



# National MRV System

## Social and Environment Safeguards Workshop

Workshop Document

11 September 2013, Grand Papua Hotel



Office of Climate Change and Development  
Papua New Guinea

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# Presentation Outline

1. **COP Decision**
2. **UN-REDD National Programme**
3. **National Monitoring System**



## COP Decisions

COP 11, 2005

RED introduced to UNFCCC by PNG and Costa Rica

COP 13, 2007

REDD+ included in Bali Action Plan

COP 15, 2009

REDD+ financing and methodological issues part of Copenhagen Accord

COP 16, 2010

**Section C:** “Policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries” → REDD+

- National forest monitoring system for the **monitoring of REDD+ activities**
- REDD+ safeguards should be promoted and supported (paragraph 69)
- Countries should develop a system for providing information on how the REDD+ safeguards are being addressed and respected (paragraph 71(d))

**Annex I:** Guidance and safeguards for REDD+

## COP Decisions

**COP 17, Durban 2011**

**Safeguards information systems and modalities relating to reference levels**

**COP 18, Doha 2012**

- **SBSTA focused on modalities for national forest monitoring systems and measurement, reporting and verification (MRV)**
- **+ focus on financing of REDD+**

**COP 19, Warsaw 2013**



# REDD+ Safeguards Cancun Agreements

The seven Cancun Agreements (Decision 1/CP.16) REDD+ safeguards

- a) Consistent with the objectives of NFPs and international agreements
- b) Transparent and effective national forest governance structures
- c) Respect for the knowledge and rights of indigenous peoples and local communities
- d) The full and effective participation of relevant stakeholders
- e) Consistent with the conservation of natural forests and biological diversity
- f) Actions to address the risks of reversals (permanence)
- g) Actions to reduce displacement of emissions (leakage)

**How can forest monitoring help [*promote/support/address/respect*] the REDD+ safeguards?**

A dense forest scene featuring a variety of tree ferns in the foreground, with taller, slender trees in the background. The foliage is lush and green, with some brownish fronds on the ferns. The text 'UN-REDD National Programme' is overlaid on a semi-transparent grey banner at the bottom.

# UN-REDD National Programme

# Objectives of PNG's UN-REDD National Programme



- Support the Government of PNG to **progress its activities towards REDD-plus readiness**
- **Complement existing efforts to establish a REDD-plus framework** in PNG, including efforts from GoPNG, civil society, the private sector and development partners
- Focus on the **refinement and implementation of a full MRV roadmap** for PNG that supports PNG's overall REDD framework and readiness efforts

## PNG's UN-REDD NPD has been in development since 2009

### PNG's UN-REDD NPD formulation and validation process

2009



- Joint Programme proposal formulation begins
- Presented to Policy Board

2010



- GoPNG opts to review Proposal (National Programme Document) to align funding request with country needs
- Agreement to focus NPD on developing an MRV system for PNG
- NPD submitted to Policy Board

2011

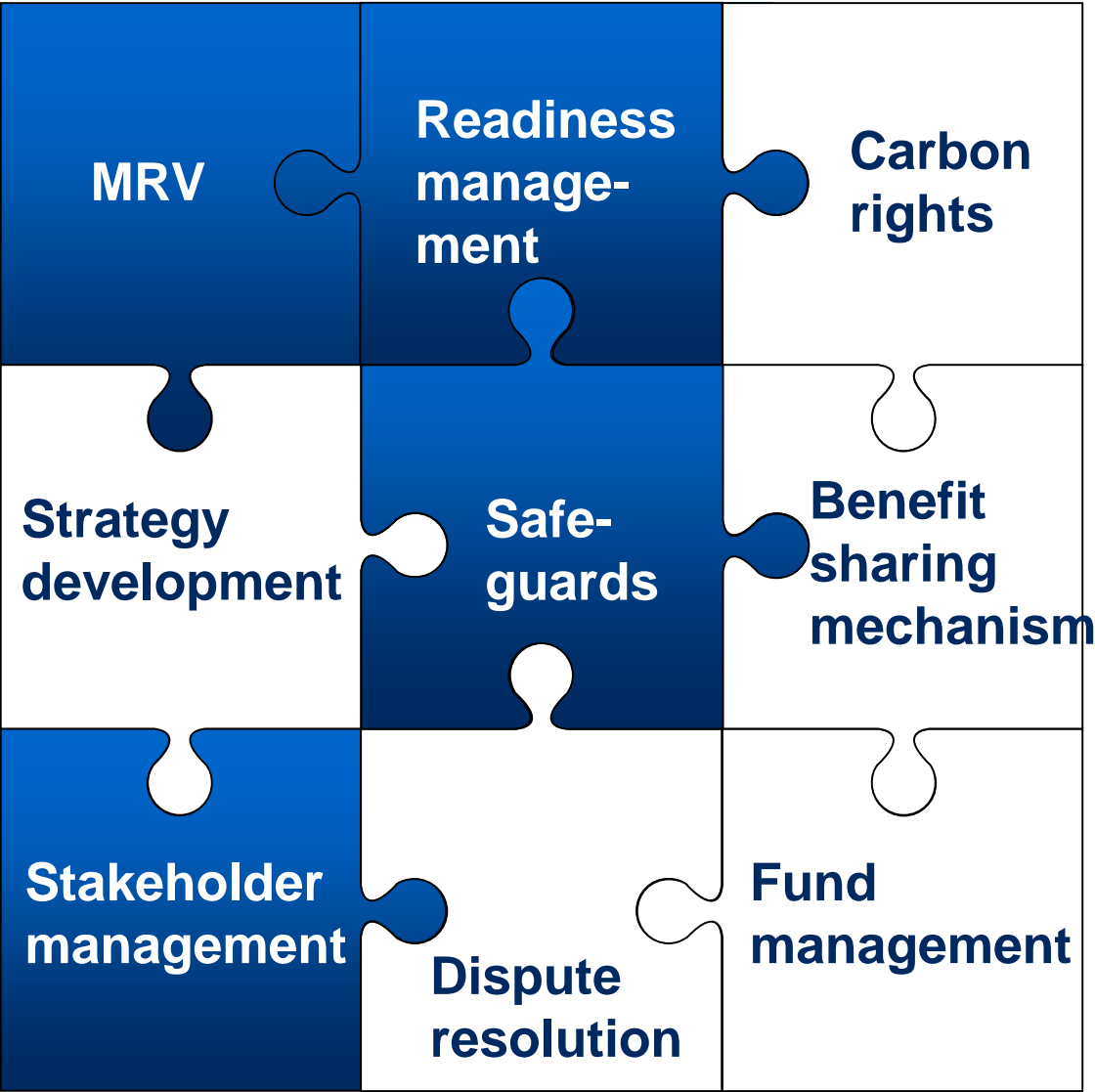


- NPD conditionally approved by Policy Board
- OCCD revises Proposal and launches 1-month review period
- Validation workshop in Feb 2011 finalises NPD with stakeholder inputs incorporated
- **Policy Board approves PNG's UN-REDD NPD on 28 Apr 2011**



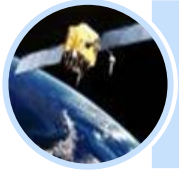









# The UN-REDD National Programme is just one contribution to PNG's readiness efforts

 UN-REDD



# PNG's UN-REDD NP is expected to deliver on five outcomes

Outcome	Lead UN Agency	Potential Implementing Partners
 <p><b>1. Readiness Management Arrangements in Place</b></p>		<ul style="list-style-type: none"> <li>▪ DNPM</li> <li>▪ OCCD</li> </ul>
 <p><b>2. National MRV System Developed</b></p>		<ul style="list-style-type: none"> <li>▪ DEC</li> <li>▪ UPNG</li> <li>▪ PNGFA</li> <li>▪ DAL</li> <li>▪ OCCD</li> <li>▪ DLPP</li> <li>▪ UNITECH</li> </ul>
 <p><b>3. Historical Drivers of Deforestation Assessed</b></p>		<ul style="list-style-type: none"> <li>▪ PNGFA</li> <li>▪ UPNG</li> <li>▪ DAL</li> <li>▪ OCCD</li> </ul>
 <p><b>4. Monitoring of Abatement Concepts Supported</b></p>		<ul style="list-style-type: none"> <li>▪ PNGFA</li> <li>▪ OCCD</li> </ul>
 <p><b>5. Framework for Stakeholder Engagement Processes in place</b></p>		<ul style="list-style-type: none"> <li>▪ OCCD</li> </ul>

# Each outcome fits into a part of PNG's climate change priorities

## Priorities for 2011

## Relevant UN-REDD NP Outcome



**REDD+**

- **REDD+ pilots** for key abatement levers
- REDD+ readiness, e.g., **benefit sharing approach**

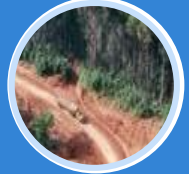


**1. Readiness Management Arrangements in Place**



**Low-carbon growth**

- **Rural electrification**, e.g., new micro hydro plants
- **Energy efficiency** measures
- **Renewable Energy**, e.g., geothermal



**3. Historical Drivers of Deforestation Assessed**



**Adaptation**

- **Mangrove** planting
- **Coastal Early Warning System**
- **Food security and agricultural yield changes**



