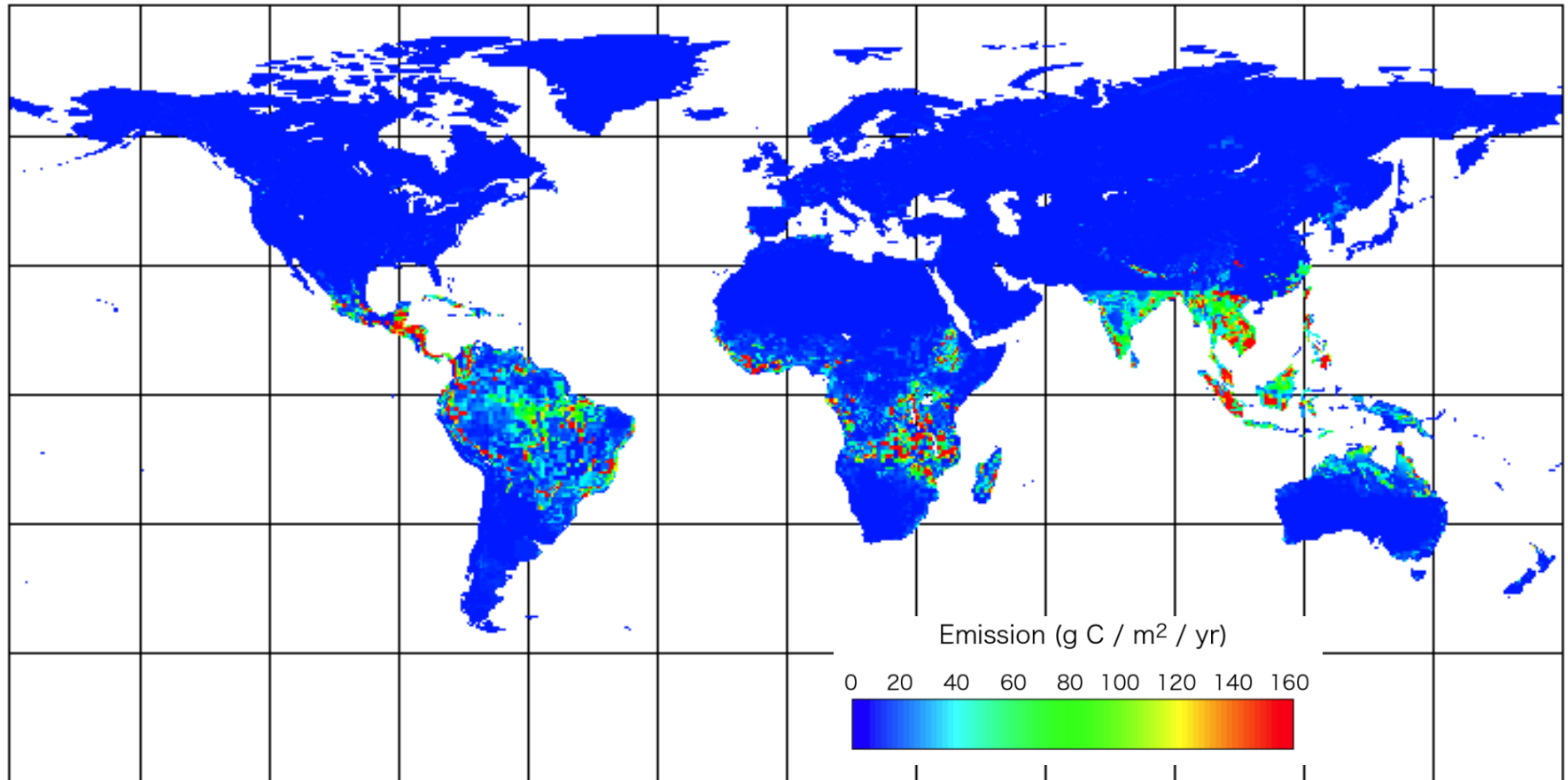


Forest Carbon Tracking

A New GEO Task in WP 2009-2011
Proposed by: Norway, Japan, Australia,
FAO....

