WEATHER CLIMATE WATER
TEMPS CLIMAT EAU

The Global Basic Observing Network (GBON)

and the Systematic Observations Financing Facility (SOFF)

Lars Peter Riishojgaard, Anthony Rea, Markus Repnik

WMO Secretariat

WMO OMM

World Meteorological Organization

Organisation météorologique mondiale

Overview

(sample Infrastructure capacity development activities)

- OSCAR Training
- GBON/SOFF
- Space Program activities
- Regional WIGOS Centers
- WIS activities
- Projects
- …

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OSCAR/Surface training courses around the world

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GEDUNG-A


КОНФЕРЕНЦ ЗАЛИ
CONFERENCE HALLS
RECEPTION
Бізнес-центр
Business-center
Сауна
Sauna
UHMC
UKRAINIAN HYDROMETEOROLOGICAL CENTER
WMO
WORLD METEOROLOGICAL ORGANIZATION
Welcome to
UKRAINE!
OSCAR/Surface Training Course for RA VI
1-3 October 2019
Kyiv
Ukraine

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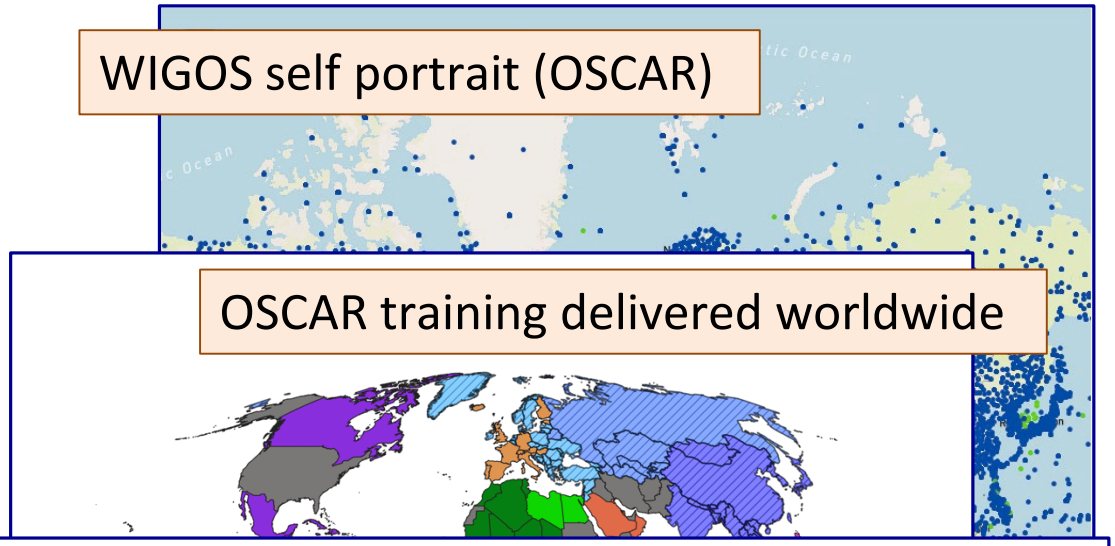
OSCAR

(Observing Systems Capabilities and Review)

