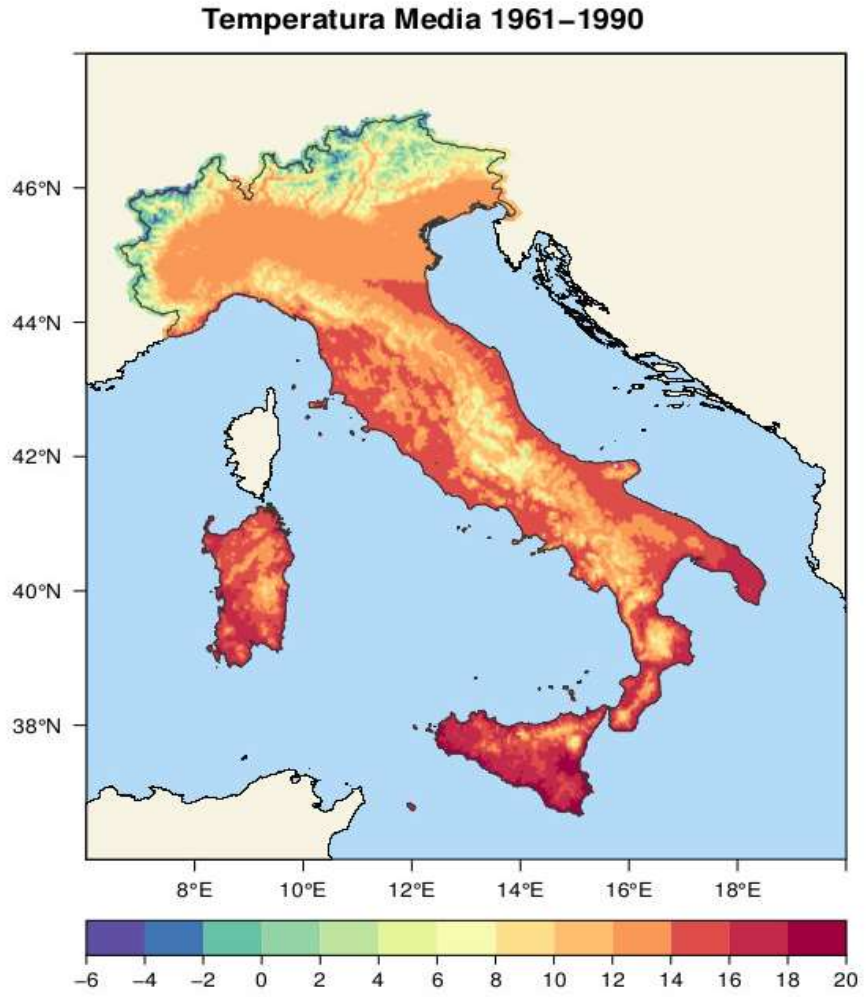
Climate monitoring products – Climate normals

