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The WMO Sand and Dust Storm Warning Advisory and Assessment System (SDS-WAS)

A Global Consortium Helping Society Reduce Risk
Through Research, Assessments and Forecasts

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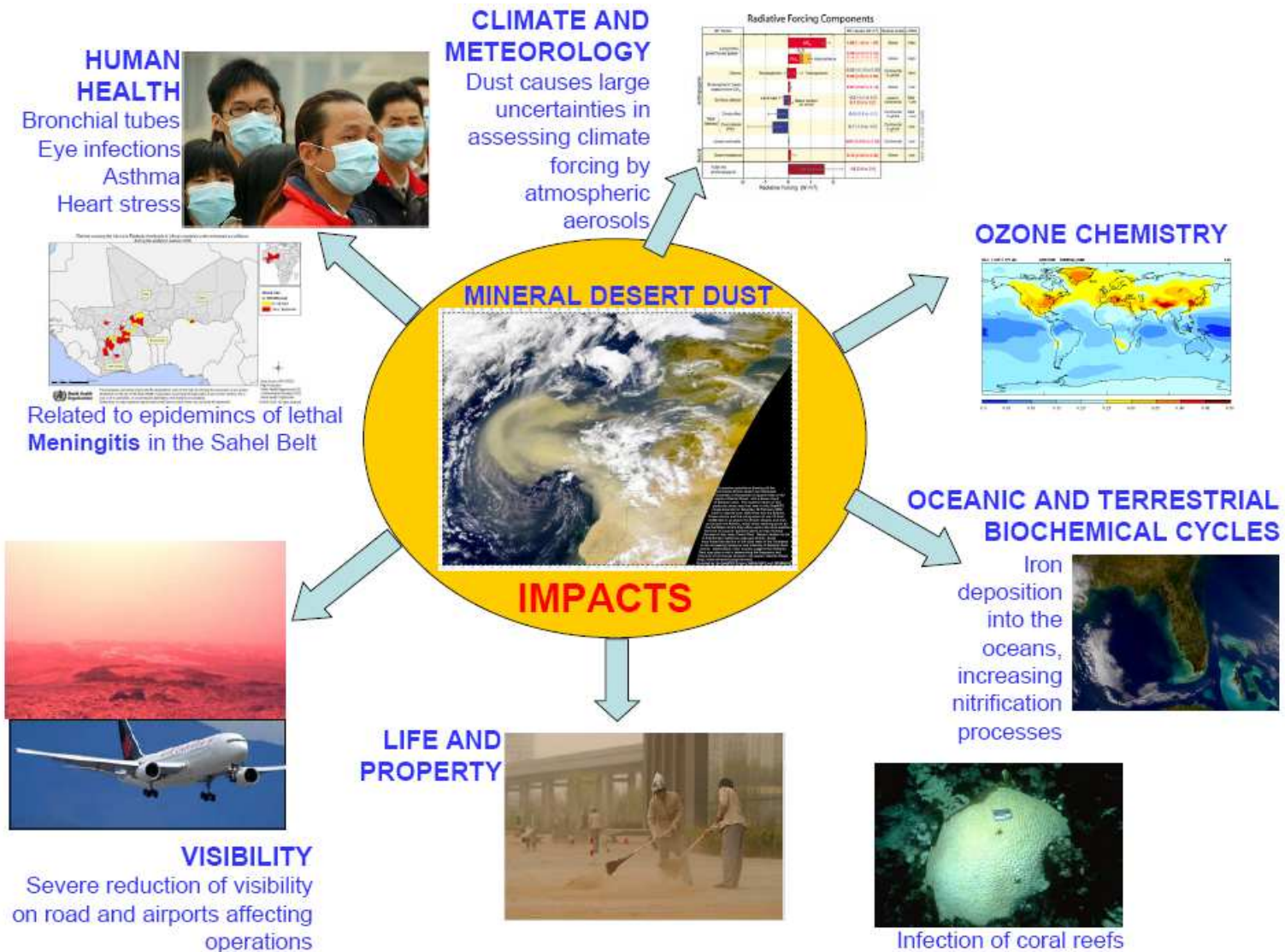
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Sand and Dust Storm Impacts



