



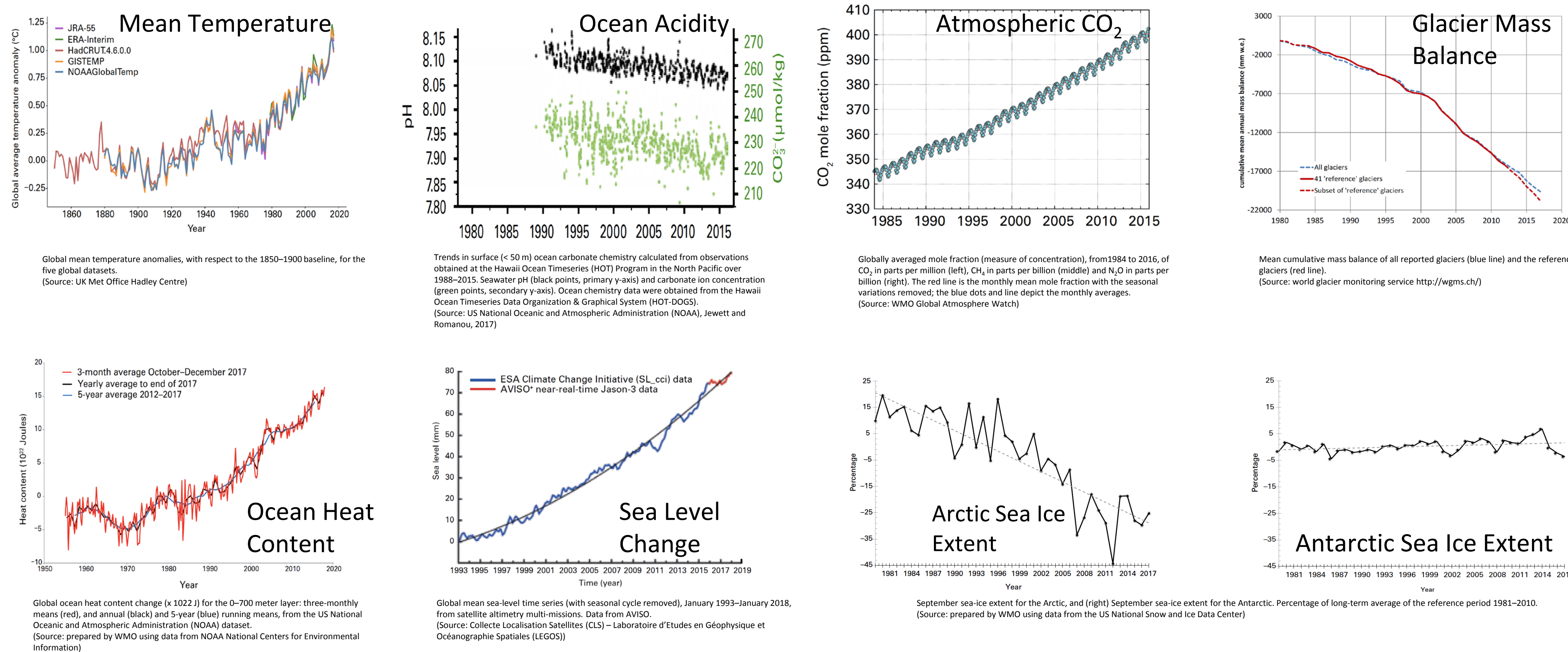
Sustained Observations to support the Paris Agreement



