

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

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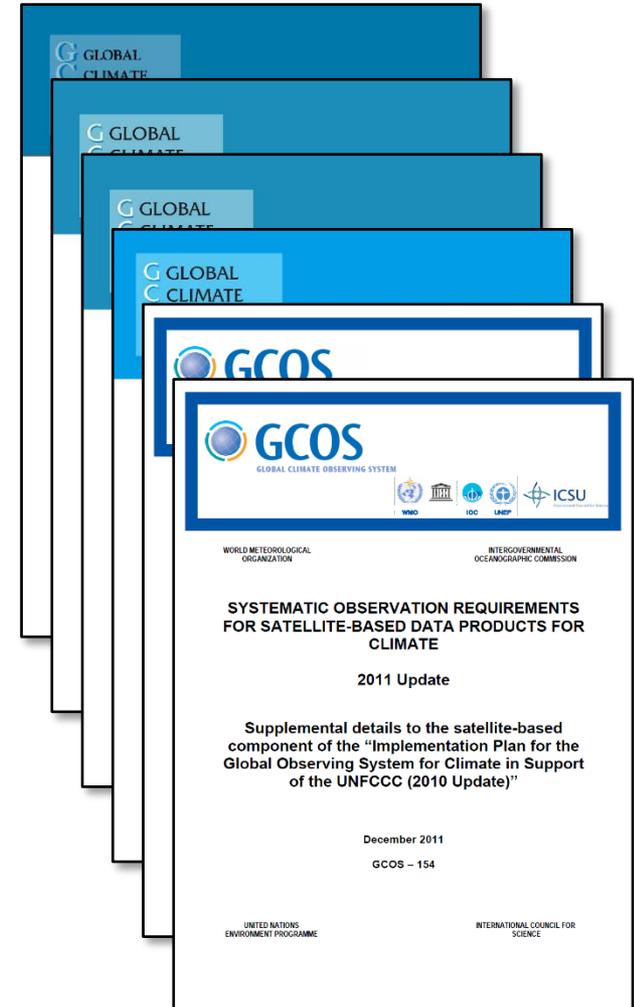
Following earlier assessment cycles beginning in 2003,
the GCOS programme is preparing:

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 5th 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

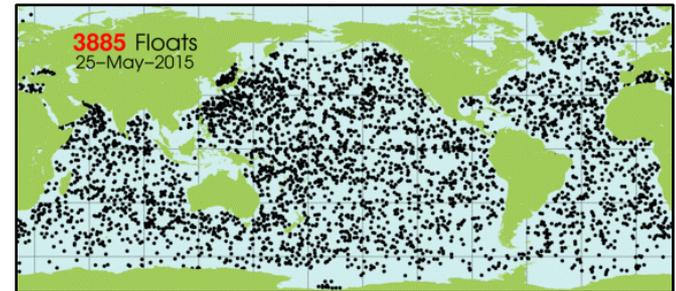
Searches of data-centre holdings

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

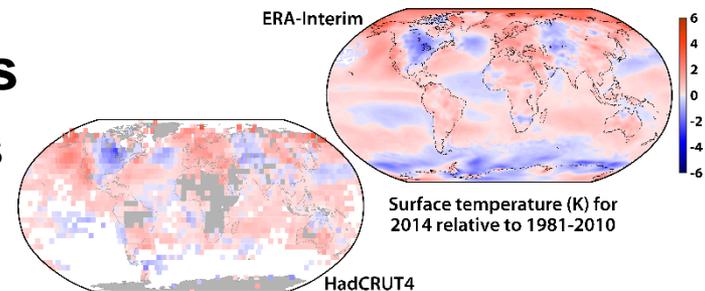


Satellites provide data on many ECVs

- 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

	Schweizerische Eidgenossenschaft Confédération suisse Confederazione Svizzera Confederaziun svizra	Federal Department of Home Affairs FDHA Federal Office of Meteorology and Climatology MeteoSwiss
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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

