



*System for Monitoring Tropical Rainforest
-Initiative for Improving Forest Governance- JICA & JAXA
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PNG NFMS Status and Gap & Expectation to Timely Ready-to-Use Satellite Data

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1. Current State of Forest in PNG

Land Area	46.2 million ha	
Forest	37.3 million ha	<ul style="list-style-type: none"> - Forest cover 80%. Dominantly natural forest. - 40% of forest subject to human activities. - PNG has reported 38.2 million as at 1975 to FAO FRAs.
Population	7.3 million	Grown at 3.1% per year since 2000.

Source: (1) PNGFA/JICA Forest Base-map 2012, (2) PNGFA/ UN-REDD/FAO Collect Earth Analysis 2013, (3) FAO FRAs, and (4) 2011 PNG Census.

- **‘Degradation of forest’ is occurring**
 - ✓ to be watched by National Forest Monitoring System on logging operation, shifting cultivation, fire and others.
- Total of 75 Special Agriculture & Business Leases Licenses
 - ✓ 1 goes, 30 to be cancelled, 11 to be suspended, 33 to be further scrutinized.

Source: http://lands.gov.pg/News/News%20Articles/Sir_Manasupe_Commends_SABL_TaskForce.html

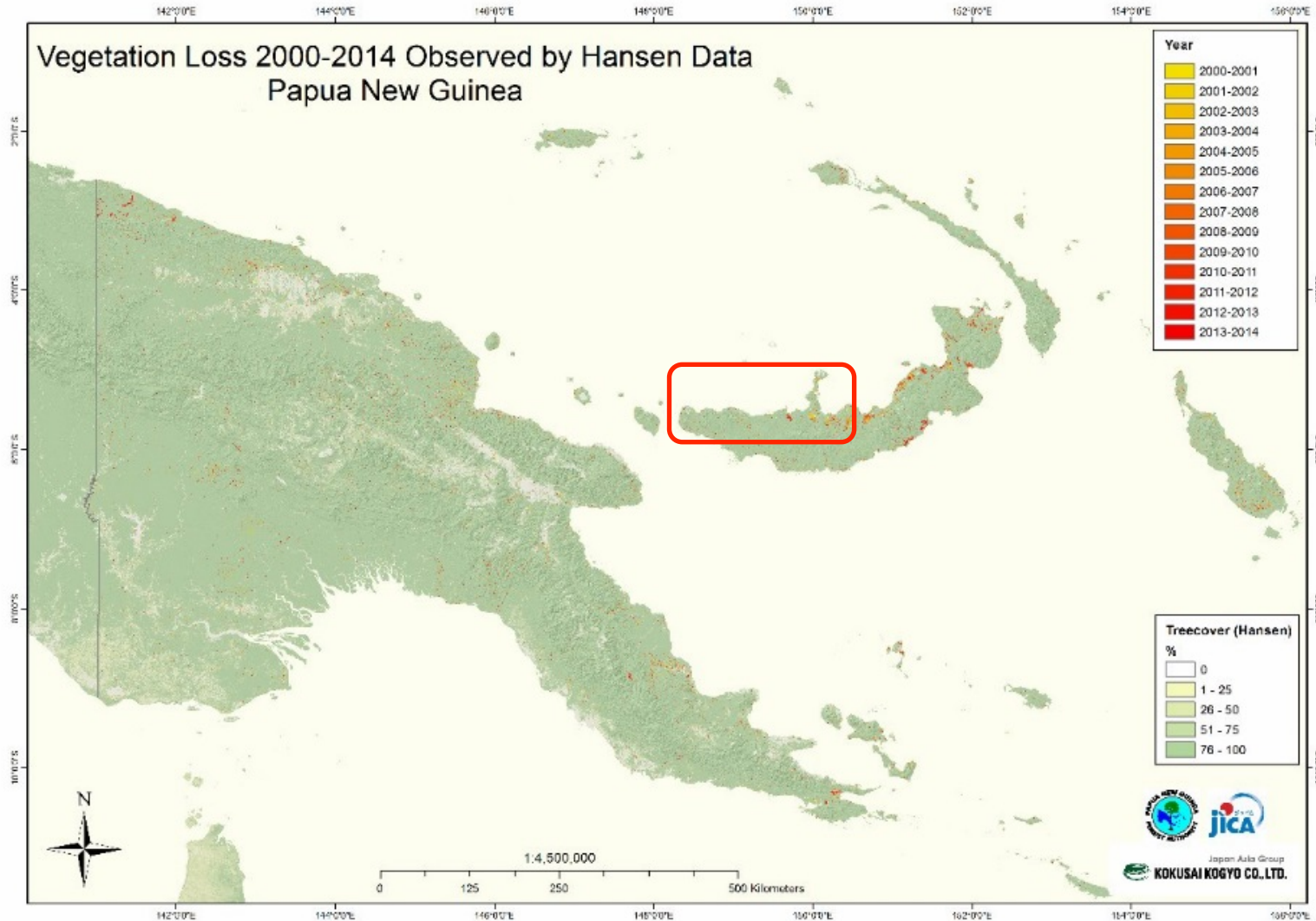
- **Potential of large scale land clearance (including Deforestation) still exists. => PNG is on fringe of High Forest Countries.**





