First DBCP Mediterranean Training Workshop
on Ocean Observations and Data Applications

WMO Global Basic Observing Network

9 November 2022

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WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

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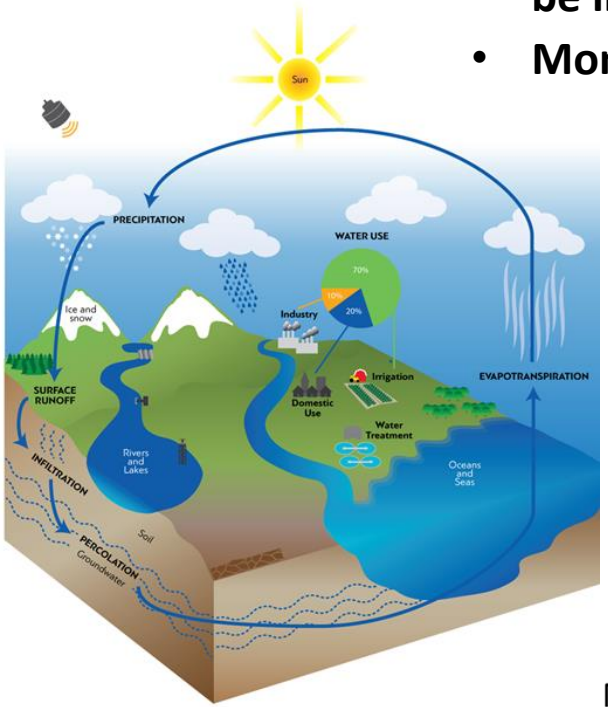
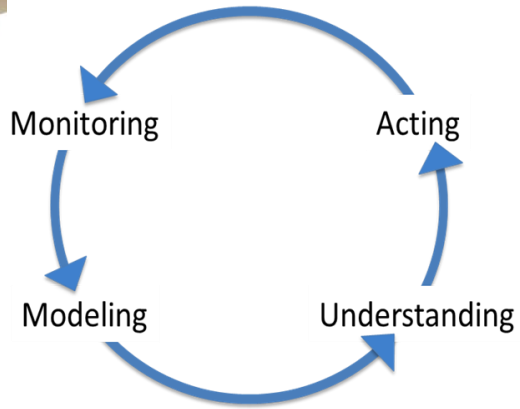
Water Challenges

- **High complexity of natural systems, doubled by anthropological effects**
- **No isolated solution can work: must be integrated, agile and adaptable**
- **Monitoring of the system is a must**





