

# Some research-related messages from evaluation of the status of the Global Observing System for Climate

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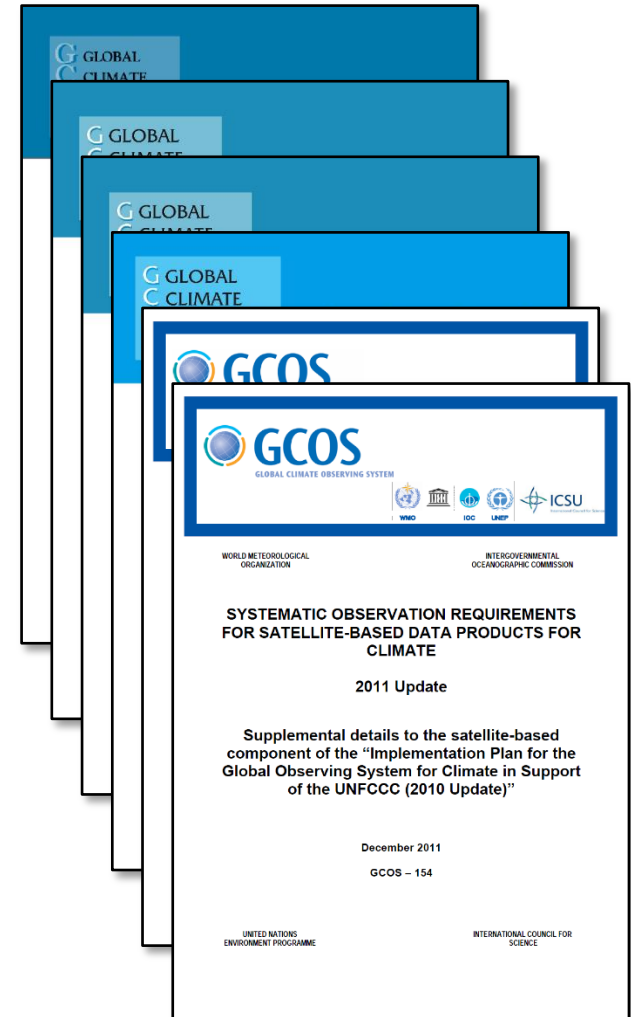
Following earlier assessment cycles beginning in 2003, the GCOS programme is preparing:

## A report on the Status of the Global Observing System for Climate

– for presentation to SBSTA 43 later this year

## A new Implementation Plan for the Global Observing System for Climate

– for presentation to SBSTA 45 in 2016



Contributions from GCOS/WCRP panel members and their colleagues

The IPCC's 5<sup>th</sup> Assessment Report

A WCRP workshop with IPCC WG I authors

National reporting to UNFCCC on systematic observation

GCOS workshops on observations for adaptation and mitigation

***A GCOS workshop with IPCC WG II authors and UNFCCC parties***

Other workshops, symposia and assessments of capabilities

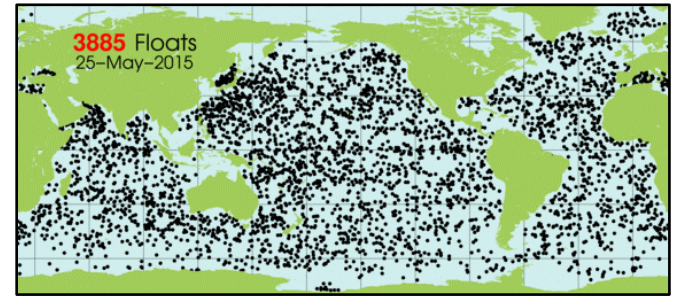
Searches of data-centre holdings

An open review

# What are the opportunities for delivering consistent data and model outputs?

## ***In situ* observation provides key data on essential variables (ECVs)**

- but is prone to variations and limitations in coverage, international exchange and archiving
- improving for some variables, but not all

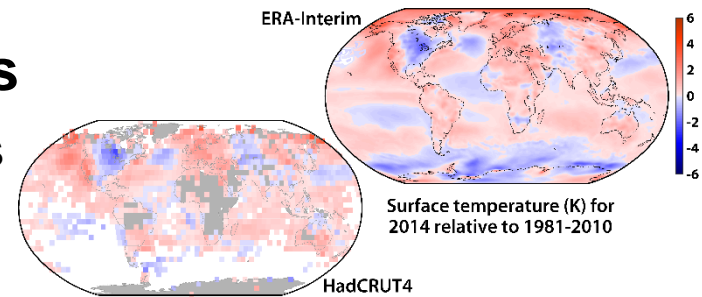


## **Satellites provide data on many ECVs**

- with new providers, capabilities and opportunities for collaboration
- with ongoing research on extracting ECV data from raw measurements

## **Model-assisted data assimilation provides**

- integrated data products for a number of variables
- quality-control information on observations



## **Satellite- and model-based products have their own limitations**

- with need for “ground-truth” data, assessments and better information exchange

**By bilateral arrangements – in addition to support such as provided by the GCOS Cooperation Mechanism, GFCS activities, ...**

## Capacity Building and Twinning for Climate Observing Systems



**CATCOS Summer School on Glacier Mass Balance Measurements and Analysis**

	<p>Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra</p>	<p>Federal Department of Home Affairs FDHA Federal Office of Meteorology and Climatology MeteoSwiss</p>
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UK collaboration with India and with Korea on regional reanalyses, building on development of European capacity for Copernicus