**4. Monitoring of Abatement Concepts Supported**



**MRV & Cons.**

- **MRV System**
- **Consultation, education, awareness**
- **Second National Communication**



**2. National MRV System Developed**

**Others**

- A number of priorities, e.g.,
- Securing **interim funding** of USD 50 million
  - Draft **Climate Change Act**

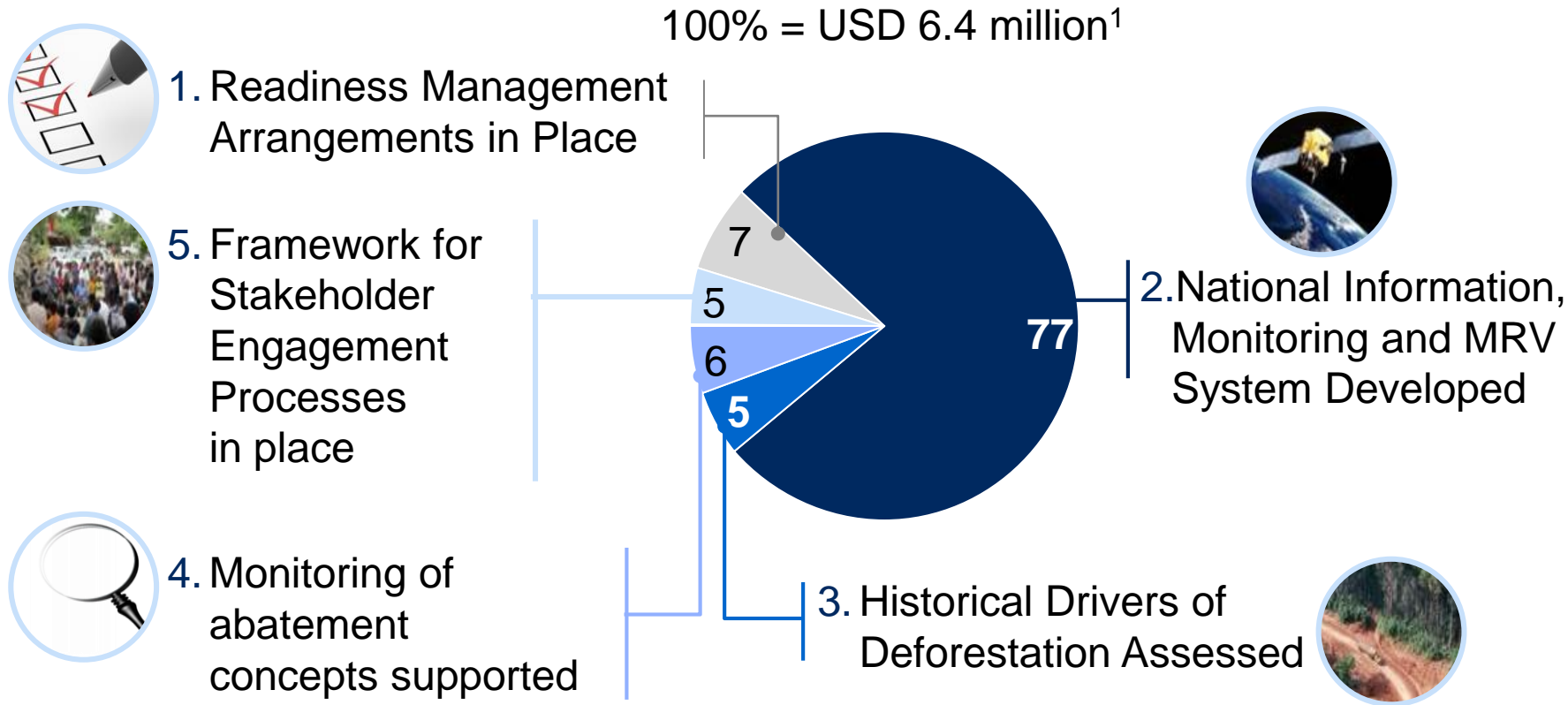


**5. Framework for Stakeholder Engagement Processes in place**

# The National Programme allocates funding to 5 outcomes

USD Millions

## Total Agency contribution by outcome



<sup>1</sup> Includes 7% Agency indirect support costs



# National Monitoring System

# Towards REDD+: the Papua New Guinea efforts in building its National Forest Monitoring System



# HIGHLIGHTS:



• PNG is realizing its “National Forest Monitoring System” as a system that will address all the information, monitoring and MRV needs under the Convention;



• The National Forest Monitoring System will be developed with a multiple purposes approach, e.g. forests, land use, land tenure, food security, biodiversity and rural livelihoods;



• The National Forest Monitoring System is a long-term effort that will be developed with a clear and strong institutional base;



• The design and implementation of the National Forest Monitoring System is including a full and effective participation and capacity development of all relevant institutions and stakeholders;



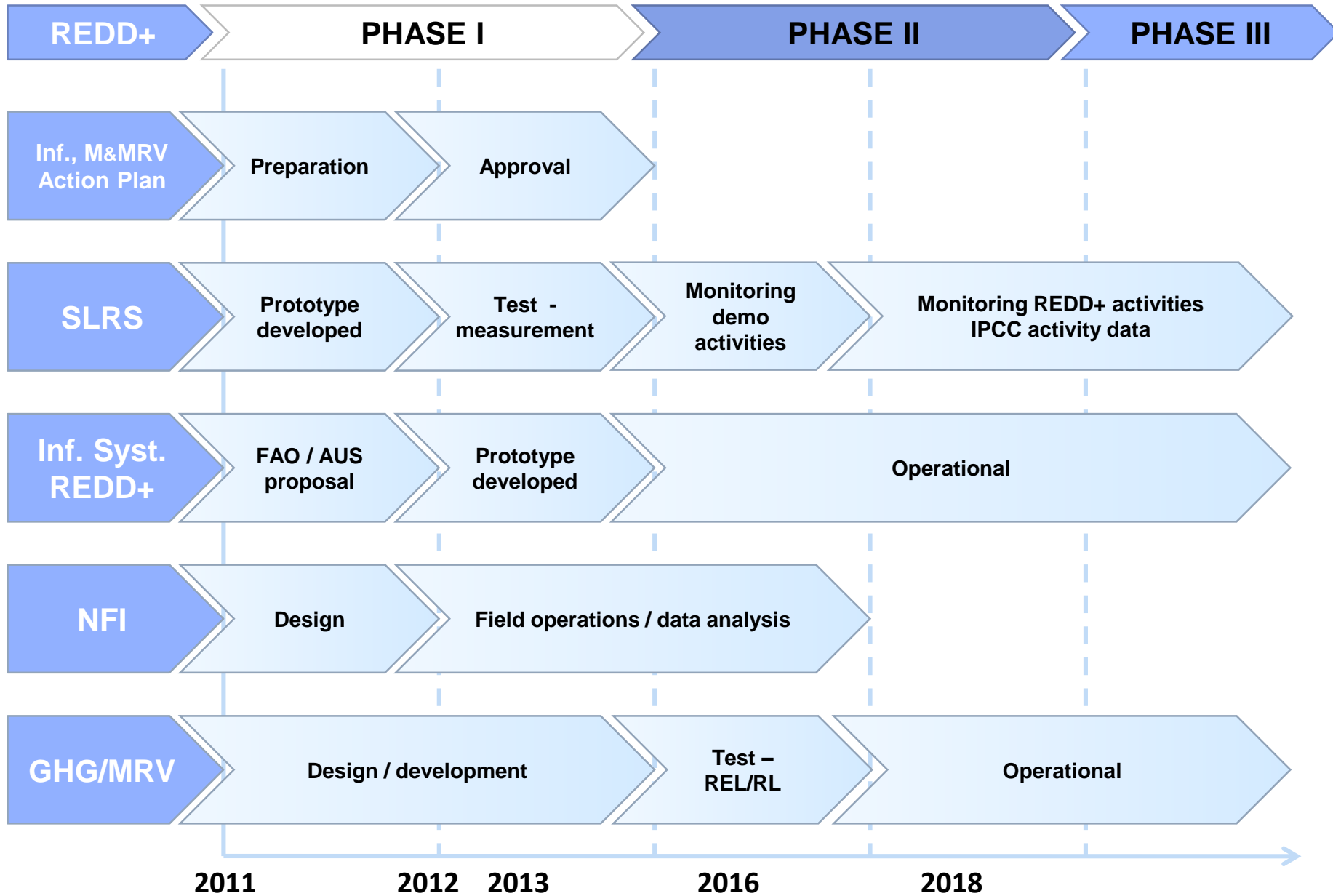
• The National Forest Monitoring System will provide free access, transparency and timely delivery of all relevant data and information to all relevant stakeholders;



• The National Forest Monitoring System is currently under development with contributions and supports from UN-REDD Programme, AusAID (Australia), and JICA (Japan).