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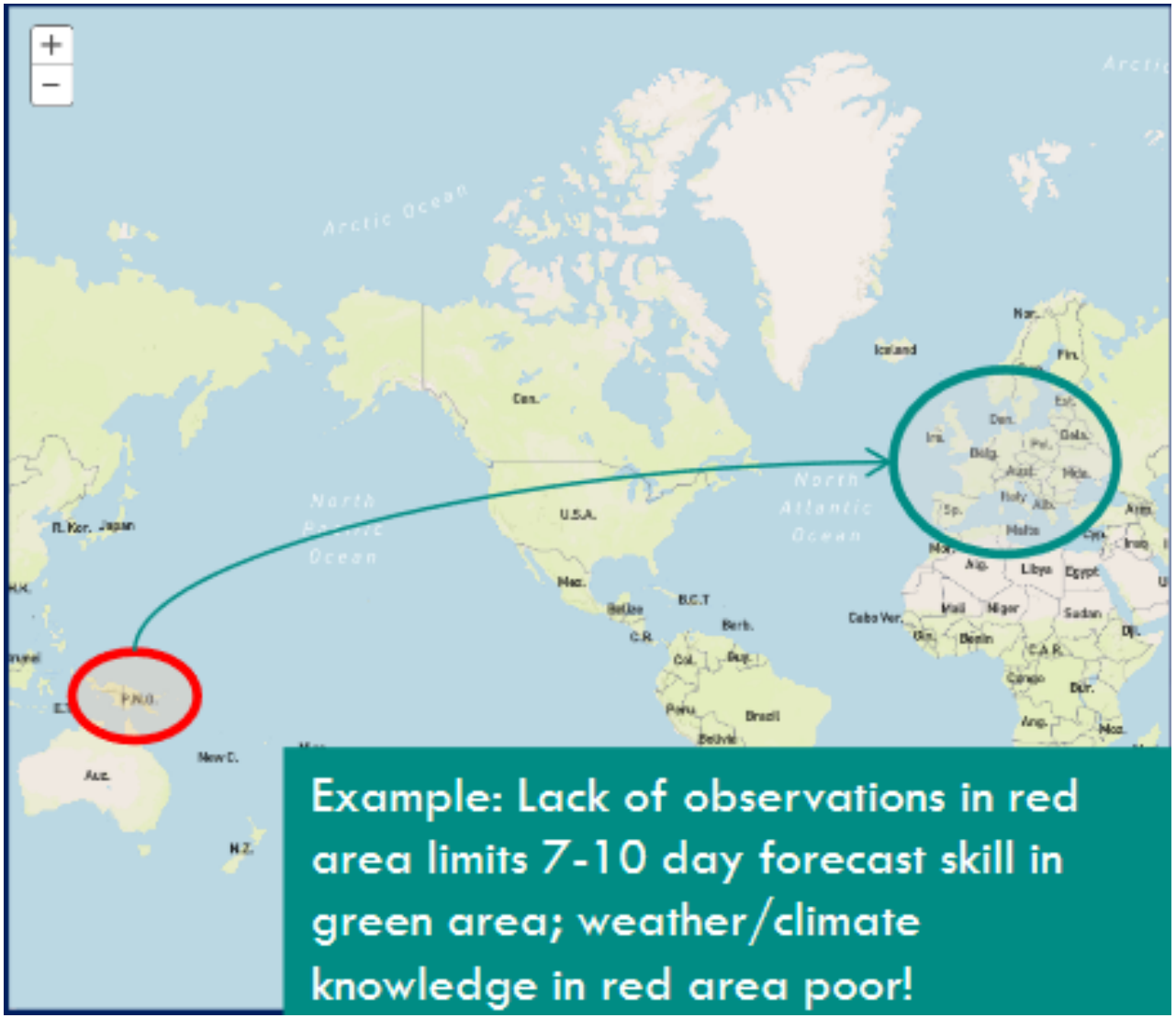
Importance of global observations