1. Current State of Forest in PNG (2)

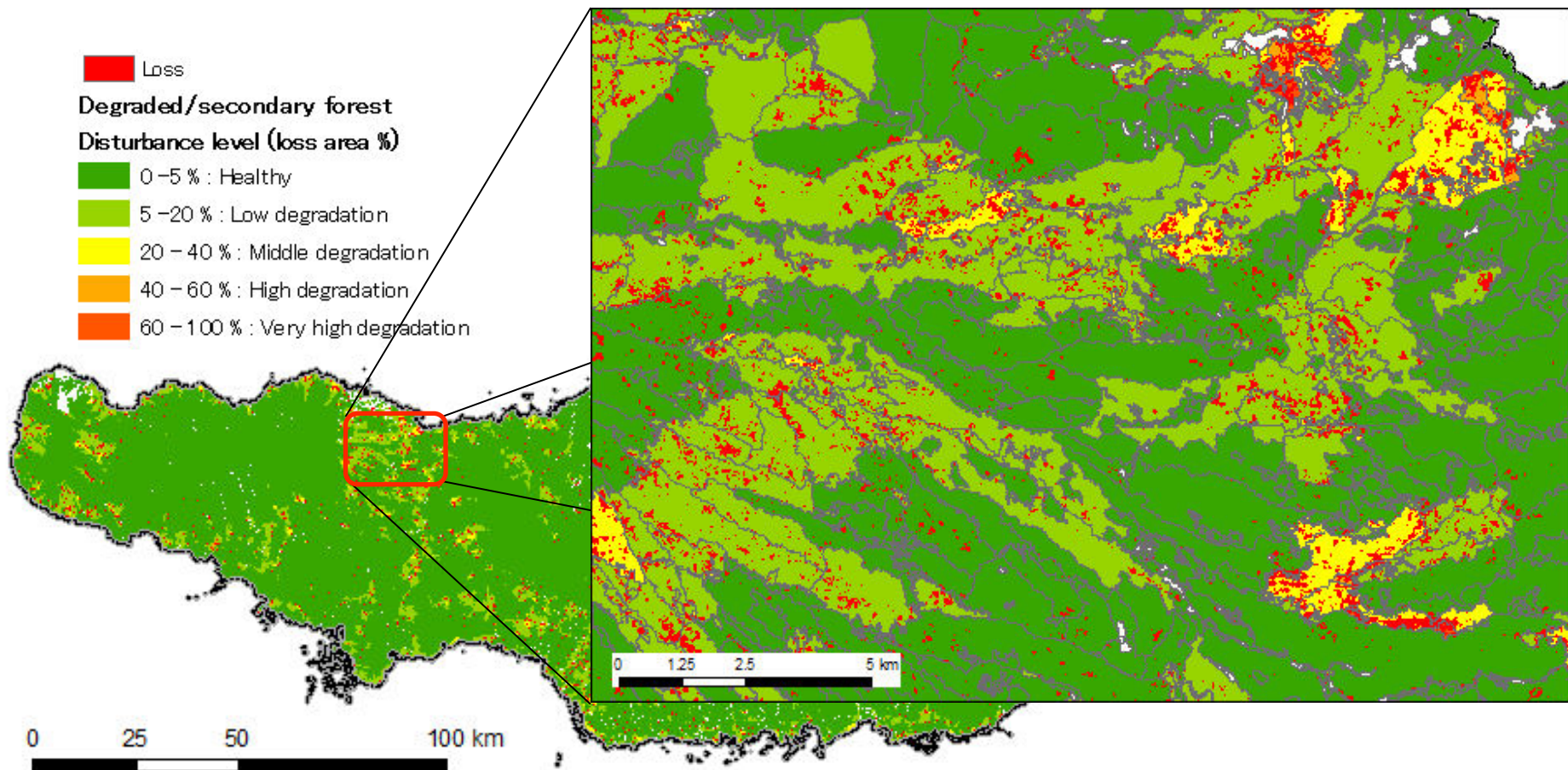
Forest disturbance observed by Hansen-Loss Data