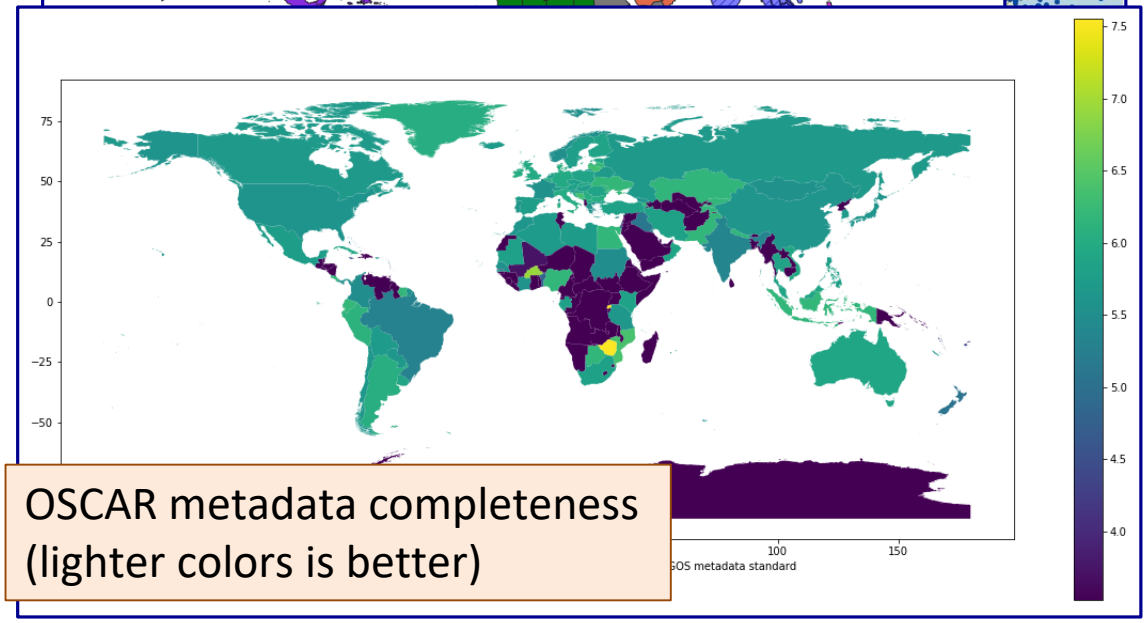
- Three operational databases supporting WIGOS:
  - **OSCAR/Requirements**, in which "technology free" requirements are provided for all WMO application areas;
  - **OSCAR/Space,** listing the capabilities of all satellite sensors;