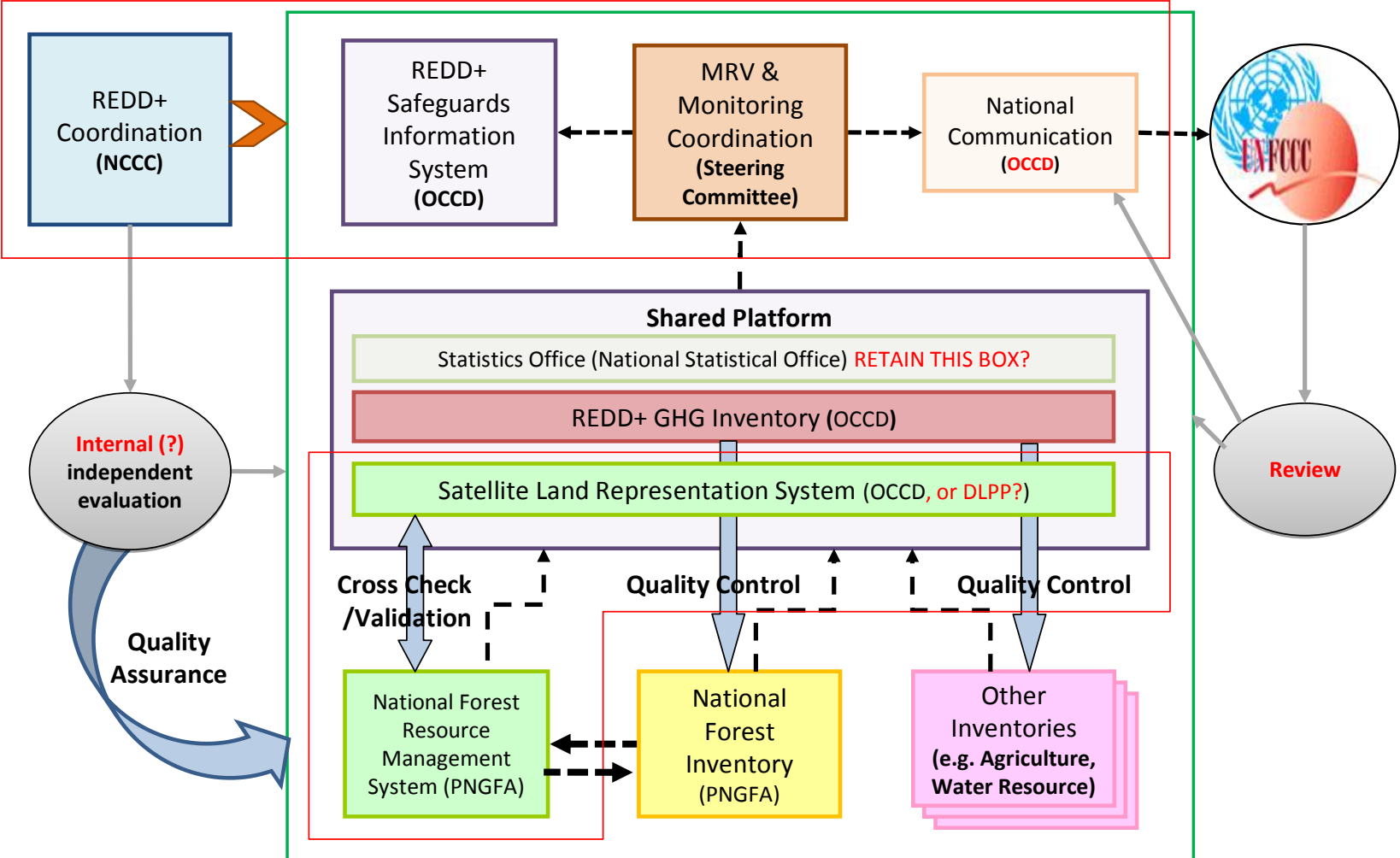


# PNG INFORMATION, MONITORING & MRV ROAD MAP





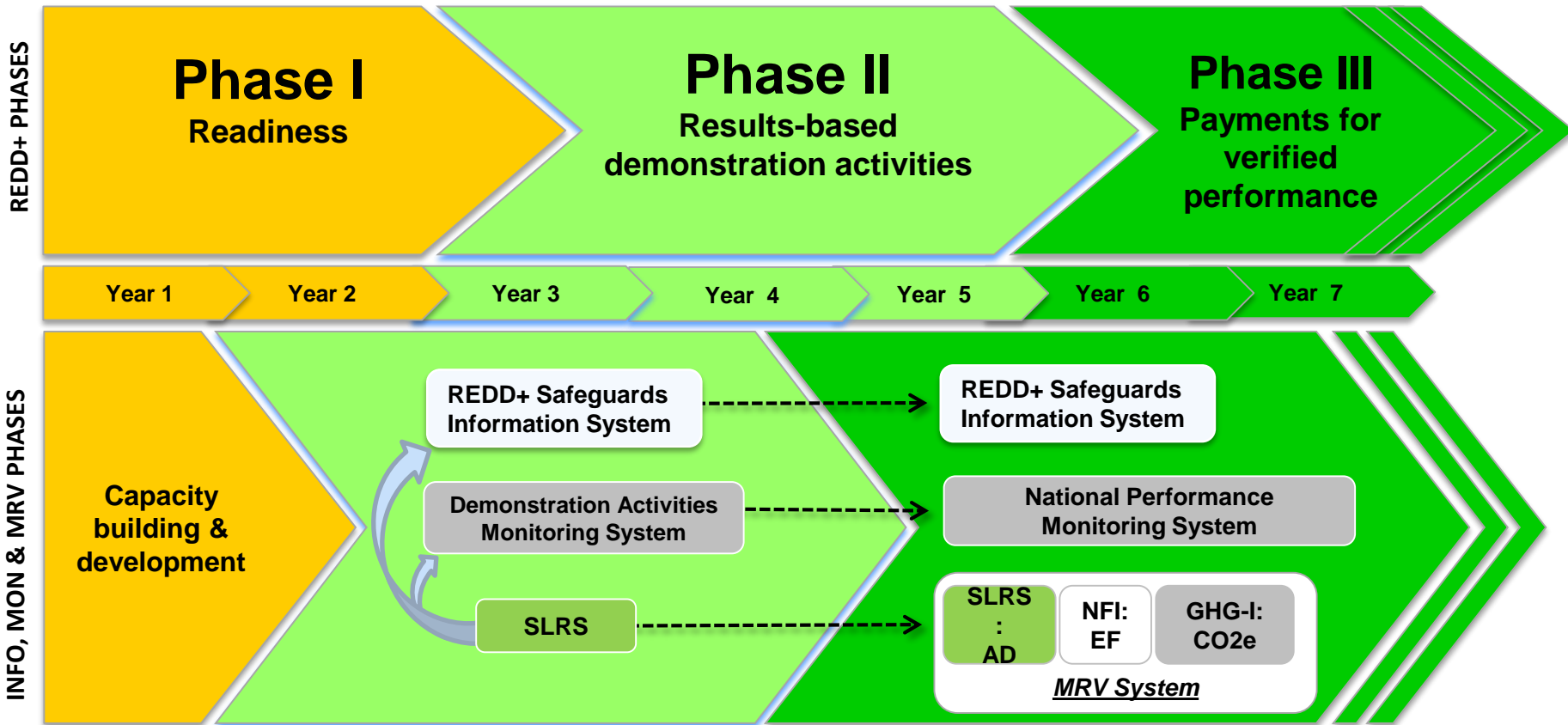
# INSTITUTIONAL ARRANGEMENT:



REDD+ Phase 2      - - - - -> Information flow  
 REDD+ Phase 3      - - - - -> External coordination      > Overall coordination



# REDD+ PHASES & NFMS ELEMENTS: Bringing it all together



# ONGOING ACTIVITIES:



• **MRV Technical Working Group:** coordinated by OCCD with the participation of all the country relevant stakeholders;



• **NEW 2011 Forest Map:** coordinated by PNG Forest Authority with technical support from JICA. This map will be use as baseline to assess past and future forest changes;



• **1<sup>st</sup> National Forest Inventory:** coordinated by PNG Forest Authority with technical support from UN-REDD. The NFI it will be the key element to assess forest related emission/removal factors



• **1<sup>st</sup> Information, Monitoring & MRV Action Plan:** coordinated by OCCD participation of all relevant country institutions and relevant stakeholders;



• **Prototype for a Satellite Land Monitoring System:** coordinated by OCCD with technical support from UN-REDD and INPE. A team of PNG experts has attended a course in Brazil, the beta version of the prototype with its web-portal have been presented in Durban in COP17



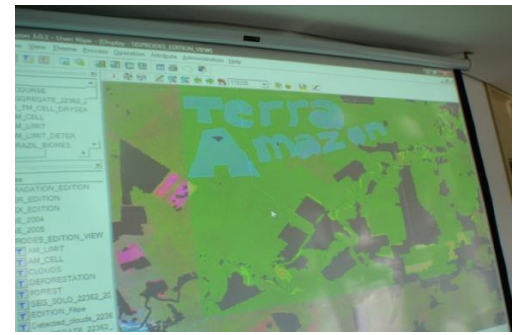
# START-UP PHASE:

## development of a prototype for the National Forest Monitoring System

- **Build on existing national forest monitoring experiences**
- **FAO (UN-REDD) / INPE collaboration**
- **Two components: TerraPapua platform**  
**National forest monitoring WEB-Portal**
- **Combination of open-source database, user interface, tools and algorithms adapted according to country needs**
- **Free-of-charge and supported by analysis and programming teams in Brazil (INPE) and FAO**
- **linkage of information from other technical partners and contributors for analysis and verification.**