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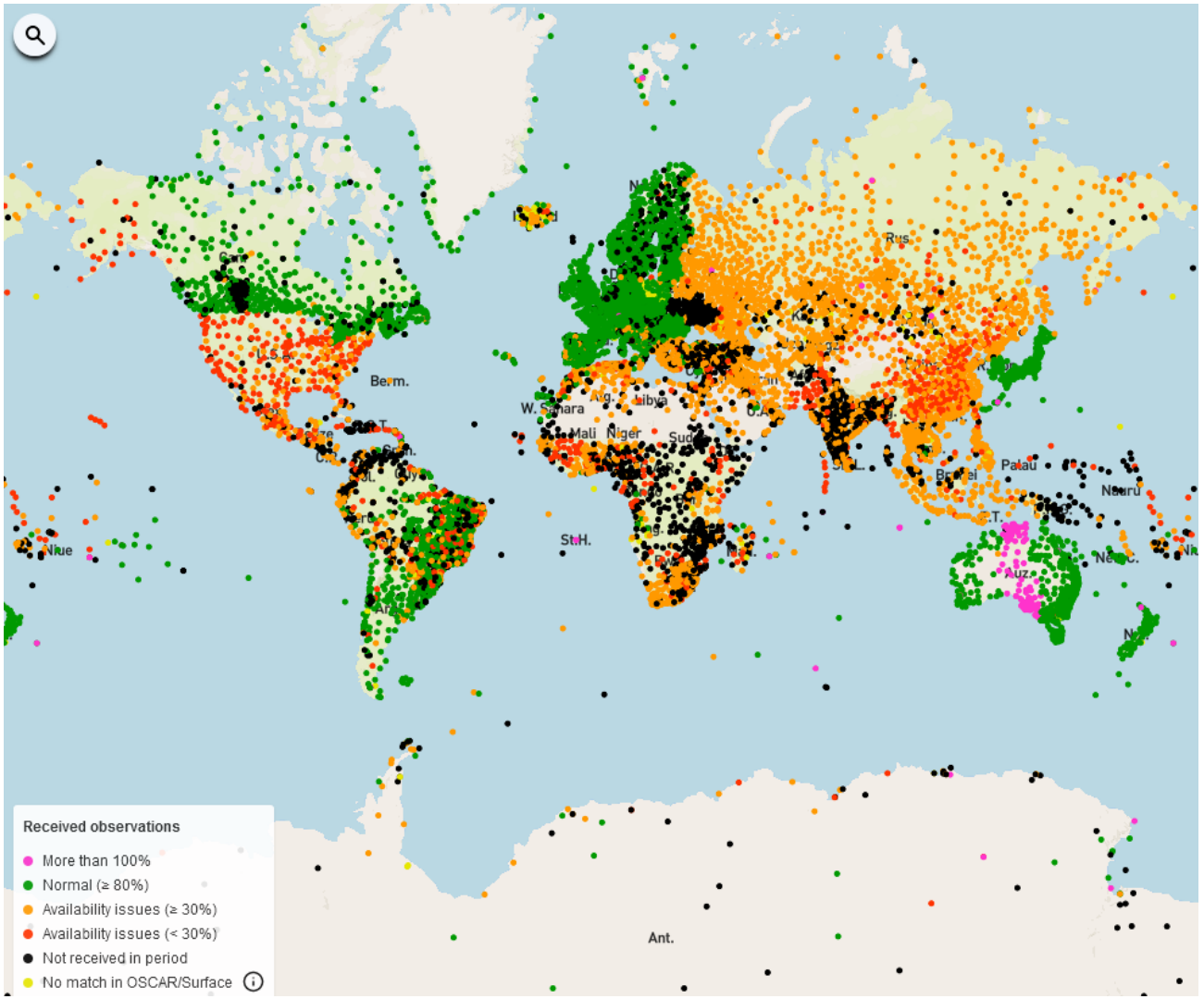
Status of global observations



