Coordinating and integRating state-of-the-art Earth Observation Activities in the regions of North Africa, Middle East and Balkans and Developing Links with GEO related intiatives toward GEOSS

GEO-CRADLE pre-Kick-Off Meeting
Thursday, 18 February 2016

WP2: INVENTORY OF CAPACITIES AND USER NEEDS
T2.3: Modelling and Computing Facilities

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WP2/T2.3: : INVENTORY OF MODEL/COMPUTING CAPACITIES AND USER NEEDS

Objective

to map and record the available numerical modelling activities in the RoI along with the available computing facilities

Expertise

GEO-CRADLE partners with extensive expertise in atmospheric, floods, agriculture, water, energy and regional climate modelling

Inventory objective

(1) initial identification of modelling groups/models/data and computer resources in the RoI

(2) On-line surveys to be distributed at national level

(3) consolidation of the collected information in a dedicated database.

WP2/T2.3: Steps to achieve the Task goals

Step 1

In cordination with T2.1 and T2.2 TLs, to design a questionaire on national modelling/computing infrastructures and available model output data and computer resources

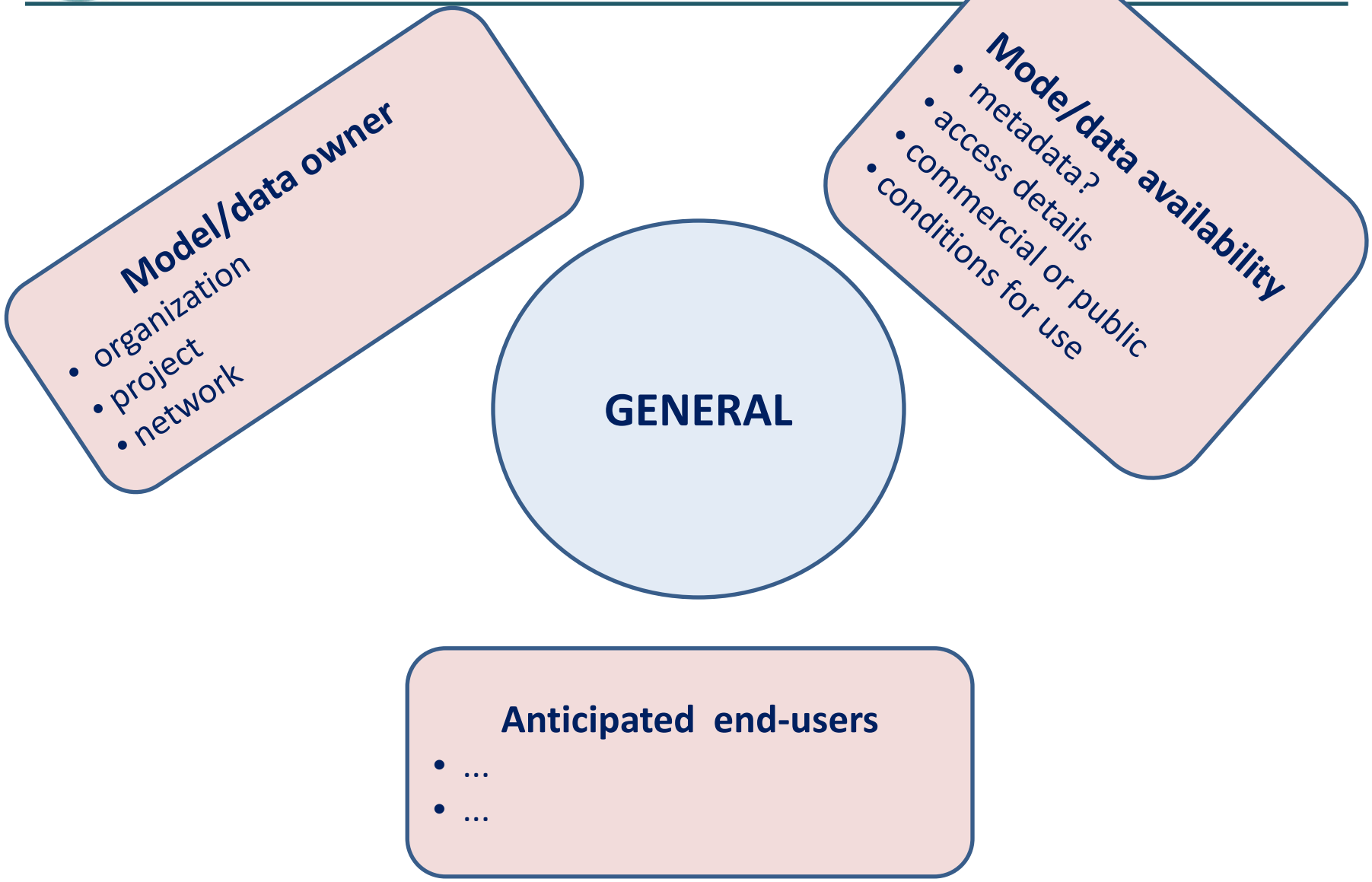
Step 2

to identify representatives in countries/networks/projects to assist in distributing and collecting information by the questionaire

Step 3

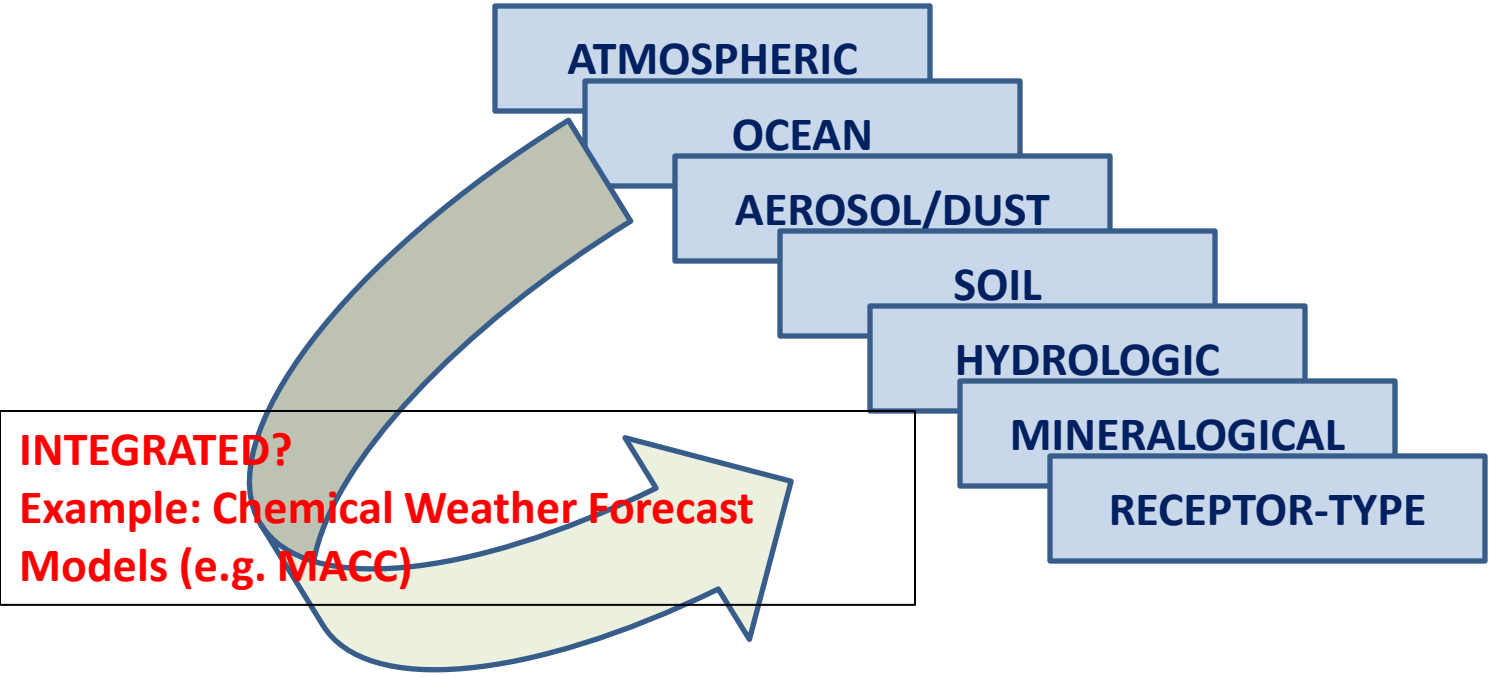
to analyze and report on the collected information

WP2/T2.3: Elements of the Questionaire (1)



WP2/T2.3: Elements of the Questionaire (2)

TYPES OF MODELS



WP2/T2.3: Elements of the Questionaire (3)

