

Quale clima, quale energia, quali utenti. ENEA per i servizi climatici

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UTMEA-CLIM, ENEA

Chi (gli utenti)

- Gestore della rete (TERNA,..)
- Mise
- Privati (SIEMENS, ADEERE, Sahara Wind, BNP Paribas clean energy partners, ...)

Cosa (i prodotti)

- Energie rinnovabili (eolico, solare,..)
- Fabbisogno energetico
- Energia dal mare (correnti, maree, onde)
- Oltre l'energia (Agricoltura e food security)

Quando (le scale temporali)

- Ricostruzione del presente
- Prodotti a scala meteorologica
- Prodotti a scala stagionale
- Prodotti a scala climatica

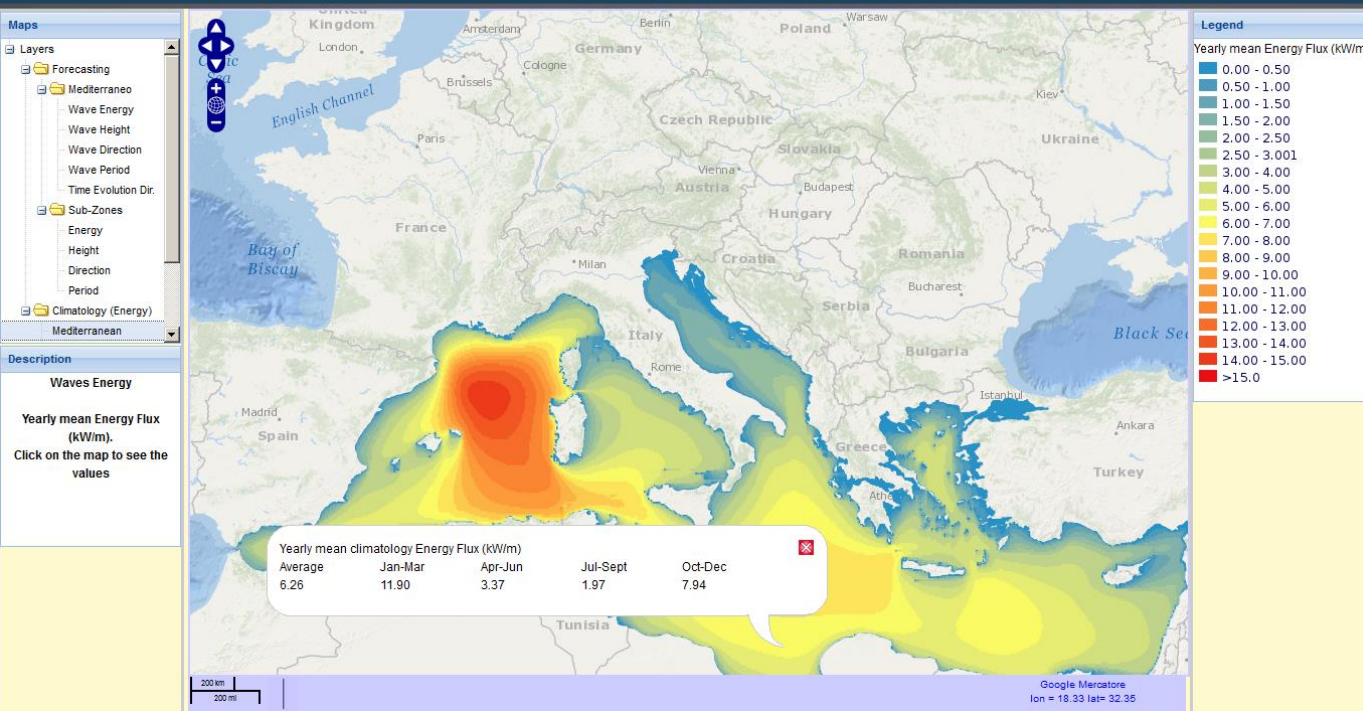
Chi (gli utenti)