NIES Model estimate: CO₂ emission during 1990's

LUC emission: 1990s



The ISSUE & Technical Challenge

- Answer to political, UNFCCC negotiations in the run-up to COP-15, late 2009.
- Unique opportunity for GEO and CEOS to demonstrate capability in development of a consistent, long-term forest carbon monitoring system
- Servicing UN negotiators
 - and by default also the carbon cycle science community

Typical forest change & routine monitoring requirements



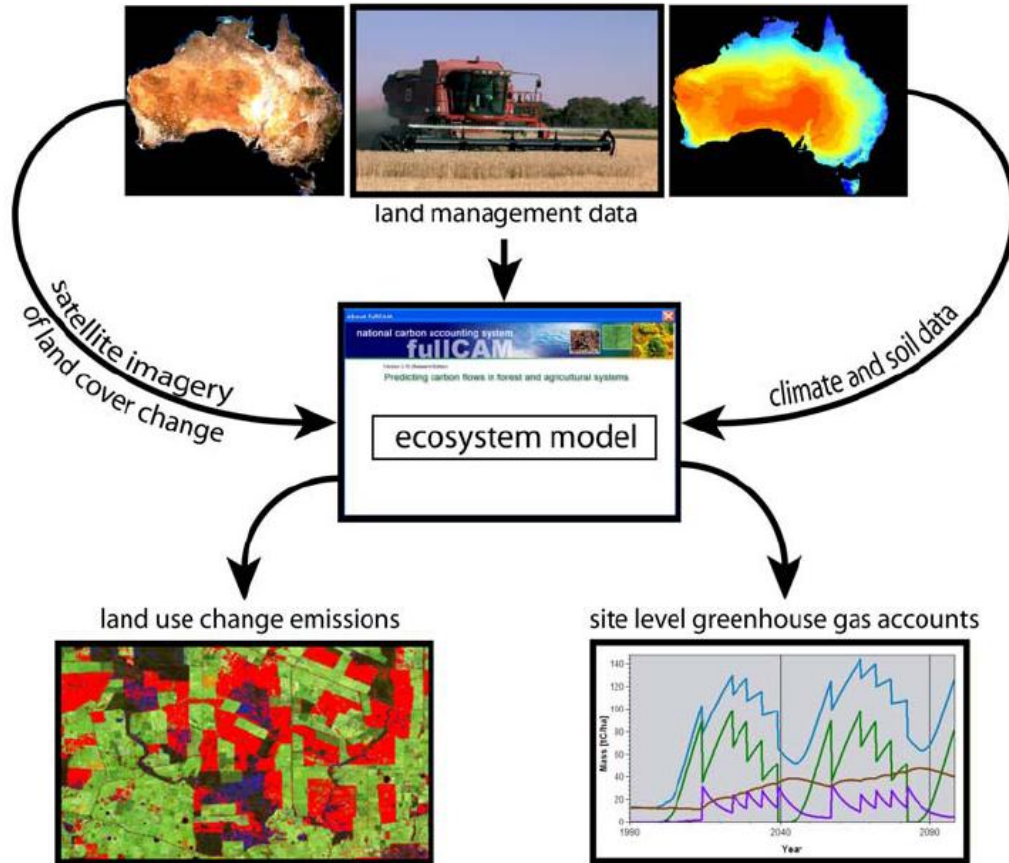
Type of clearing	Characteristic size	Characteristic temporal cycle
Selective logging	Gaps < 30 x 30 m	30-80 yrs
Clear-cut logging	> several ha	80 yrs
Shifting cultivation	Small fields, < 6 ha	5-10 yrs
Small-holder agriculture	Small fields, < 6 ha	Permanent until abandoned
Intensive mechanized agriculture	> 100 ha	Permanent until abandoned
Urban growth, or other uses	Ranging from small settlements to urban expansion	Permanent until abandoned

