

Figure 1. Meteorological Value Chain

Weather and climate services depend on a functioning meteorological value chain

Currently the initial links in the chain (acquisition and international exchange of observations) are weak in many areas, especially SIDS and LDC. The map below shows that the availability of observations is highly inconsistent across the globe. Areas with red (sporadic data), black dots (no data), or without dots (no observing stations) are problematic. This negatively impacts early warning systems and disaster preparedness.

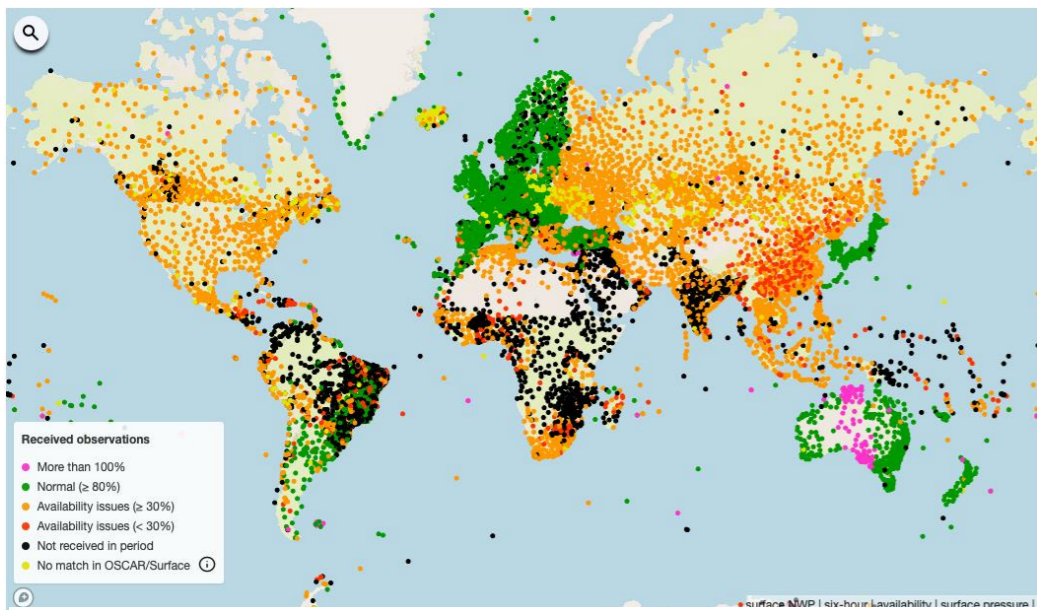


Figure 2. Surface pressure observations exchanged internationally, October 25, 18Z

Insufficient observational data coverage remains a serious issue in many parts of the world

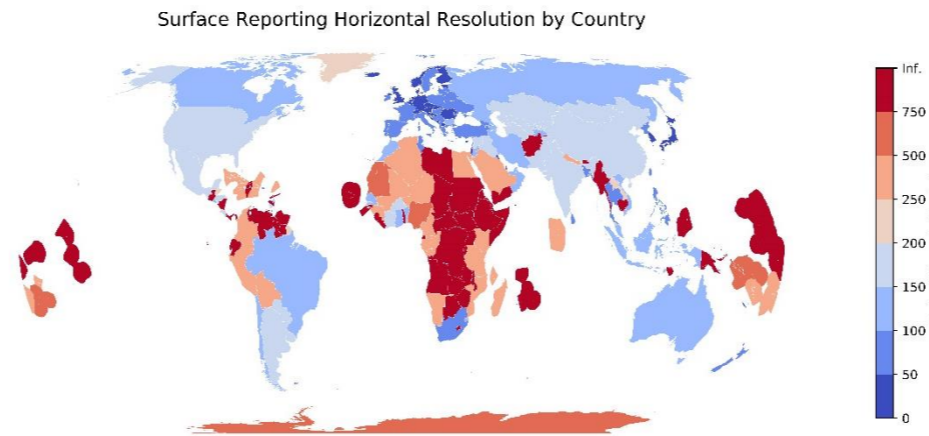


Figure 3. Observing network density, January 2020

WMO's recent approval of the **GBON** represents a historic, binding commitment of all 193 WMO Member states and territories to the international exchange of observations specified in technical regulations. However, many countries, especially SIDS and LDCs, remain far from meeting GBON requirements (red colors; dark red indicates far from compliance).

Action under the Paris agreement must be carried out based on the best available science (Article 4); without observations, no science!

The lack of adequate observational data coverage negatively impacts the quality of climate analysis products, especially locally where observations are missing. These products are used as a basis for climate monitoring and climate prediction, also to provide detailed local prediction via downscaling. Without high-quality climate prediction it will be impossible to take meaningful climate adaptation measures.

Lack of observational data linked to lack of local resources (similarity between Fig. 3 and Fig. 4)

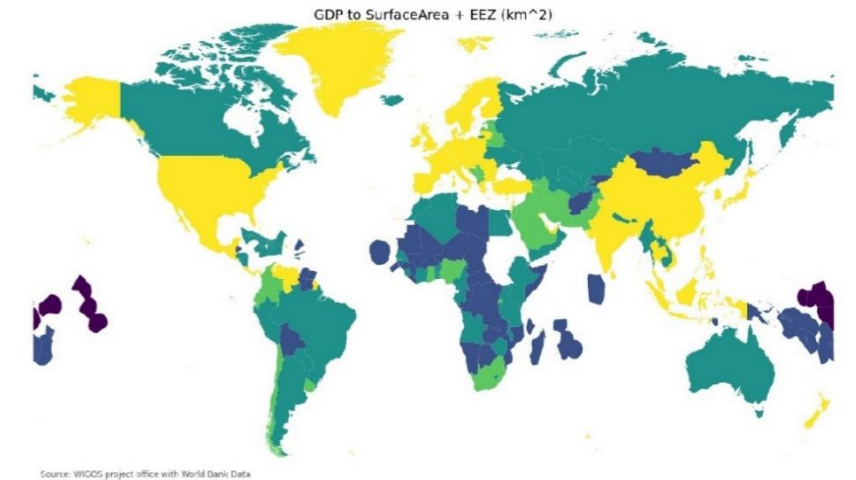


Figure 4. "Ability to pay for observations" (GDP divided by surface area)

SOFF: Providing essential support for GBON

Countries with few resources relative to the size of the area they have to observe (low GDP per unit surface area, dark colors) are expected to have difficulties implementing GBON. By the measure shown here, the most affluent countries are more than a million times wealthier than the poorest.

SOFF is a dedicated mechanism providing long-term grants and technical assistance to support the implementation and sustained operation of GBON. SOFF focuses exclusively on the initial links of the meteorological value chain, working in partnership with other development initiatives that focus on other links in the chain.

SOFF is a UN coalition fund with WMO, UNDP and UNEP as founding partners.

SOFF will deploy a global approach with sustained international data exchange as a measure of success. It will provide innovative finance for sustainable GBON compliance and enhance technical competency and coordination.

GBON and SOFF responding to COP26 ambition and science targets: Support from UNFCCC Parties will be necessary for GBON and SOFF to materialize

SBSTA Research and Systematic Observation informal note (May-June 2021) includes:

- Welcome the activities {...} and acknowledge the ongoing efforts in relation to {...} WMO Global Basic Observing Network (GBON);
- Also encourage Parties and relevant organizations to support the WMO Systematic Observations Financing Facility in order to support and sustain implementation of GBON in developing countries, including the LDCs and SIDS

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