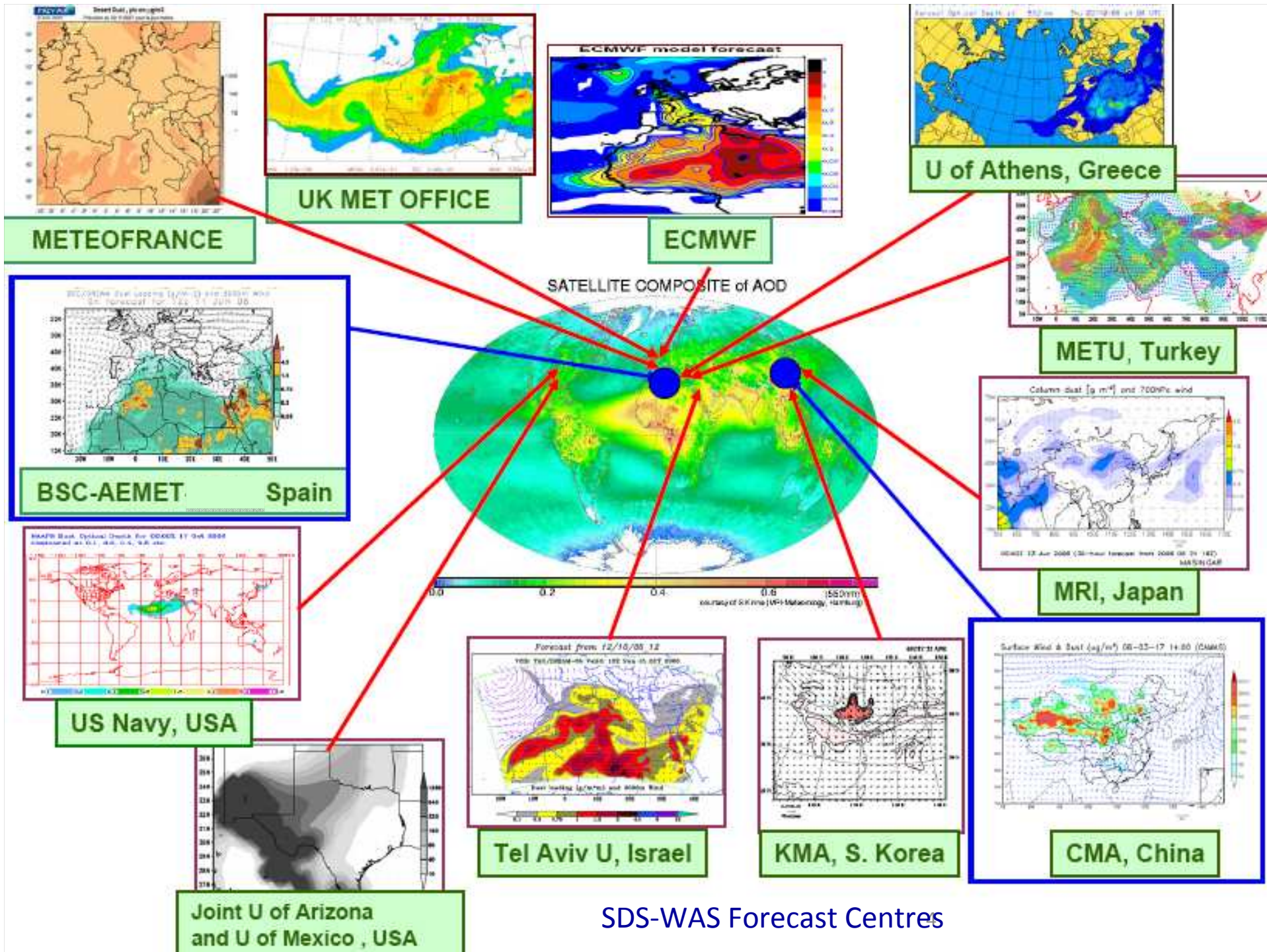
SDS-WAS Mission

To enhance the ability of countries to deliver:

- timely and quality forecasts of sand and dust storms,
- observations and
- information and knowledge to users

through

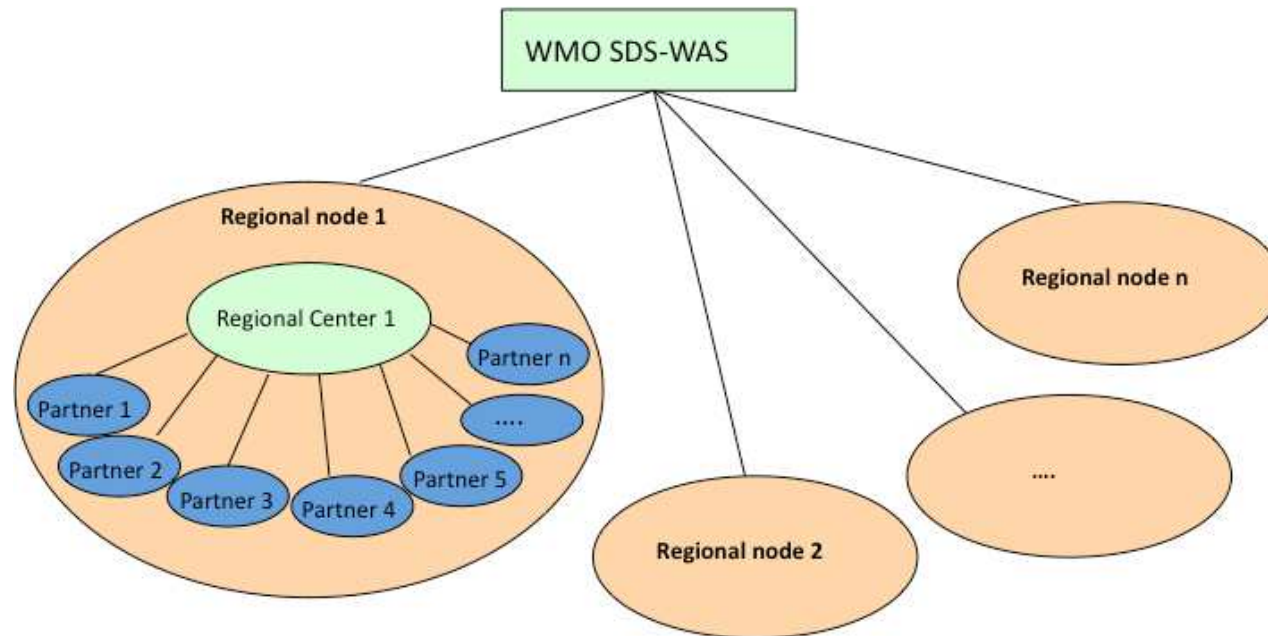
- an international partnership of research and operational experts and users



Objectives

- Provide user communities access to forecasts, observations and information of the SDS through regional centres connected to the WMO Information System (WIS) and the World Wide Web.
- Identify and improve SDS products through consultation with the operational and user communities
- Enhance operational SDS forecasts through technology transfer from research
- Improve forecasting and observation technology through coordinated international research and assessment
- Build capacity of relevant countries to utilize SDS observations, forecasts and analysis products for meeting societal needs

A Federated System of Regional Nodes Bringing Modeling, Research, Observations and Users Together