Forest Carbon Tracking

Proposed Task main activities

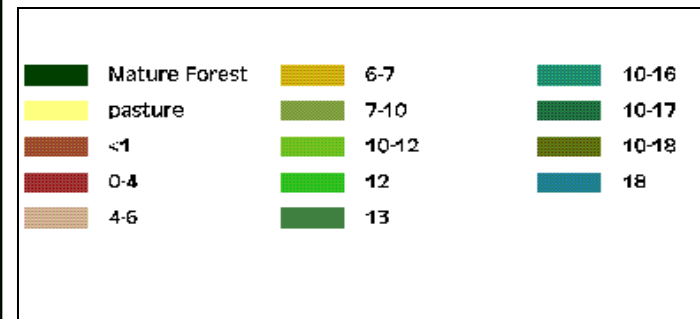
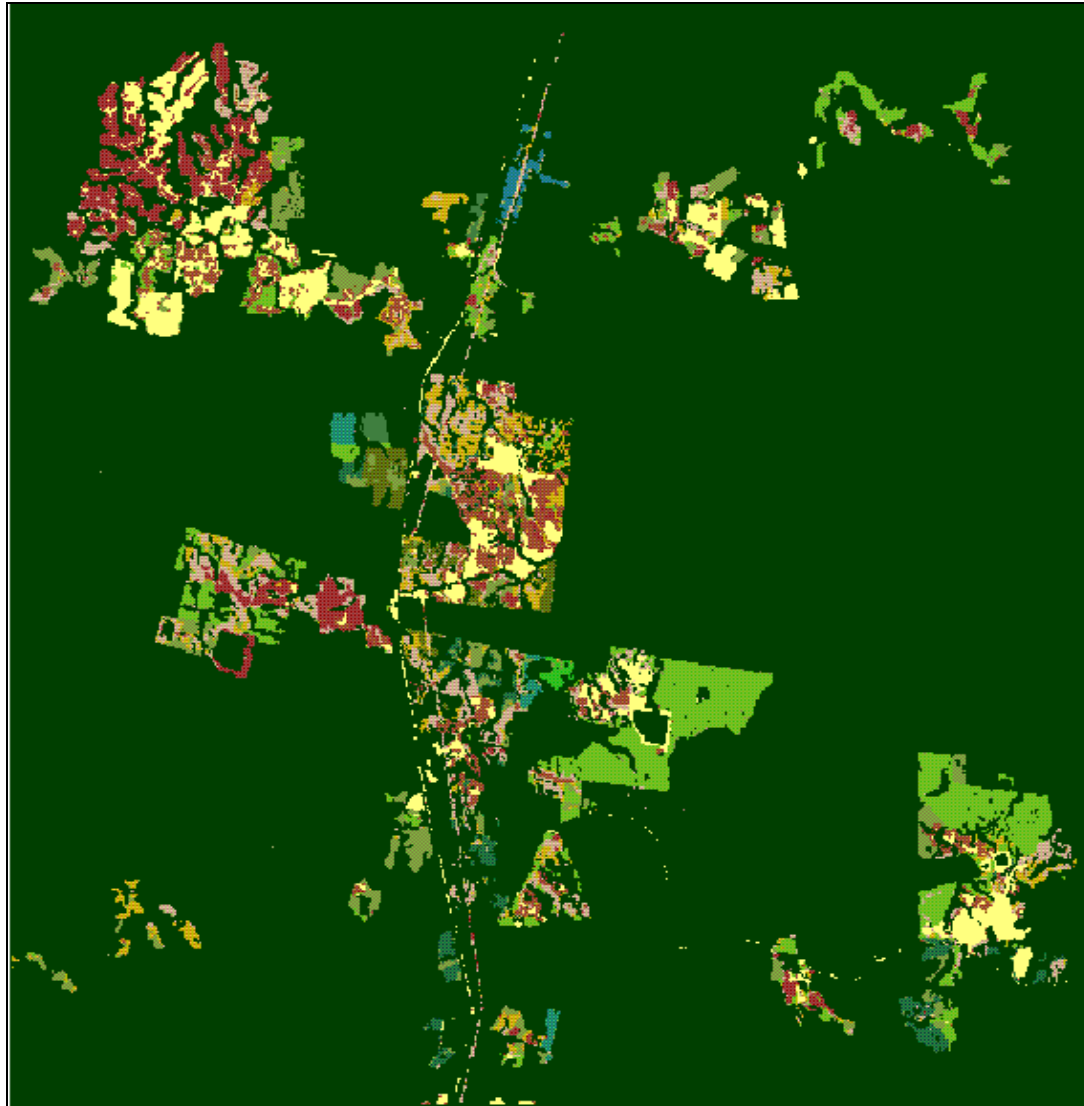
- Consolidation of observational requirements and associated products
- Coordinated assessment of tools and methodologies
- Coordination of observations, including securing their continuity
- Coordination of the production of reference datasets
- Establish tropical demonstration sites to show capabilities
- Improvement of access to observations, datasets, tools and expertise and associated Capacity Building activities.