Example of Surface pressure, 7 November 2022

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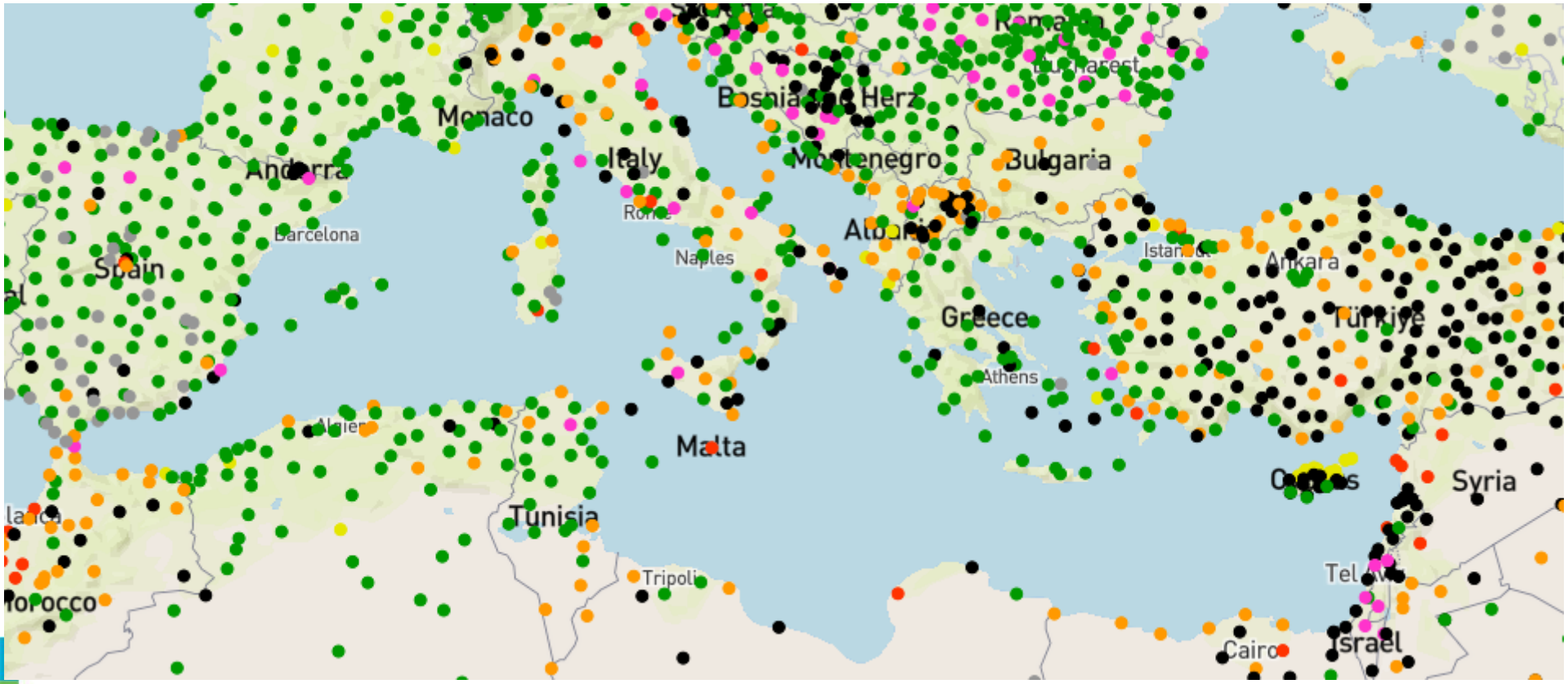
Status of global observations



