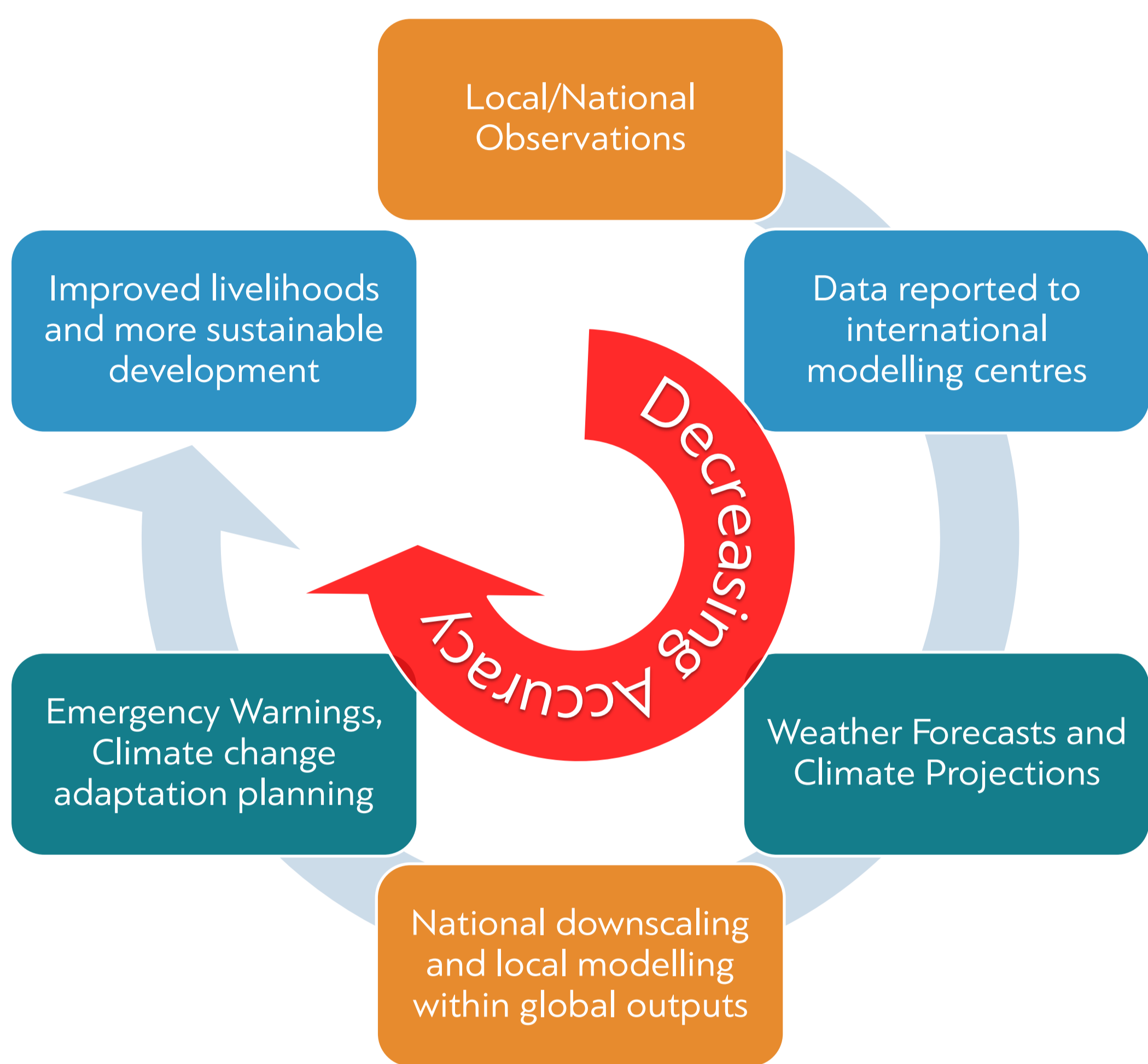


# Supporting Observations in Africa

## Why is the exchange of national observations important?

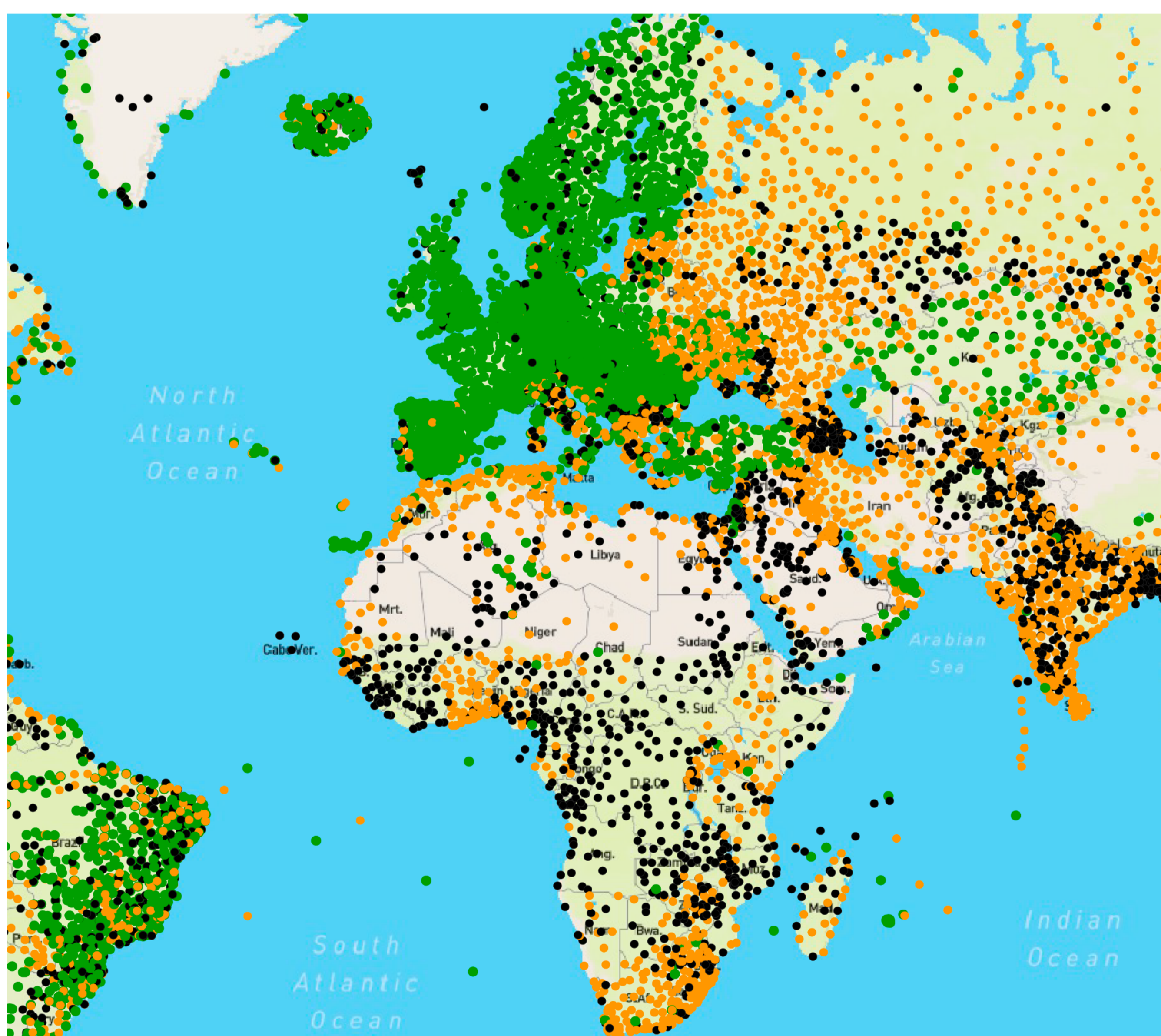
Understanding and planning to adapt to climate change depends on climate models. Local and national models and projections use global models for boundary conditions and are the basis of downscaled estimates. All models and projections, for weather and climate, depend on the quantity and quality of observations. Accurate, long-term, observations are necessary to calibrate and validate models especially at a national level. Where there are few, or no, observations the resulting uncertainties in the models can lead to poor, inaccurate warnings and maladaptation.