Synoptic stations – low resolution



Nat.l and regional networks – high resolution



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Climate data products

Daily temperature 1981
stations n.: 453

Daily precipitation 1981
stations n.: 2620

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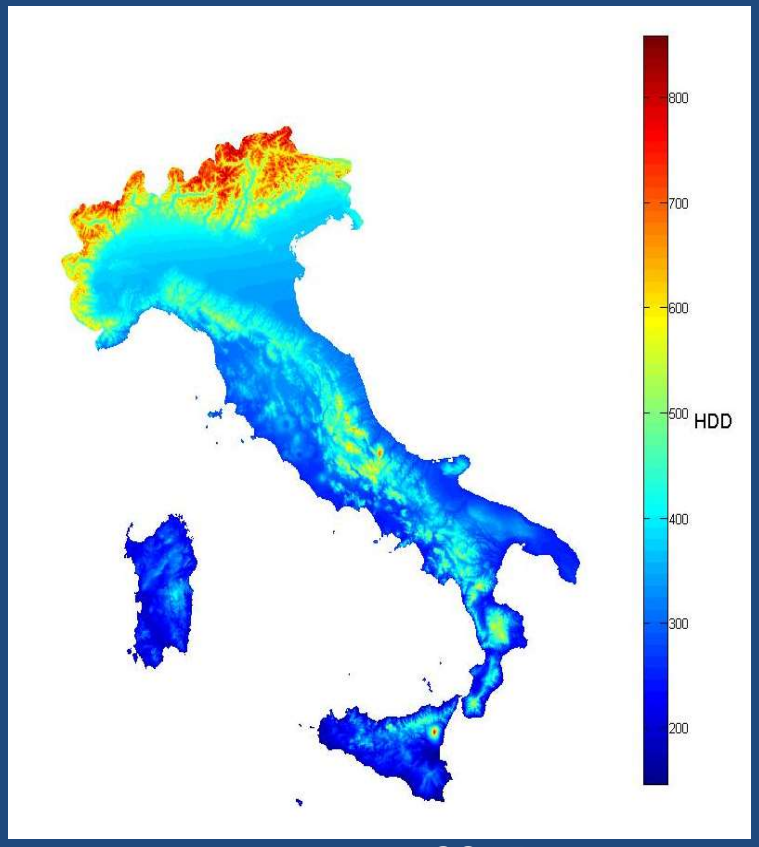
Current use of climatological information based on observations: Examples

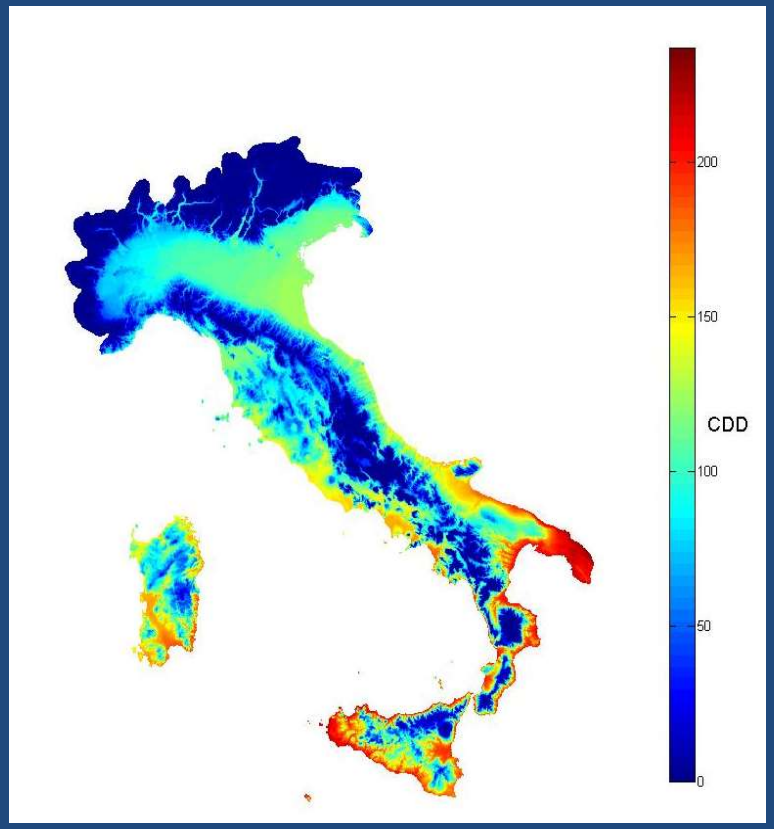
Working Group on Decarbonisation coordinated by the Presidency of the Council

Heating Degree Days (HDD)



January 2015

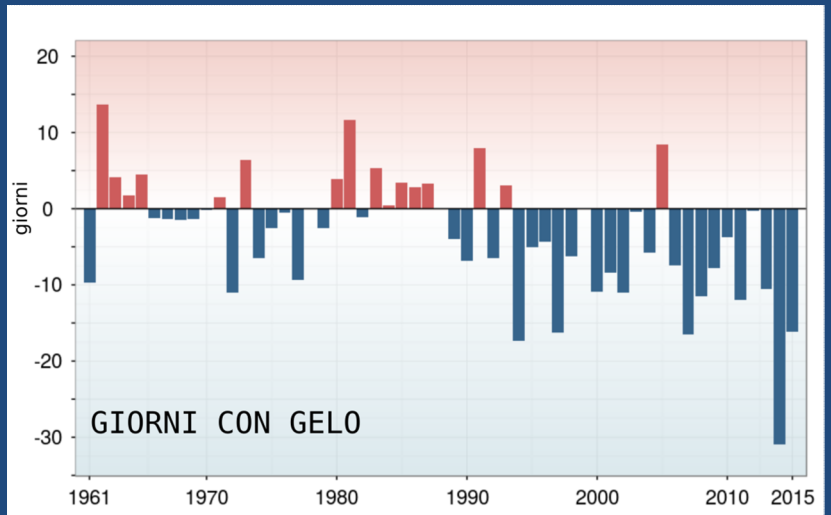
Cooling Degree Days (CDD)