Example: Australia National Carbon Accounting System



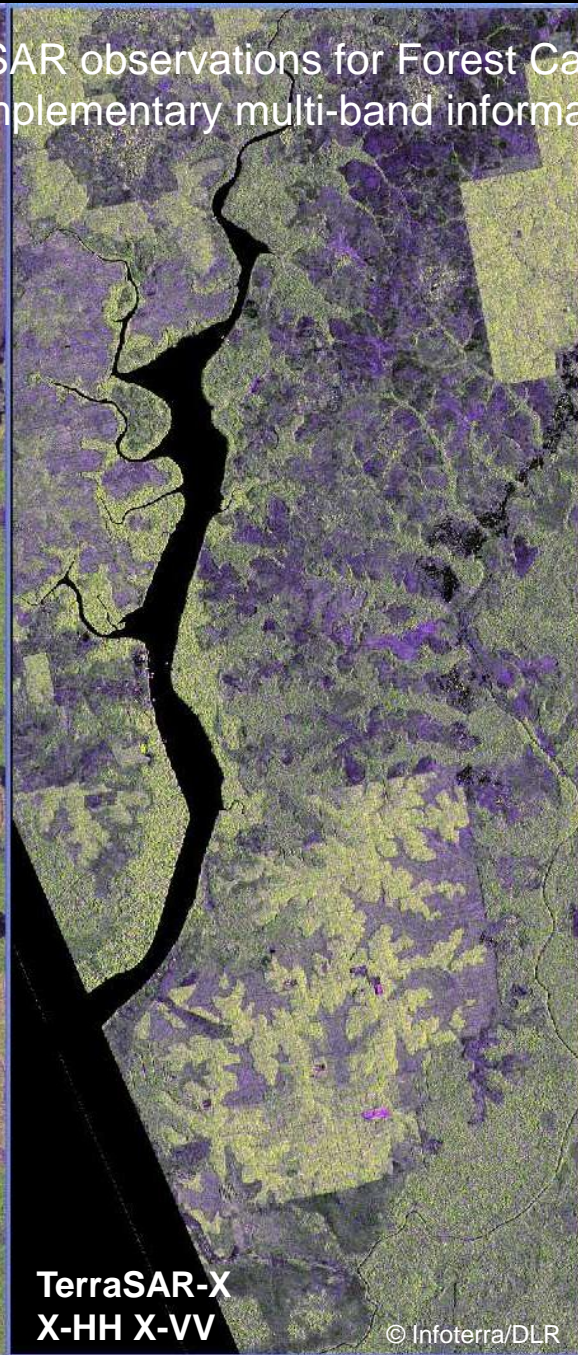
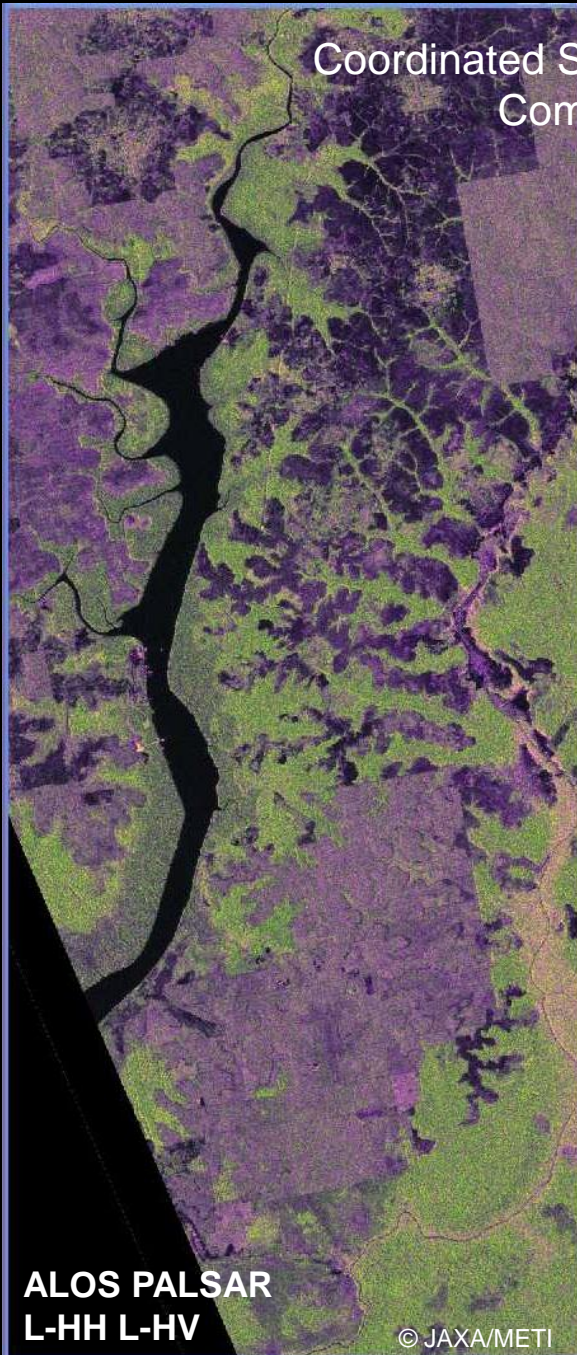
Annual, wall-to-wall,
change detection