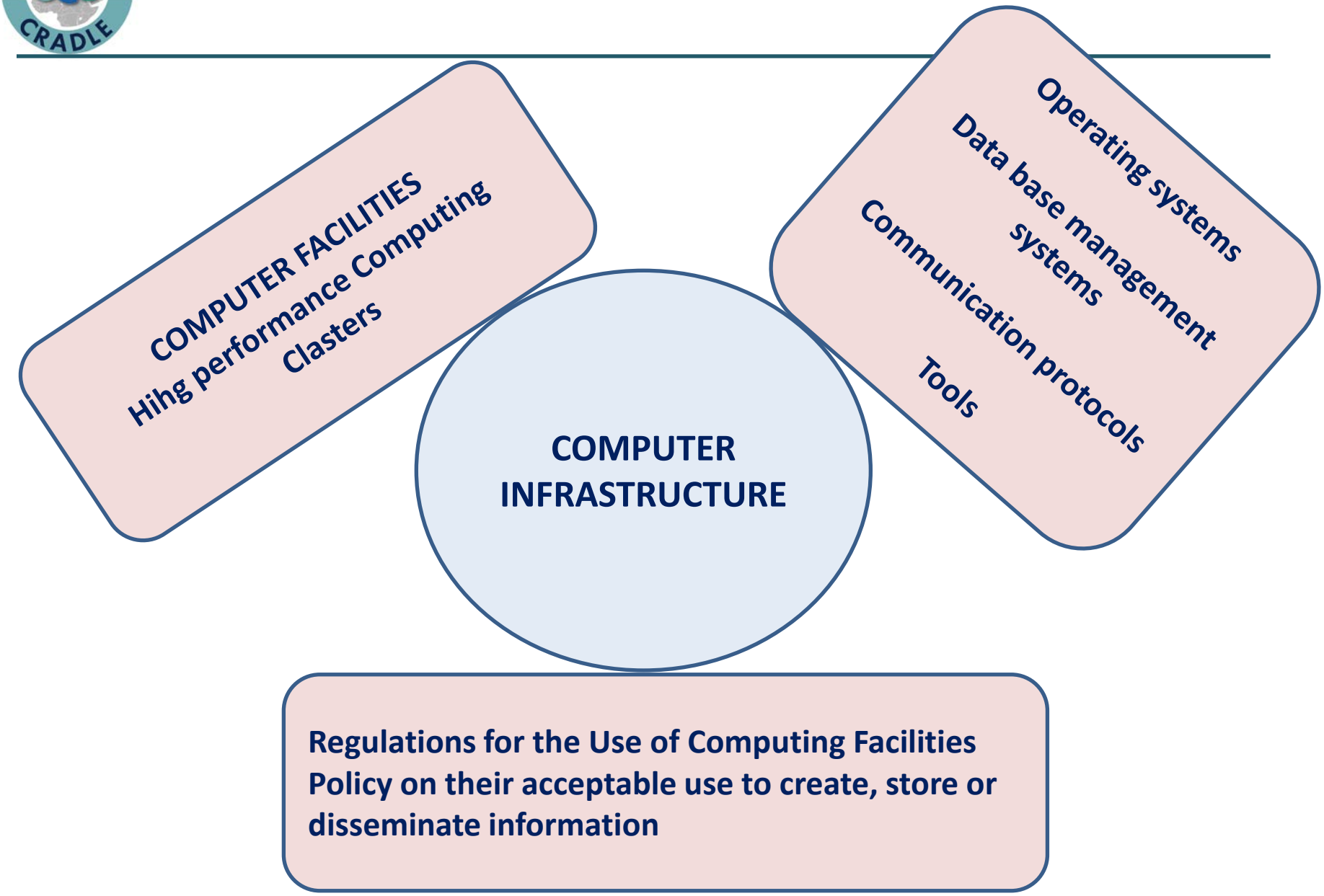
Spatial characteristics
- h/vert esolution
- type of grids

Temporal characteristics
- short-term forecasts
- medium-to monthly forecasts
- seasonal outlooks
- climate assessments

MODEL FEATURES

Model output data
- parameters
- output frequency
- forecast/climate lead time

WP2/T2.3: Elements of the Questionaire (4)



WP2/T2.3: Issues to be further ellaborated

- Common approach of T2.1, T2.2 and T.2.3
  - proposed by Elisabetta; accepted
  - How technically to perform questionaire processing?
    - An option – web-based falling manues
- Exploit experiences on inventories from other similar European projects
- Proposed 5 contacts/country
  - Contact list to be consolidated ASAP
  - To add projects and networks, not only national organizations

WP2/T2.3: Examples of key data providers (1)

CLIMATE

- **SEE-VCCC - South East European Virtual Climate Change Center, Belgrade**; http://www.seevccc.rs/
  - brings together scientists from different areas of research.
  - The Center's operational functions are
    - climate monitoring, long range forecast, monthly forecast and dust forecast. Research and development activities are mostly related to the numerical modeling of the Earth system components, and their application in agriculture, forestry, energeticsnomy.