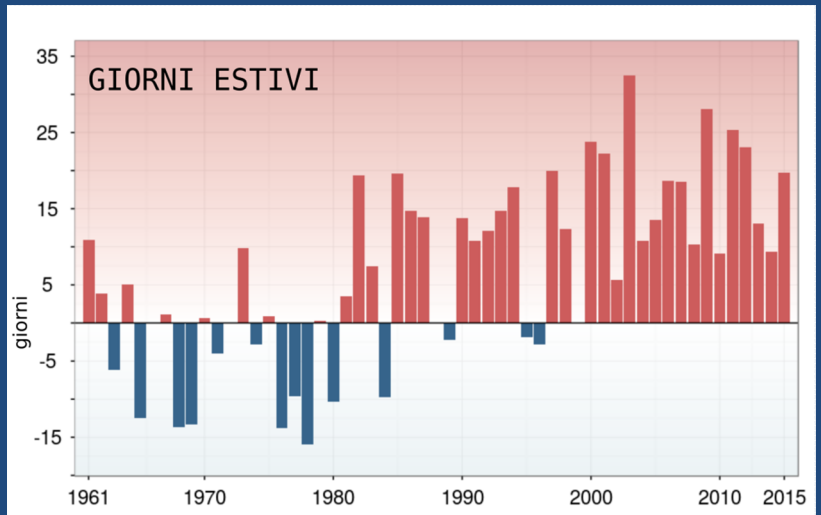


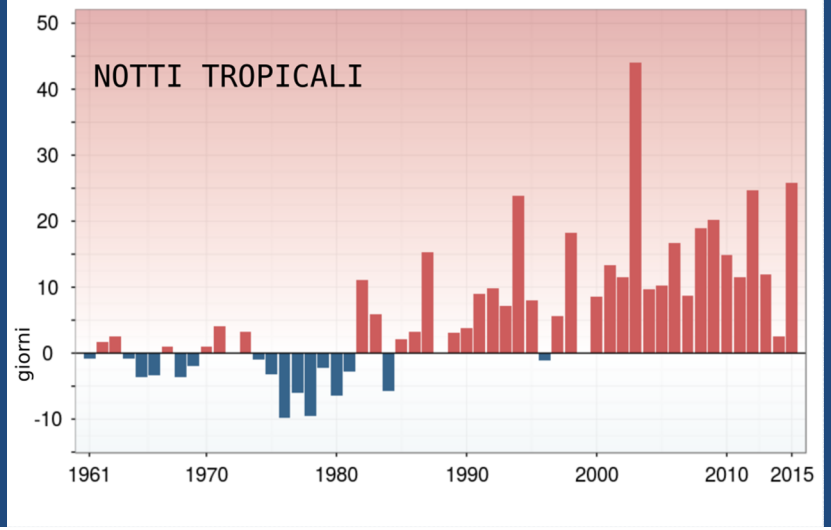
August 2015

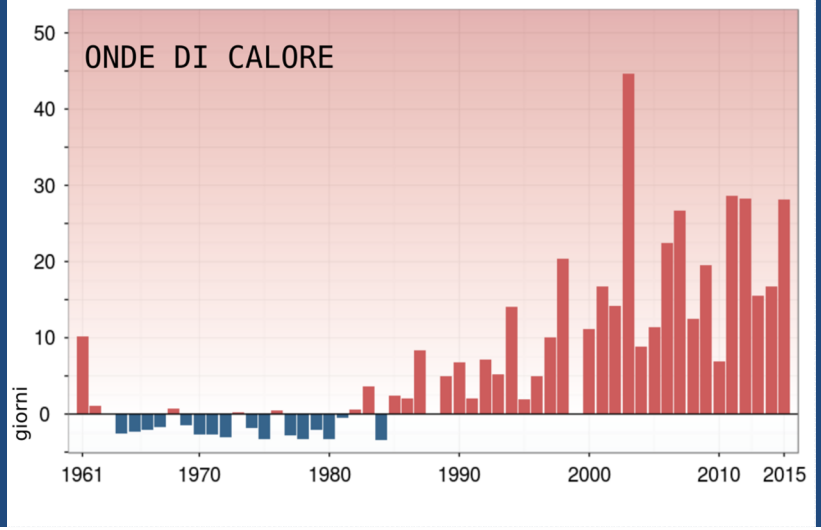
Current use of climatological information based on observations: Examples