## Data are distributed by types

- with *in situ* data held (in principle) by international data centres
- with satellite and reanalysis products hosted primarily by producers

## There are a number of portals (and Google, ...) to link to data

- but links tend to break, and product lists may not be complete
- and users may be in doubt over what they are missing and how products compare

## Data-centre holdings may not be comprehensive

- depending on submissions by owners, and thus their data policies
- and the resources owners have, including for recovering data from paper records

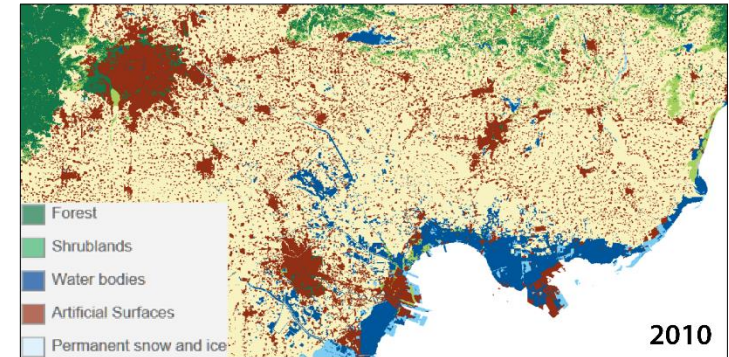
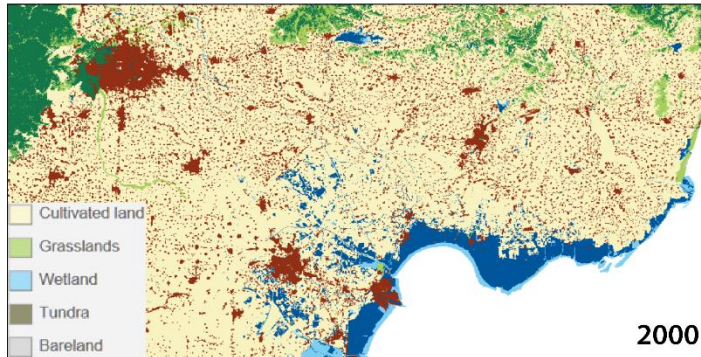
## Data served by a centre may not be in an easy-to-use format

- and may not include quality control, merging of sources, duplicate removal, ...
- or be easy to sample, notwithstanding welcome advances in visualisation

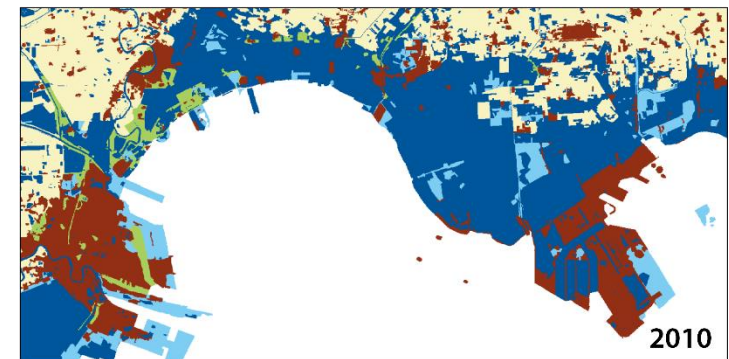
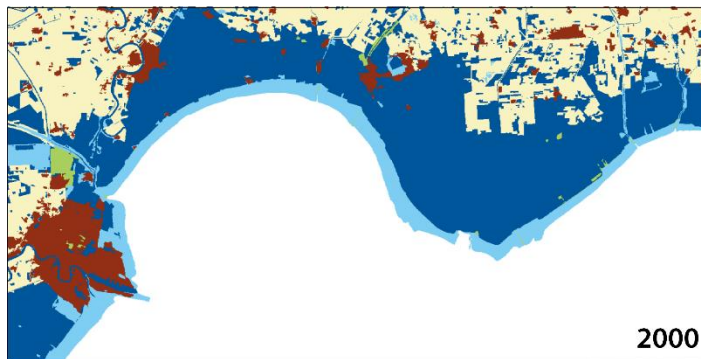
# Building global land-cover datasets using images from satellites

GlobeLand30: 30m land-cover data for 2000 and 2010 produced by China from US Landsat images

USGS Landsat archive has been available free-of-charge from the web since 2009

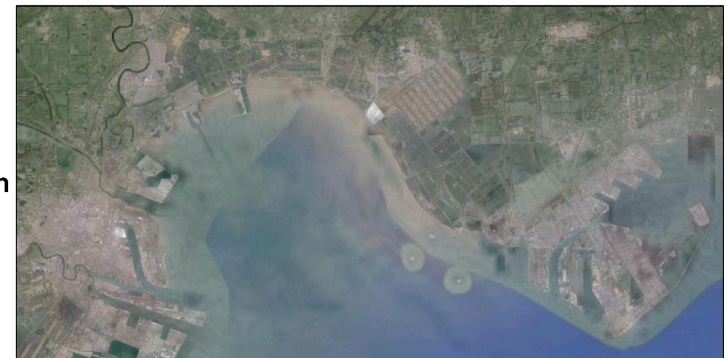


China similarly made available in 2014 derived 30m land-cover datasets for 2000 and 2010



Challenges and opportunities are for further validation, refinement of classification, use of improved imagery, e.g. from Sentinel-2, reprocessing and updating

~ 50km



Google Maps May 2015