

K&C Phase 3 – Brief project essentials

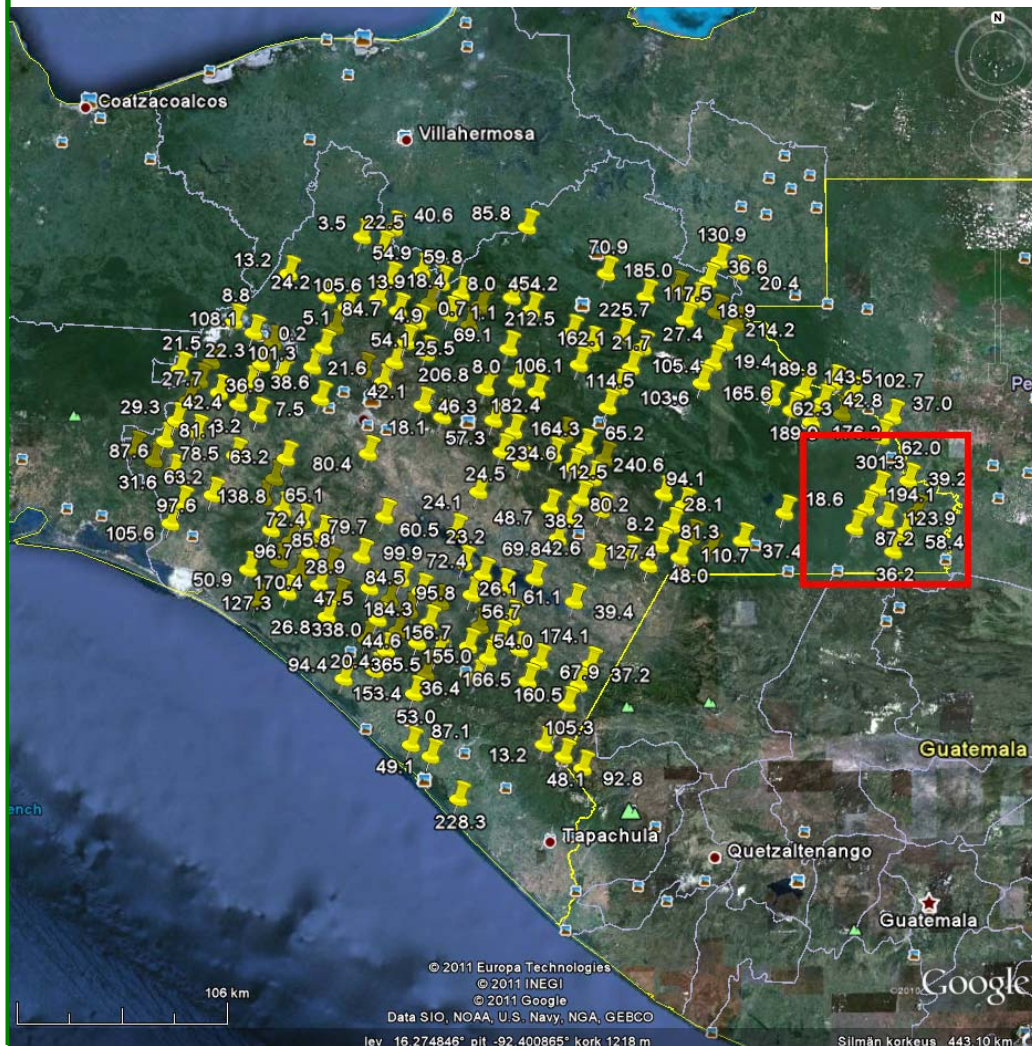
Forest Degradation and Change Monitoring in the Tropical Zone