Example of Surface pressure, 8 November 2022

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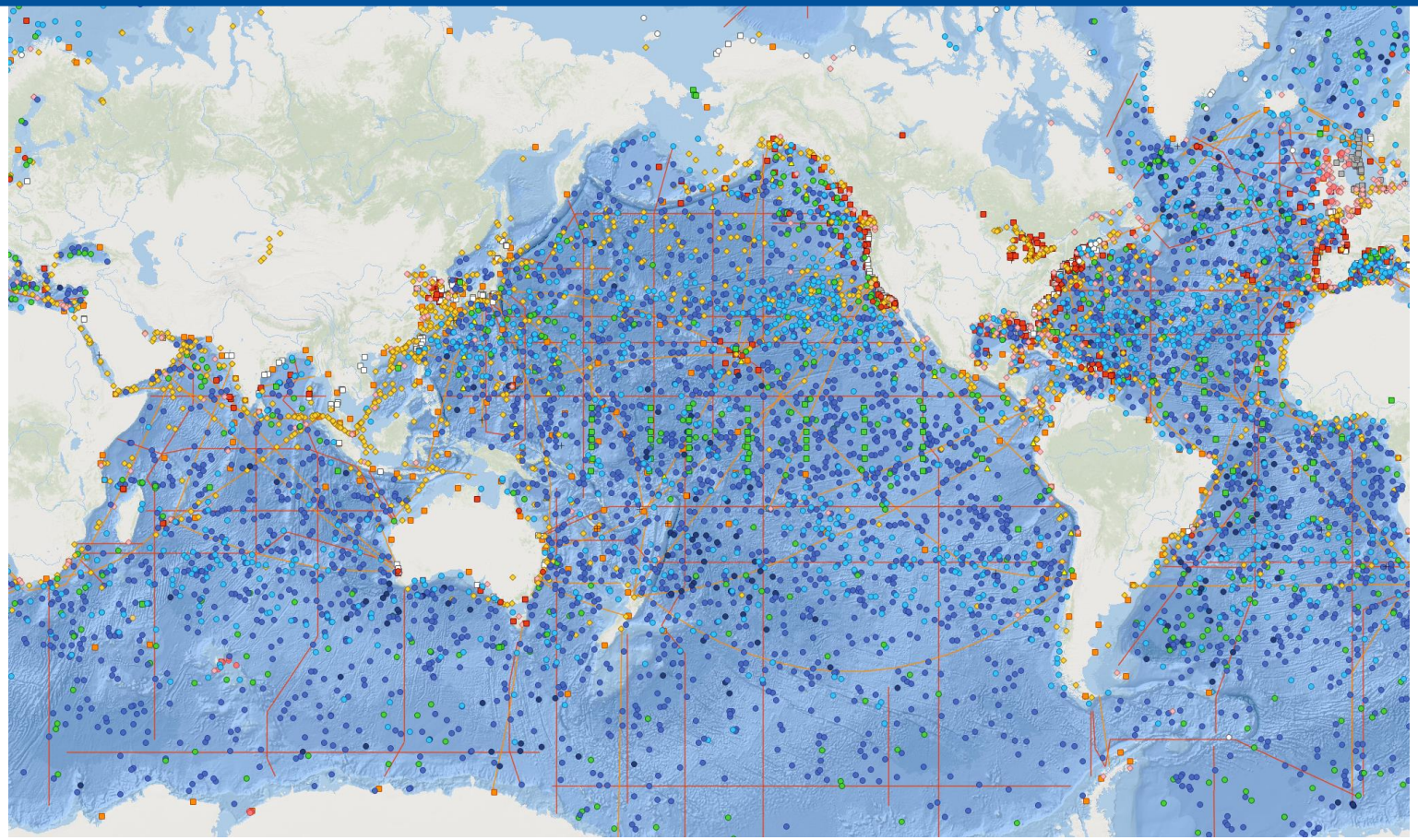
Ocean Observing system: current status



www.ocean-ops.org, 7 November 2022

- Many networks (buoys, ships, etc.) involved and coordinated through Ocean Coordination Group and OceanOPS
- Serious concerns about gaps (Indian Ocean, South Pacific, …) and sustainability

