

# National Forest Inventory principles

*GIZ – Indonesia WORKSHOP , Jakarta, 18 Feb 2016*

**FAO's role in supporting countries  
to do National Forest Inventories**

**Adam Gerrand,  
FAO Forestry**



[www.fao.org/forestry](http://www.fao.org/forestry)

# FAO support to national forest monitoring

## Forest Resources Assessment (FRA)

The Global Forest Resources Assessments (FRA) are produced **every five years** in an attempt to provide a consistent approach to describing the world's forests and how they are changing.

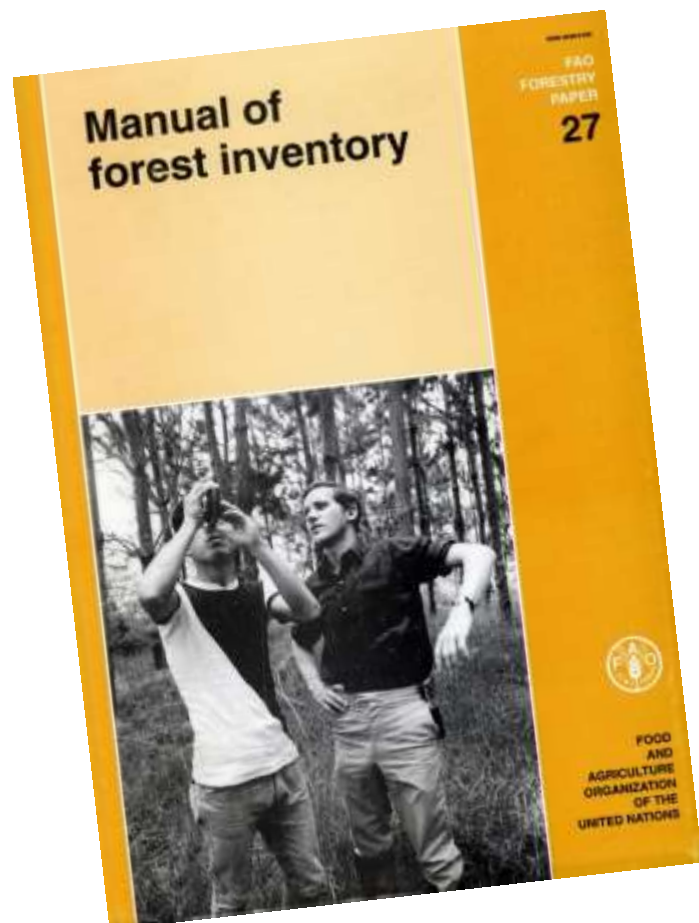
The Assessment is based on two primary sources of data: **Country Reports** prepared by National Correspondents and **remote sensing** that is conducted by FAO together with national focal points and regional partners.