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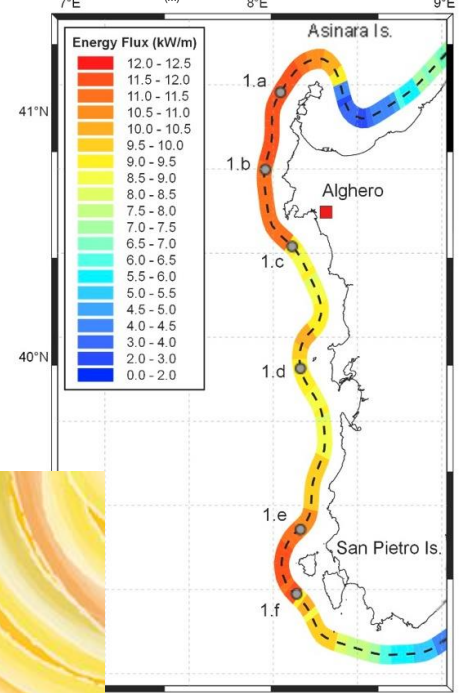
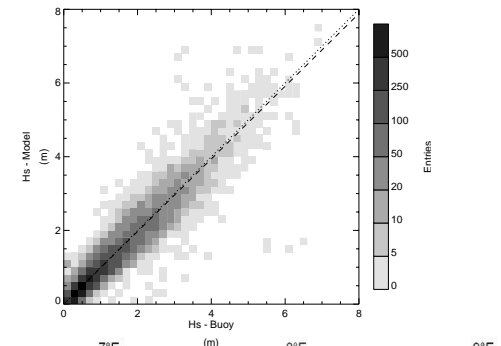
Ricostruire il presente



WebGIS
WAVES ENERGY



Modello vs boa: ALGHERO



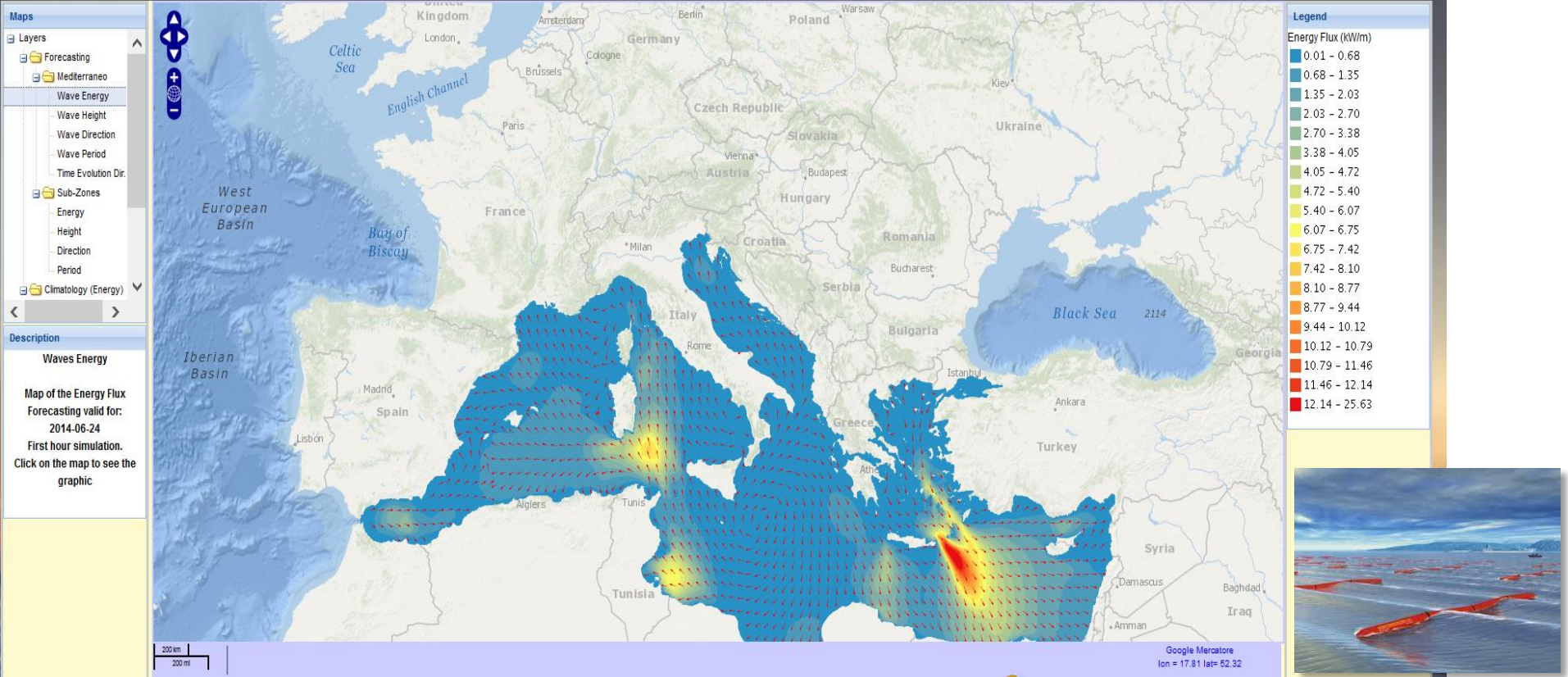
WAM/SWAN (1/120°x/120°)