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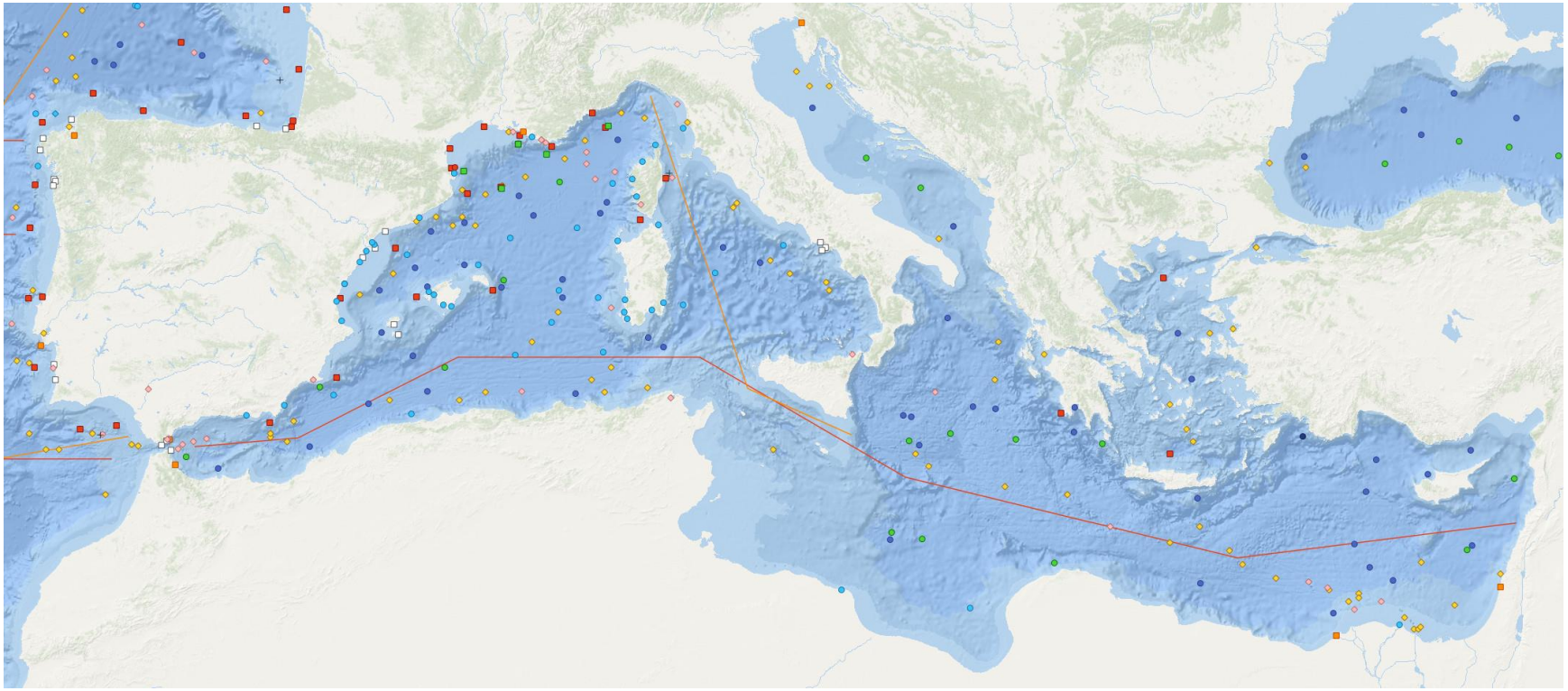
Ocean Observing system: Mediterranean Sea



www.ocean-ops.org, 7 November 2022

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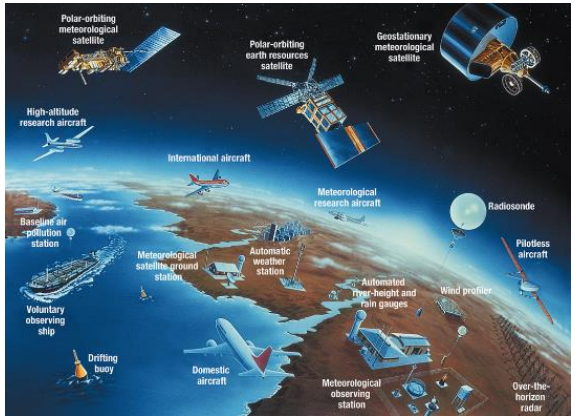
WMO Congress decisions in 2021: better services for economy and society

GBON, The WMO Global Observing System

SOFF
Systematic Observations Financing Facility

Weather and climate information for the global public good



New WMO unified data policy

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GBON

- The Global Basic Observing Network (GBON) shall be a subset of the surface-based subsystem of **WIGOS**, used in combination with the space-based subsystem and other surface-based observing systems of WIGOS, to contribute to meeting the requirements of **Global Numerical Weather Prediction**, including reanalysis in support of **climate** monitoring
- Amendments to the Technical Regulations
- Current status: preparation of initial GBON composition for January 2023