Time series of anomalies of temperature extremes indices

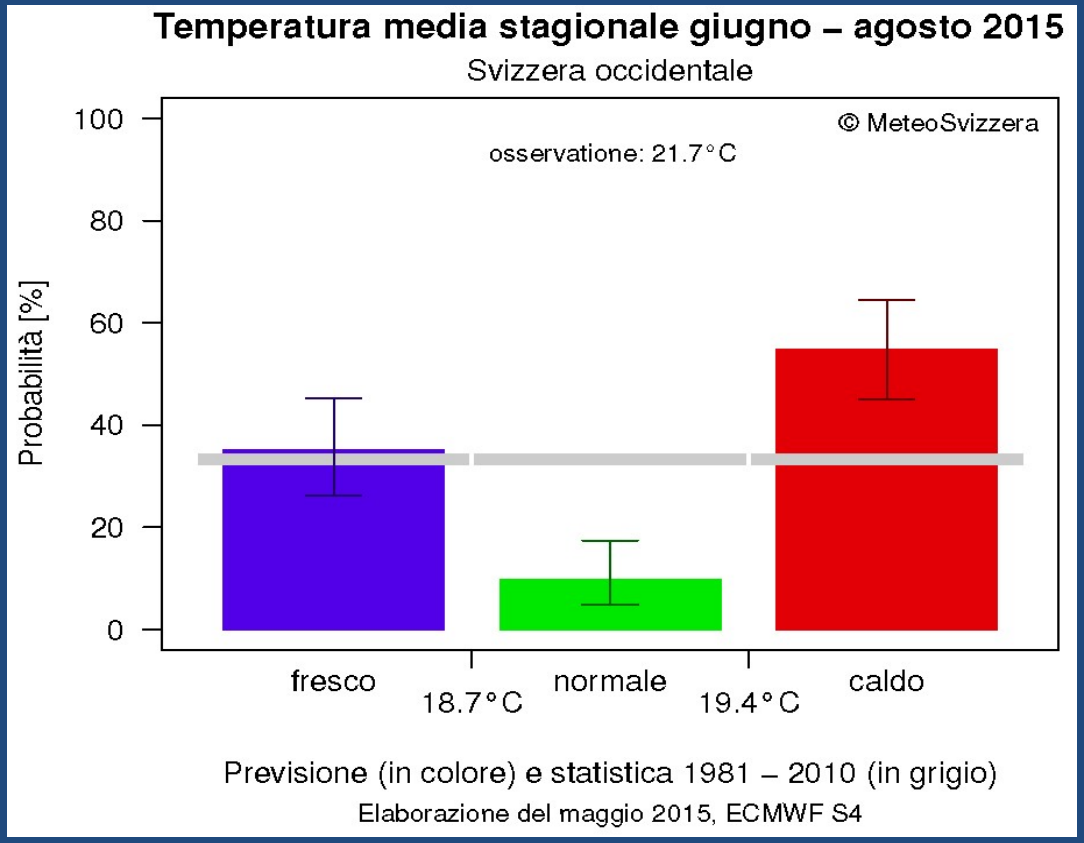








PROBABILISTIC FORECAST:
a complicated concept to be communicated to the stakeholders and to the public



