

Observing terrestrial variables for climate: achievements and opportunities

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*Joint GCOS, UNFCCC, IPCC workshop
10. Febr. 2015*

Essential Climate Variables (terrestrial)

River discharge, Water use, Groundwater, Lakes, Snow cover, Glaciers and ice caps, Ice sheets, Permafrost, Albedo, Land cover (including vegetation type), Fraction of absorbed photosynthetically active radiation (FAPAR), Leaf area index (LAI), Above-ground biomass, Soil carbon, Fire disturbance, Soil moisture



[ESA CCI > HOME](#)

5th CCI Colocation Meeting

The 5th Colocation meeting of the CCI took place in ESRIN, Italy from the 20-22 October 2014. A key focus for this year's Colocation meeting is on the steps that need to be taken to make the ECVs operationa

[Read more...](#)

Final version of Fire_cci Burned Area products available

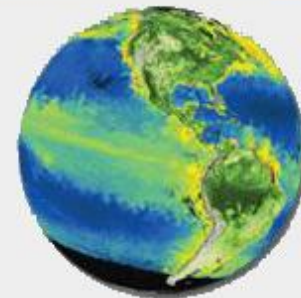
Burned Area (BA) data generated in the [Fire_cci project](#) is now available online at <http://www>

[Read more...](#)

CCI Workshop: Integrative Study of the Sea Level Budget

2-5 February 2015, ISSI, Bern, Switzerland

The International Space Science Institute (ISSI) are hosting a CCI workshon to discuss the



Events

[February 2015](#)

M	T	W	T	F	S	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	

Upcoming events

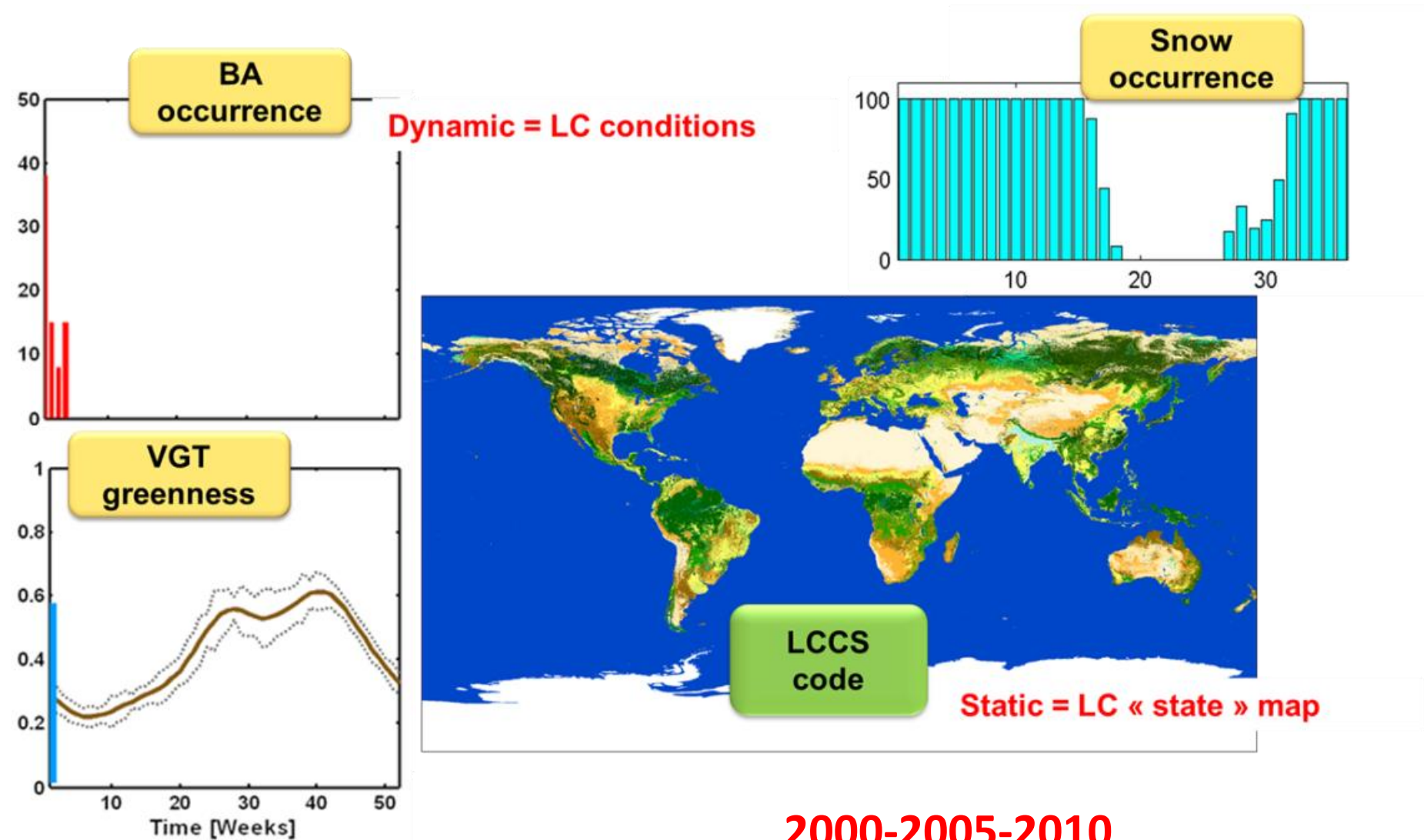
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<http://ionia1.esrin.esa.int>