1

Global Climate Indicators

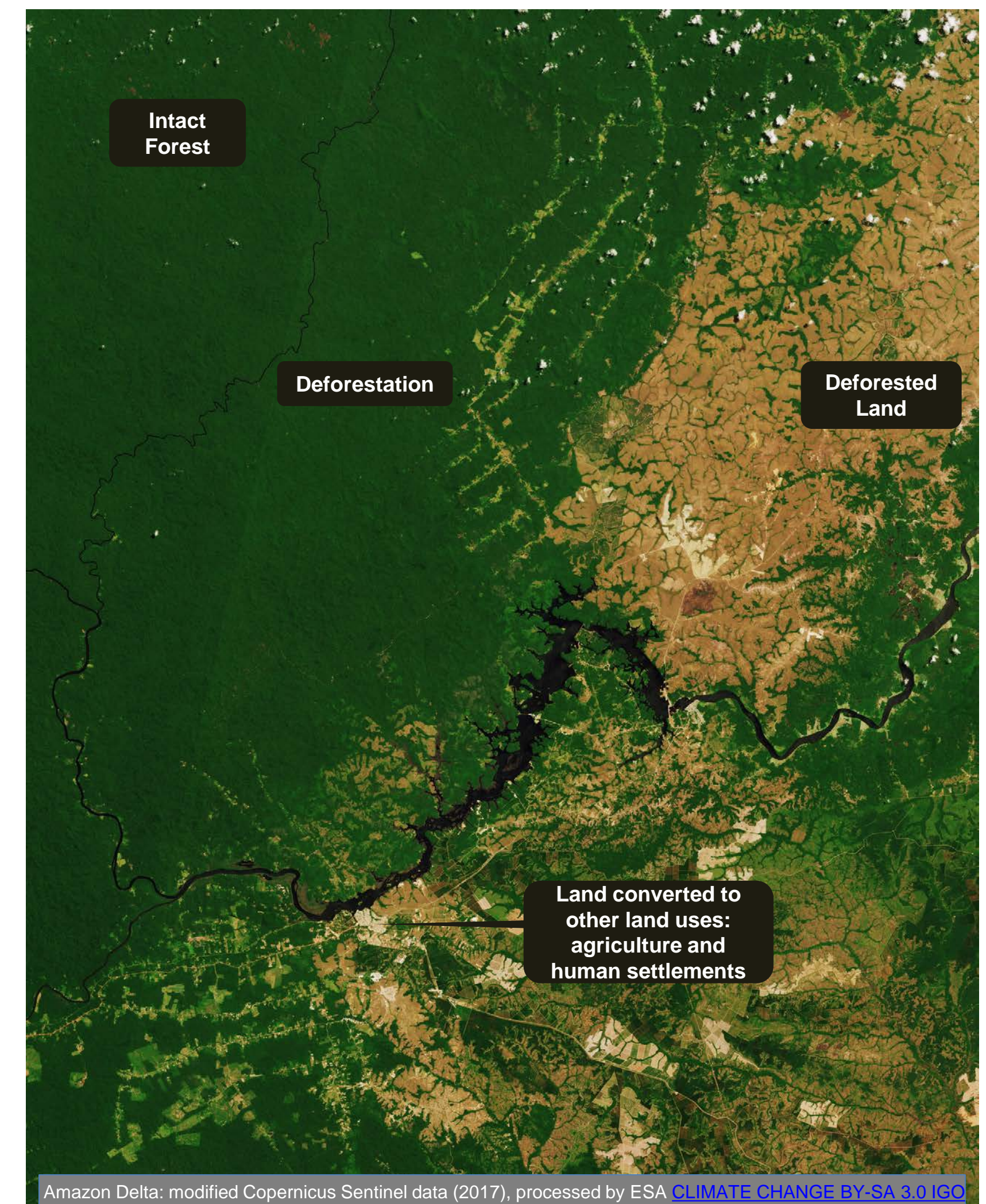
Collected and summarised annually by WMO



The Global Climate Indicators are presented each year by WMO in their statements on the state of the environment. See WMO Statement on the State of the 'Global Climate in 2017, WMO No.2012 for more information.

3

Example of forest and land use/land cover monitoring



Remote sensing showing new deforestation, and land uses. This allows monitoring of deforestation and transitions between different land uses. Here forest is being converted to agricultural land.