Prevedere il futuro (prodotti a scala meteo)



WAVES ENERGY



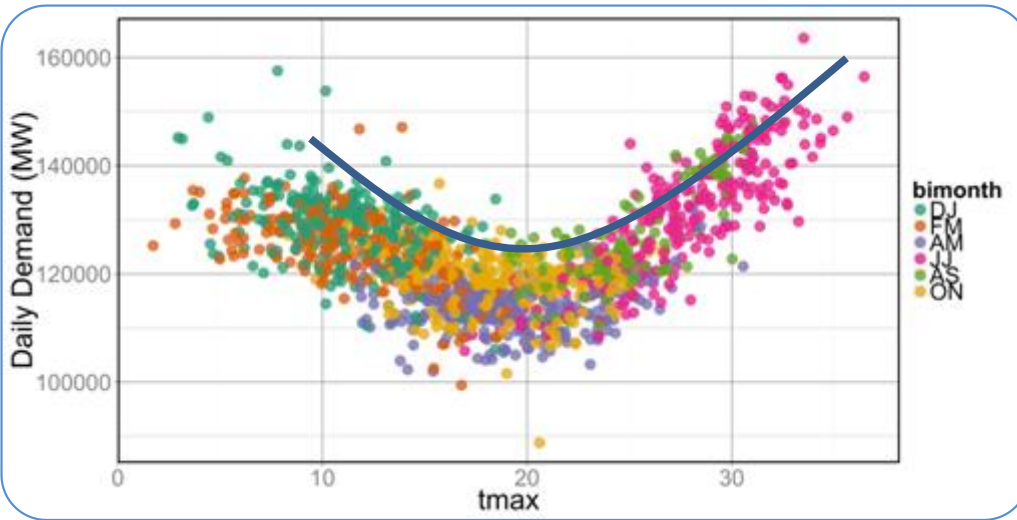
Ministero dello Sviluppo Economico

RICERCA DI SISTEMA ELETTRICO

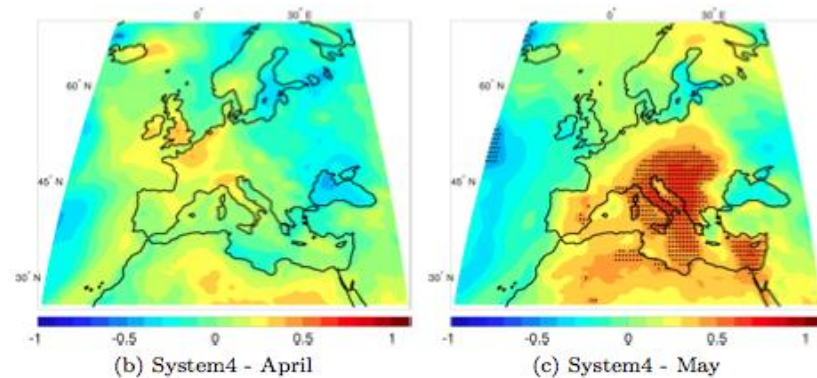
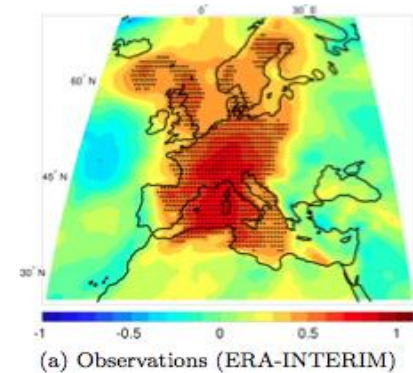


Prevedere il futuro (prodotti a scala stagionale)

