First Funders’ Forum

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Virtual meeting
Systematic Observations Financing Facility
First Funders’ Forum

Agenda item 2 - SOFF rationale

Anthony Rea, Director Infrastructure Department
Lars Peter Riishojgaard, Director Earth System Branch
Hydromet – at the core of bold and effective action

**Paris Agreement**

- Strengthen systematic observation of the climate system and early warning systems

**Sustainable Development Goals**

- Strengthen environmental monitoring for climate change mitigation, adaptation and early warning

**Sendai Framework**

- Substantially increase the availability and access to multi-hazard early warning systems and disaster risk information and assessments to the people
The benefits from better prediction are measurable and significant

USD 160 billion

World Bank estimates of the *minimum annual socio-economic benefits* of weather prediction and climate information
Weather and climate observations from the whole globe are the basis for weather forecasts, early warning systems, and climate services

The hydromet value chain

1. Weather and climate observations
2. International weather and climate data sharing
3. Global weather and climate prediction models
4. Weather forecasts, early warnings and climate information products
5. Dissemination and outreach to vulnerable population and economic sectors
6. Use and national/global value of better early warnings and climate information
The foundational role of surface-based observations

- **Essential for weather and climate prediction models**
- **Measure weather and climate variables** that cannot be reliably observed from space
- **Play a vital role** in the calibration and validation of satellite data
The Global Basic Observing Network (GBON)

A global endeavor for better weather and climate information

- A global “optimal” design to respond to the most essential data requirements of weather and climate prediction models that are not met or fully met by satellite systems
- Agreed by 193 WMO Member countries and territories
- Clear requirements for countries to collect and internationally exchange the most essential surface-based weather data
- Based on the principle of global free and unrestricted data sharing
Surface-based observations necessary for weather and climate prediction are not being collected and/or internationally shared in many parts of the world.

SIDS and LDCs are currently far from meeting the Global Basic Observing Network requirements.

Figure 3: This map shows the horizontal resolution of upper air observations in different countries based on stations actively reporting in January 2020. Source: WMO Secretariat.
The output and outcome problem

**Limited observations mean**

- degraded local weather forecasts and climate prediction;
- degraded worldwide medium to long-range weather forecasts and climate predictions, since weather and climate prediction models fall short of their potential in terms of the quality of their predictions;
- LCDs and SIDS suffer the most from direct and indirect effects of poor weather and climate services

Example: Lack of observations in red area limits 7-10 day forecast skill in green area
The benefits from GBON

Closing the GBON gap is highly beneficial and economically efficient.

- **USD 5 billion per year** - the potential benefits directly attributed to the implementation of GBON in those countries with the largest data-sharing gaps

- **1:25 cost-benefit** - for every dollar invested in GBON in these countries, at least 25 US dollars in socio-economic return could be realized, much higher than in low-gap countries

- **These investments provide the foundation to realize the USD 162 billion** of estimated minimum annual benefits of weather and climate prediction