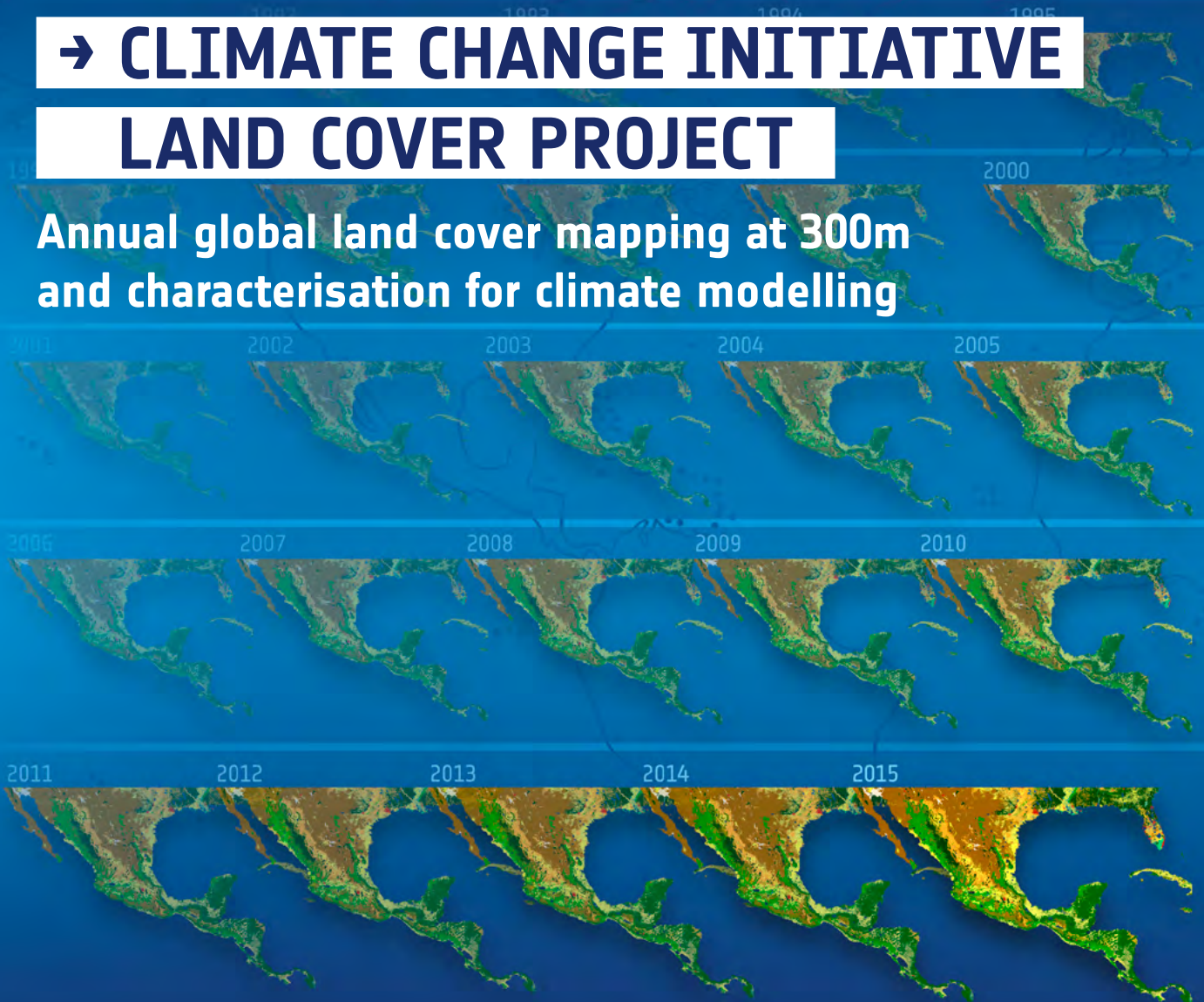
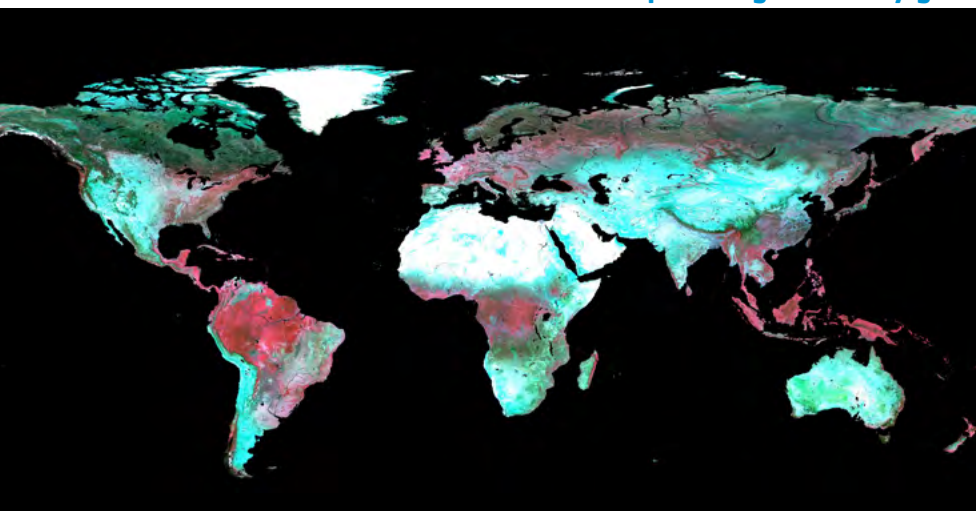