Rete di trasmissione e temperatura



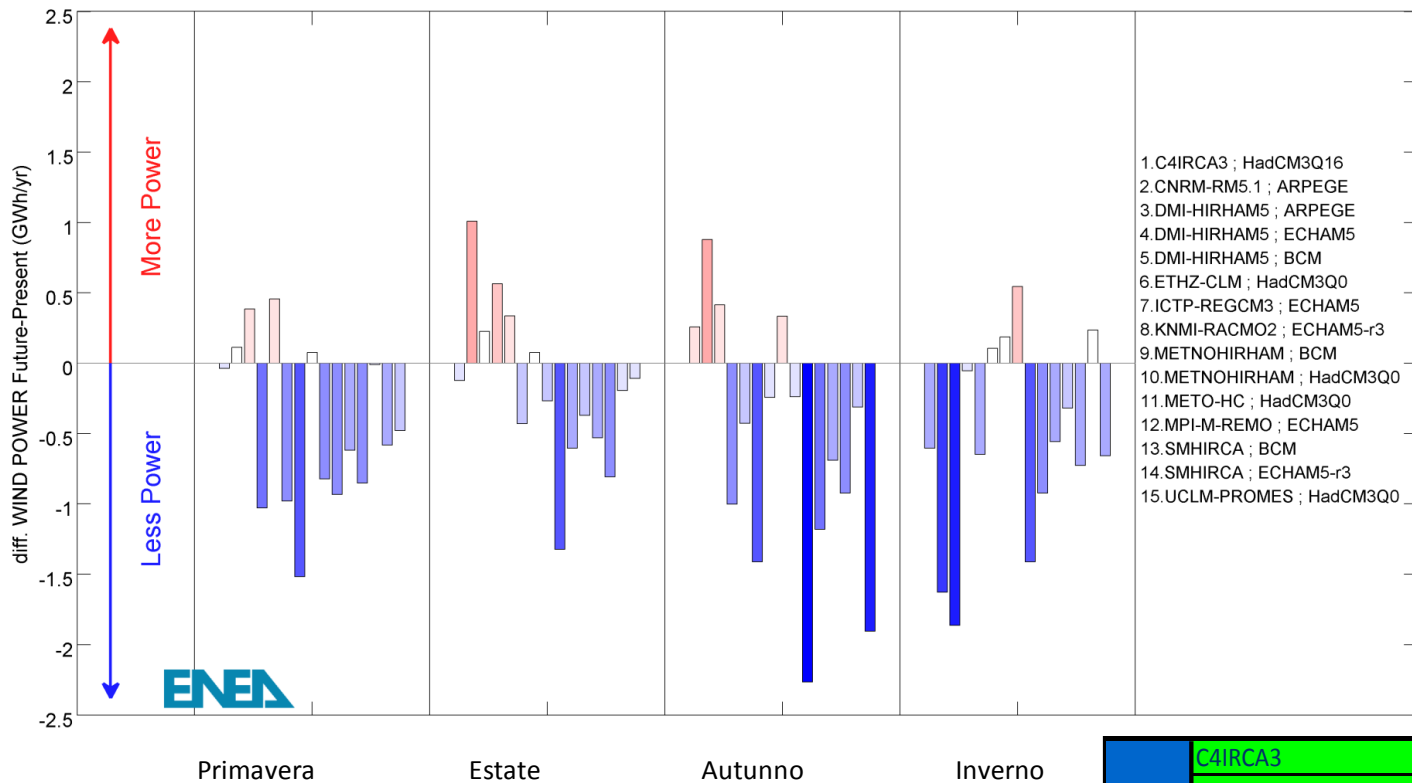
Domanda elettrica giornaliera in funzione della temperatura massima per regioni sud Italia (Puglia, Campania, Basilicata, Calabria). Forte relazione nel periodo primaverile estivo dovuta al condizionamento. Questo permette di sviluppare sistemi di previsione stagionale sulla domanda energetica.