  - **OSCAR/Surface,** list all surface-based capabilities under WIGOS; developed by MeteoSwiss for WMO, operational since May 2016;

OSCAR homepage

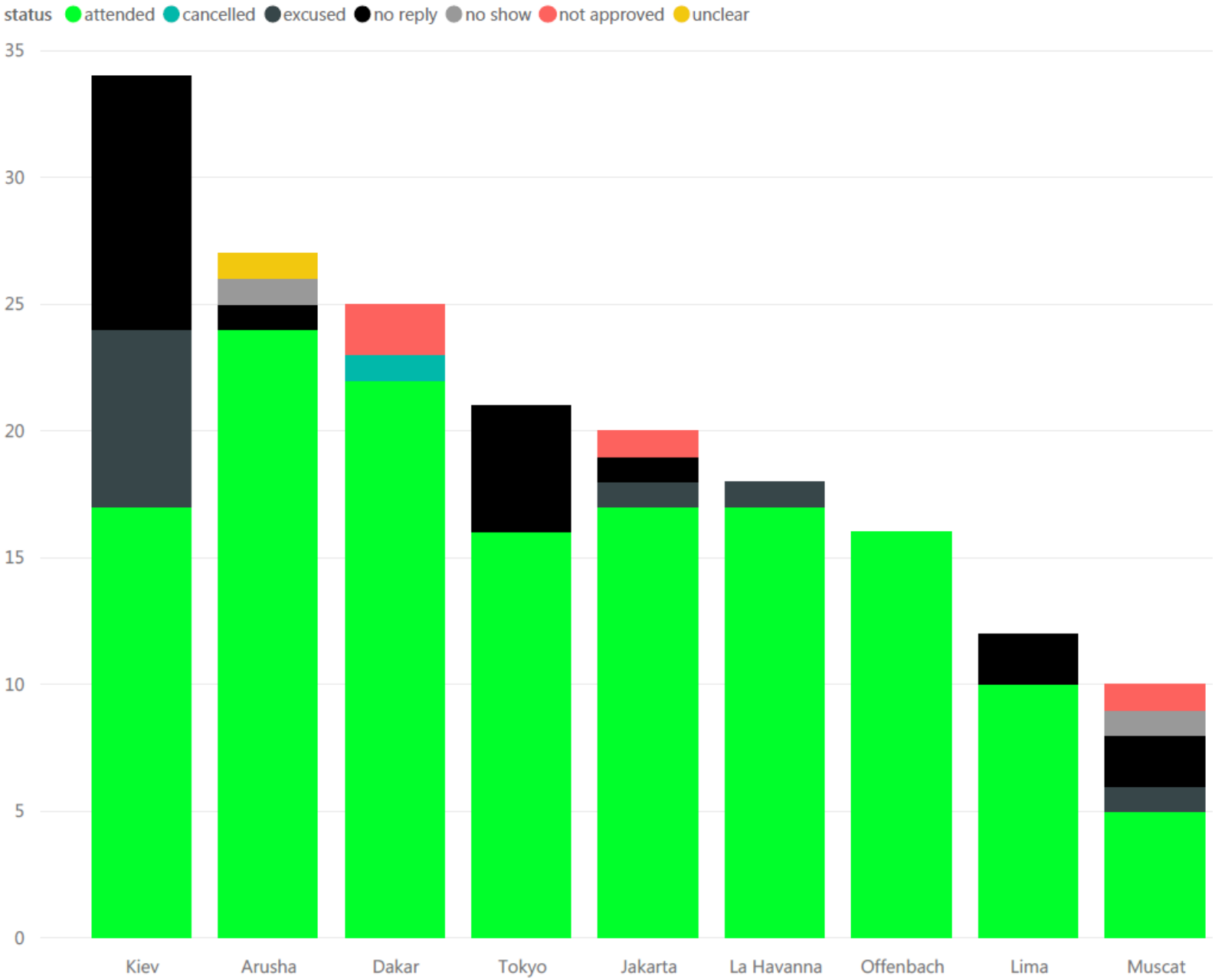
WIGOS self portrait (OSCAR)