CLIMATE

- **ORIENTGATE - A structured network for integration of climate knowledge into policy and territorial planning;** *http://orientgate.rec.org/*
  - The ORIENTGATE project aims to implement concerted and coordinated climate adaptation actions across South Eastern Europe (SEE)
  - set of 27 extremes indices (maps and gridded data)
  - The sectors in which indices are most frequently used are agriculture, forestry, waterpower engineering and human health.

WP2/T2.3: Examples of key data providers (3)

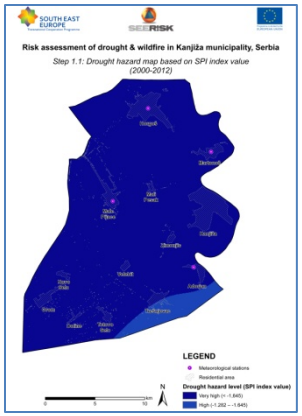
CLIMATE

- **CLIMATEUROPE- European Climate Observations, Modelling and Services**
  - H2020 project started Jan 2016; SEEVCCC/RHMSS the Balcan partner
  - Objectives
    - Develop a European framework for Earth-system modelling and climate service activities
    - Coordinate/ integrate European climate modelling, climate observations and climate service infrastructure initiatives (e.g Copernicus C3S)
    - Facilitate dialogue among relevant stakeholders, including climate science communities, funding bodies, providers and users.
    - Enhance communication and dissemination activities with stakeholders; stakeholder-oriented reports on the state-of-the-art in Earth-system modelling and climate services in Europe

WP2/T2.3: Examples of key data providers (4)

CLIMATE

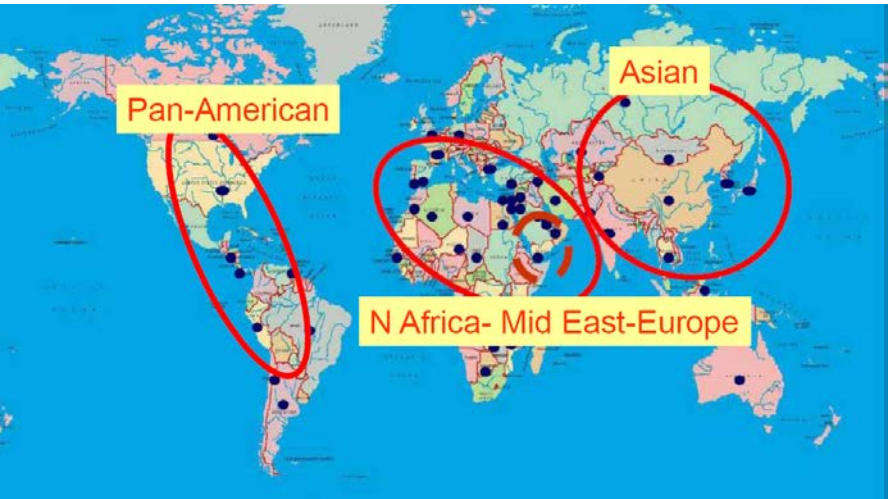
- **SEERISK "Joint Disaster Management risk assessment and preparedness in the Danube macro-region“**
  http://www.seeriskproject.eu/seerisk
  - The project is funded by the South East Europe Transnational Cooperation Programme.
  - The project consortium comprises 20 project partners representing 9 countries, namely Austria, Slovakia, Hungary, Croatia, Serbia, Romania, Bulgaria, Slovenia and Bosnia and Herzegovina.
  - Objectives
    - to formulate common methodology for the assessment of natural hazards,
    - reveal the similarities and distinctions between the institutional framework of risk assessment and disaster management
    - put in local practice the European Commission risk assessment guidelines