# TERRAPAPUA PLATFORM:



- Application of INPE national forest monitoring techniques and satellite image processing to PNG context (TerraAmazon software platform)
- Two weeks training on software utilities at INPE Amazonia, Belem, Brazil (Sept 2011)
- Follow-up and country implementation in FAO-HQ (on going in Rome, 21Nov-2Dec 2011)



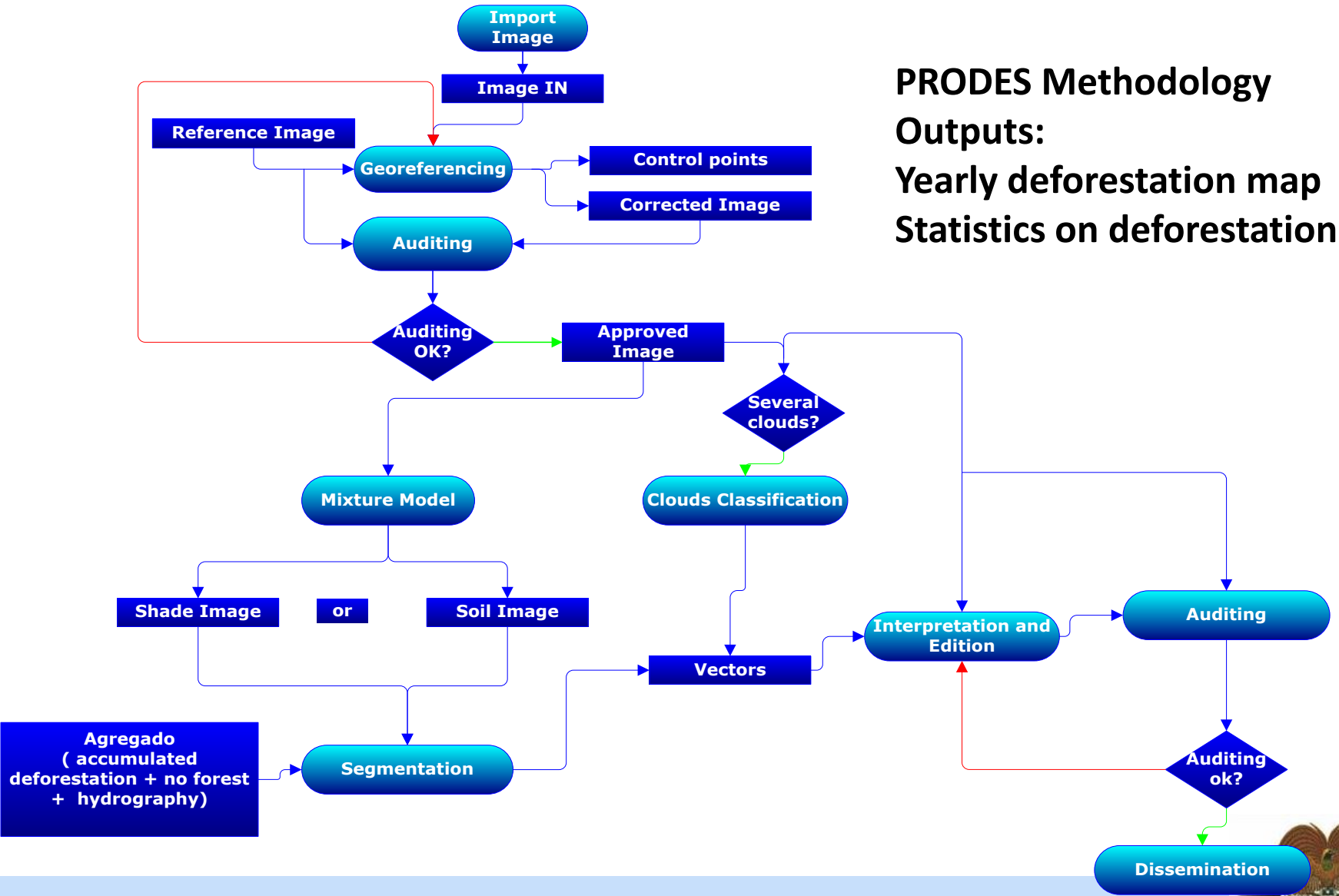
# BUILD ON TERRAAMAZON PLATFORM:



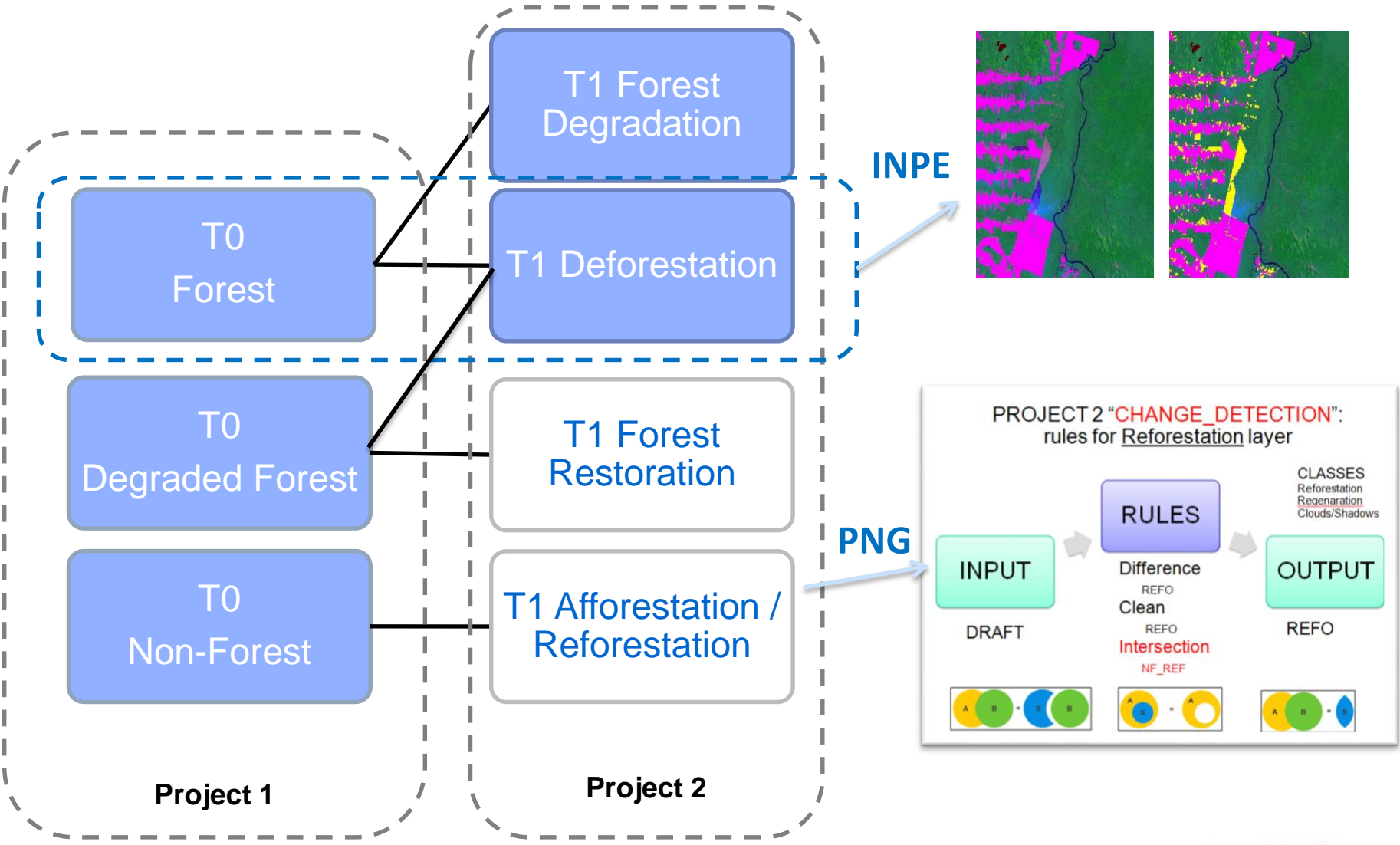
- **RS/GIS software platform designed to be a multi-user editor of geographic vectorial data stored in a unified database**
- **Free of charge (open-source)**
- **Self sustaining system (open to improvements)**
- **Up to 20 concurrent users during the interpretation phase**