1. Current State of Forest in PNG (2)

Forest disturbance observed by Hansen-Loss Data



Status of REDD+ NFMS development

Main components for REDD+ National Forest Monitoring System

	PNG FRIMS	Collect Earth	Terra-PNG
Developed and Operated by	JICA/ PNGFA (Forest Resource Information Management System)	UN-REDD/FAO/ PNGFA	Gov. Brazil, FAO/ OCCD/ PNGFA
Features and Focus	Main GIS Database for PNGFA to manage forest resource & timber harvesting operations	<ul style="list-style-type: none"> • Point based sampling • 25,279 tracts (points) over PNG 	<ul style="list-style-type: none"> • Wall – Wall mapping • Automated polygon delineation
Incorporate data from	RS, Logging companies, licensing, field officers, etc.	RS through Google Earth Engine	RS (Remote Sensing)
Data processed by	In-house	Flexible to feed any layers	In-house
Update Trigger	Annual Logging Plan	Flexible, mostly 'Annual' Greenest Pixel	Flexible, mostly 'Annual' Greenest Pixel
Status	Base-map 2012 done. Detailed upgrading in two pilot provinces on-going.	2013 analysis done. Historical change to 1990 on-going.	Preliminary work with simple forest class on-going.

Extracts from these and other components will be made publicly accessible from a REDD+ Web Portal site operated by OCCD (PNG Office of Climate Change and Development), soon.

15/12/15



3. Gap and **expectation**

Needs for timely and ready-to-use satellite data

- **Despite the availability of processed data..**
 - Institutional and human capacities in PNG are largely stretched already
- **Newly Developed System update**
 - Constraints by an yearly update cycle of input-data
 - In-coming new RS data are heavily relying on optical sensor (i.e. ‘Annual’ Greenest Pixel from LANDSAT)
- **Remote/Rural areas**
 - 87 % of the population are located
 - Forest faces various pressures (agriculture, logging) to meet local needs

Under these circumstances

- there is a **GAP** between current efforts made and needs necessary for securing the interest of local communities
- This gap should be filled with objectively verifiable (**sound-science based**) **data**
 - ✓ **readily useable at a national level,**
 - ✓ **more frequent than annual update, and**
 - ✓ **not affected by cloud-prone climate.**

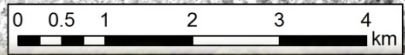


Forest Clearance Licensed Area

PALSAR2007: 1/35,000 level



No forest clearance can be seen in PALSAR2007



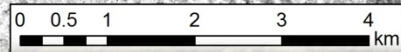


Forest Clearance Licensed Area

PALSAR2010: 1/35,000 level



Forest Clearance happened between 2007 and 2010



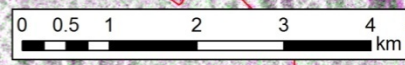
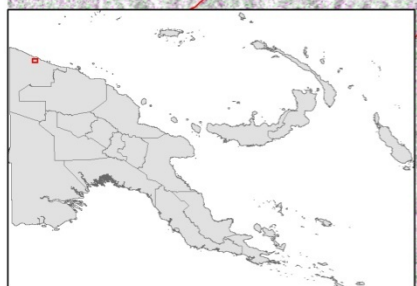