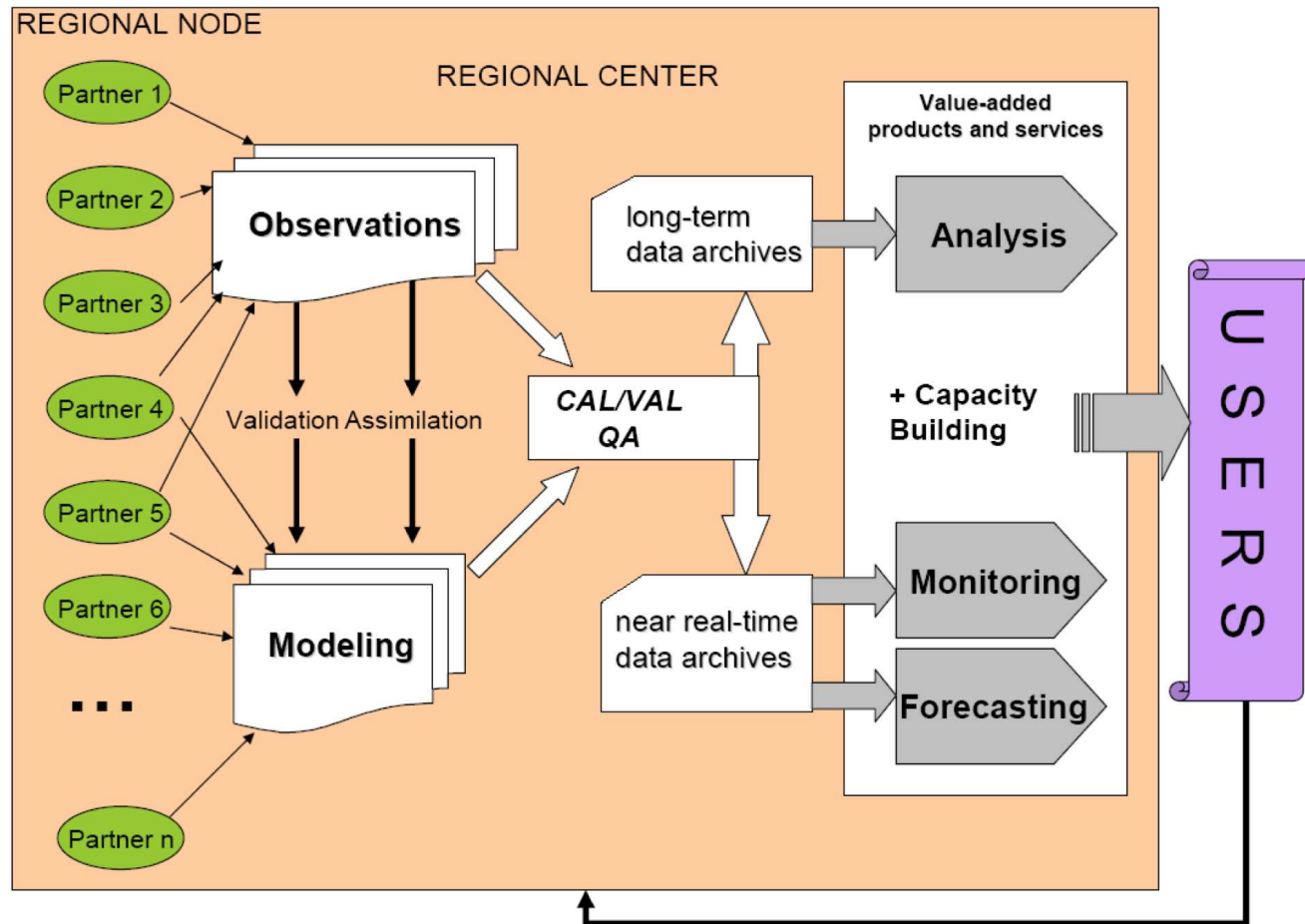
**Regional Center for Northern Africa,
Middle East and Europe: AEMET and BSC-CNS (Spain)**

Partners of the regional node (list not exhaustive):
Meteo-France, UK Met Office, ECMWF, LISA, LSCE,
IFT, EUMETSAT, CNR, AERONET/PHOTONS,
Tunisian Met Service, University of Athens,
University of Tel Aviv, Egyptian Meteorological Agency,
METU