Correlazione temperatura- fabbisogno energetico in Italia (dati TERNA)

Proiettare il futuro (scenari climatici)

Puglia- Simulazioni ENSEMBLES- Cambiamenti nella Potenza Eolica: 2041-2050vs1971-1980



*MATRICE
GCMs-RCMs
dal progetto
ENSEMBLES*

| Global Model | | | | | | |
|--------------|-----------|--------|-----|-----------------|----------------|----------|
| ERA40 | HadCM3Q16 | ARPEGE | BCM | ECHAM5-MPIOM r3 | MIROC3.2 hires | HadCM3Q0 |

| Regional Model | C4IRCA3 | | | | | | | | | |
|----------------|------------------|--|--|--|--|--|--|--|--|--|
| | CNRM-RM4.5 | | | | | | | | | |
| | DMI-HIRAM5 | | | | | | | | | |
| | ETHZ-CLM | | | | | | | | | |
| | ICTP-RegCM3 | | | | | | | | | |
| | KNMI-RACMO2 | | | | | | | | | |
| | METNO-HIRAM | | | | | | | | | |
| | METO-HC HadRM3Q0 | | | | | | | | | |
| | MPI-M-REMO | | | | | | | | | |
| | SMHIRCA | | | | | | | | | |
| UCLM-PROMES | | | | | | | | | | |



CLIM-RUN

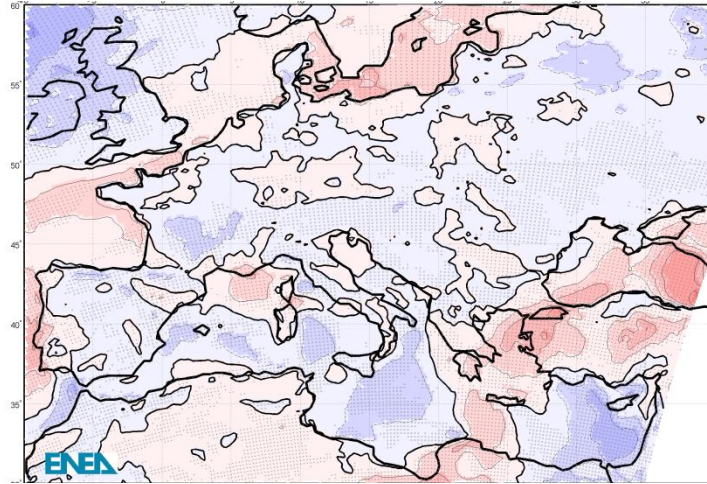
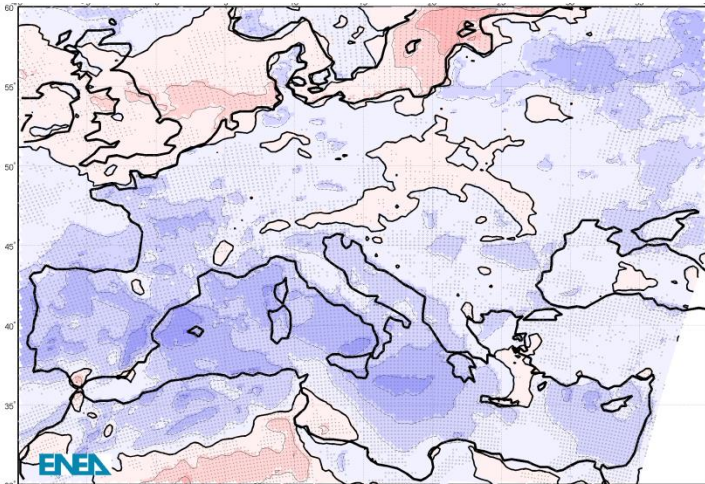


Proiettare il futuro (scenari climatici)