1 land cover pixel, 4 descriptors



2000-2005-2010

Key remarks

1. The UNFCCC/GCOS/ECV framework has resulted in focus and important progress for climate observations

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Essential Climate Variables (terrestrial)

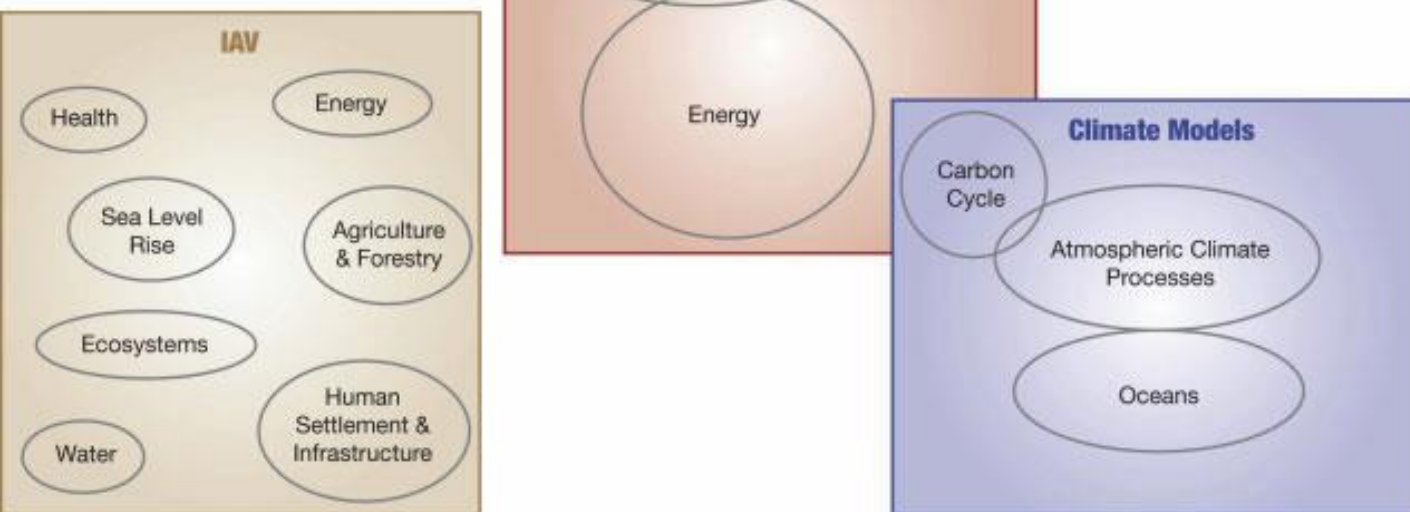
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Essential for what and whom?

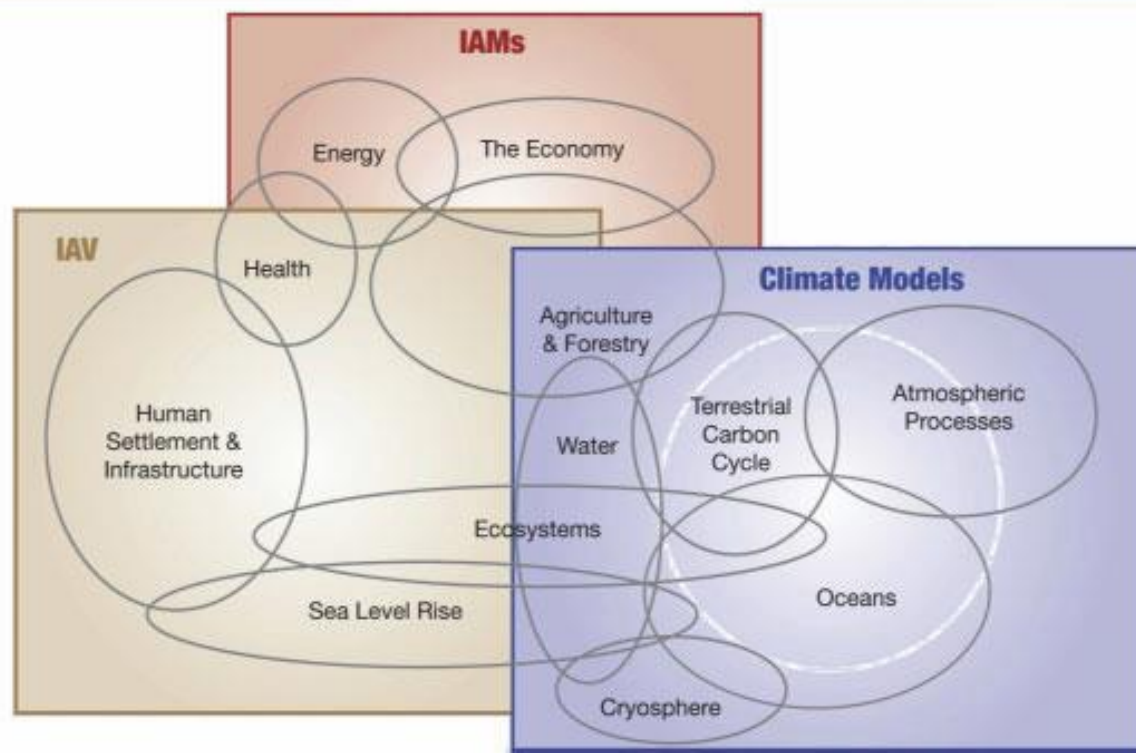
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3. ECV observation progress has largely focused on IPCC WP I – type users