## The Global Basic Observing Network (GBON)

In order to address the deficiencies in of basic meteorological observations that is reducing the accuracy of both weather and climate models, WMO is proposing the establishment of the Global Basic Observing Network (GBON). This lays down minimum reporting requirements and and resolution of the meteorological parameters needed to ensure adequate performance of the models.

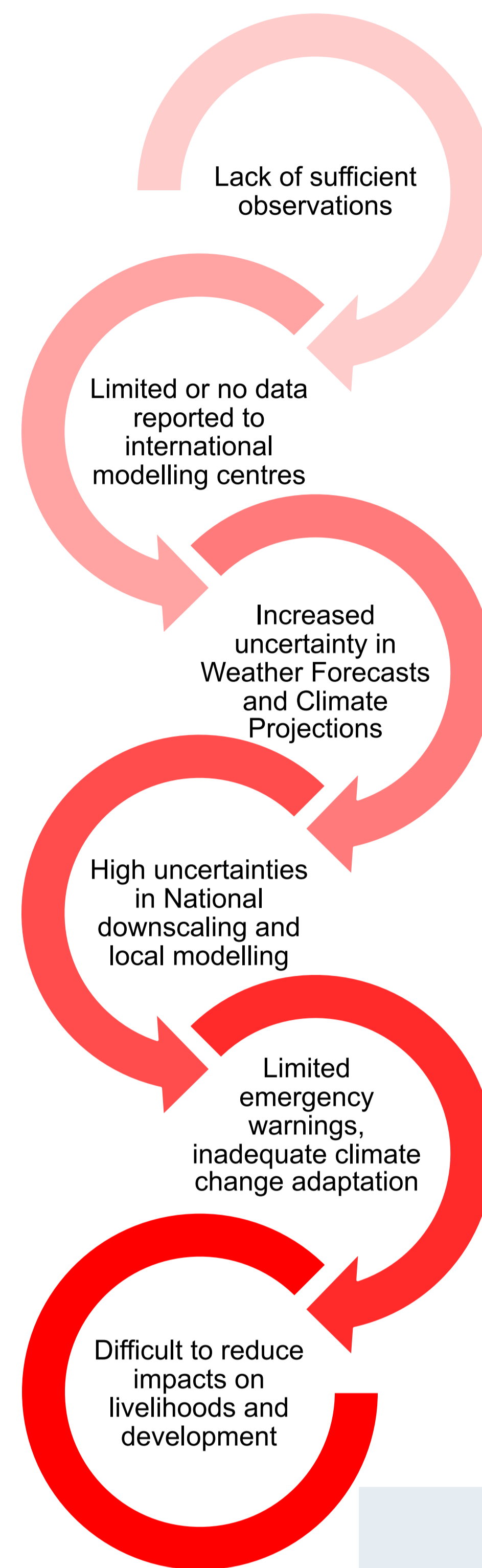
It is important to note that GBON will not address all the elements of the climate system. In particular observations of river flows, many ocean observations, the cryosphere or ecosystems and the carbon cycle are not covered.



Observing sites reporting data to ECMWF in a 6 hour period in April 2019 in Africa and Europe, Green = adequate reports (>80%), Orange = insufficient reporting (30-80%) and Black = No data.

Reported observations to ECMWF on 3/6/2019 at 12:00. Data from WIGOS Data Quality Management System.