**Regional Center for Asia/Central-Pacific:
China Meteorological Agency**

Partners of the regional node:
Japan Meteorological Agency
Korea Meteorological Agency

A Federated System of Regional Nodes Bringing Modeling, Research, Observations and Users Together

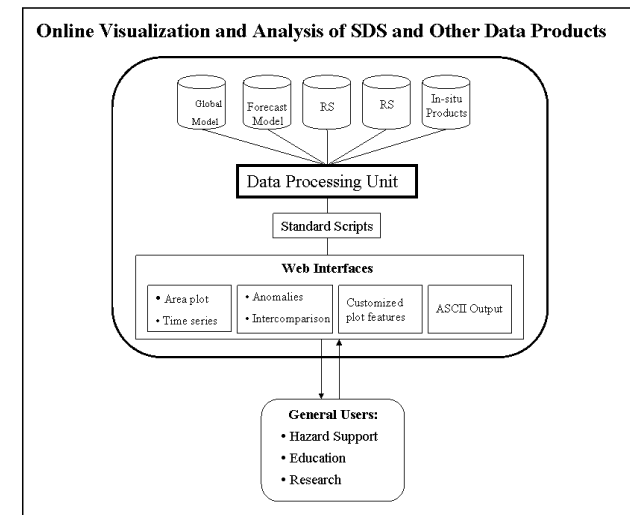
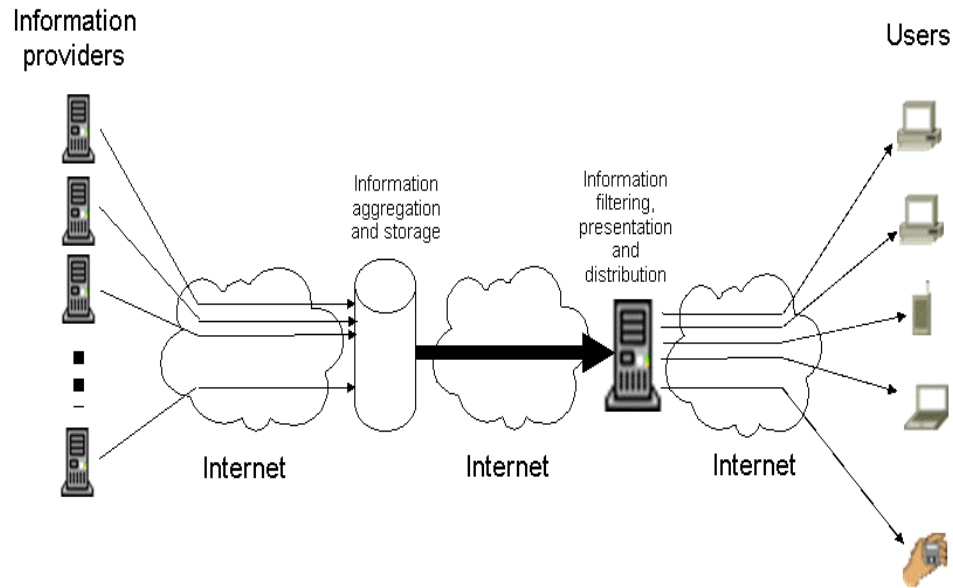


Flow of information between SDS-WAS system components for a regional node consisting of a consortium of partners supported by a Regional Steering Group and Regional Centre

What data or service does/will the Project produce?

- SDS forecasts and model climatologies
 - ✓ Products: PM2.5, PM10, AOD, deposition, visibility
 - ✓ Visual maps, gridded data, time series for selectable sites, vertical profiles
- Observations and near-real time verification
 - ✓ qualitative and quantitative common verification system for all participating forecast models
 - ✓ Verification data: Satellites, sun-photometer networks, synop and metar visibility, pm networks
 - ✓ Linking to SDS relevant satellite data platforms (GIOVANNI, EUMETSAT,...)
- Off-line validation platform for model climatologies and experiments (AEROCOM)
- Other Services:
 - Capacity building for users
 - Connecting data providers with users. MERIT project (meningitis) is an example.