OSCAR training delivered worldwide



OSCAR metadata completeness (lighter colors is better)


status
attended
cancelled
excused
no reply
no show
not approved
unclear
35
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Kiev
Arusha
Dakar
Tokyo
Jakarta
La Havanna
Offenbach
Lima
Muscat

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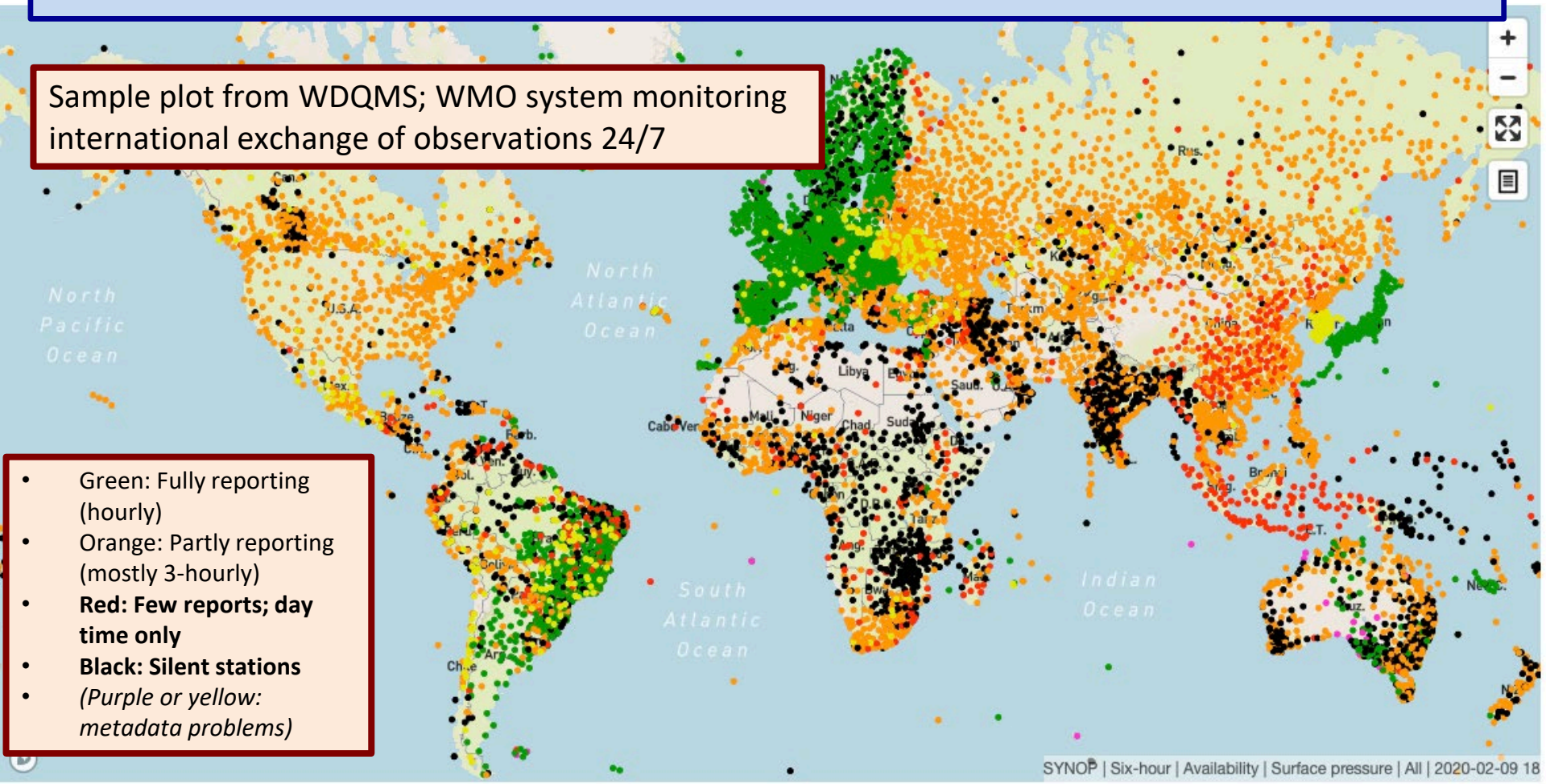
Current OSCAR-related activities

- Increasing online presence: Moodle, Forum, Blog
- Monthly Webinars
- Online moodle course (self-enrolment) replacing training course -> videos, interactive exercises, quiz;

The WMO Global Basic Observing Network (GBON)

I. Why do we need this? Current observational data exchange;

(Example: surface pressure observations)



- Green: Fully reporting (hourly)
- Orange: Partly reporting (mostly 3-hourly)
- **Red: Few reports; day time only**
- **Black: Silent stations**
- *(Purple or yellow: metadata problems)*

Current international exchange of data for global NWP less than optimal (Example: Surface pressure observations received by global NWP Centers on Feb 9 2020, 18Z)