(a)



(b)



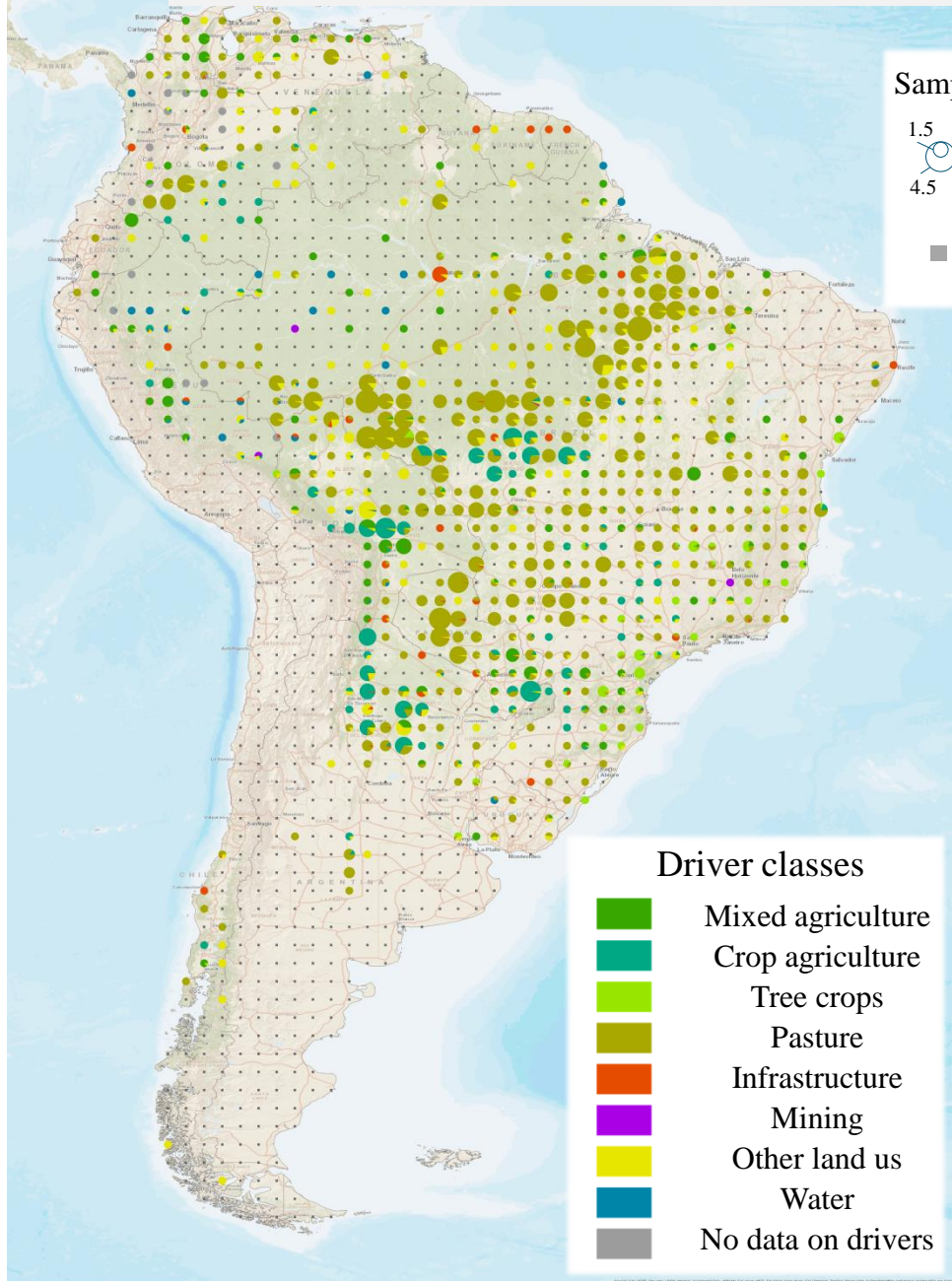
Increasing
overlap and
synergies
among climate
science
communities

Hibbard et al., 2010,
Int. J. Climatol.

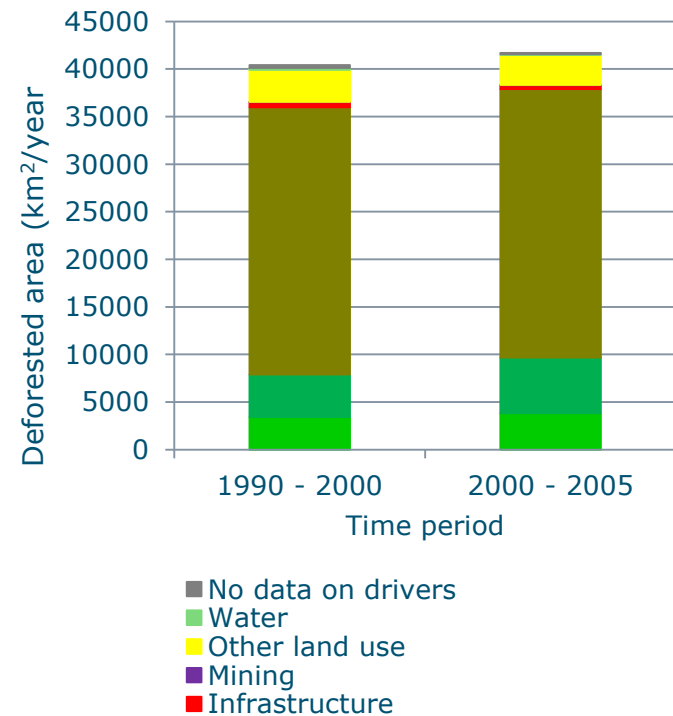
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4. Importance of terrestrial domain is increasing in climate science