Systematic observations are vital for the Paris Agreement. Observations are needed to both implement actions and to monitor the progress and impacts:

1. Observations are needed to understand the current state of the environment at a global level. GCOS is promoting a small set of Climate Indicators that present the state of the climate in a simple way (see Global Climate Indicators)
2. The geographic distribution of the changes in the parameters is also available (see Sea ice extent anomaly)
3. In some areas the use of observations is well established (See, for example, forest and land use/land cover monitoring)

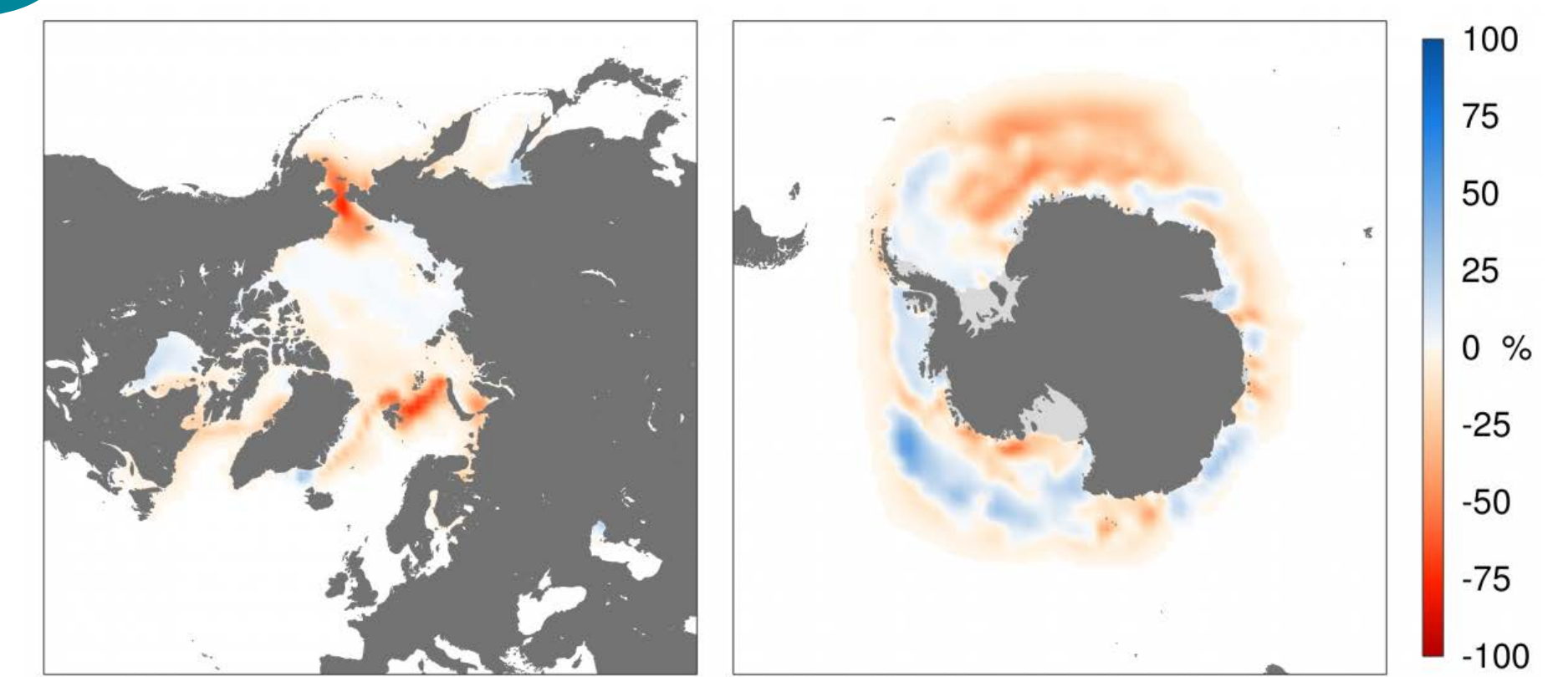
4. In other areas, such as observing the progress of adaptation, its use still needs to be demonstrated (see example of potential remote sensing of implementation of adaptation actions: ameliorating urban heat extremes)

In many cases, adaptation planning will be based on the outputs of reanalysis and downscaled models, these depend on systematic sustained observations to maintain their accuracy.