Yrjo Rauste

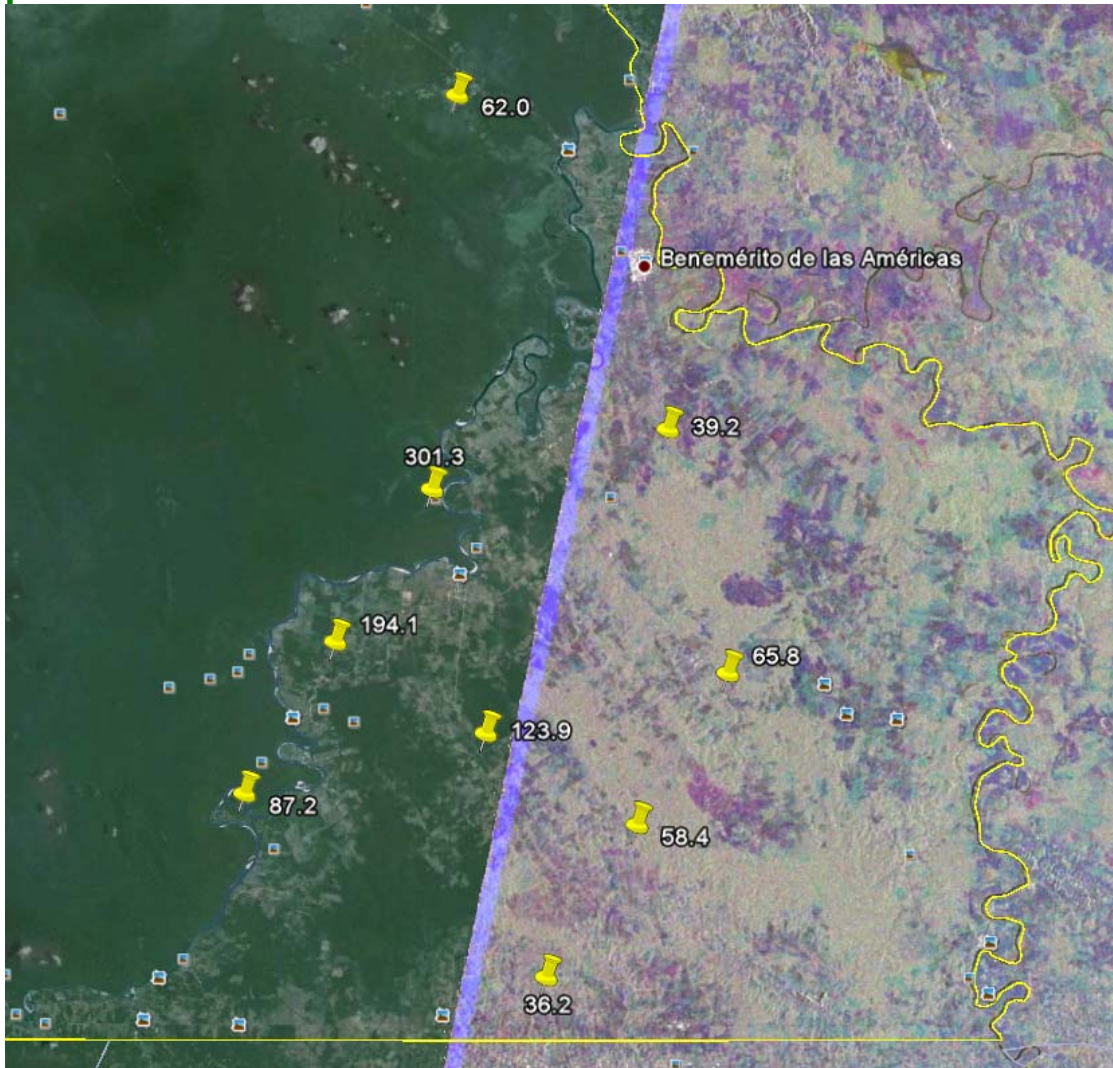
VTT Technical Research Centre of Finland

Project area(s)

- ▽ The main area is Chiapas Province in Mexico (the same as the Mexican study site in EU project ReCover)
- ▽ Forest cover change mapping and forest biomass mapping over whole Mexico proposed (based on 25-m mosaics by JAXA).