How does/will the Project deliver data / services?



- ✓ Web-based
- ✓ Fast and reliable real time or near real time data and imagery access;
- ✓ Historical data access;
- ✓ Data integration from multi-sensor, multi-satellite and modeling products;
- ✓ Analytical capabilities;
- ✓ Products targeting users at different levels;

How could the Project also deliver data / services?

SDS WAS through EUMETCAST:

- Near real time data archives and visual information
- Long term data base archive (value-added products)

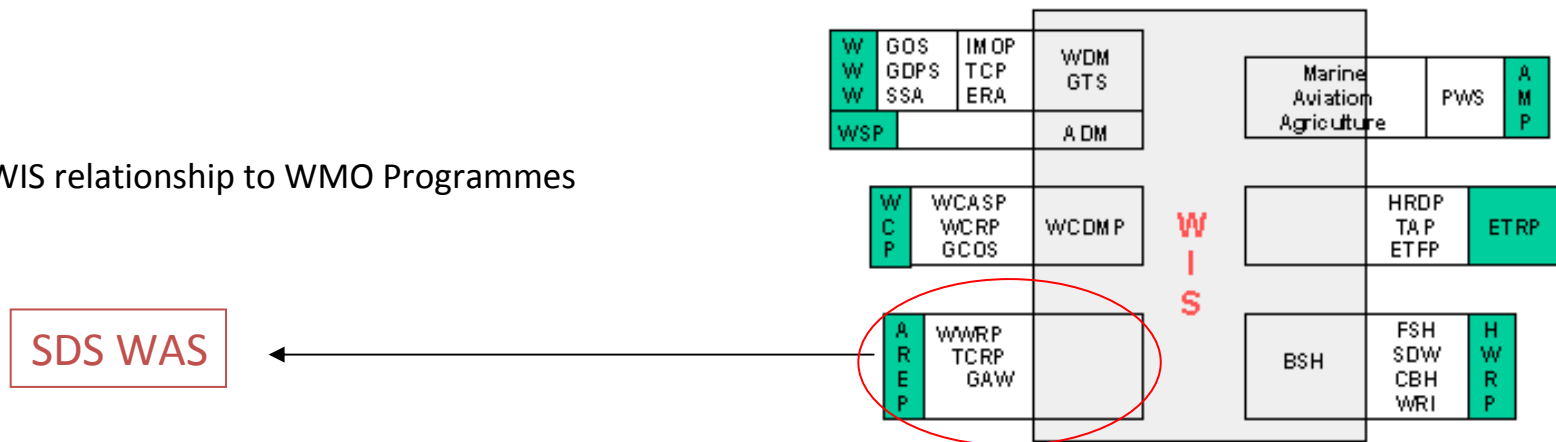
www.eumetsat.int/Home/Main/What_We_Do/EUMETCast/

The WMO Information System (WIS)

It is an overarching approach and a single coordinated global infrastructure for the collection, distribution, retrieval of, and access to data and information of all WMO and related programmes.

www.wmo.ch/pages/prog/www/WIS-Web/home.html

WIS relationship to WMO Programmes



Who are the Project's intended target audience / users?

- Air quality agencies (regional and local)
- National Meteorological Services
- Aviation and ground transportation authorities
- Decision makers (health, agriculture)
- Researchers (ocean community, health community, planning experimental campaigns)

What decision/action does/will the project support?

Example: respiratory health and transportation



[Kuwait Times - 22 June, 2008](#)

Sand storms in the northern Gulf have *disrupted oil exports* for several days from OPEC members Iraq and Kuwait. The storms had prevented seven of eight ships from docking there since Saturday.

www.arabianbusiness.com – 20 June 2008

More than 500 **traffic accidents** were reported in Kuwait in the space of just 48 hours on Thursday and Friday, while in Bahrain a further 20 accidents were reported, according to local media.