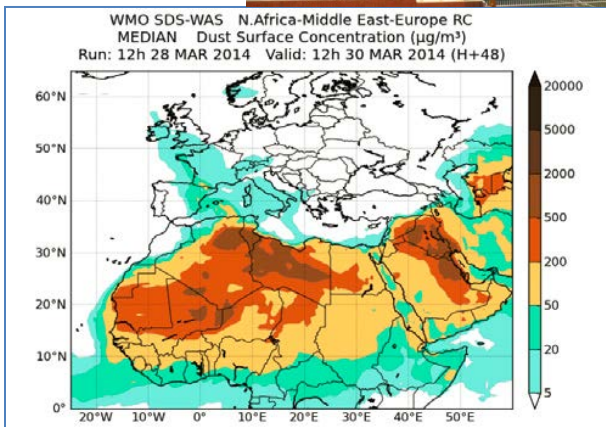


WP2/T2.3: Examples of key data providers (5)

DUST

- **SDS-WAS - Sand and Dust storm Warning Advisory and Assessment System** http://sds-was.aemet.es/
  - Multidecadal model data re-analysis on dust
  - 9 models intercomparing and validating against observations for N Africa, S Eurore and Mid East
  - Regular workshops on data use

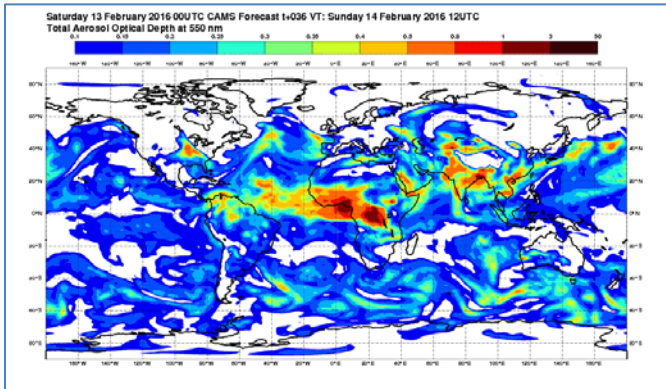




WP2/T2.3: Examples of key data providers (6)

AEROSOL (GENERAL)

- **Copernicus Atmosphere Monitoring Service (CAMS) predecessor of MACC II**
  http://atmosphere.copernicus.eu/about-cams
  - Objectives
    - By combining satellite and in situ observations with advanced numerical models based upon latest science insight, deliver high-quality environmental information services
    - provides forecasts of air quality, dust storms, fire emissions and solar UV radiation for a few days ahead both globally and in more detail for Europe.
    - Annual assessments of air quality
    - Multidecadal model data



macc Monitoring atmospheric composition & climate

WP2/T2.3: Examples of key data providers (7)

HYROLOGY

- **HYMEX – Hydrology Mediterranean Experiment**
  - better understanding and quantification of the hydrological cycle and related processes in the Mediterranean,
  - emphasis on high-impact weather events, inter-annual to decadal variability of the Mediterranean coupled system, and associated trends in the context of global change.

HyMeX HYdrological cycle in Mediterranean E

- **WMO/FFGS - Flash Flood Guidance System**
  - Regional component: Black Sea and Middle East FFFGS
  - SEEVCCC/RHMSS – Balkan partner

WP2/T2.3: Examples of key data providers (9)

VI-SEEM (https://vi-seem.eu/)

- 3yr H2020 project started October 2015.
- Objectives
  - Creating Virtual Research Environment (VRE) in Southeast Europe and the Eastern Mediterranean (SEEM),
  - Facilitate regional interdisciplinary collaboration, with special focus on Life Sciences, Climatology and Digital Cultural Heritage.
  - Provide scientists with access to state of the art e-Infrastructure – computing, storage and connectivity resources – available in the region;
  - Promote the inclusion of additional resources.
  - Promote capacity building in the region and foster interdisciplinary approaches.
  - Bring high level expertise in e-Infrastructure utilization to enable research activities of international standing in the selected fields of Climatology, Life Sciences and Cultural Heritage.

WP2/T2.3: Examples of key data providers (8)

- **COMPUTER REGIONAL NETWORKS/PROJECTS**
  - Scientific Computing Laboratory – Institute of Physics Belgrade (SCL-IPB) has been recognized as a Centre of Excellence for modeling of complex systems. (http://www.scl.rs)
  - SCL-IPB provides high performance computing and storage facilities for eScience research.
  - More than 1000 CPUs and 50 TB of storage capacity logically divided into three Grid sites (AEGIS01-IPB-SCL, AEGIS07-IPB-ATLAS, and AEGIS08-IPB-DEMO) + one local cluster.