Project area 2



▽ A more detailed study area

▽ SAR Data from other satellites:

↓ TanDEM-X

↓ COSMO SkyMed

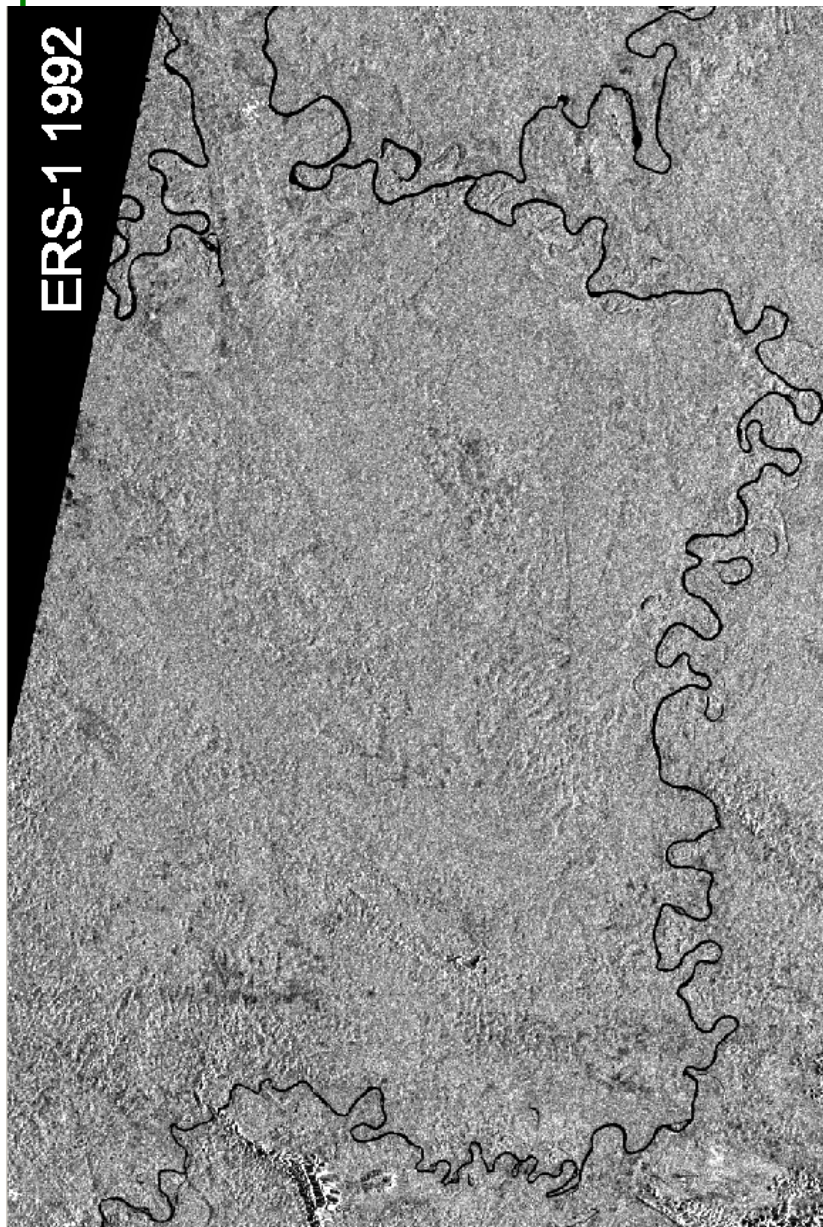
↓ Envisat/ASAR

↓ ERS-1 SAR