# TERRAAMAZON IN BRAZIL:

**PRODES Methodology**  
**Outputs:**  
Yearly deforestation map  
Statistics on deforestation area

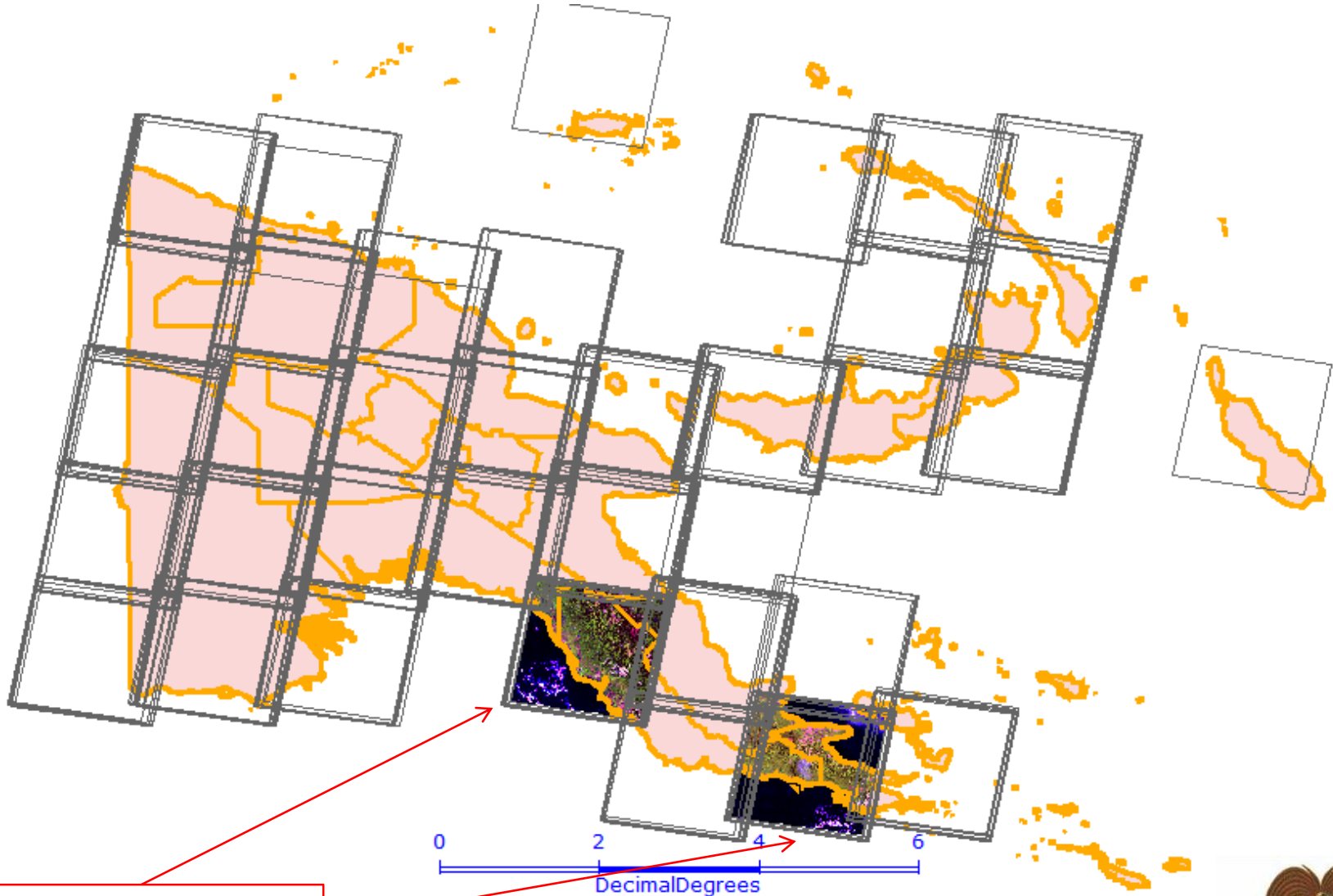


# PNG CONCEPTUAL MODEL:





# TERRA-PAPUA WORKSHOP FAO HQ, 21Nov.–2Dec2011:



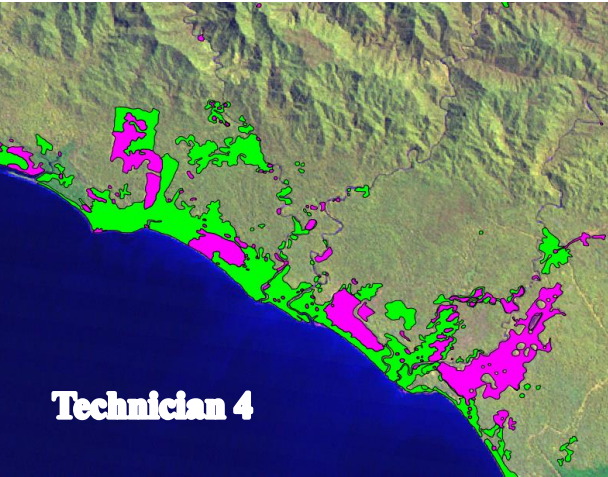
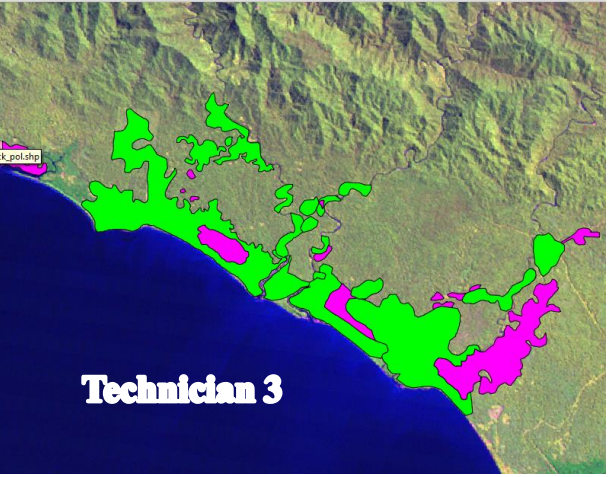
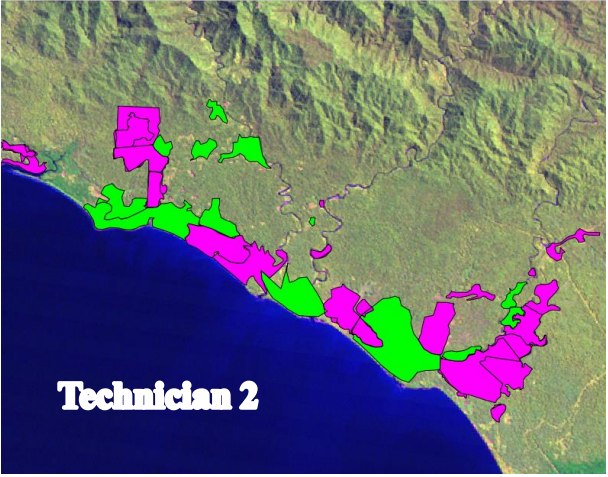
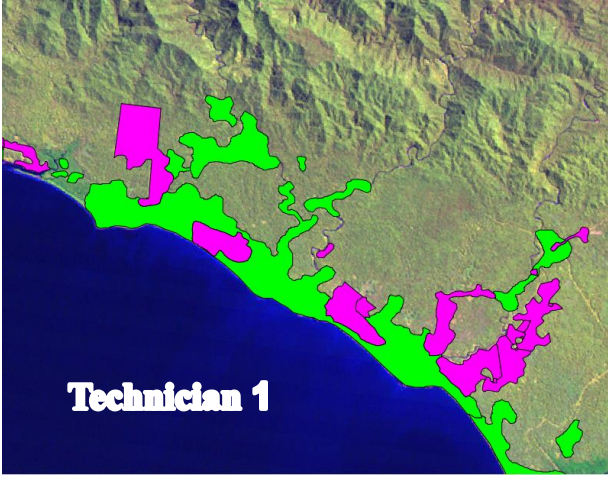
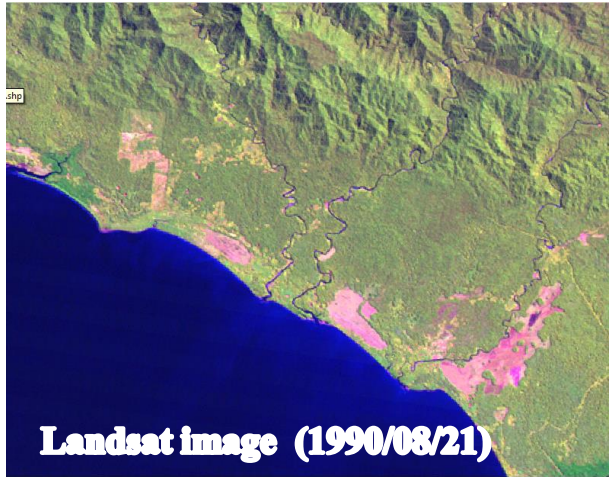
**TEST AREAS**






# TERRA-PAPUA WORKSHOP

## CALIBRATION OF IMAGE INTERPRETATION:

FAO HQ, 21Nov.–2Dec2011



-  CLOUDS/SHADOWS
-  DEGRADED FOREST
-  NON FOREST



# TERRA-PAPUA WORKSHOP MULTI-USER EDITION:

FAO HQ, 21Nov.–2Dec2011

The screenshot displays the TerraAmazon software interface. The main window shows a map of Papua New Guinea with a grid overlay. The map is divided into several colored regions: a large pink area, a yellow area, and two satellite imagery insets (one in the center and one on the right). The interface includes a menu bar (File, Show, View, Theme, Process, Attribute, Administration, Help), a toolbar, and a left-hand panel with layers and themes. The 'Layers' panel shows 'PNG\_change' with sub-layers like AFFORESTATION, CELL, Cen\_veg, CLOUDS\_SHADOW, DEFORESTATION, DEGRADATION, and DEGRADED\_FOREST. The 'Themes' panel shows a list of themes with checkboxes, including CELL, LandsatIndexDEG10, PNG\_box, PNG\_adm1, DRAFT, DEGRADATION, FOREST\_RESTITUTION, REFORESTATION, AFFORESTATION, DEFORESTATION, NON\_FOREST, DEGRADED\_FOREST, Draft\_1\_pol, Lan\_MB\_p095r66\_19890708, Lan\_MB\_p094r67\_19900821, Cen\_veg, Mil\_veg, CLOUDS\_SHADOW, and Lan\_MB\_p096r66\_19900328. A 'Cells Manager' dialog box is open in the foreground, displaying a table of locked cells.