GCOS is supporting all these uses of observations in order to support the Global Stocktake and Paris Agreement.

2

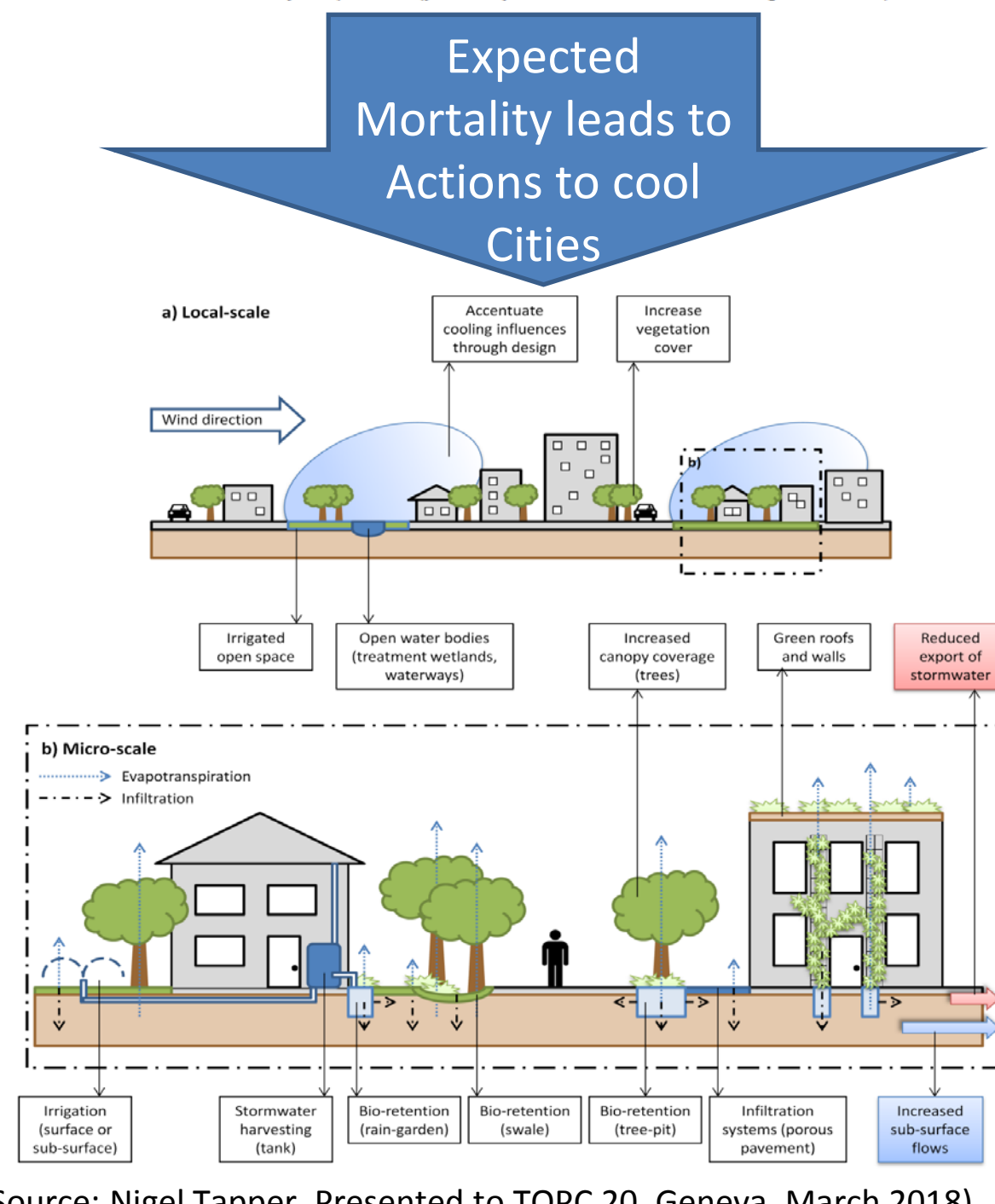
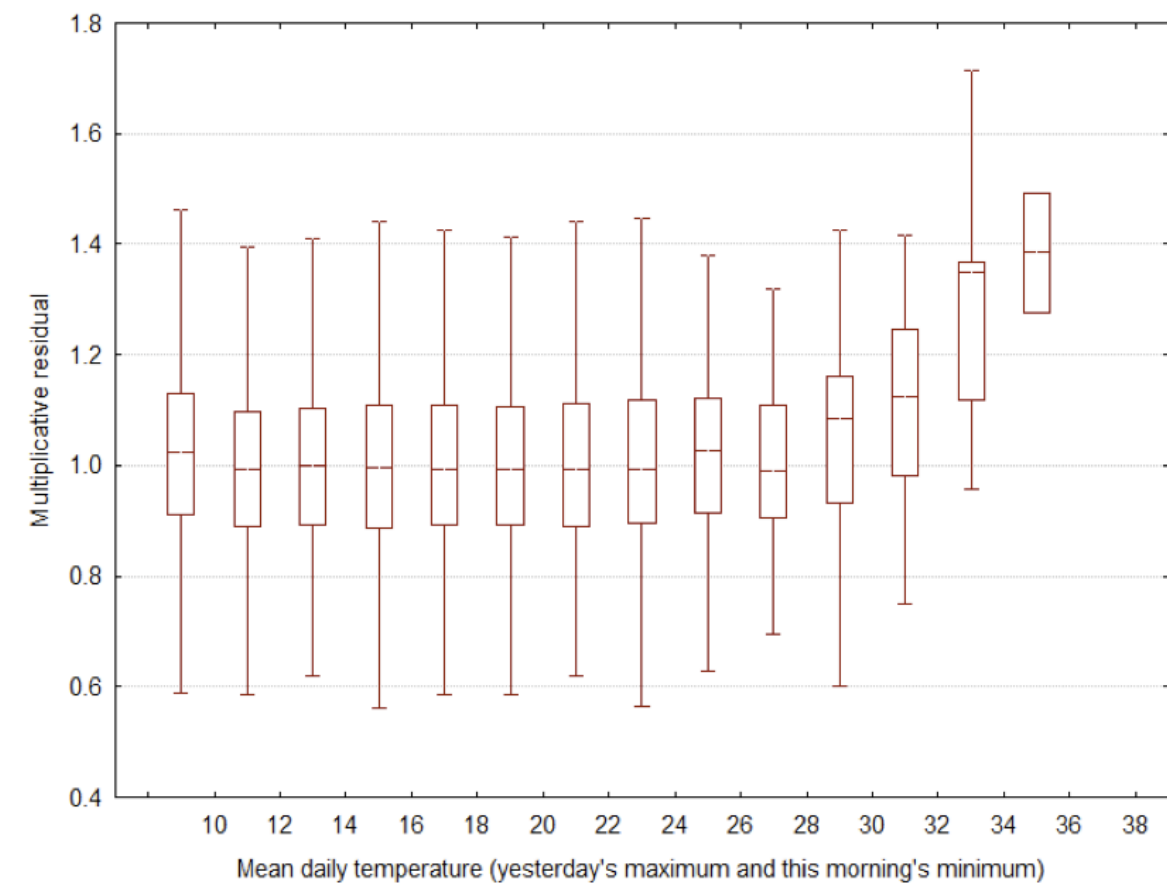
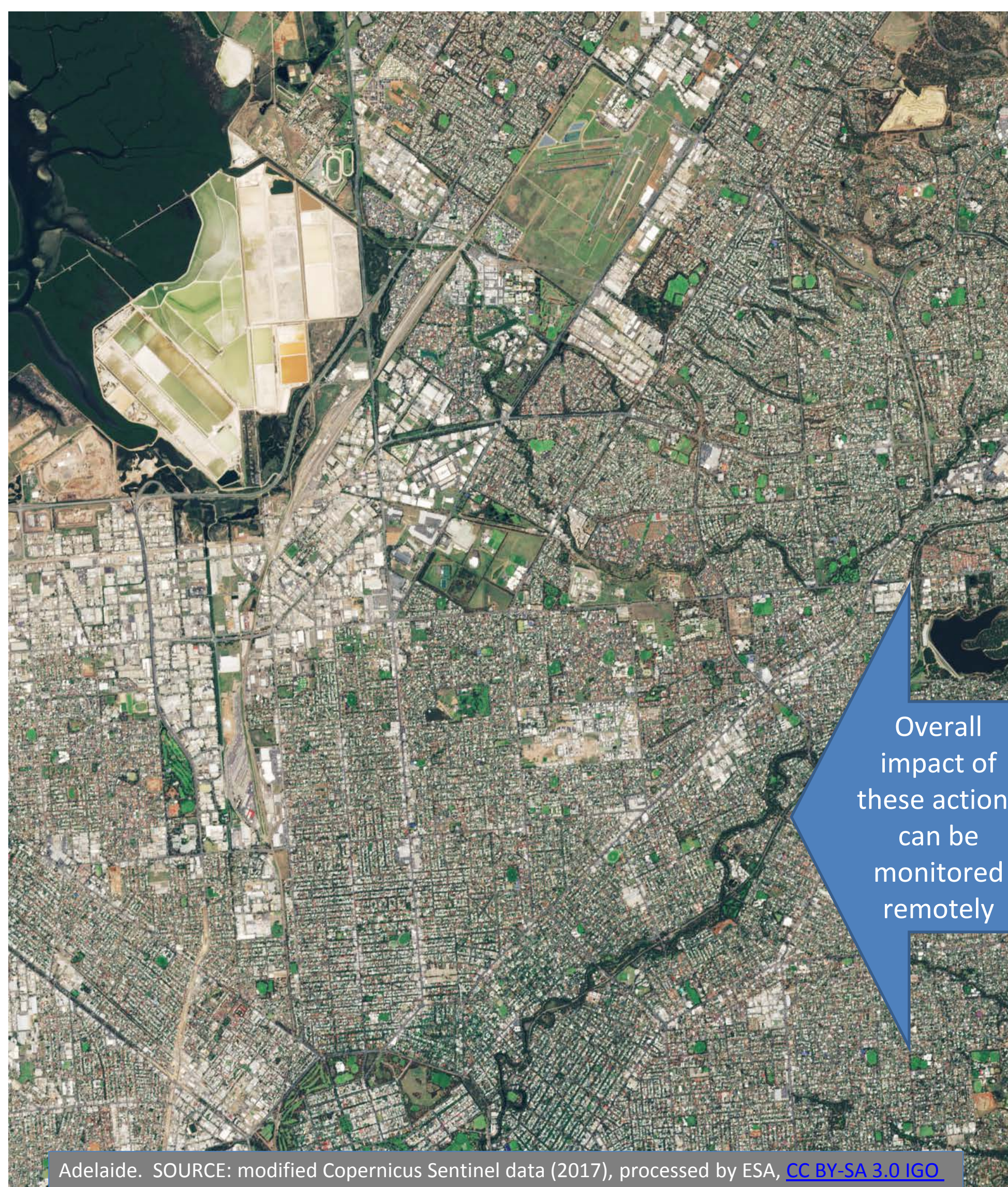
Sea ice extent anomaly



Sea-ice cover anomaly for December 2017 relative to the December average for the period 1981-2010. (Source: ERA-Interim. (Credit: ECMWF Copernicus Climate Change Service))

4

Example of potential remote sensing of implementation of adaptation actions: ameliorating urban heat extremes



Overall impact of these actions can be monitored remotely

(Source: Nigel Tapper, Presented to TOPC 20, Geneva, March 2018)



Systematic Observations are fundamental to implementing the Paris Agreement and monitoring its progress