ALOS

K&C Initiative
An international science collaboration led by JAXA

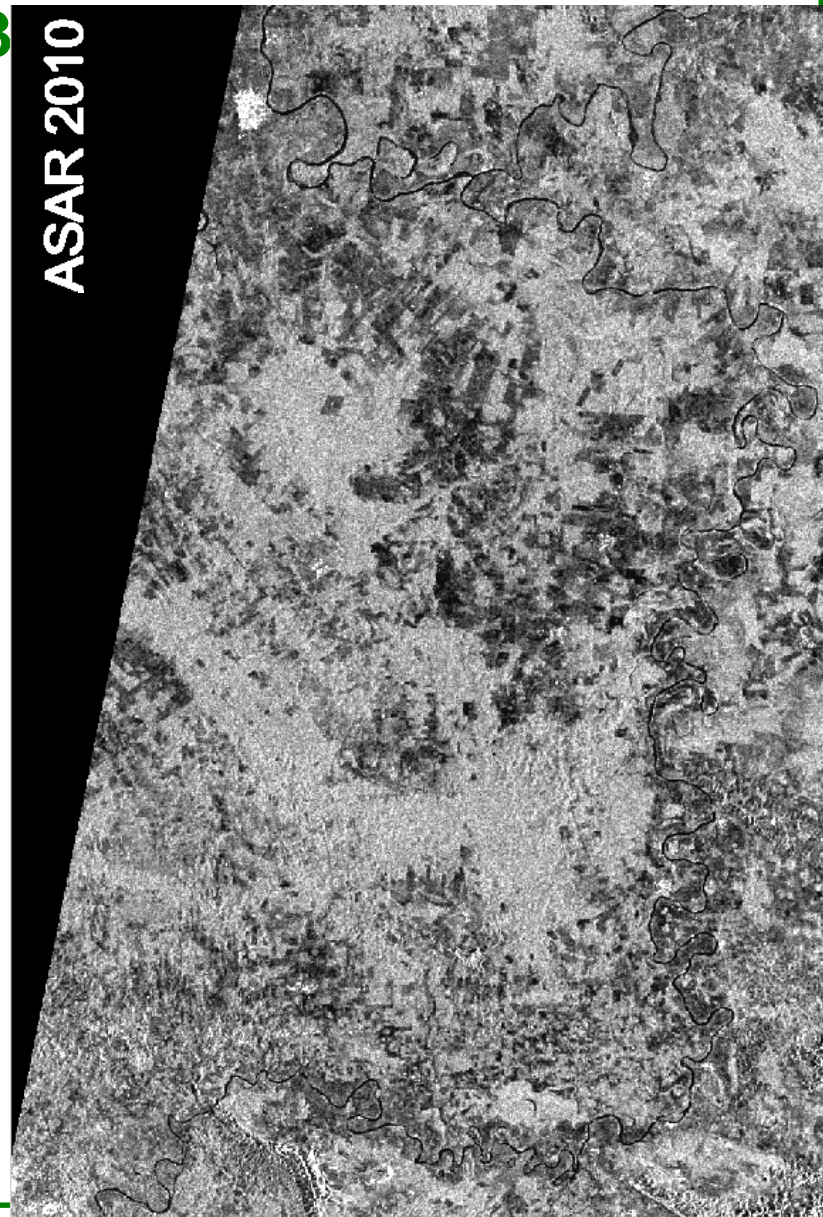
ERS-1 1992



Project area 3

▽ A fast
changing
environment

ASAR 2010