Cambiamenti attesi nell' Energia eolica (GWh/yr) 2041-2050 vs 1971-1980

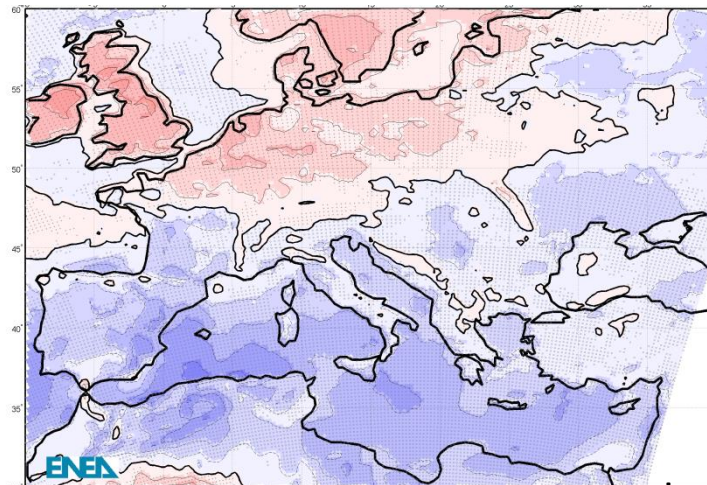
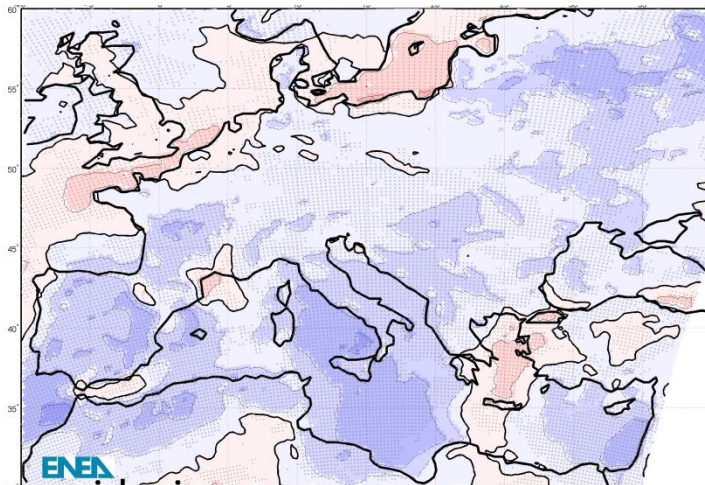
Primavera

Estate



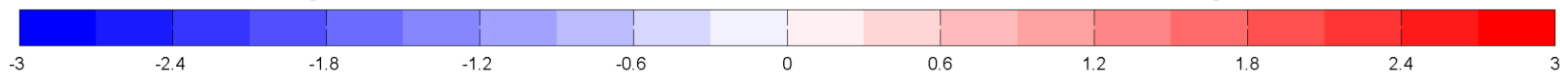
Autunno

Inverno



riduzione

aumento



WIND POWER[GWh/yr]

Proiettare il futuro (scenari climatici)

MATRICE GCMs-RCMs
dalla nuova iniziativa
MED-CORDEX

| | | ERA-Interim | CMCC-CM RCP45 | CNRM-CM5 RCP45 | CNRM-CM5 RCP85 | HadGEM2-ES RCP85 | IPSL-CM5A RCP45 | IPSL-CM5A RCP85 | MPI-ESM-MR RCP85 |
|----------------|---------------|-------------|---------------|----------------|----------------|------------------|-----------------|-----------------|------------------|
| Regional Model | CMCC-CCLM | | | | | | | | |
| | CNRM-ALADIN52 | | | | | | | | |
| | ENEA-PROTHEUS | | | | | | | | |
| | ENEA-RegCM31 | | | | | | | | |
| | GUF-CCLM4 | | | | | | | | |
| | ICTP-RegCM4 | | | | | | | | |
| | IPSL-WRF | | | | | | | | |
| | LMD-LMDZ | | | | | | | | |
| | UCLM-PROMES | | | | | | | | |

Da 50 km a 10 km e oltre....



MEDCORDEX data base: search

The field values are only those present in the database. If, for example, in the "org" field the value ENEA is not present it means that ENEA didn't upload any file yet.

simulations

MEDCORDEX data base

help

statistics

search

get data

register

news as of December 13th, 2013

publications

references

contacts

HYMEX data base

search fields

Realm: any

variable: any

org: any

Domain: any

GCMModelName: any

CMIP5ExperimentName: any

CMIP5EnsembleMember: any

RCMmodel: any

Frequency: any

file name free search

from YYYY-MM-DD

to YYYY-MM-DD

CMCC-CCLM4-8-19 v1
CNRM-ALADIN52 v1
CNRM-RCSM4 v1
ENEA-PROTHEUS v2
ENEA-REGCM v31
GUF-CCLM4-8-11 v1
GUF-CCLM4-8-11 v2
GUF-CCLM4-8-18 v1
GUF-CCLM4-8-18 v2
ICTP-RegCM4-3 v1
ICTP-RegCM4-3 v7
INSTM-INSTMED06 v2
IPSL-WRF311 v1
IPSL-WRF311NEMO v1
LMD-LMDZ4 v1
LMD-LMDZ4NEMOMED8 v1
UCLM-PROMES v1

actions

show the total size and the number of files

[Different Image]

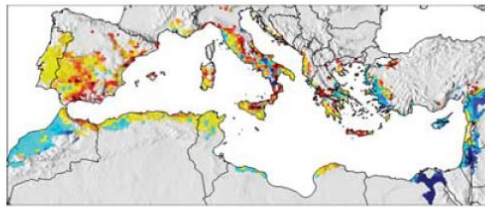
please type the above text:

reset fields search

Non solo Energia...