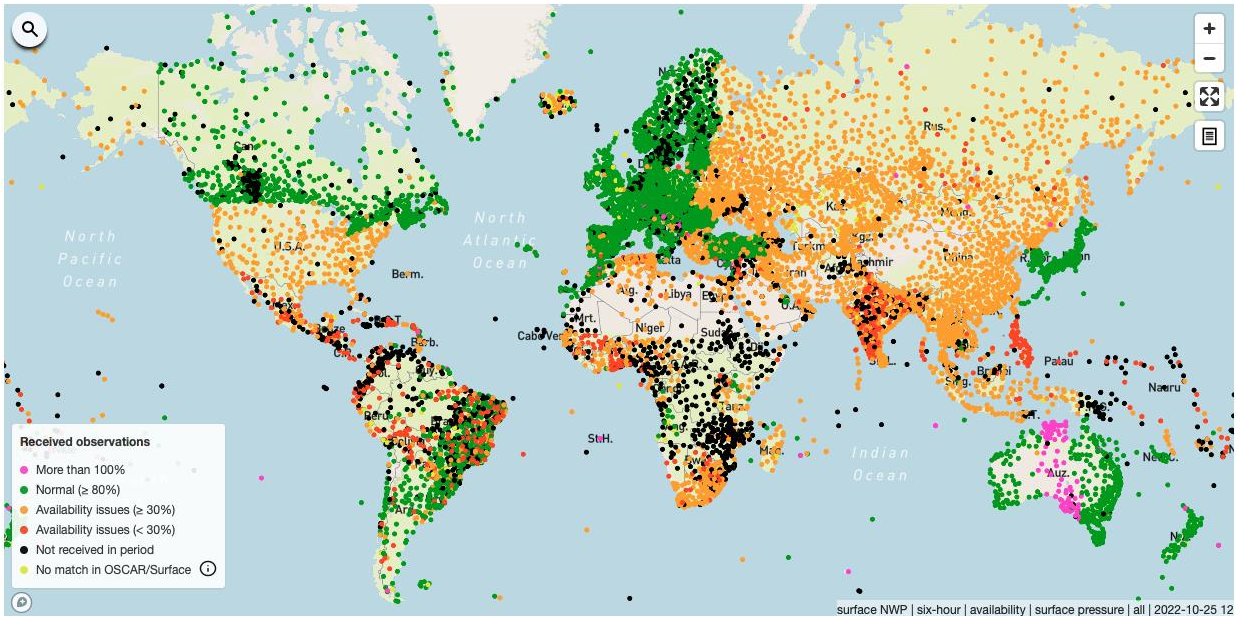
GBON, marine variables

- "..Where applicable, Members shall maintain the continuous operation of a set of **surface marine meteorological observing stations/platforms within their Exclusive Economic Zone**, where applicable or the corresponding marine areas of their jurisdictions, that observe, at a minimum, **atmospheric pressure and sea surface temperature** located such that where opportunity exists, GBON has a horizontal **resolution of 500 kilometres or higher**, over the marine areas of their jurisdictions, for these variables, with an hourly frequency"
- "Members shall operate, as applicable, a set of upper-air stations/platforms that observe **temperature, humidity and horizontal wind**, with a vertical resolution of 100 m or higher, twice a day or better, up to 30 hPa or higher, located such that, where opportunity exists, **GBON has a horizontal resolution of 1 000 kilometres or higher over the marine areas of their jurisdictions**, for all these observations"

- Request from Congress to explore, in collaboration with the Joint WMO-Intergovernmental Oceanographic Commission (IOC) Collaborative Board, possible initiatives **to strengthen the exchange of surface-based Earth system observations over the global ocean, for example via an extension of GBON into this domain**

Proposed initial composition of GBON (Jan 1, 2023)

- All stations shown in purple (sub-hourly data) green (hourly), orange (3-hourly) were selected as ***candidate GBON stations and have been tagged as such in OSCAR/Surface;***
- Members have been informed about this, and they have until **November 15 2022** to react, either by adding additional stations or by withdrawing candidate stations in OSCAR/Surface;



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GBON expansion to ocean variables

Possible key questions to address:

1. Main driver

2. Input data for global Numerical Weather Prediction (NWP) and climate reanalysis

3. Clarity on the observing remit

4. Data requirements

5. Mandatory global exchange of hydrological and cryosphere data

WMO Related Activities: Rolling review of requirements process

RRR develops a unified global decision on user requirements for observational data and the design and implementation of WMO integrated observing systems (WIGOS).