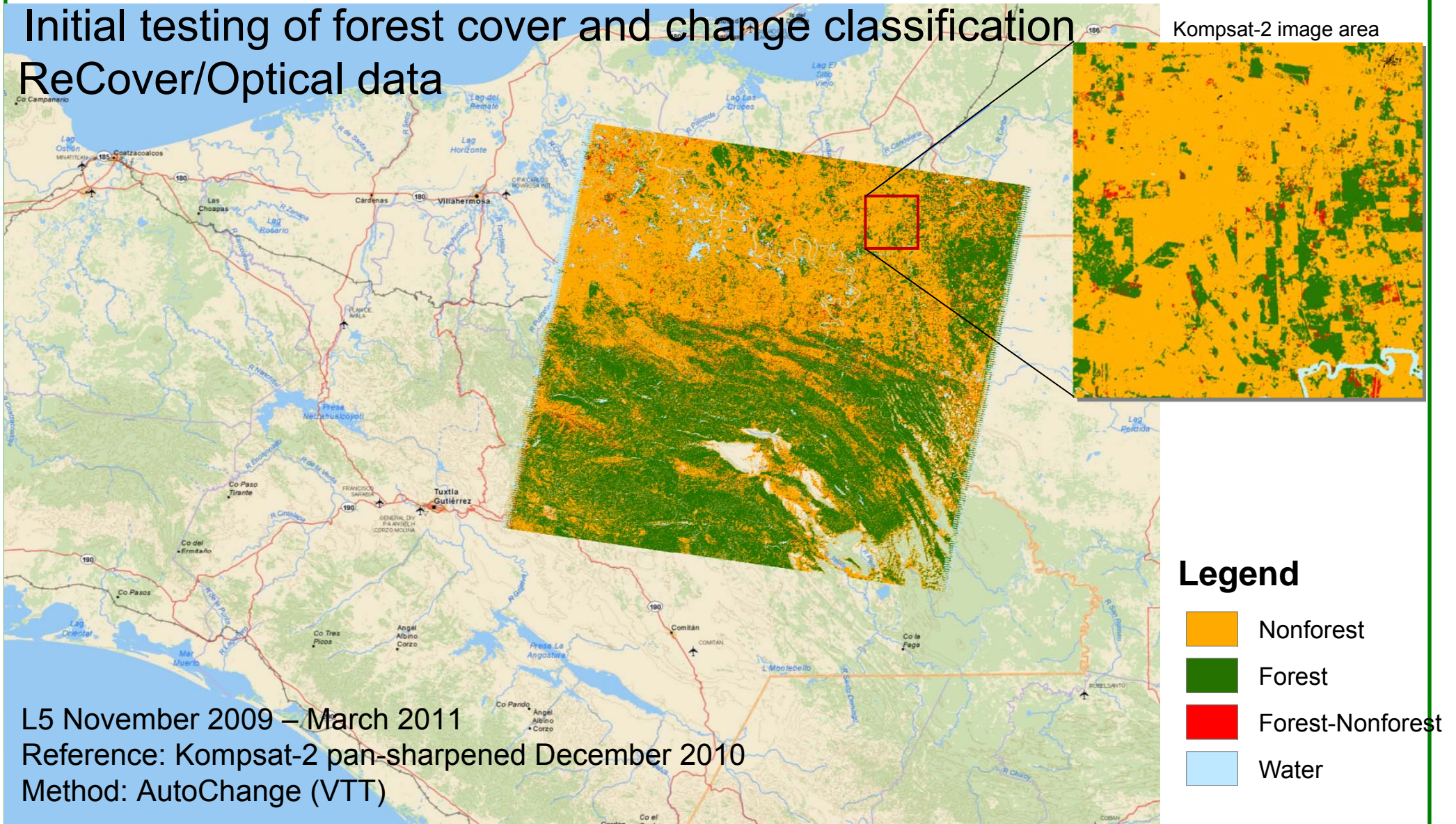


ALOS

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Initial testing of forest cover and change classification ReCover/Optical data