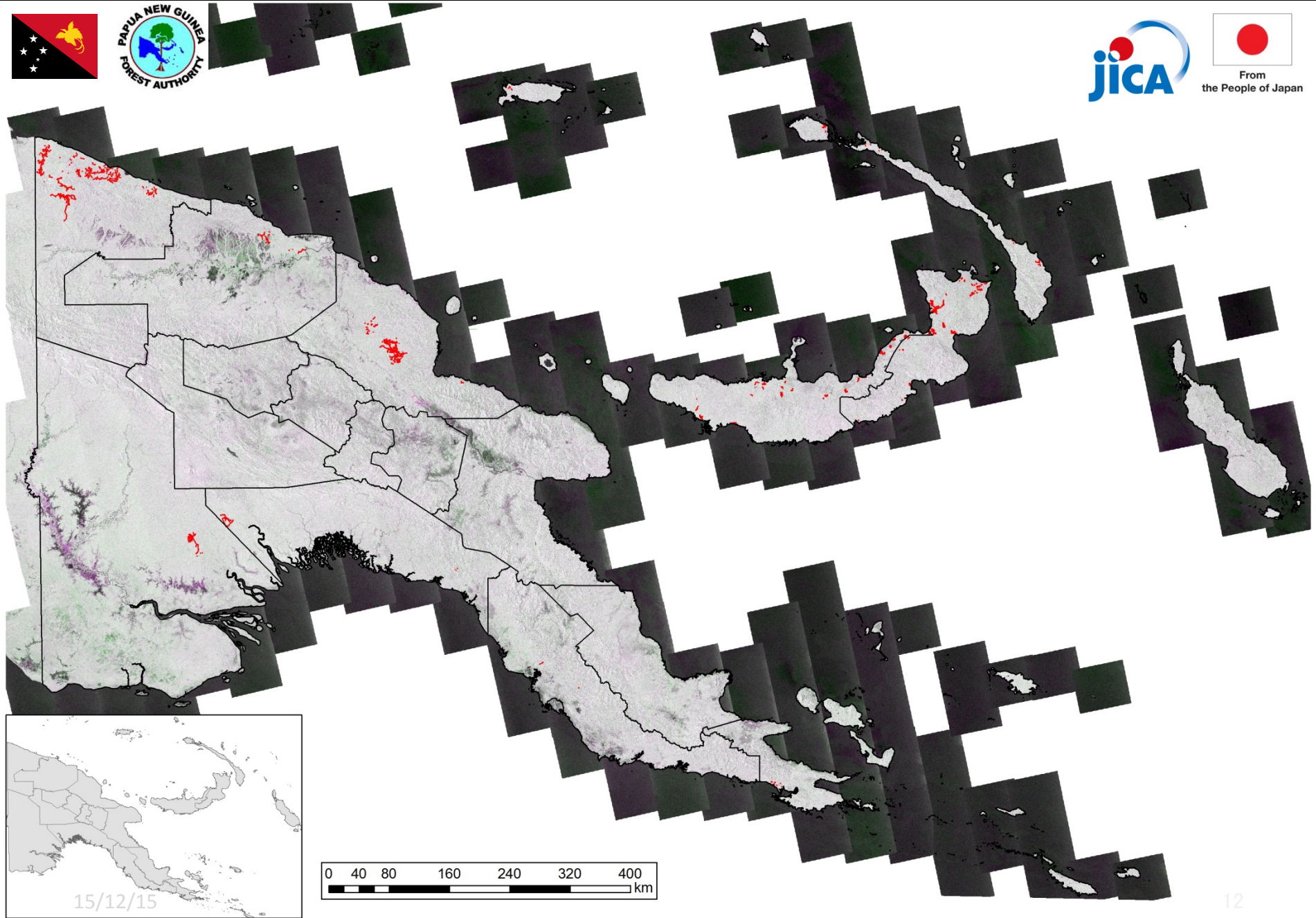
Forest Clearance Change Analysis by PALSAR(HV)

PALSAR Change can monitor forest clearance



We see PALSAR Change is a powerful tool.







4. Conclusion

1. The collaborative **initiative** proposed by **JAXA and JICA** is welcome.
2. The timely provision/ update of the processed, thus **ready to use, and cloud free data from ALOS-2** is to fill the gap of the PNG National Forest Monitoring System.
Imageries product that are:
 - ✓ Provided **more frequently than annual,**
 - ✓ Ready-to-use: Processed for slope adjustment, ortho-angle-rectification, and difference analysis between two points of time
3. The data will be likely **incorporated and used by all three components of NFMS:**
 - ✓ **PNG-FRIMS** of PNGFA
 - ✓ **Collect Earth analysis** in PNGFA
 - ✓ **Terra-PNG** of OCCD
4. The output extract must be fed to the **PNG REDD+ Web Portal Site** and potentially **PNG REDD+ Safeguard Information System** (not yet emerged) as well.



Thank you!
Arigatou Gozaimasu.

**With acknowledgement to
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3-B: Monitoring with Local Office (PNGFA)