User-Centric approach for understanding requirements

Review of national requirements for observation

Review of capabilities/ capacities of existing and planned observing systems

At national level by the Points of Contacts

Critical review of extent to which the capacities meet the requirements

Statement of Guidance for each Application Category

High Level Guidance for evolution of observing systems

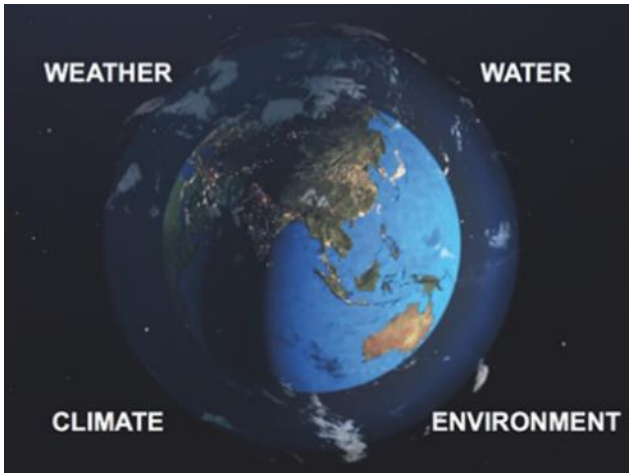
Side comment:

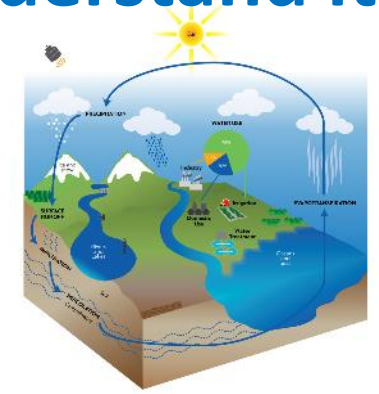
Union for the Mediterranean
Union pour la Méditerranée
الاتحاد من أجل المتوسط

Memorandum of Understanding with WMO on climate and water since 2018

Conclusion: Earth System as a new paradigm helping to understand its complexity

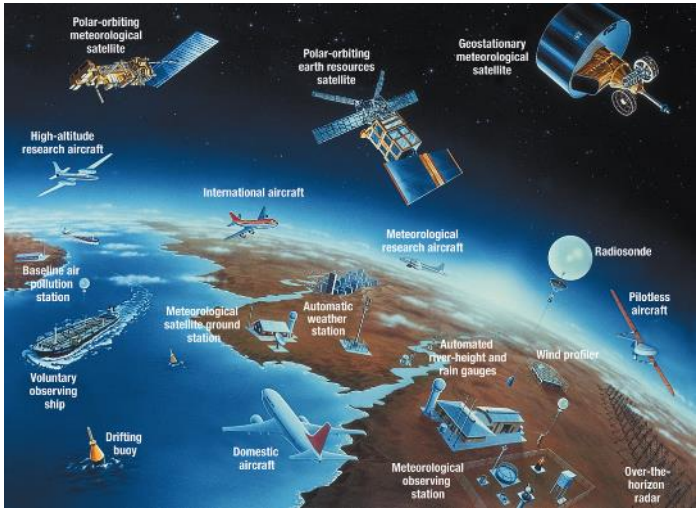
Innovation





Interconnected

Interoperable



- Common, affordable, interoperable technologies
- Beyond technical solution: trust building among players
- Co-design approach
- Sustainability
- Cost-benefit of monitoring has an excellent ratio, support needed!

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Thank you

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