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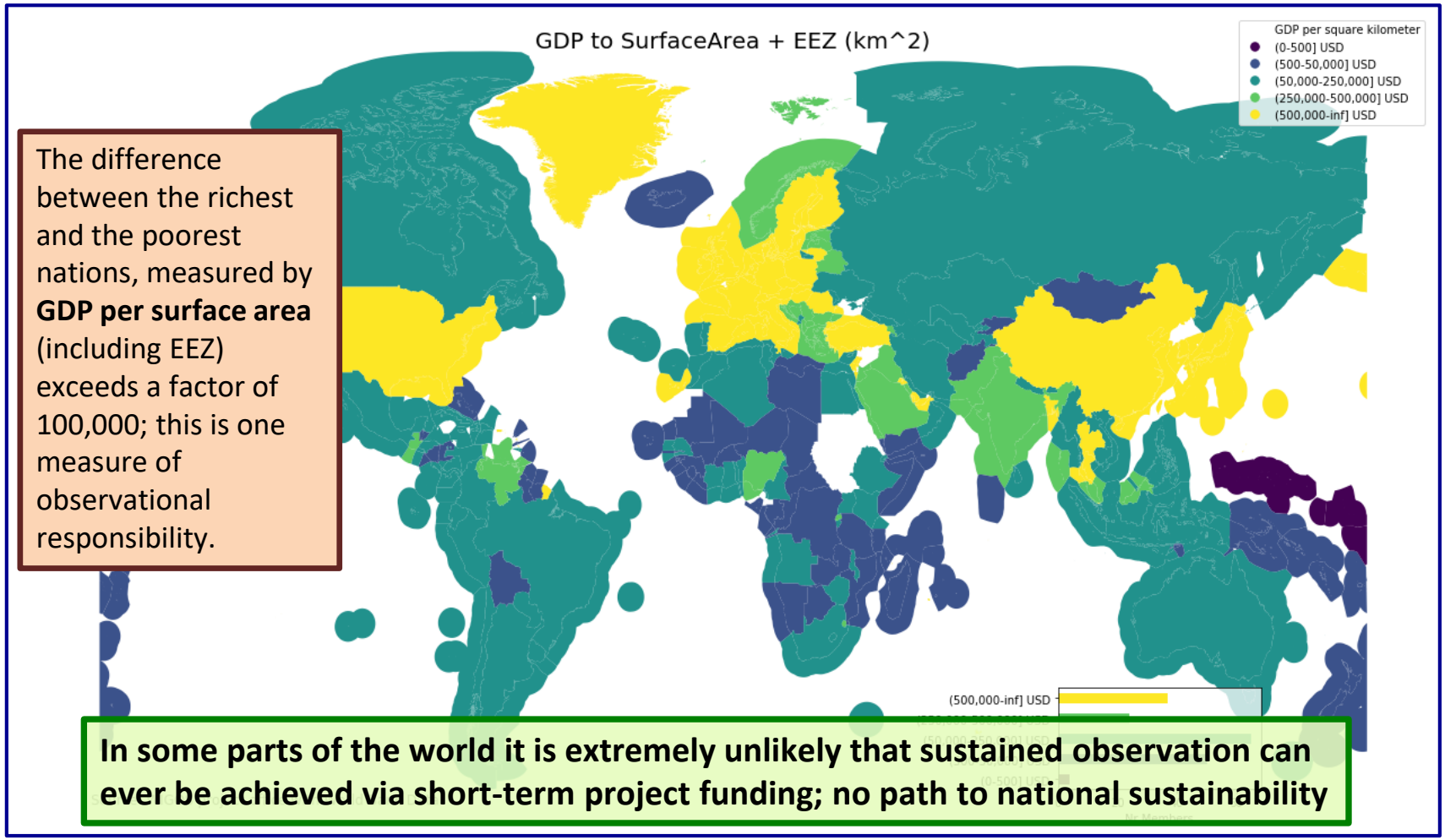
Observational remit against available resources



The difference between the richest and the poorest nations, measured by **GDP per surface area** (including EEZ) exceeds a factor of 100,000; this is one measure of observational responsibility.

In some parts of the world it is extremely unlikely that sustained observation can ever be achieved via short-term project funding; no path to national sustainability

GDP (World Bank numbers) per surface area (land surface + EEZ)