Land use change after deforestation in 1990 - 2005



Deforested area per driver (km²/year)

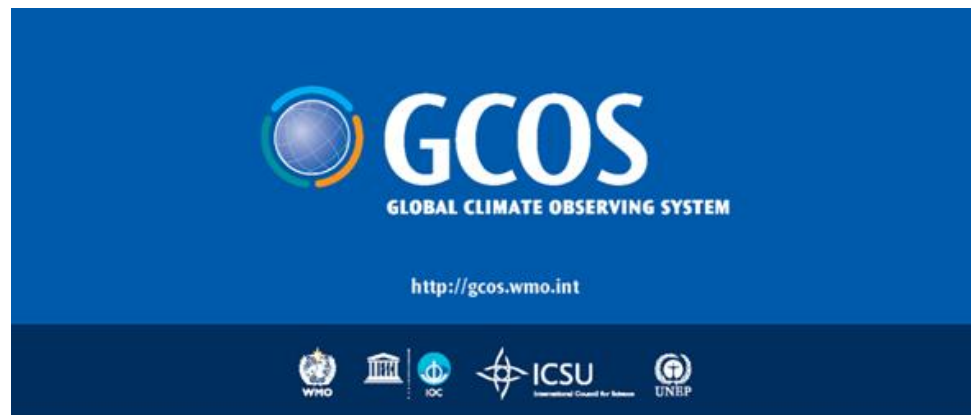


Pan tropical analysis to be completed in 2015

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Starting the dialog between observation and mitigation community



GCOS Workshop on Observations for Climate Change Mitigation

Geneva, Switzerland
5–7 May 2014

Co-sponsored by the Land Cover Project Office of the Global
Observation for Forest Cover and Land Dynamics (GOFC-
GOLD) Programme

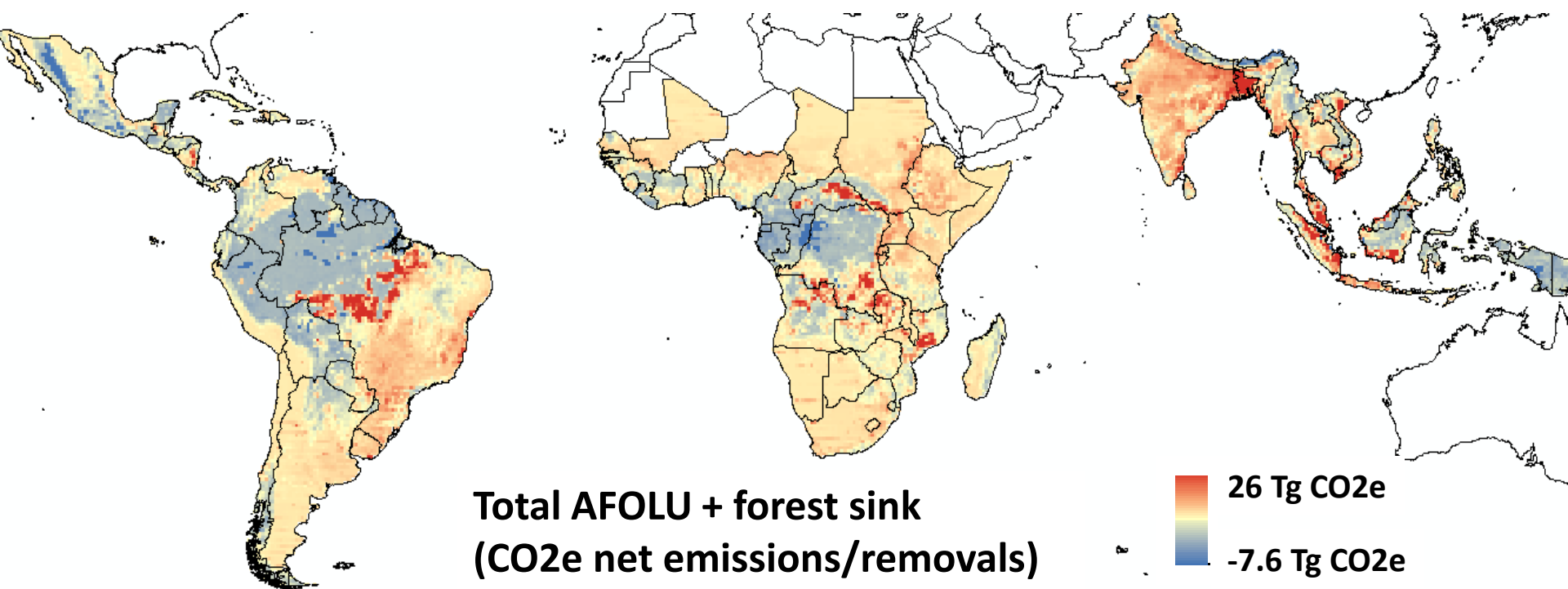
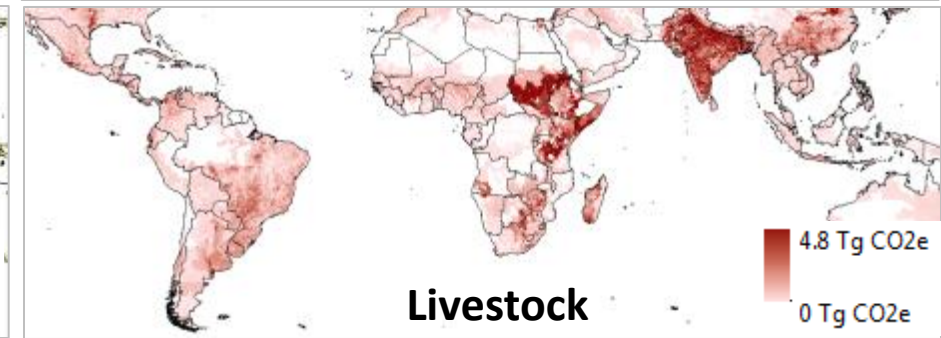
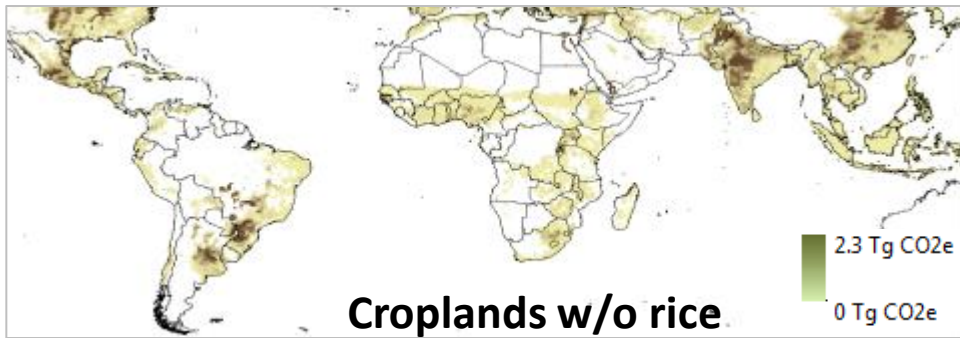
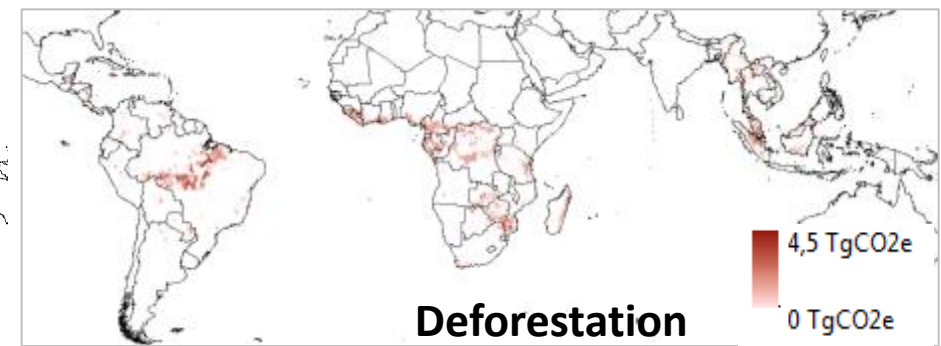