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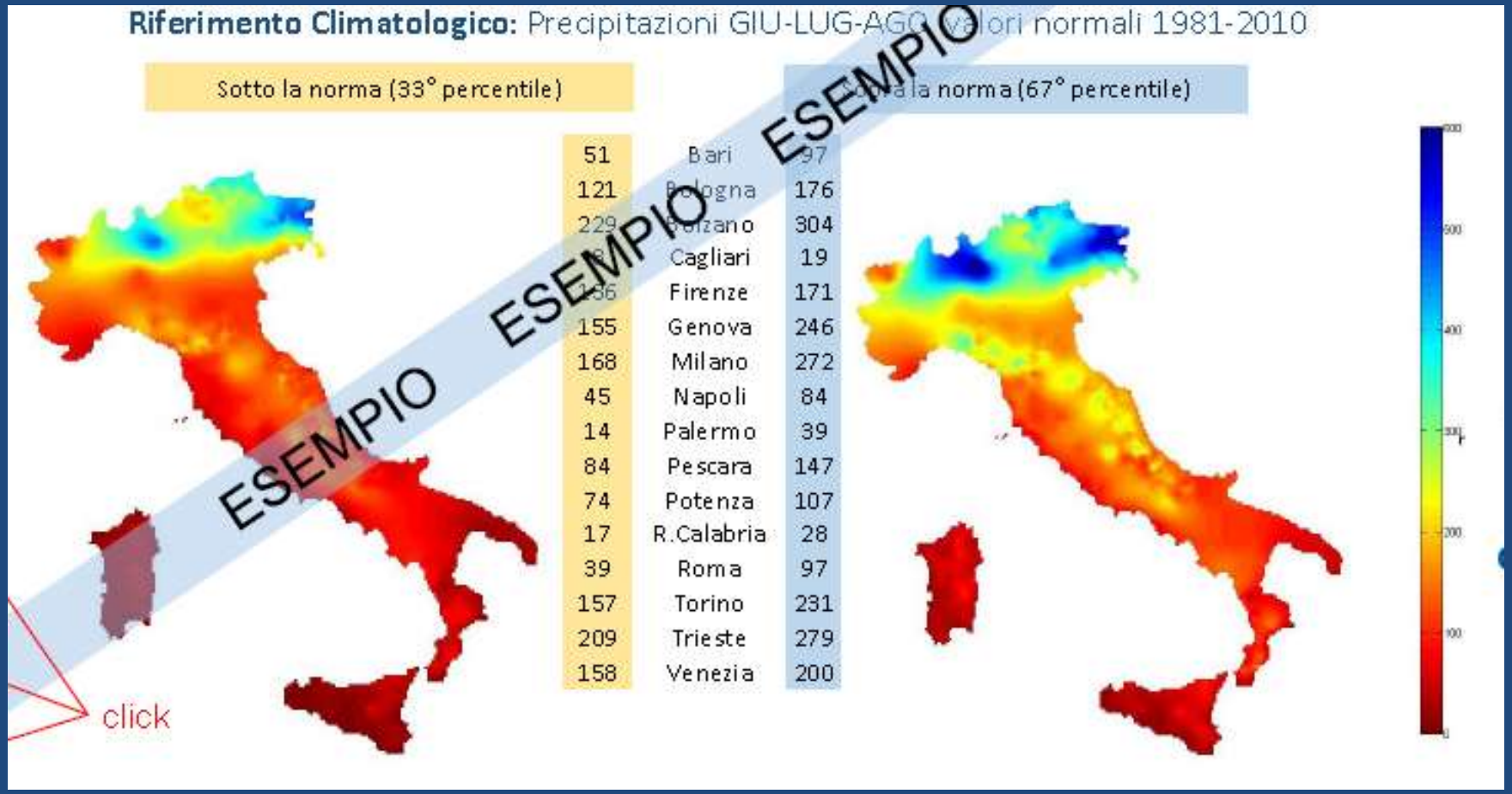
Relationship between probabilistic forecast and reference climate: average, below average, above average