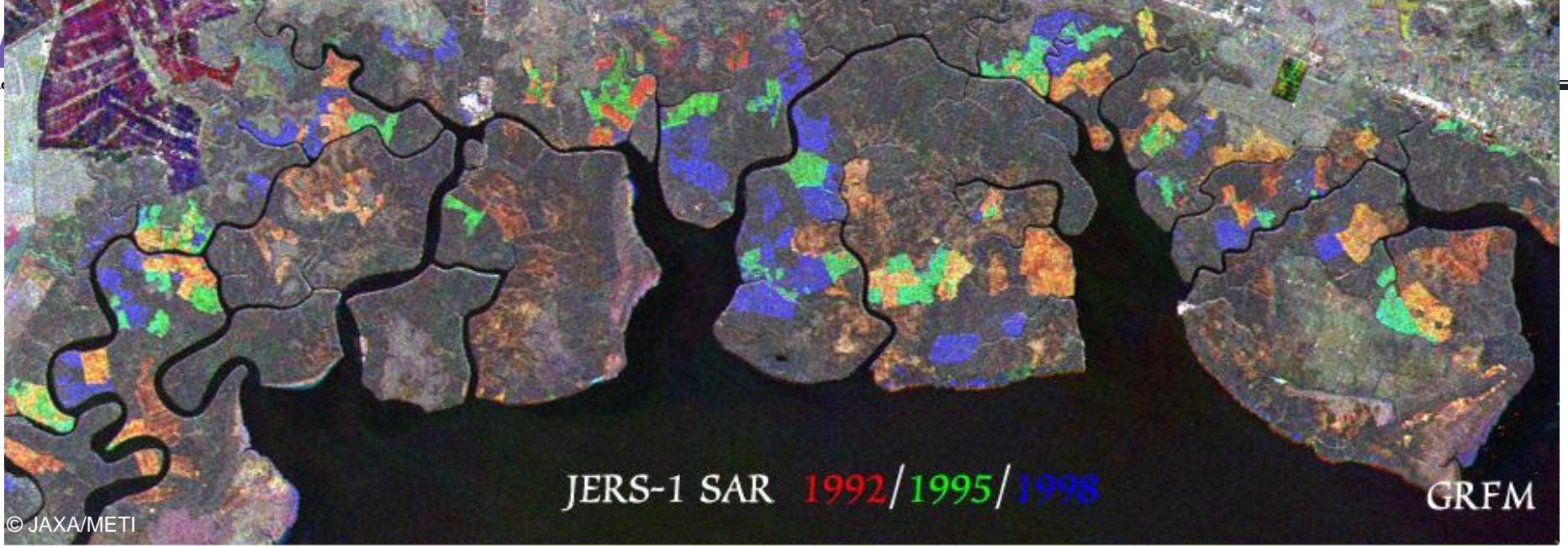
Example: Landsat TM - Time-series Classifications, Manaus, Brazil



(Source R. Lucas)

Coordinated SAR observations for Forest Carbon Tracking
Complementary multi-band information