GCOS-185

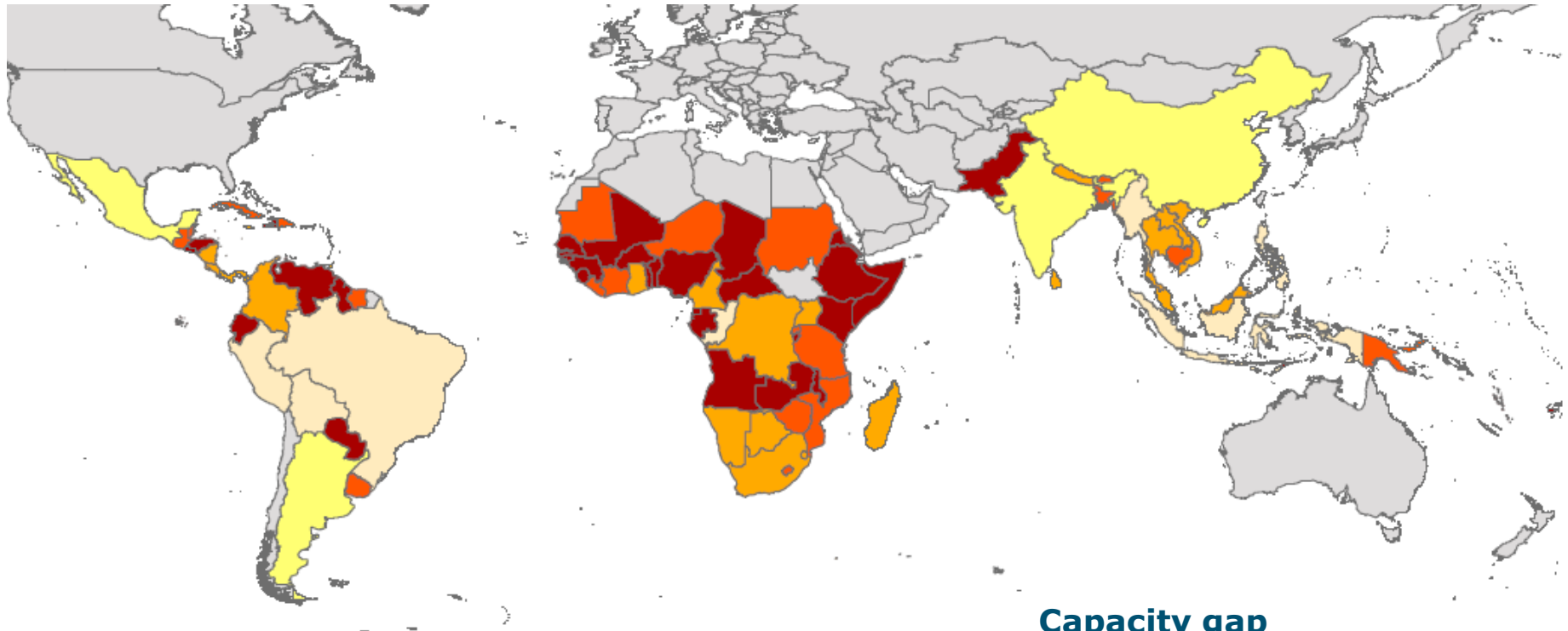
- ✦ *Representatives from UNFCCC, FAO, ICRAF, ESA, IPCC, etc.*
- ✦ *Focus on Land Use (Agriculture) and Forest*
- ✦ *Land use change and forestry and agricultural management practices*
 - ✦ *Key ECVs: fire, land cover, biomass, soil carbon, ...*
 - ✦ *Develop a consistency among mitigation-relevant terrestrial ECVs for IPCC GPG-based estimation*