→ CLIMATE CHANGE INITIATIVE LAND COVER PROJECT

Annual global land cover mapping at 300m
and characterisation for climate modelling



Focus on ESA and Member States missions providing near-daily global surface reflectance observation

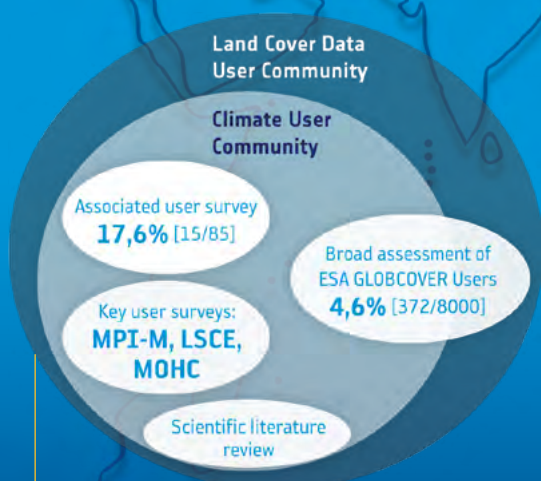


INPUT DATASETS

- **ENVISAT-MERIS FR and RR**
Full and Reduced Resolution
2003–2012
- **NOAA-AVHRR HRPT**
1992–1999
- **SPOT-Vegetation**
1998–2012
- **PROBA-V**
2013–2015
- **ENVISAT-ASAR**
Mainly Wide Swath Mode (150m)
2005–2012

User consultation

To better understand how climate modellers use land cover data to know their future expectations.



- User communities consulted (percentages indicating the number of responses received for each group)

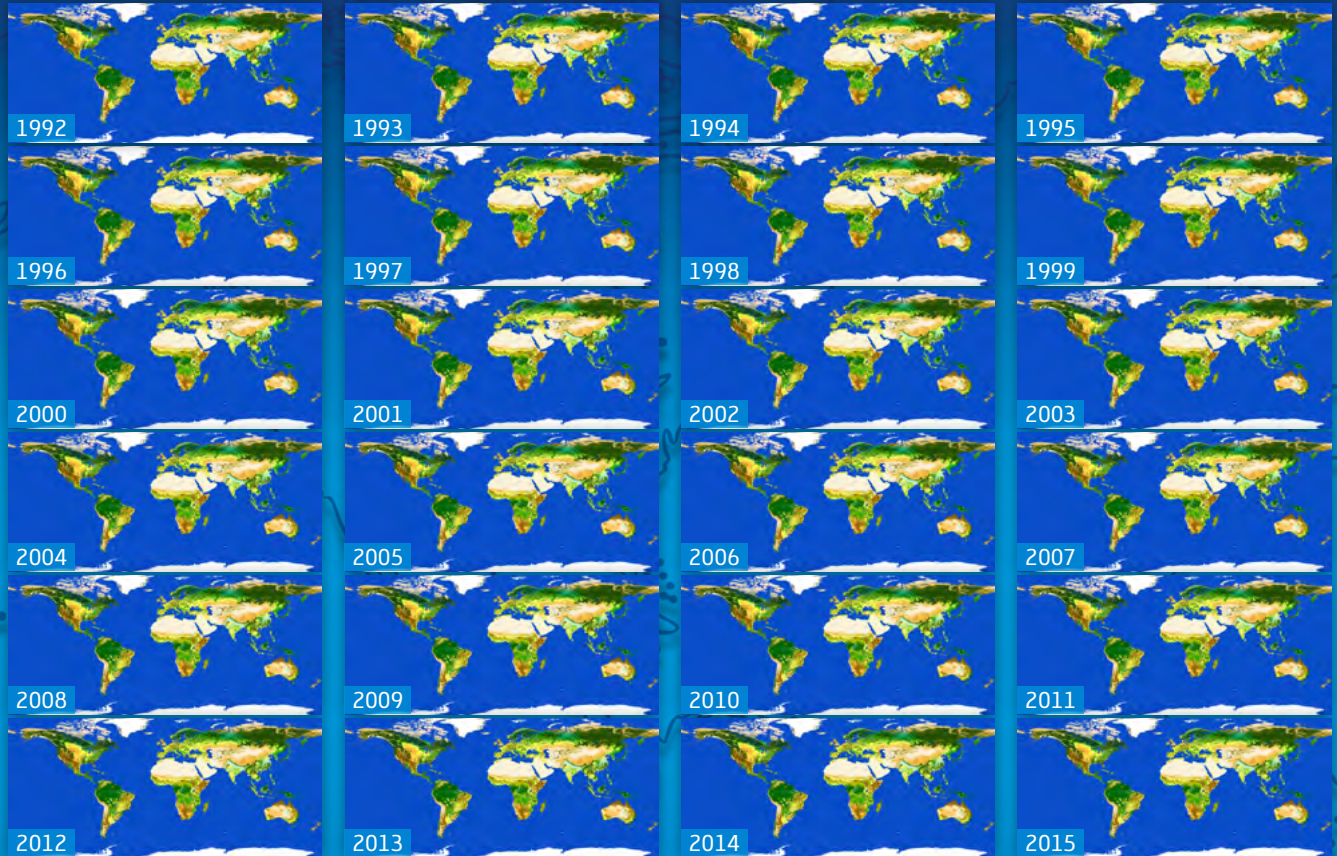
Products properties	User requirements
Spatial coverage	Global
Spatial resolution	< 1000m
Temporal sampling	Best/stable maps over time and regular updates
Thematic detail	LC detail to meet current modeling user needs
Accuracy/Stability	Higher accuracy/stability than existing datasets
Accuracy assessment protocol	Independent one-time accuracy assessment