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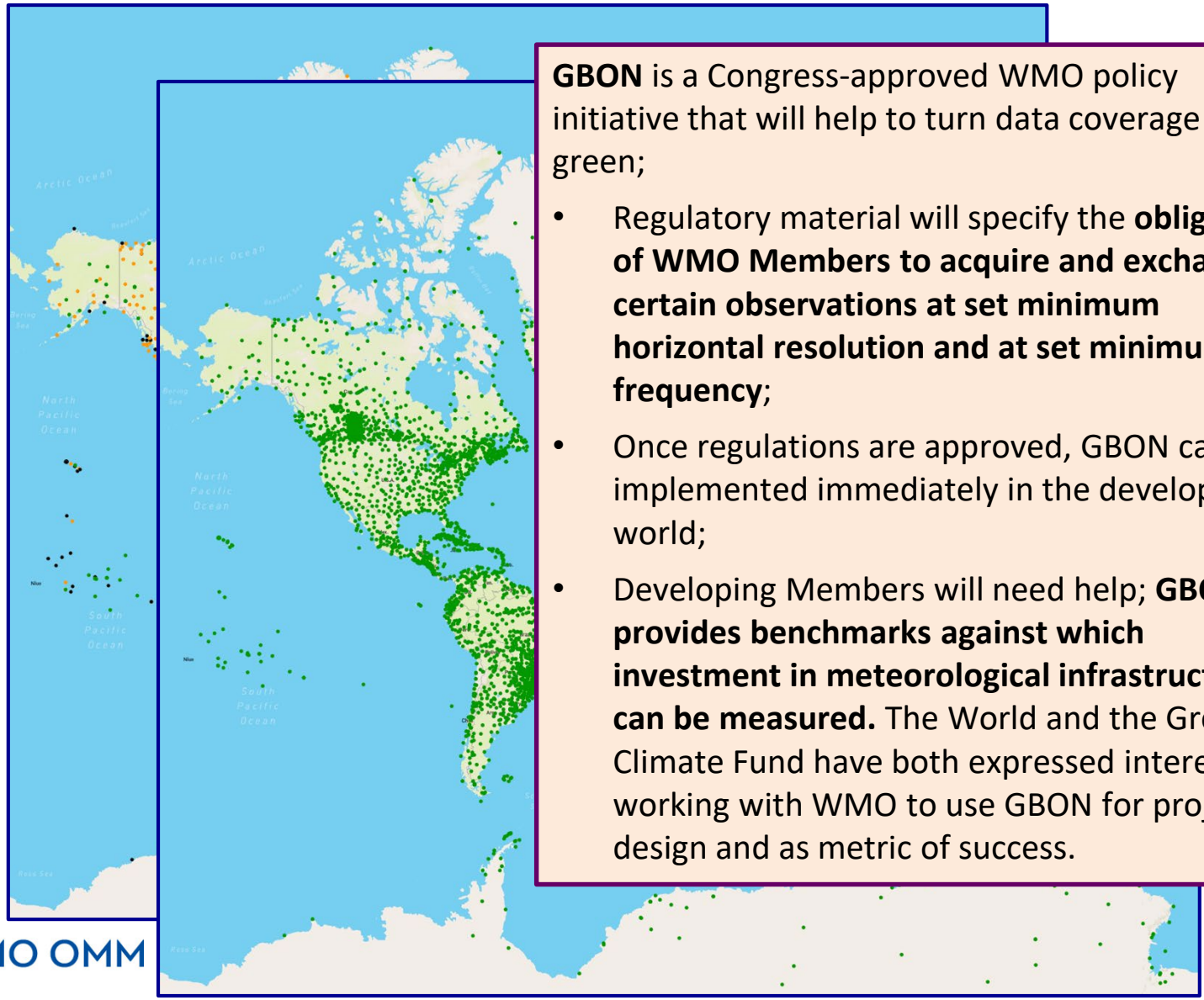
Global Basic Observing Network (GBON)



GBON is a Congress-approved WMO policy initiative that will help to turn data coverage map green;

- Regulatory material will specify the **obligation of WMO Members to acquire and exchange certain observations at set minimum horizontal resolution and at set minimum frequency**;
- Once regulations are approved, GBON can be implemented immediately in the developed world;
- Developing Members will need help; **GBON provides benchmarks against which investment in meteorological infrastructure can be measured.** The World and the Green Climate Fund have both expressed interest in working with WMO to use GBON for project design and as metric of success.