JERS-1 SAR 1992/1995/1998

GRFM

© JAXA/METI

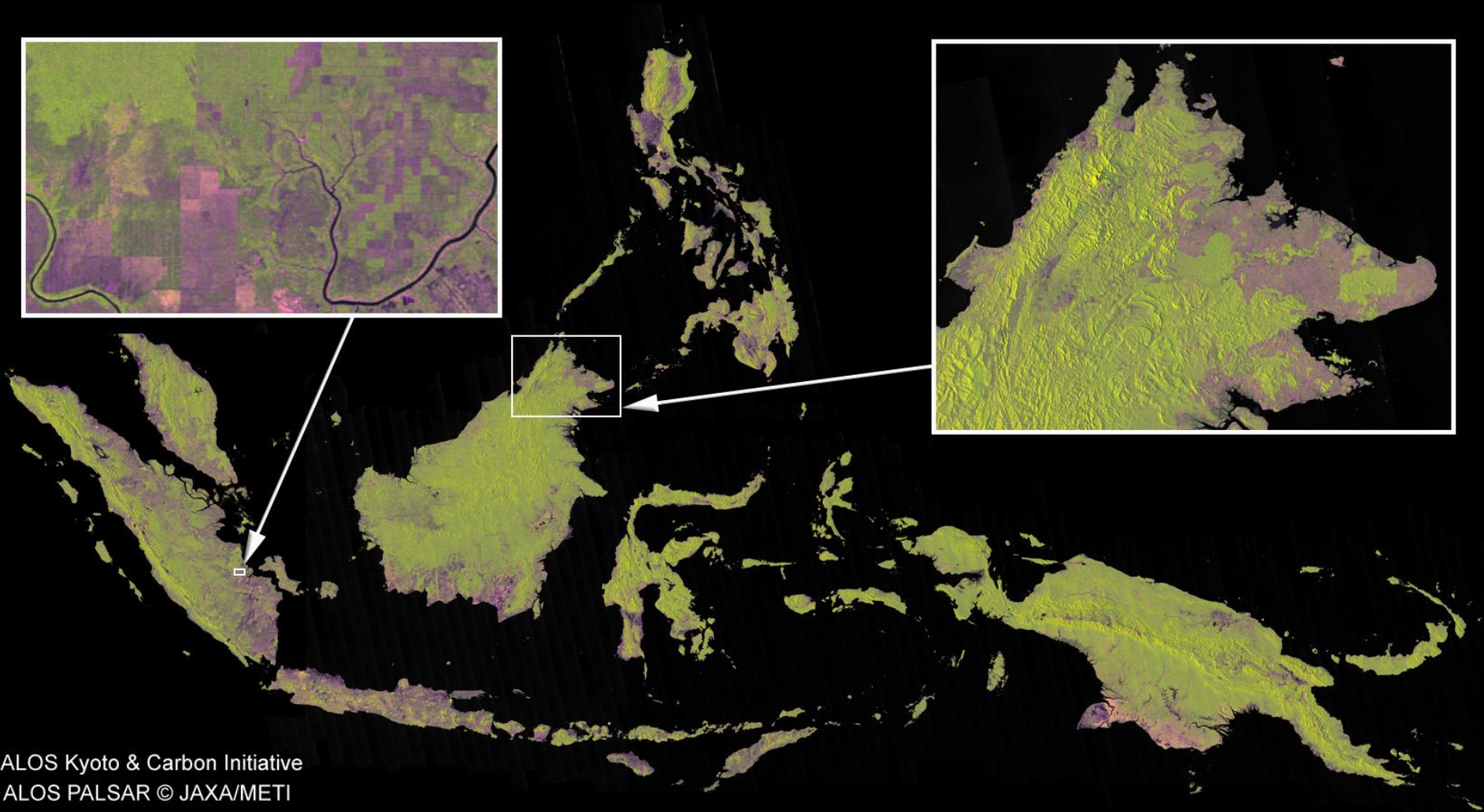
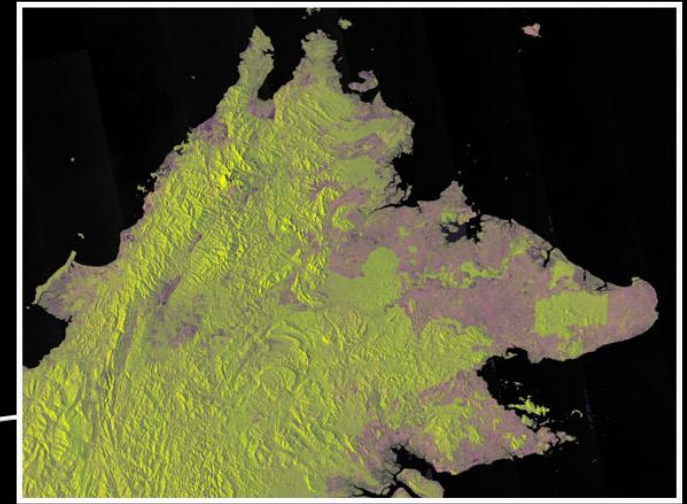


ALOS PALSAR 2006-06/2007-11/2007-11

K&C

© JAXA/METI

ALOS PALSAR 50 m global mosaics



How can CEOS Help?

- Via the LSI Constellation Team assist in development of a strategy and requirements for continuous, systematic observations to demonstrate capability over test sites
- Leading to full, Pan-tropical wall-to-wall, multi-mission, medium resolution annual mapping (as initiated by JAXA's JERS-1 & ALOS PALSAR missions)
- Need POC from each space agency to discuss and plan execution of CEOS commitments to this GEO task