- User requirements characterising useful land cover products for climate modelling applications

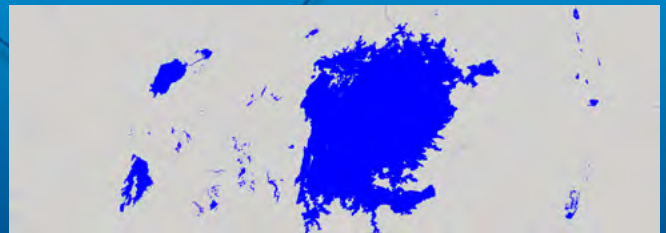
Online visualization tool

The 24 annual global land cover maps can be interactively visualized and downloaded on the CCI Land Cover viewer <http://maps.elie.ucl.ac.be/CCI/viewer>.

24 consistent global land cover products along with climatological 7-day time series



- Global map of open permanent water bodies at 150m spatial resolution derived from ENVISAT-ASAR images.



Overall Accuracy

"Certain" and "homogeneous" points CCI LC 2015 annual map (v2.0.7) = **75,4%**

"Certain" and "homogeneous" + "heterogeneous" points CCI LC 2015 annual map (v2.0.7) = **71,5%**



land cover
cci

The ESA Climate Change Initiative Programme

In 2010, the Global Climate Observing System (GCOS) listed 50 Essential Climate Variables (ECVs).

In response, ESA launched its Climate Change Initiative (CCI) to provide a comprehensive and timely response to the need for long-term satellite-based products in the climate domain. Through individual projects, the ESA-CCI focuses on 14 ECVs, amongst which the Land Cover.

6 years CCI Land Cover Project (Phase 1 and 2) achieved the following results:

- Annual global LC maps spanning a 24-year period, from 1992 to 2015 including NOAA-AVHRR HRPT, SPOT-Vegetation, ENVISAT-MERIS FR and RR, ENVISAT-ASAR, and PROBA-V datasets;
- Demonstrate the feasibility of a higher resolution global land cover product by generating a 20m land cover map, over Africa, using Sentinel-2 dataset;
- Extend the climate impact assessment of a better land surface description for climate modelling;
- Very good overall accuracy for CCI LC annual map (v2.0.7)

The partnership of the Land Cover project of the Climate Change Initiative funded by ESA is led by the Université catholique de Louvain (BE), Brockmann-Consult (DE), Gamma RS (CH), Wageningen University (NL), University of Jena (DE), University of Pavia (IT), LIST (LU), Laboratoire des sciences du climat et l'environnement (FR), Met Office Hadley Centre (UK), Max Planck Institute for Meteorology (DE), Joint Research Centre (EU).



For more information on the project, please visit www.esa-landcover-cci.org

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