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Proposed solution to the mismatch between observing responsibility and resource distribution:

Systematic Observations Finance Facility

(SOFF; *more about this in presentation by Markus Repnik*)

- Will provide equitable, predictable and sustainable assistance to facilitate implementation and sustained operation of GBON in developing countries, in particular Africa, SIDS, and LDCs;

  This was acknowledged by SBSTA 51 (subsidiary body under the Paris Agreement), which recognized GBON and re-emphasized the need for sustained funding to meet the essential needs for global climate observation;

- **Support for GBON compliance** through technical assistance and funding ;

- Will cover both initial capacity development (capital investment and training) and sustained operations where needed;

The SOFF Concept was initially developed during a Workshop in Geneva in July 2019 (immediately following GBON approval by Congress 18, and is currently being developed by five Working groups involving WMO and key development and climate finance institutions

Working Group 1

The value of GBON

Anthony Rea

WMO - Lars Peter Riishojgaard
DWD - Karolin Eichler
DFID/UK Met - Helen Bye
World Bank - Rob Varley
BMZ/GIZ - Andrea Cullman
ECMWF - Fabio Venuti
GCF - Joseph Insitful

Country cases

ADB - Arghya Sinha Roy
AfDB - James Kinyangi (Nigeria)
IDB - Gerard Alleng (Caribbean)
UNDP - Benjamin Larroquette
UNEP - Jochem Zoetelif (Maldives)
World Bank - Daniel Kull (Central Asia)

Working Group 2

GBON gap analysis and implementation options

Lars Peter Riishojgaard

WMO - Markus Repnik (country case)
DWD - Claudia Rubart
GCF - Joseph Insitful

Country cases

ADB - Arghya Sinha Roy
AfDB - James Kinyangi (Nigeria)
IDB - Gerard Alleng (Caribbean)
UNDP - Benjamin Larroquette
UNEP - Jochem Zoetelif (Maldives)
World Bank - Daniel Kull (Central Asia)

Working Group 3

SOFF financing mechanisms and opportunities

Markus Repnik

ADB - Robert Marc Schoellhammer
Adaptation Fund - Mahamat Abakar
AfDB - James Kinyangi
EBRD - Craig Davis
GEF - Fareeha Iqbal
GCF - Urvaksh Patel
UNDP - Benjamin Larroquette
UNEP - Jochem Zoetelif
IDB - Gerard Alleng
IsDB - Haruna Kachalla Gujba
WFP - Montserrat Barroso
World Bank - Vladimir Tsirkunov, David Grimes
CIFs - Loreta Ruffo
BMZ/GIZ - Andrea Kuhlmann
CPI - Angela Falconer and Valerio Micale
CREWS - John Harding
Switzerland/FOEN - Stefan Schwager
DWD - Claudia Rubart

Working Group 4

Insurance sector use-cases

John Firth

WMO - Dimitar Ivanov
IDF - Nick Moody
Annette Detken
ARC - Federica Carfagna
Wills (CCRI) - Geoffrey Saville
MCII - Maxime Souvignet
Lloyds - Trevor Maynard
Oasis - Dickie Whitaker
InsuResilience - Tuga Alaskary
World Bank - Jack Hayes
World Bank - David Grimes
GCF - Joseph Insitful