Workshop website:

<http://www.wmo.int/pages/prog/gcos/index.php?name=ObservationsforMitigation>



National forest monitoring capacities for REDD+

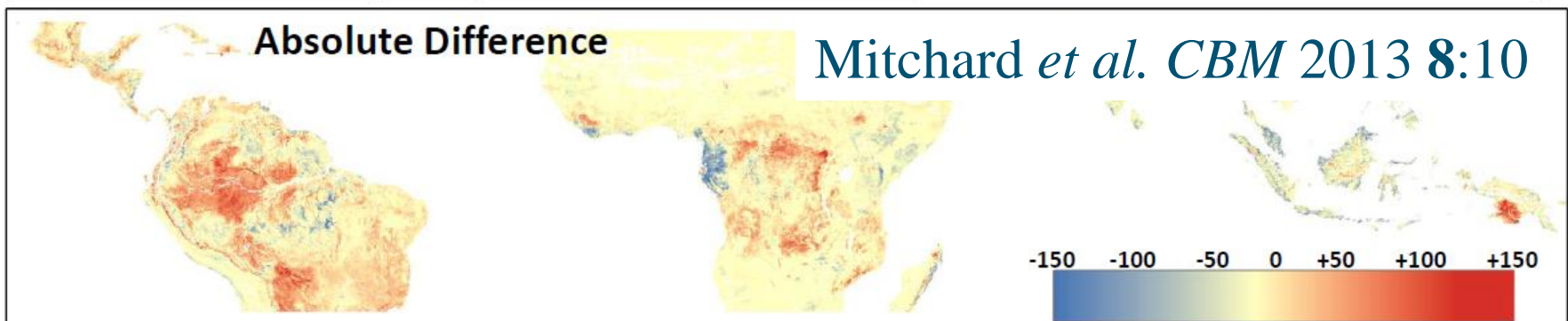
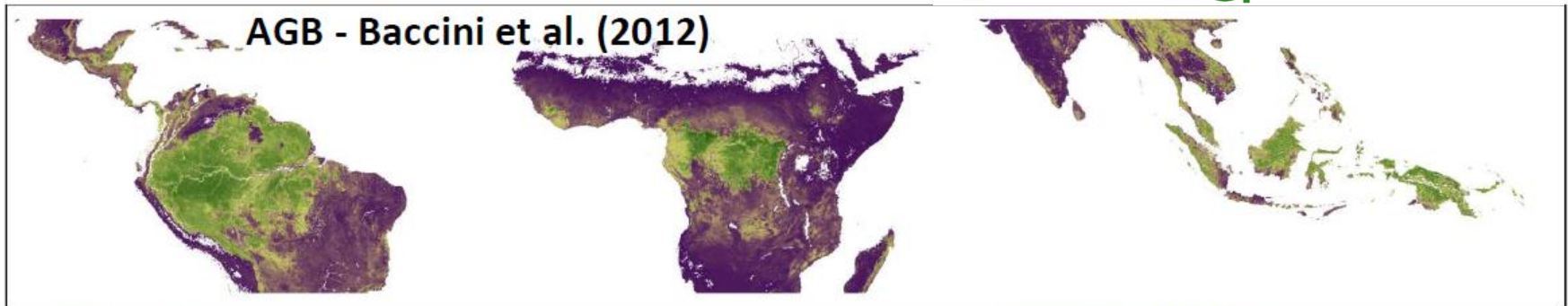