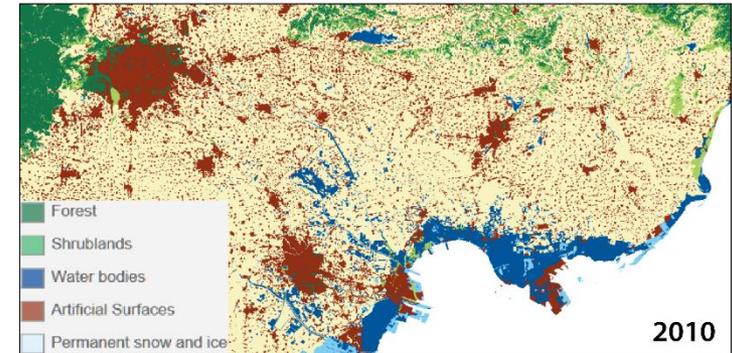
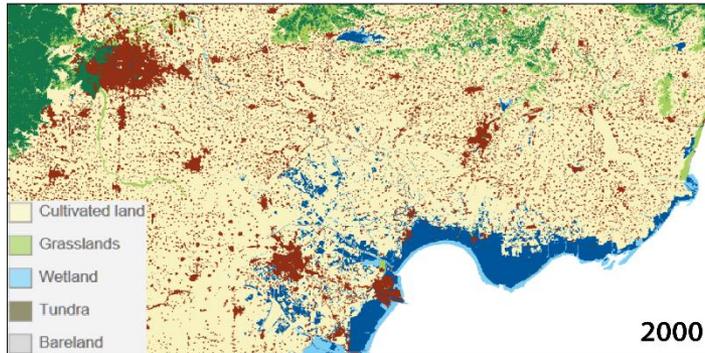
Data served by a centre may not be in an easy-to-use format

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

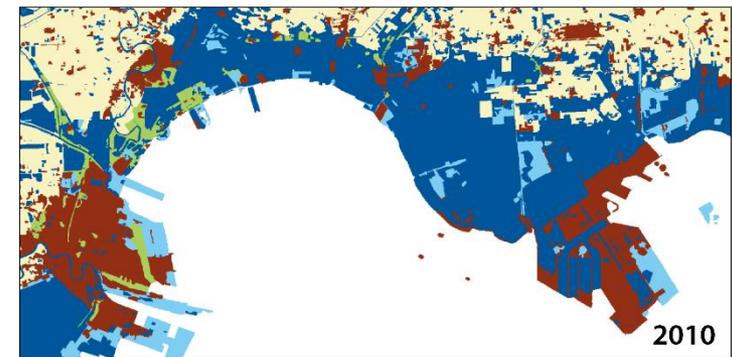
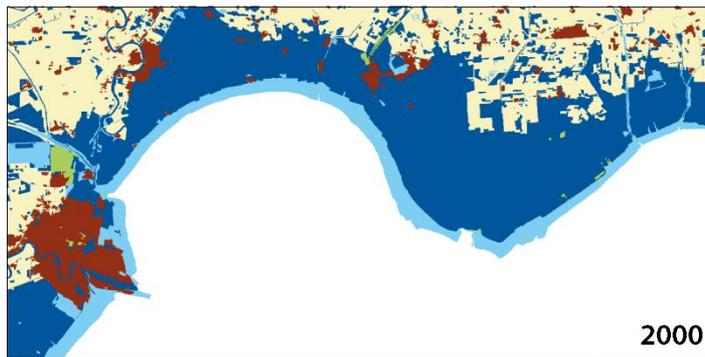
Building global land-cover datasets using images from satellites

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

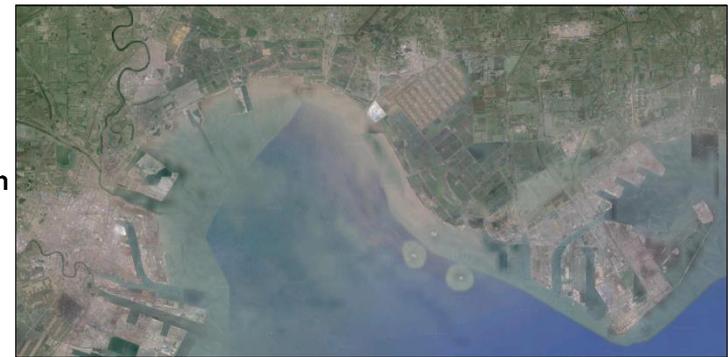


China similarly made available in 2014 derived 30m land-cover datasets for 2000 and 2010



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