Kompsat-2 image area



Landsat 5 TM, 3 km by 3 km



L5 November 2009



L5 March 2011

Landsat 5 TM, 3 km by 3 km



Komsat-2 pan-sharpened December 2010

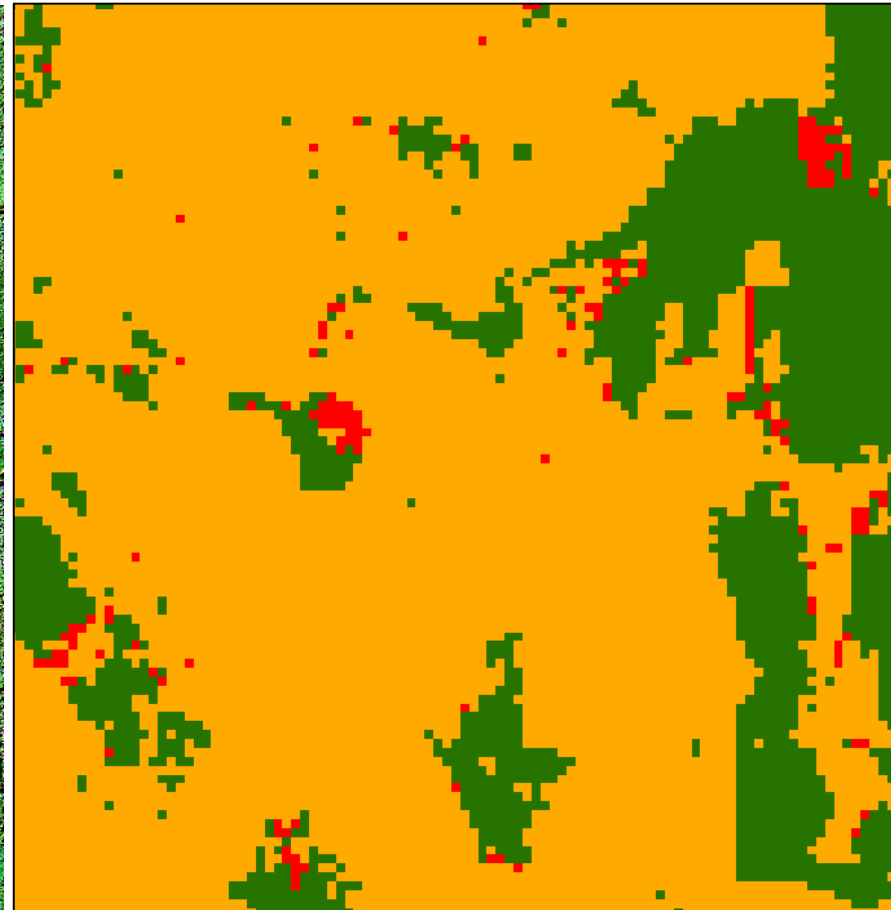


L5 March 2011

Change classification from Landsat 5 data Nov 2009 – March 2011 area 3km by 3km



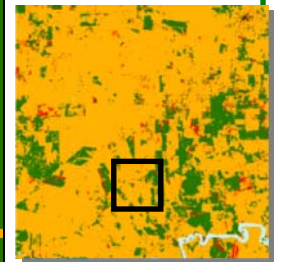
Komsat-2 pan-sharpened December 2010



L5 November 2009 – March 2011

Legend

- Nonforest
- Forest
- Forest-Nonforest
- Water



Project objectives in K&C Phase 3

Objectives:

- 1.to estimate on a semi-annual basis the change in the amount of forest biomass over a regional area in support of techniques aiming at REDD monitoring
- 2.to demonstrate the ability of ALOS/PALSAR and ALOS-2/PALSAR-2 sensors to map a predefined set of forest degradation types, and
- 3.to evaluate the capability of L-band radar in mapping forest types over nation-wide areas.

Objective 1 directly supports **C**arbon cycle science.

Objectives 2 and 3 support International **C**onventions .

Objective 3 (and 2) may also support Environmental **C**onservation.

Project schedule

- ▽ Spring 2012: the first iteration of forest cover type map of Chiapas + ground data support to JAXA
- ▽ Spring 2013:
 - ↓ Multi-year forest cover type maps of Chiapas + extension to whole Mexico
 - ↓ Forest biomass maps of selected study sites
- ▽ Spring 2014:
 - ↓ Forest cover type map 2013 with ALOS 2 data if the schedule of the PALSAR 2 mosaic 2013 allows
 - ↓ Forest degradation map of a selected study site in Chiapas

Support to JAXA's global forest mapping effort

- Validation of JAXA-produced forest cover map against forest cover maps produced by project ReCover in Chiapas province in Mexico using optical EO data:
 - Wall-to-wall maps at Spot-Landsat resolution
 - Sample locations at VHR resolution
- Validation of JAXA-produced forest biomass maps against ground plot data

Ground truth data to be shared with JAXA:

- Ground plot data (see e-mail exchange 31.8.-1.9.2011)

Deliverables

- ~ estimates of accuracy of JAXA forest cover mosaics from years coinciding with those VHR optical images that are available in ReCover project in Mexico,
- ~ forest cover type maps, based on 25-m HH-HV mosaics of PALSAR data, and their validation reports,
- ~ sample forest biomass maps for the intensive study site(s) based on PALSAR scenes from the AUIG system,
- ~ sample forest degradation maps for the intensive study site(s), and
- ~ report on method development in 1) wide-area forest mapping with 25-m mosaic data, and 2) detailed forest mapping within the intensive study sites.