## Why is the international exchange of observations inadequate?



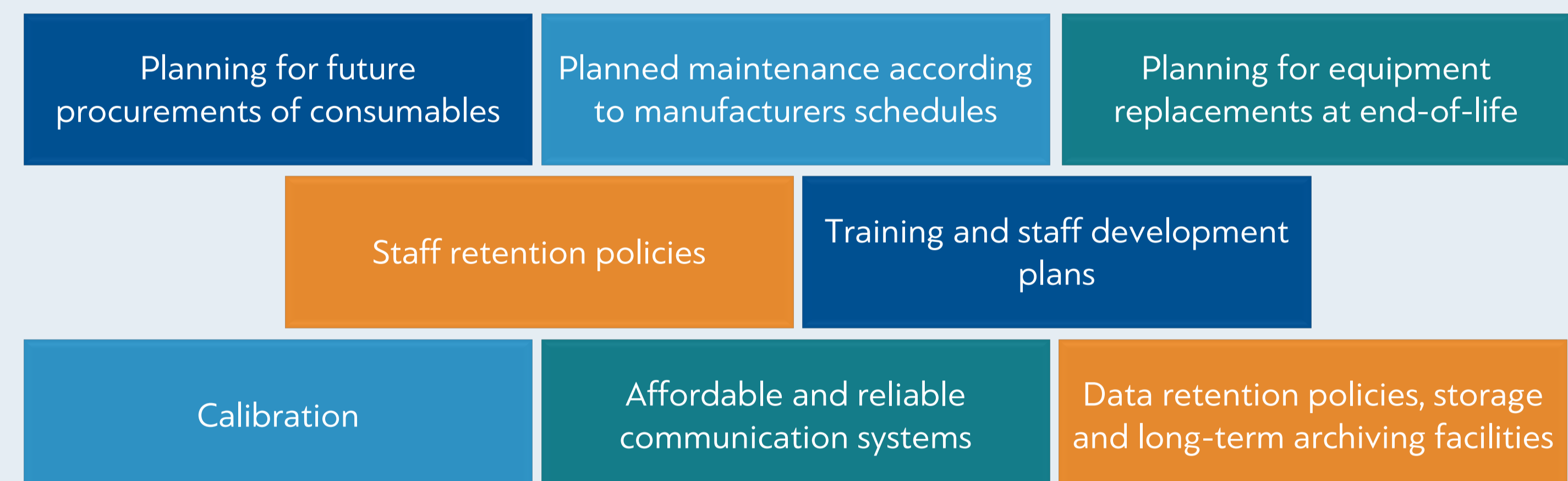
GCOS/WIGOS workshops are working with national meteorological services to understand why reported observations are inadequate.

A workshop in Entebbe, Uganda, noted that none of the 5 countries in the lake Victoria region (Burundi, Kenya, Rwanda, Tanzania and Uganda,) had any observing sites reporting adequately to international modelling centres, and, in general, suffered from four main, interrelated, issues:

- Insufficient reporting to meet climate and weather needs
- Lack of planning for sustainable operation
- Need for a regional forum
- Lack of calibration facilities in the region

**Until these issues can be addressed it is unlikely that additional monitoring stations will provide long-term benefits**

## Sustainable networks include:



**All these need adequate, long-term, funding**

## GCOS Cooperation Mechanism

The **GCOS Cooperation Mechanism (GCM)** identifies and make the most effective use of resources available for improving climate observing systems in developing countries, particularly to enable them to collect, exchange, and utilize data on a continuing basis. It can be used to support the national services in all aspects of observational process; from resourcing of equipment and consumables; quality management of the measurements; capacity development of local staff; and data rescue.

Recent examples of successful projects in Africa: new surface instrumentation for Chad (2017); equipment for a data rescue project in Botswana (2017); hydrogen generator system repair & engineer training for Harare, Zimbabwe (2016); and radiosonde/balloon consumables for Nairobi, Kenya (2018).

The GCOS Cooperation Mechanism depends on donors for their support.



Providing training in operation and maintenance of equipment, data storage and transmission and in the access and use of global data sets for local and national climate services