from Romijn et al., 2012, ESP

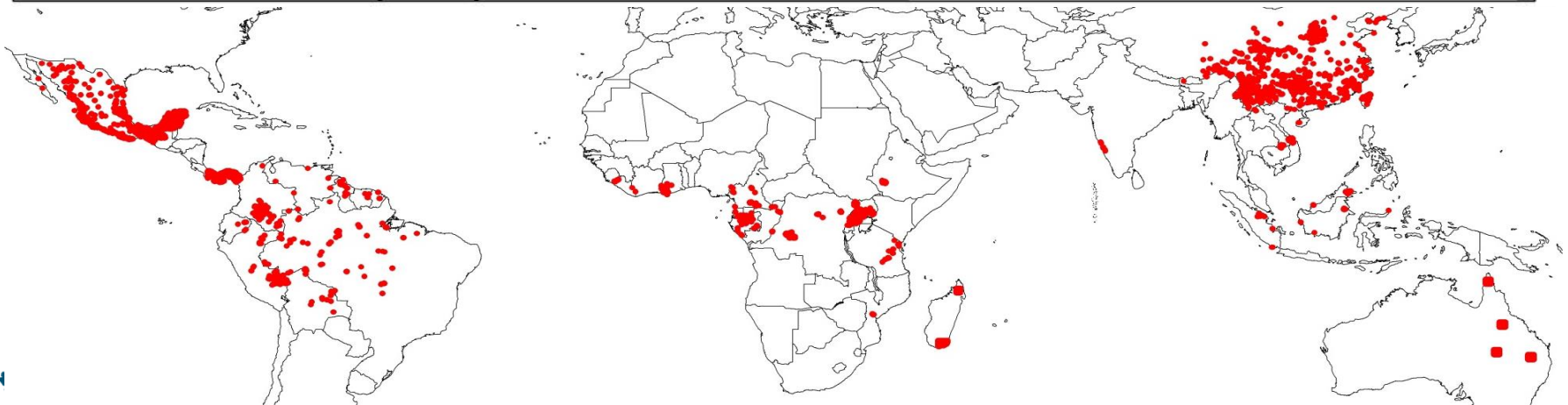
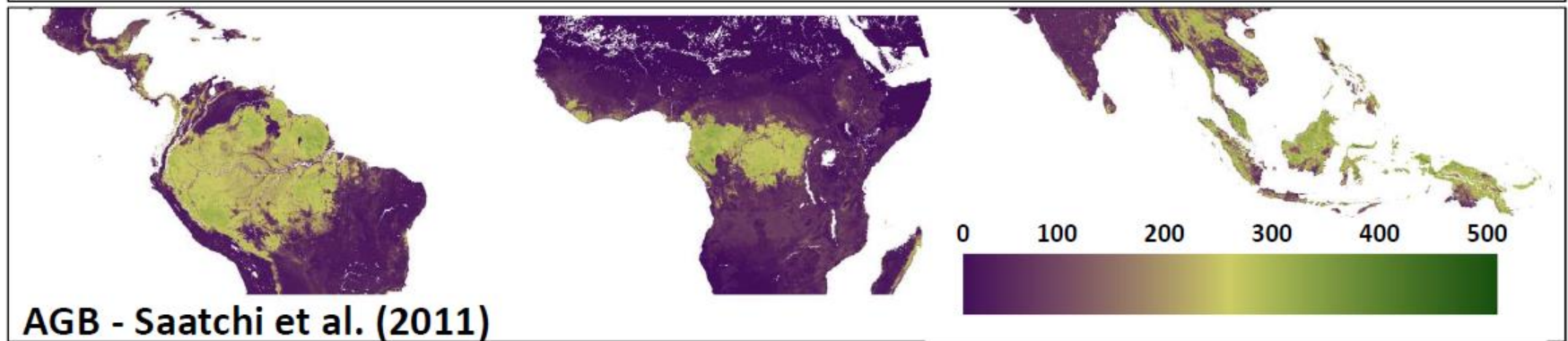
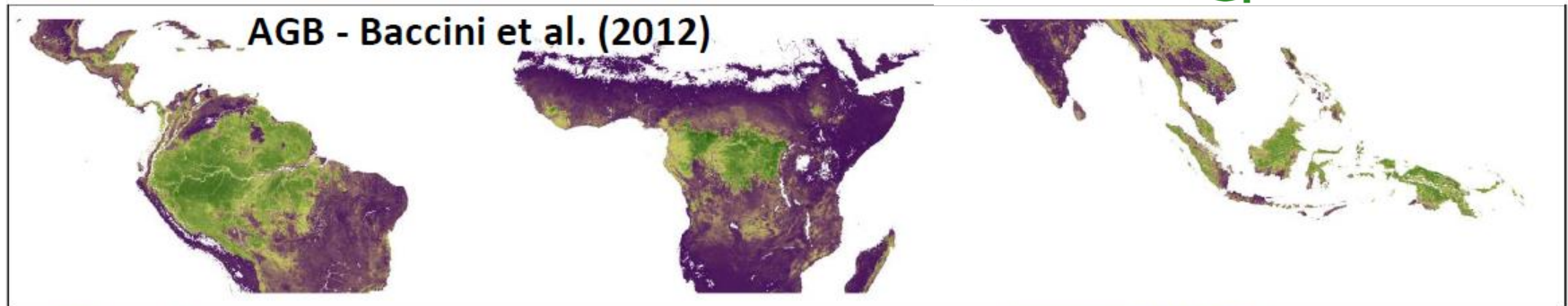