<http://www.fao.org/forest-resources-assessment/en/>



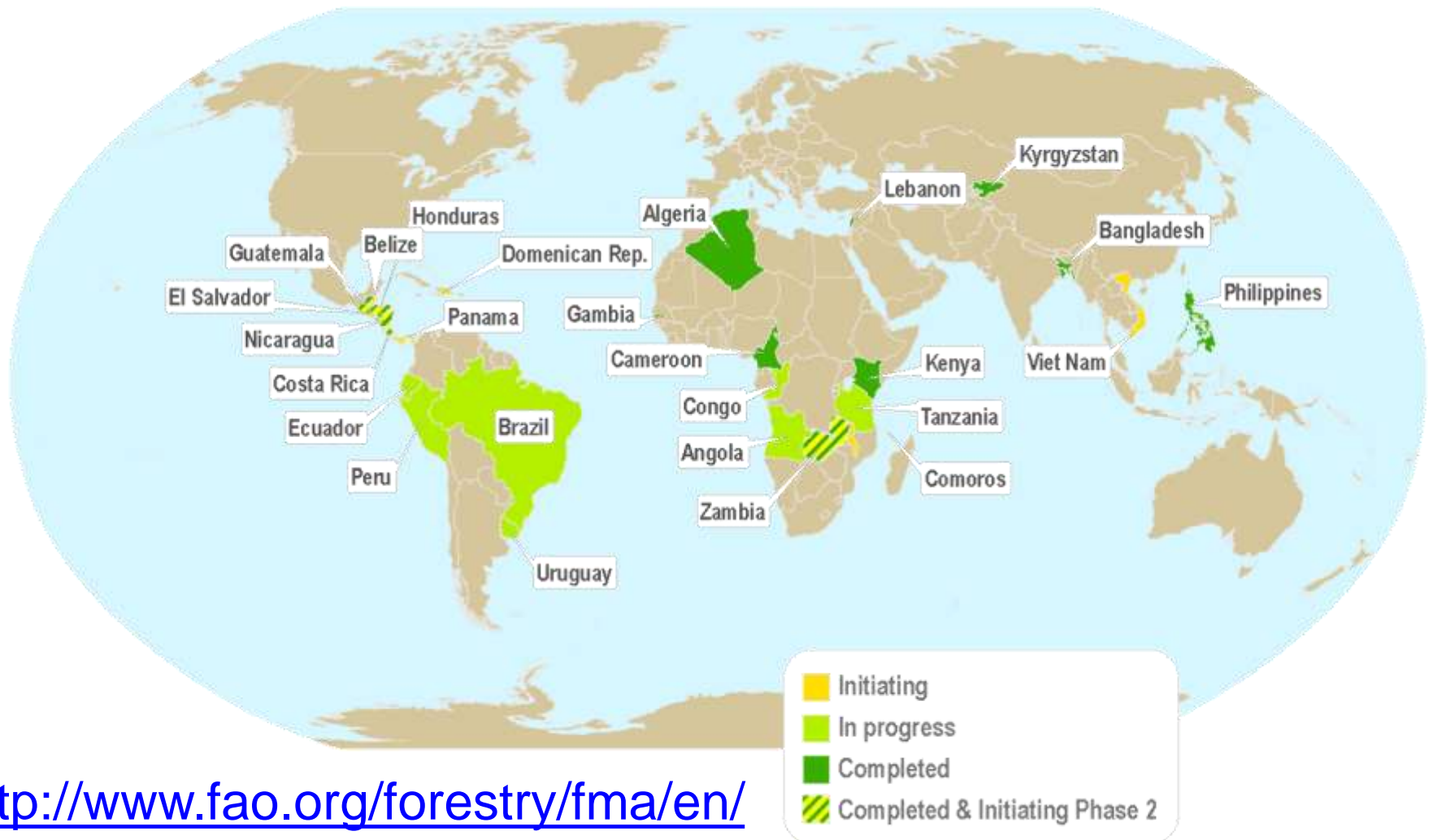
# FAO support to national forest monitoring

FAO has a long history of supporting countries to implement projects aiming at improving forest data from the 1960's – technical advice, reports and project funding



# FAO support to national forest monitoring

National Forest Monitoring and Assessment programme NFMA since 2000



<http://www.fao.org/forestry/fma/en/>

# FAO support to national forest monitoring

National Forest Monitoring and Assessment programme NFMA since 2000

## Key features

- Demand Driven
- Capacity development
- Participatory process
- Address national and international Reporting Requirements (harmonisation to national and global standards)
- Knowledge Sharing (e.g. south-south collaboration)
- Solid & Sustainable