Precipitation, summer - Maps of 33° and 67° percentile 1981-2010



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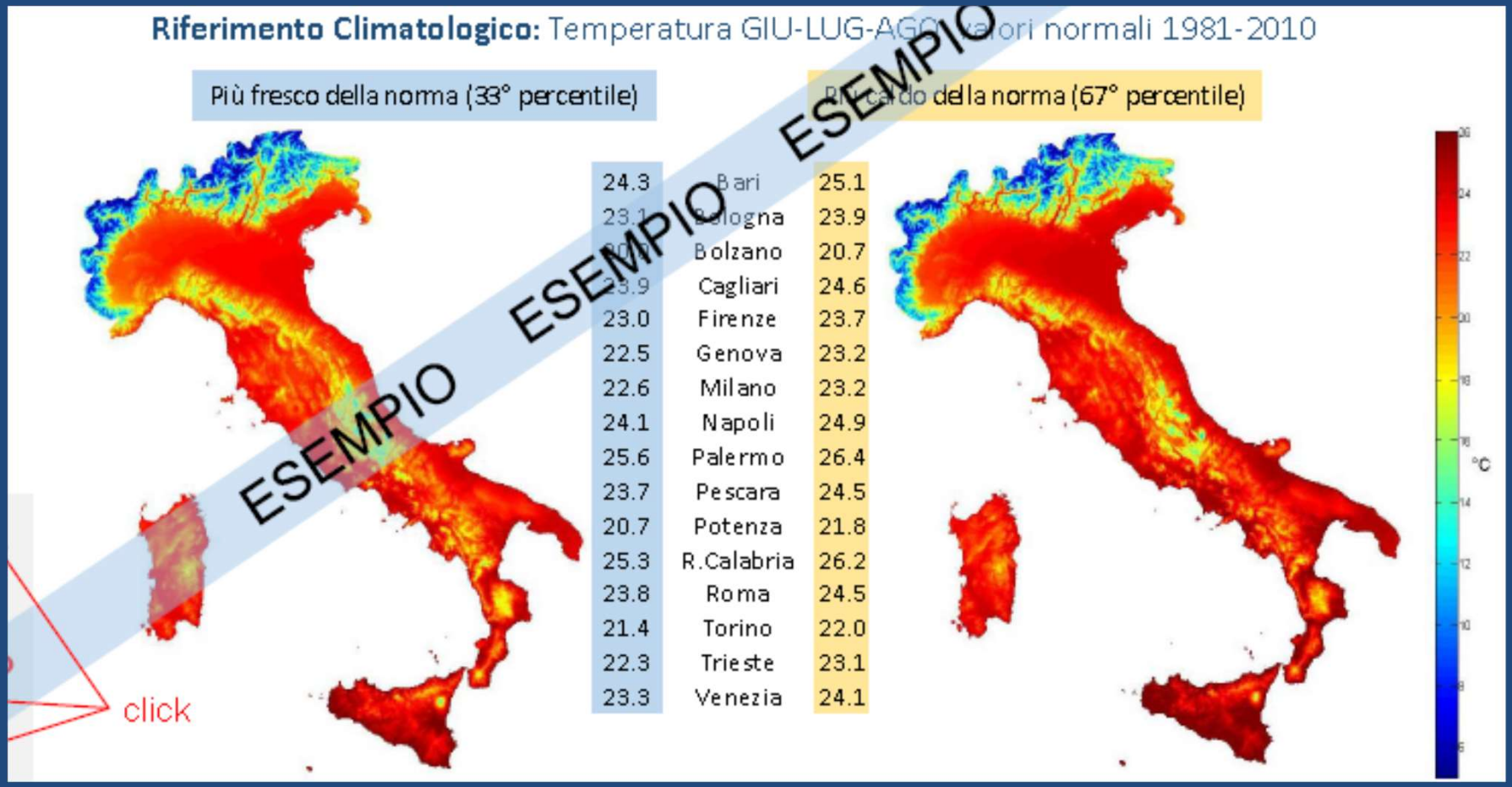
Relationship between probabilistic forecast and reference climate: average, below average, above average

Mean Temperature, summer - Maps of 33° and 67° percentile 1981-2010




Thank you