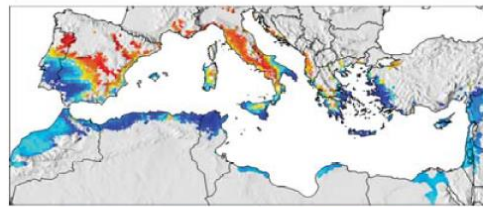
Agricoltura

A ΔY (change in olive yield, t ha⁻¹)



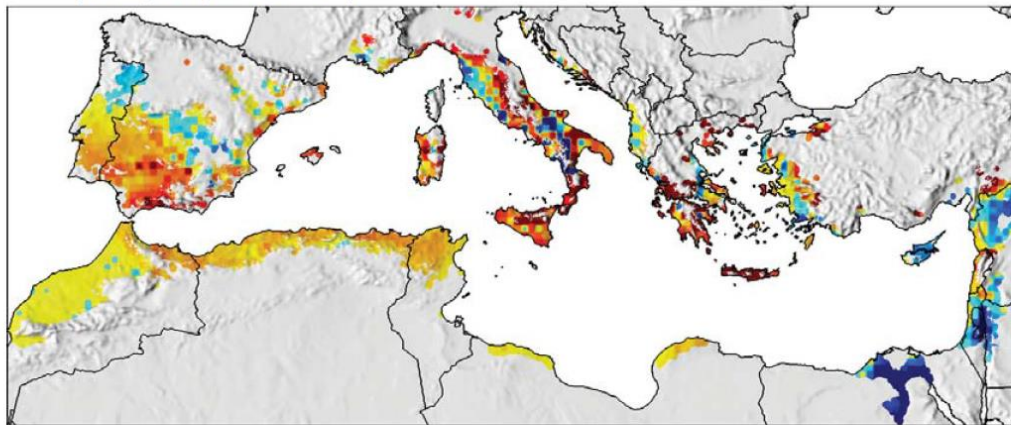
-0.44 0 0.29 0.57

B ΔI (change in fruit attacked, %)



-42 -21 0 33

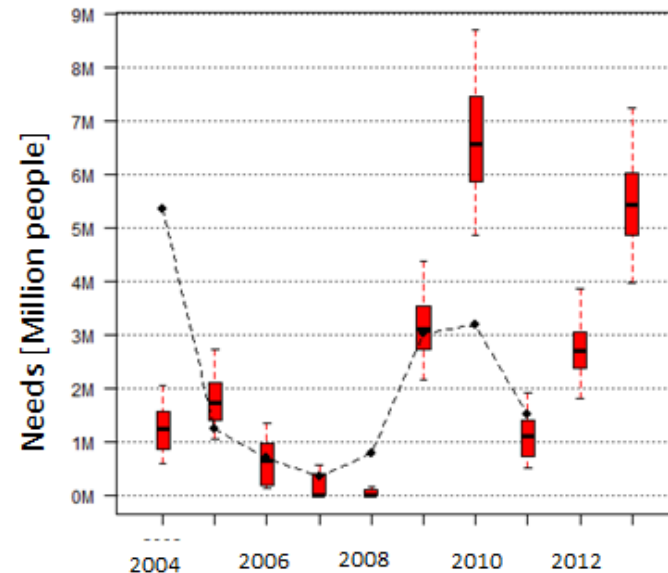
C $\Delta \Pi$ (change in profit, € ha⁻¹)



-256 0 216 431

Food security (WFP, ...)

Livelihood early assessment & Protection (LEAP) model over Ethiopia



In 20 anni il sistema di allerta precoce, rispetto alla risposta all'emergenza, può portare a rilevanti risparmi...

Historical beneficiary number

LEAP generated estimate

Produzione Olive

2041-2050 vs 1971-1980

ENE-Protheus regional coupled model+ physiologically-based demographic model (PBDM)



2.8 miliardi US\$

EUPORIAS



**Grazie per la
vostra
attenzione!!**