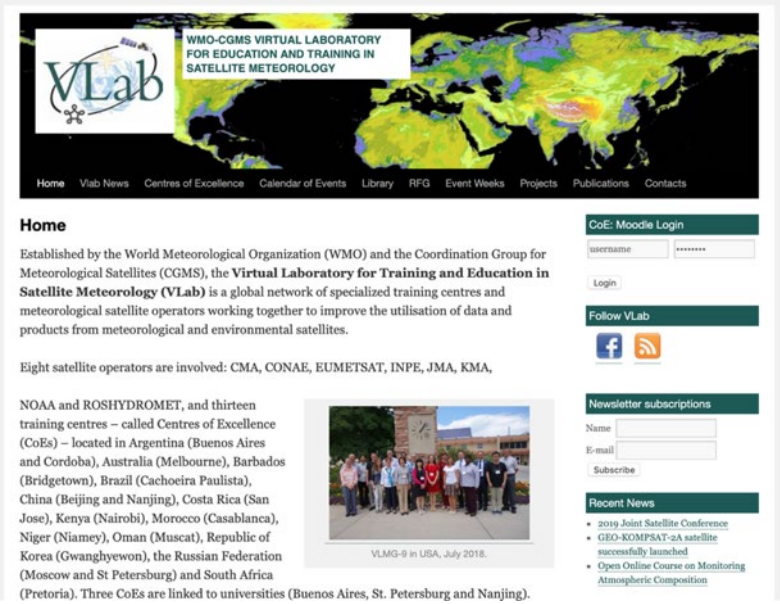
Working Group 5

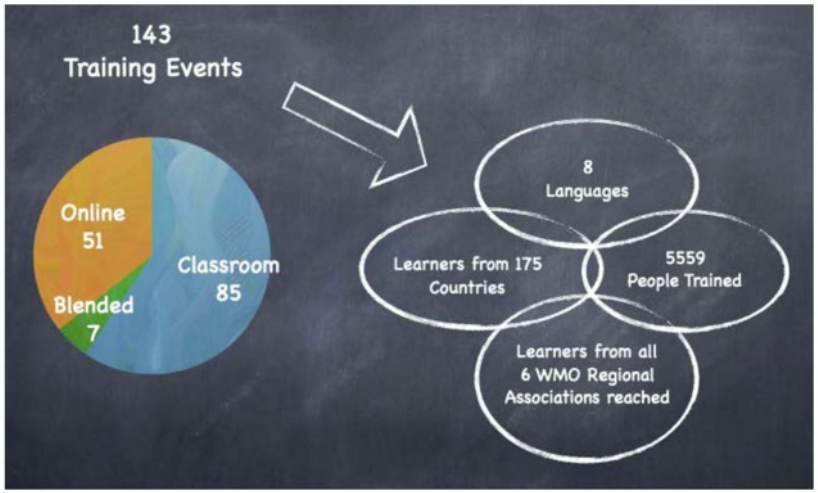
Advocacy and Communications

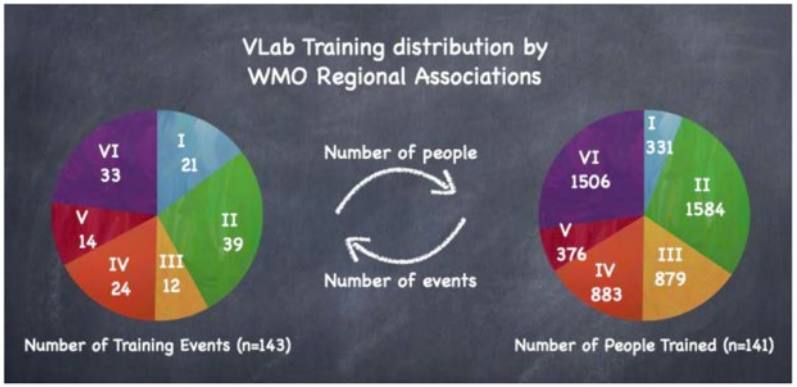
Michael Staudinger

DWD - Karolin Eichler
WMO - Markus Repnik
WMO - Anthony Rea
WMO - Jonathan Fowler
WMO President Africa
WMO President Latinamerica
WMO - Lars Peter Riishojgaard

Virtual Laboratory for Training and Education in Satellite Meteorology







See https://www.wmo-sat.info/vlab/

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Final remarks

- The WMO Infrastructure Commission and the Infrastructure Department in the Secretariat are fully committed to capacity development and engaging in many efforts
  - WIGOS and WIS could arguably be seen as being primarily capacity development efforts; no single country has yet fully implemented either of these systems;
- Examples of individual activities include:
  - GBON/SOFF
  - OSCAR training
  - Virtual Laboratory
  - Regional WIGOS Centers