**Cells Manager**

List of locked cells...

	User Name	Cell Oid	Date	Hour
1	Frederick	042038	30/11/2011	16:46:18
2	Frederick	042039	30/11/2011	16:46:18
3	Gewa	042040	30/11/2011	11:35:12
4	Gewa	042041	30/11/2011	11:35:12
5	Mericha	036028	30/11/2011	12:13:12
6	Mericha	037028	30/11/2011	12:13:12
7	Popei	037029	30/11/2011	16:4:8
8	Popei	037030	30/11/2011	16:4:8

Buttons: Help, Unlock Cell, Close

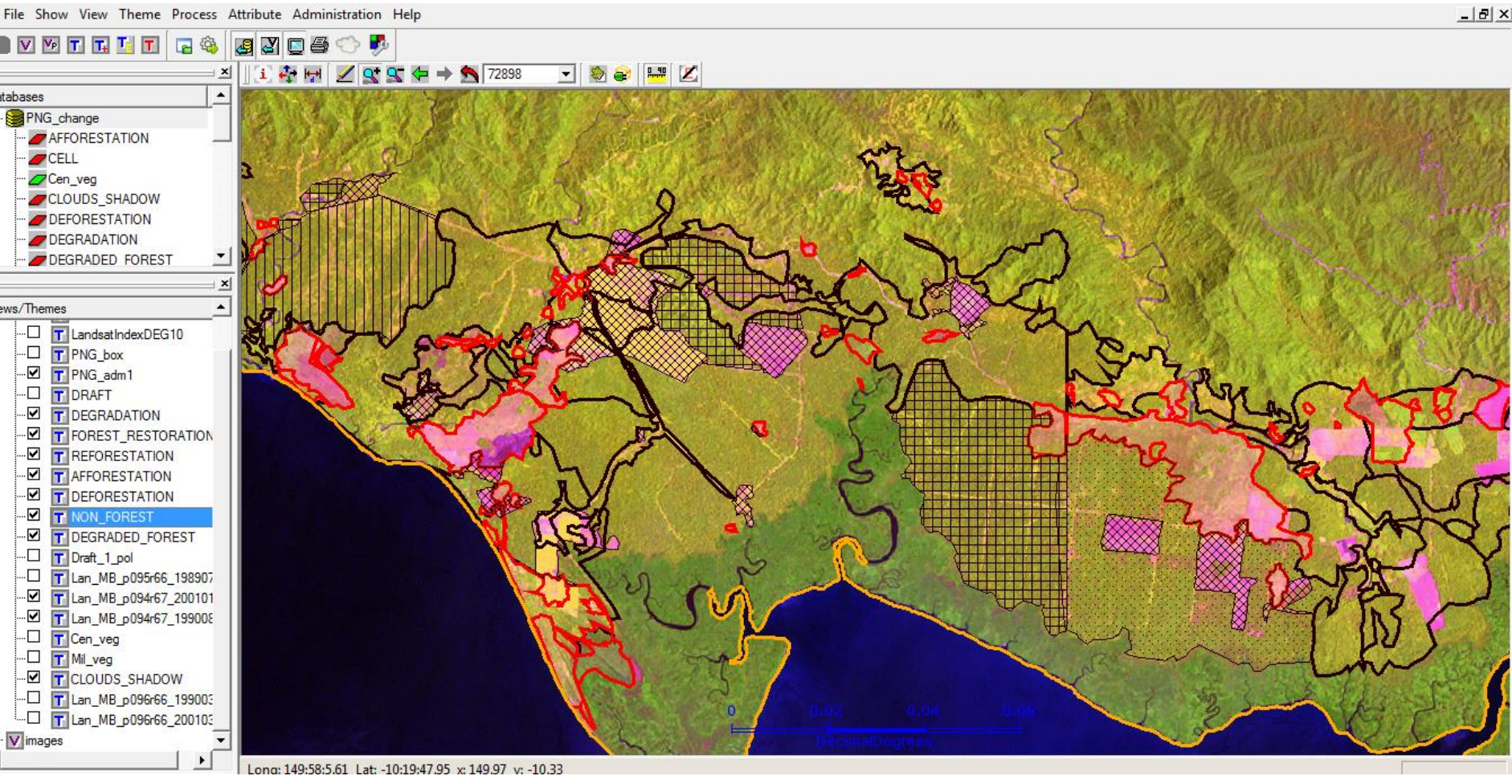
Scale: 0.01 AFFOREST

Decimal Degrees



# TERRA-PAPUA WORKSHOP RESULTS:

FAO HQ, 21Nov.–2Dec2011



# PAPUA NEW GUINEA NATIONAL FOREST MONITORING WEB-PORTAL:

- **Web portal under development through the support of FAO, UN-REDD Programme , expected to be on-line June 2012**
- **Enable the country to follow all the actions related to the implementation of its national REDD+ policies and measures and to communicate its results to the international community (transparent and open data access)**

## **In practice...**

- **Allow any user to interact with the system through a web-interface;**
- **Visualise data; download statistics; visualise information on logging concessions, protected areas, REDD+ activities,....**
- **Allow users to provide feedback on areas of deforestation, etc.**




# PAPUA NEW GUINEA NATIONAL FOREST MONITORING WEB

PNG National Forest Monitoring Portal - Windows Internet Explorer

Secure Search McAfee


PNG National Forest Monitoring Portal



## PNG National Forest Monitoring Portal

2010

Français English



REDD+ Activity

- Deforestation
- Degradation
- Conservation
- Sustainable forest management
- Enhancement

Forestry information

- REDD+ Safeguards
- Forest Management Data

Land use/Land use changes

- Land use map
- Forest land -> Other land use**
- Other land use -> Forest land**