Hospitals in all three Gulf states reported large numbers of patients being admitted with **respiratory problems**. In Bahrain, more than 150 people required hospital treatment, Bahrain's Gulf Daily News reported.

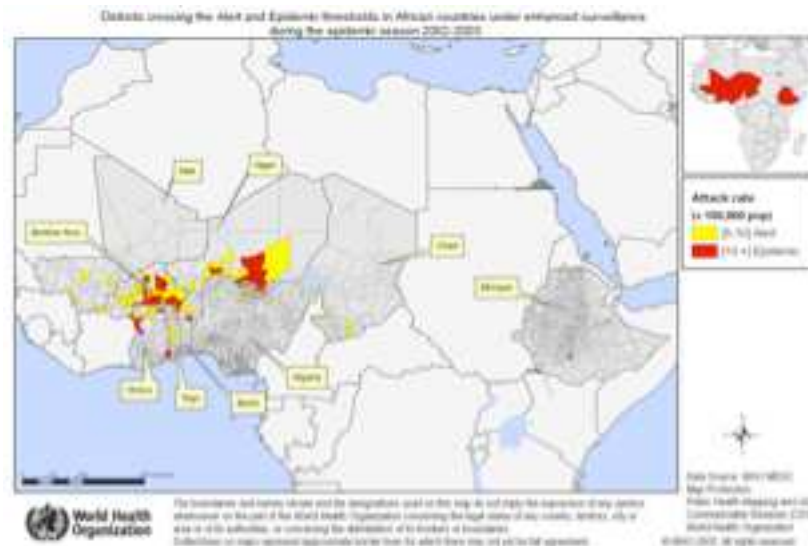
The adverse weather conditions also caused some **problems at airports** around the region, with both Bahrain and Kuwait reporting minor disruptions.

What decision/action does/will the project support?

Another example: Meningitis epidemics

MERIT project is a collaborative effort of the World Health Organization (WHO) and members of the environmental, public health and epidemiological communities. Other member organizations of MERIT: GEO, AEMET, HCF, IRI, WMO, MVP project, Ethiopian Climate and health Working Group, and other....

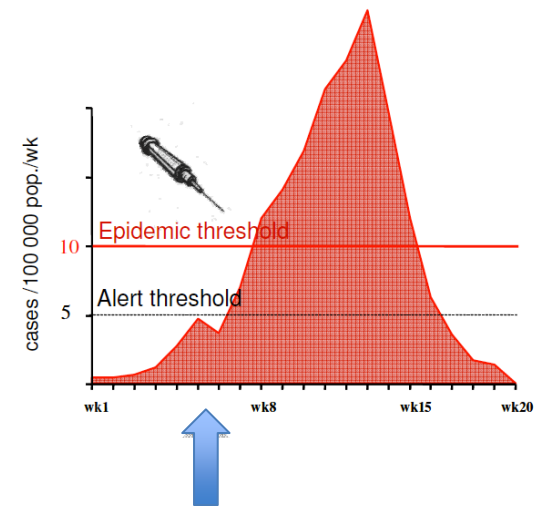
!!! Meningitis epidemics associated to dry and dusty weather in the Sahel during the dry season



Map of Epidemic Meningitis thresholds

One of the most feared epidemic diseases in Africa
High fatality rates; brain damage

CHALLENGE:
timely
vaccination to
optimize the
control of the
epidemics



SDS products together with other climate data to support decision making at WHO to optimize reactive vaccination campaigns at district level

What particular data sharing issues face the AQ community? Discussion

- SDS models current approach for data format is Netcdf CF convention with AEROCOM aerosol standards
- Grib2 may be used in the future but still needs standardization for aerosol.
- Data sharing rights is an issue for some data providers
- How to effectively link to GEOSS?

WMO contacts

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