WAGENINGEN UR
For quality of life

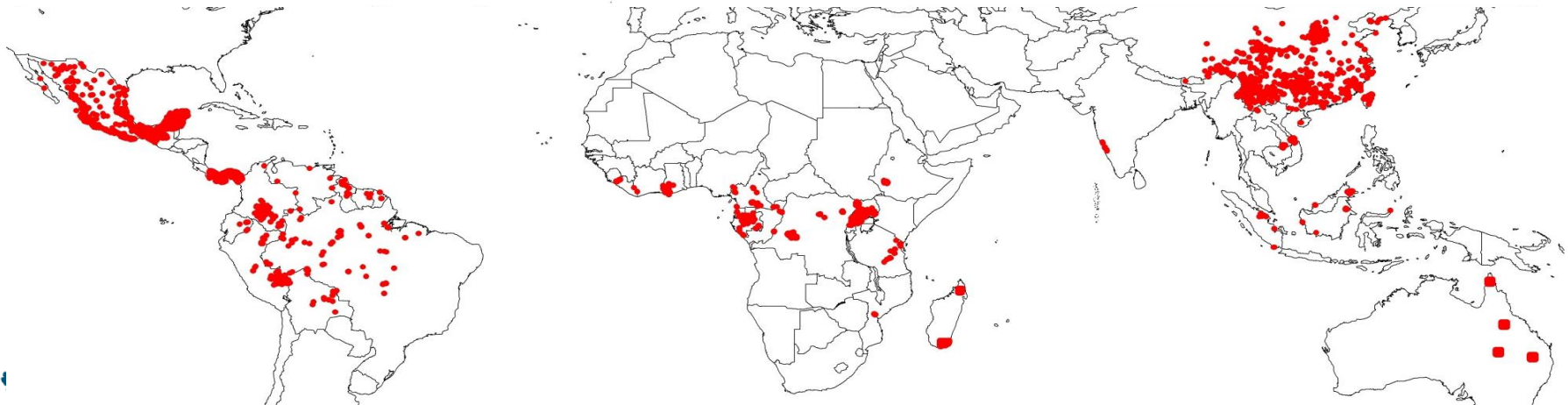
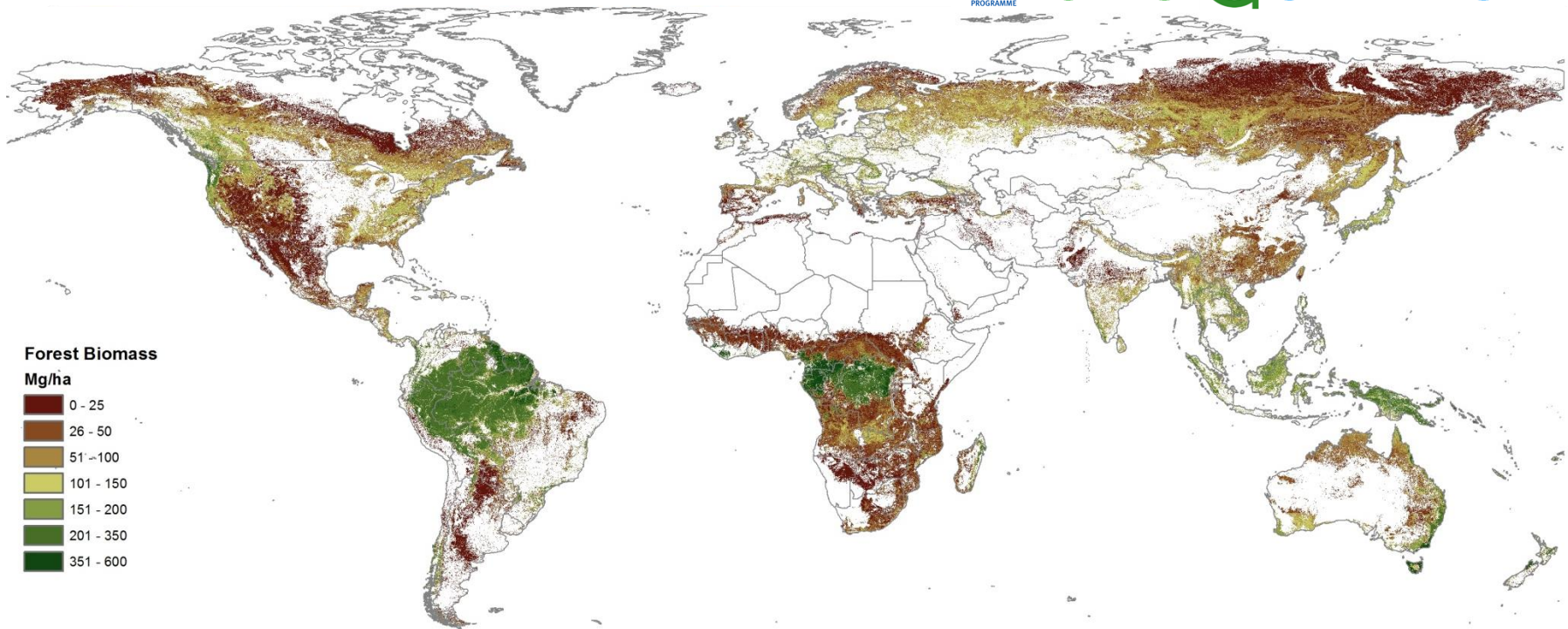
Large area biomass mapping



Large area biomass mapping



Large area forest biomass mapping



Key remarks for terrestrial domain

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5. Human dimension largely absent in ECVs; required for links to mitigation and adaptation
6. (Global) ECV monitoring and national estimation and reporting (to UNFCCC) are largely independent

One question and one challenge

- 1. Question:** How to expand the GCOS/Essential Climate Variables framework to make terrestrial/land observations more relevant for purposes of mitigation and adaptation?
- 2. Challenge:** Stimulus and actions needed by the UNFCCC to better integrate and coordinate (1) global (research) observations, (2) national estimation and reporting, and (3) monitoring and implementation of local actions (for mitigation and adaptation)!