  - Reforestation
  - Afforestation

- Forest land -> Forest land**

  - Selective Logging
  - Fire

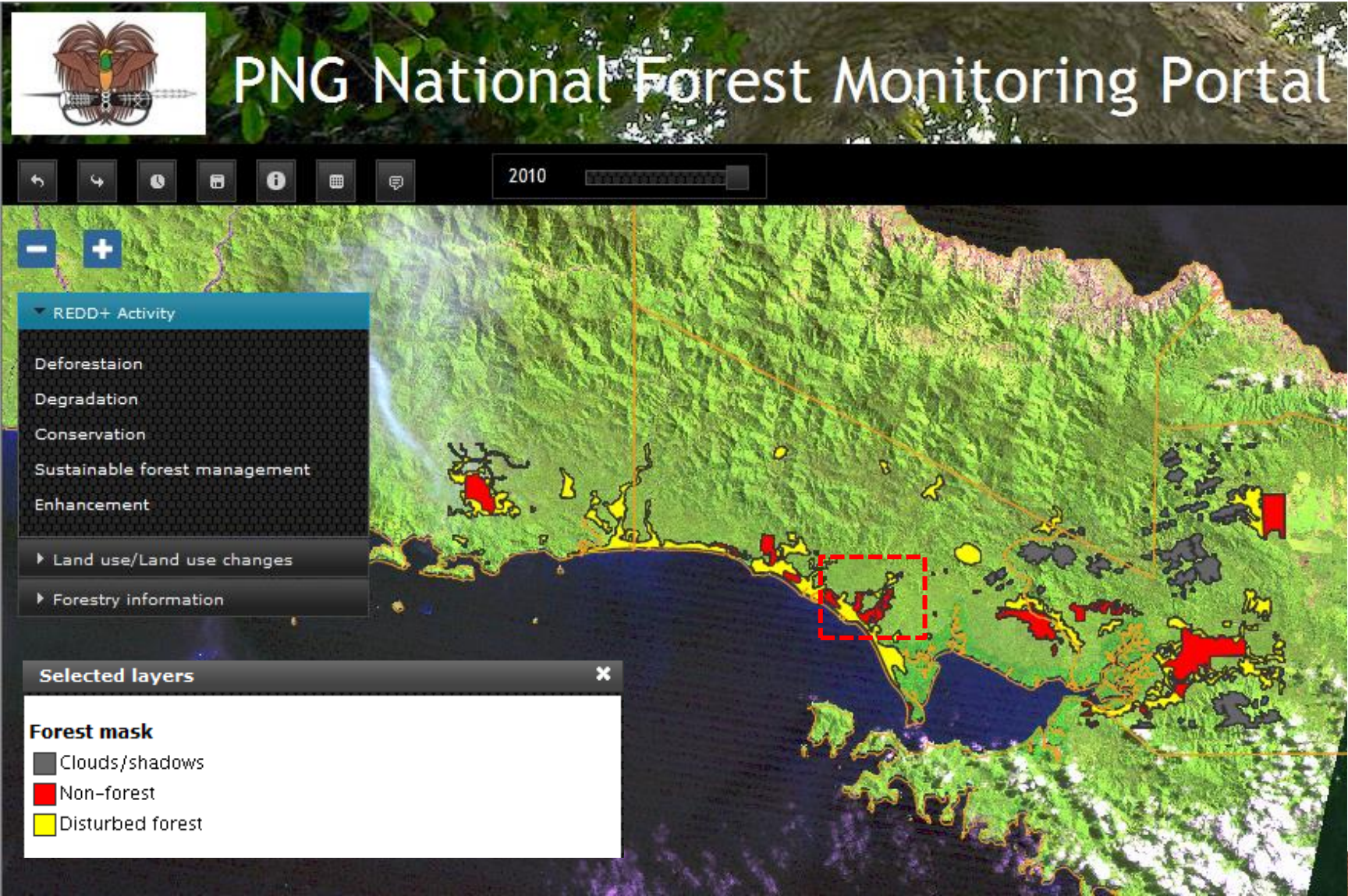
Port Moresby

Scale = 1 : 7M

YAHOO! ©2011 Yahoo! Inc



# PAPUA NEW GUINEA NATIONAL FOREST MONITORING WEB-PORTAL:

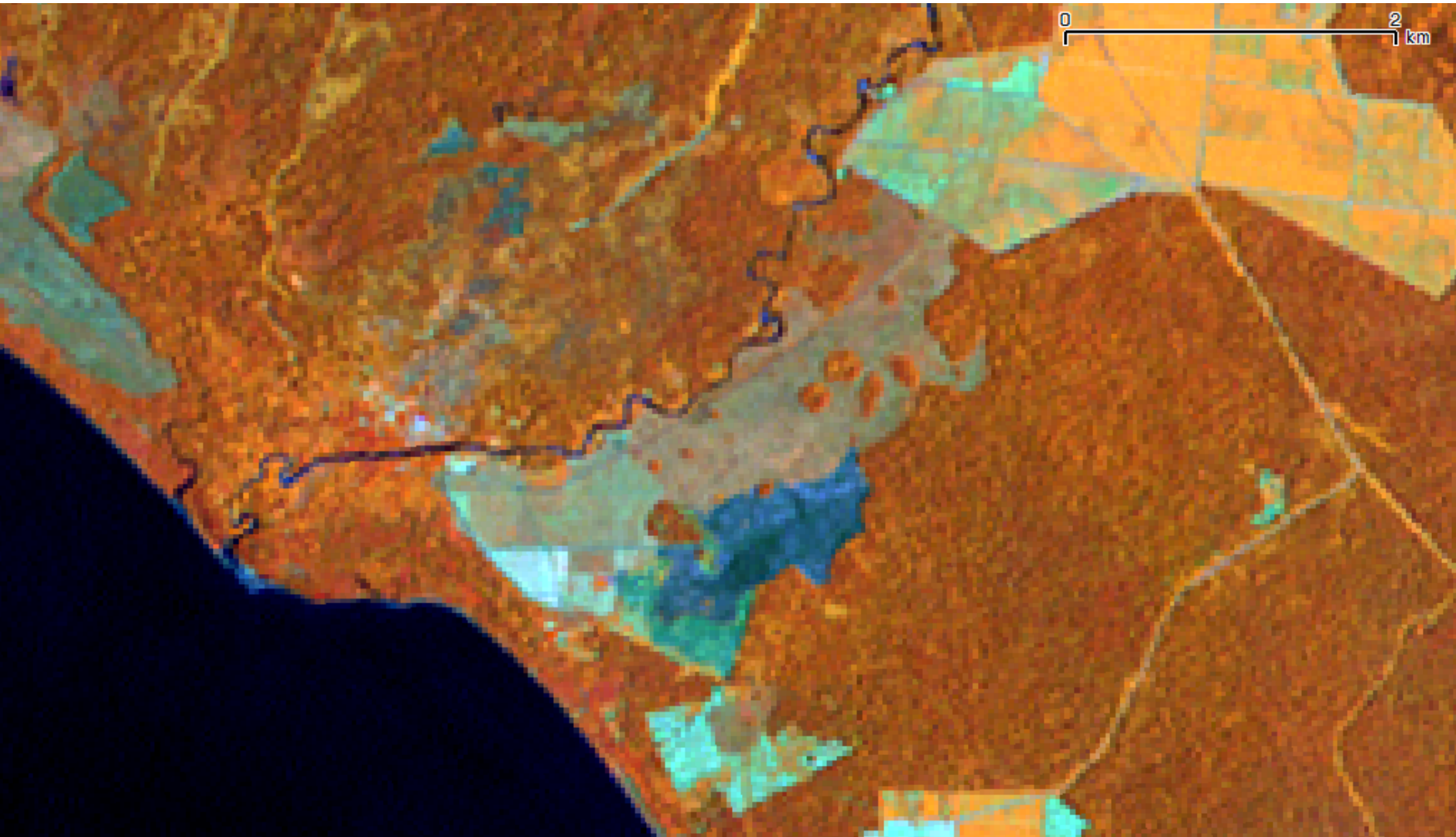


# LANDSAT 1990

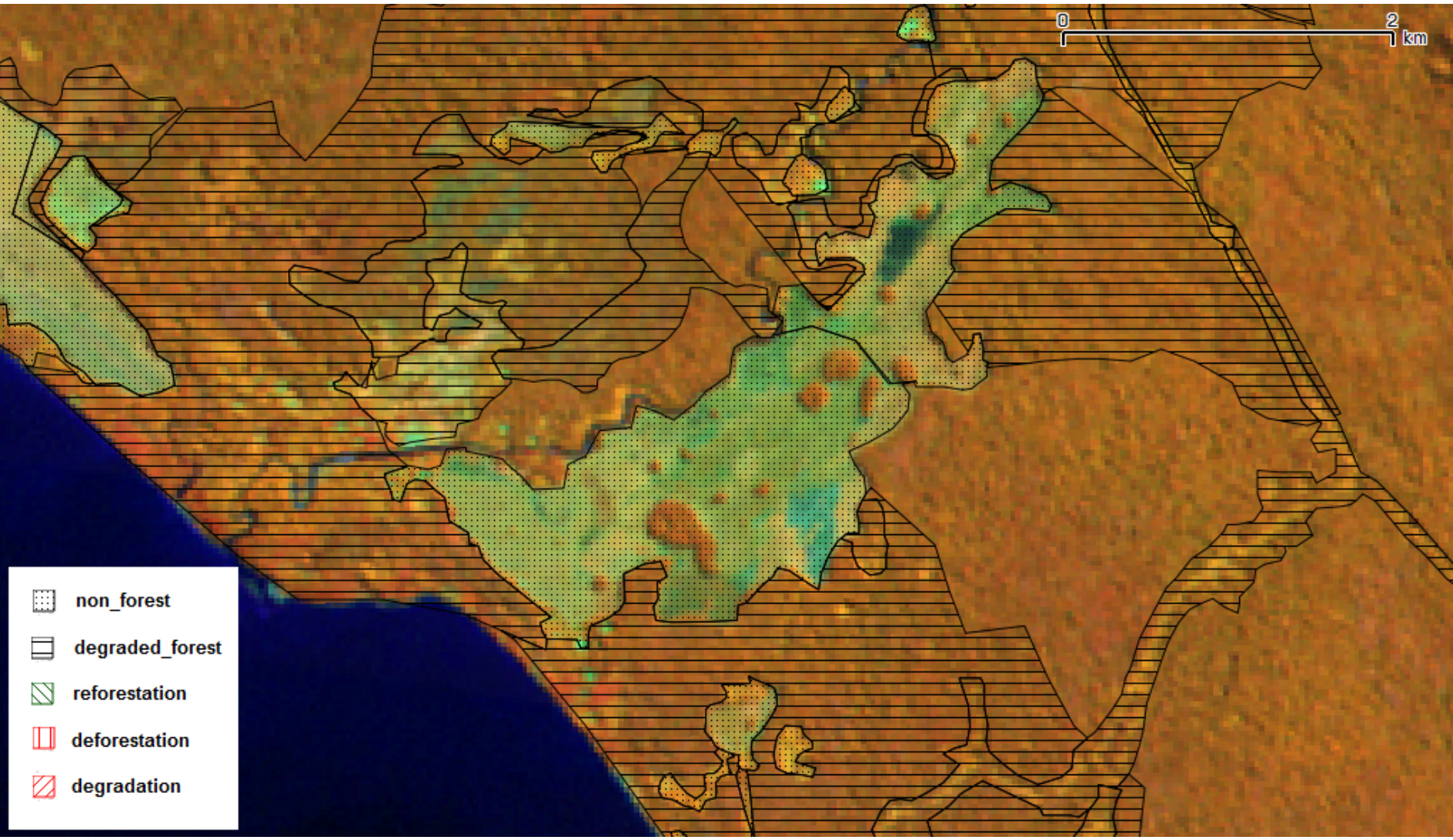




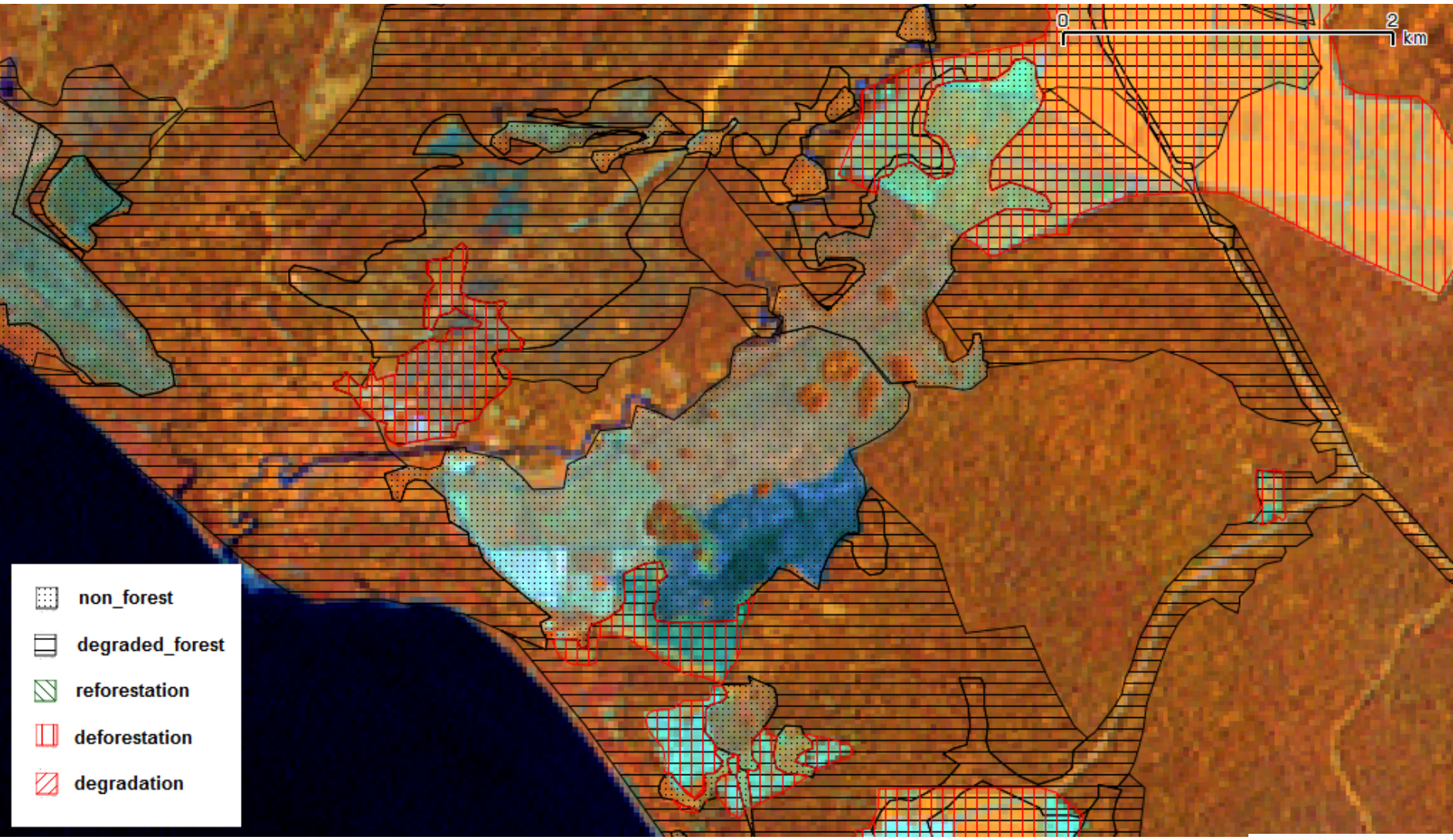
# LANDSAT 2000



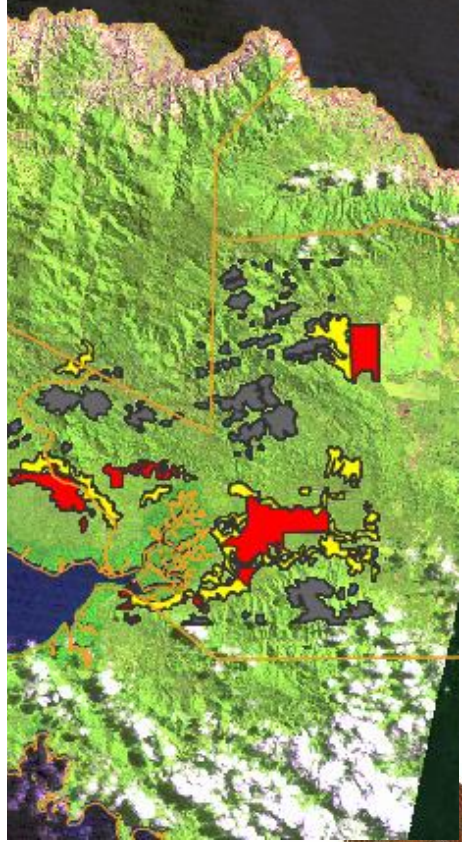
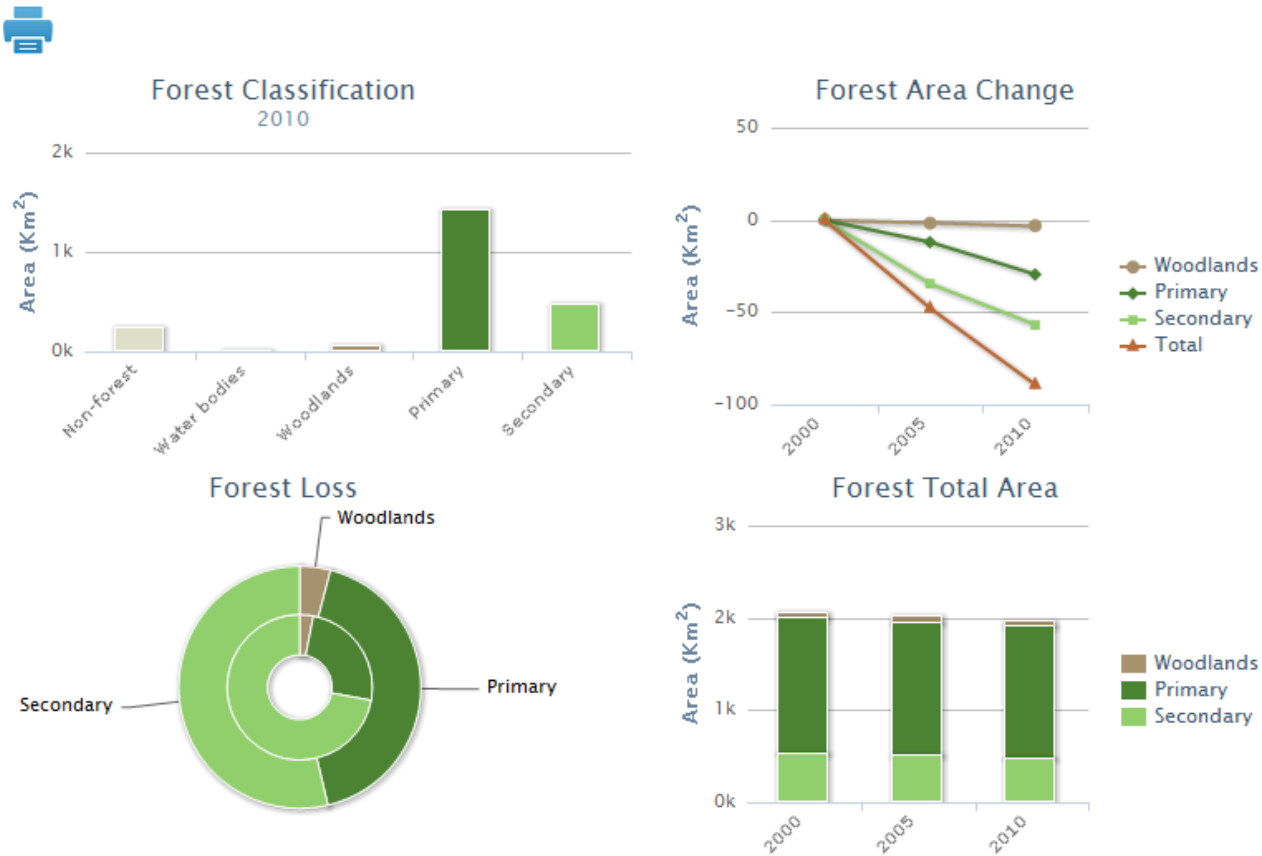
# LAND USE ASSESSMENT 1990



# LAND USE ASSESSMENT 2000



# PAPUA NEW GUINEA NATIONAL FOREST MONITORING PORTAL:



Please place the mouse pointer over the charts to see values



# Summary

1

Forest monitoring is required to assess the outcomes of REDD+ activities

- Are the activities working??

2

Forest monitoring can also provide useful information on the REDD+ safeguards

3

Online “web-GIS portals” can allow open access to forest monitoring (and therefore some safeguard) information

4

Forest monitoring is not a silver bullet!

- Useful for as part of the ***system to provide information*** on the safeguards
- Other information is needed!

**Thank you**



**Questions?**



## Contact

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