 In progress

 Completed

 Completed & Initiating Phase 2

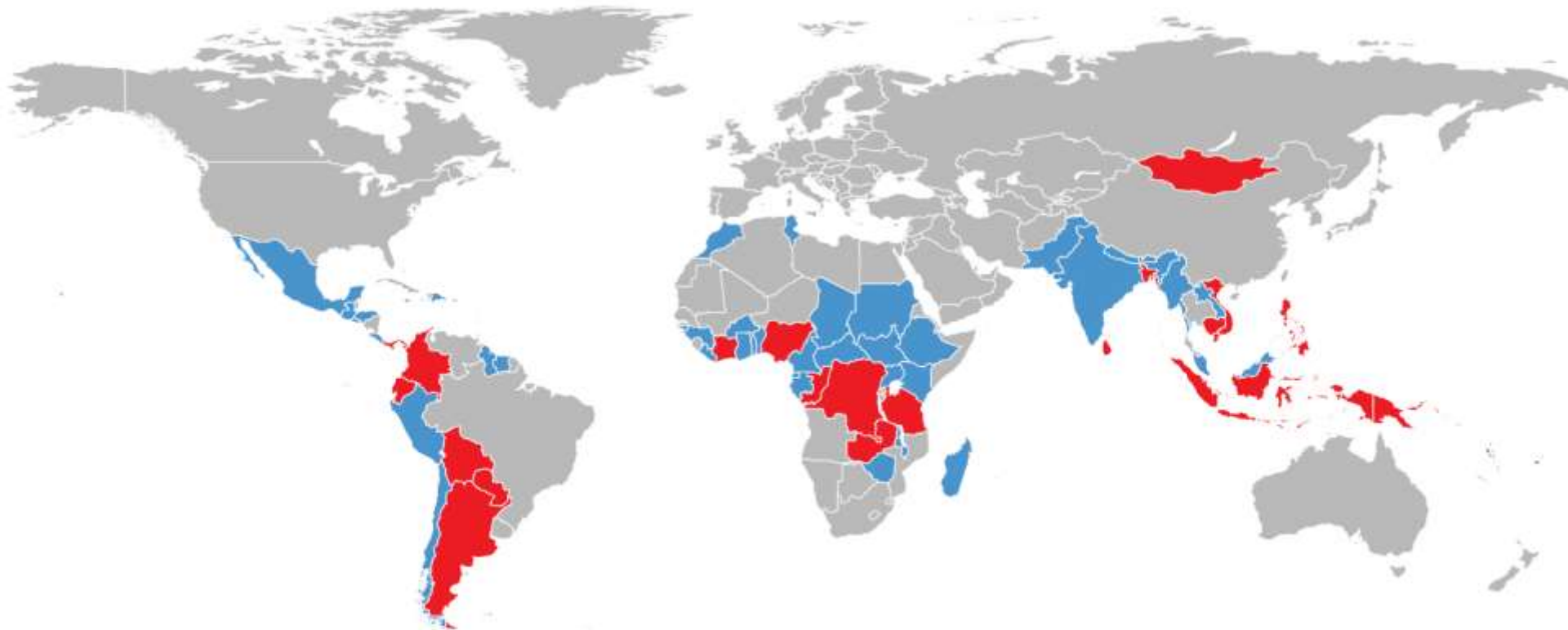
<http://www.fao.org/forestry/fma/en/>

# FAO support to national forest monitoring

## UN-REDD Programme- since 2008

supports national REDD+ readiness efforts in **partner countries** through direct support in the design and implementation of UN-REDD National Programmes and targeted support upon request.

UN-REDD  
PROGRAMME



■ Countries receiving support to National Programmes

<http://www.un-redd.org/>

# FAO support to national forest monitoring

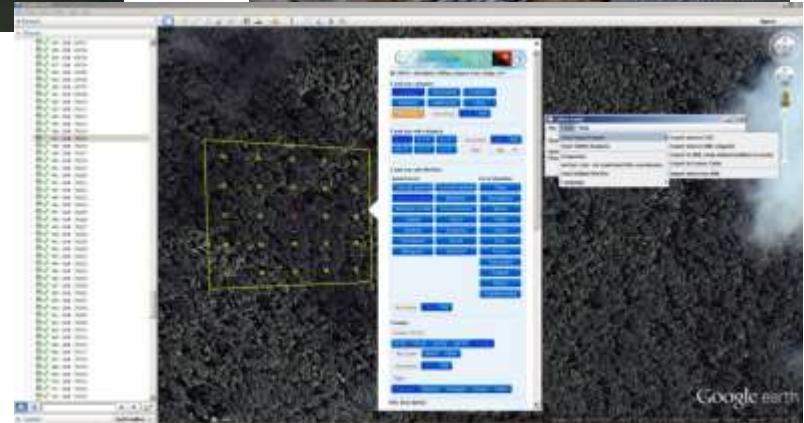
## Finland – FAO Forestry Programme – 2009

strengthening the FAO resources and capacity in methodological and tool development at FAO headquarters and five pilot countries (**Ecuador, Peru, Tanzania, Viet Nam and Zambia**).



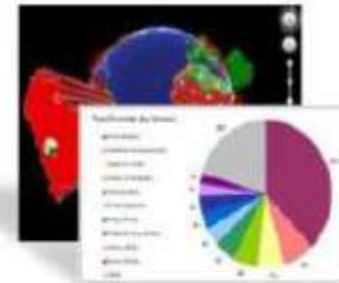
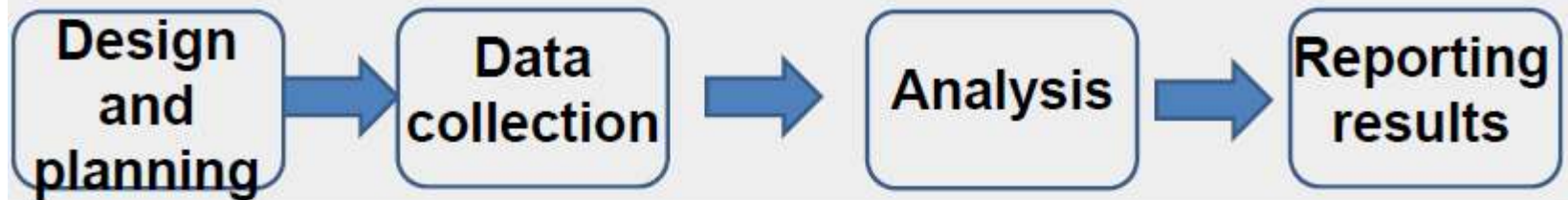
OPENFORIS

*Free open-source  
solutions for  
environmental  
monitoring*



# FAO support to national forest monitoring

## Using Open Foris tools



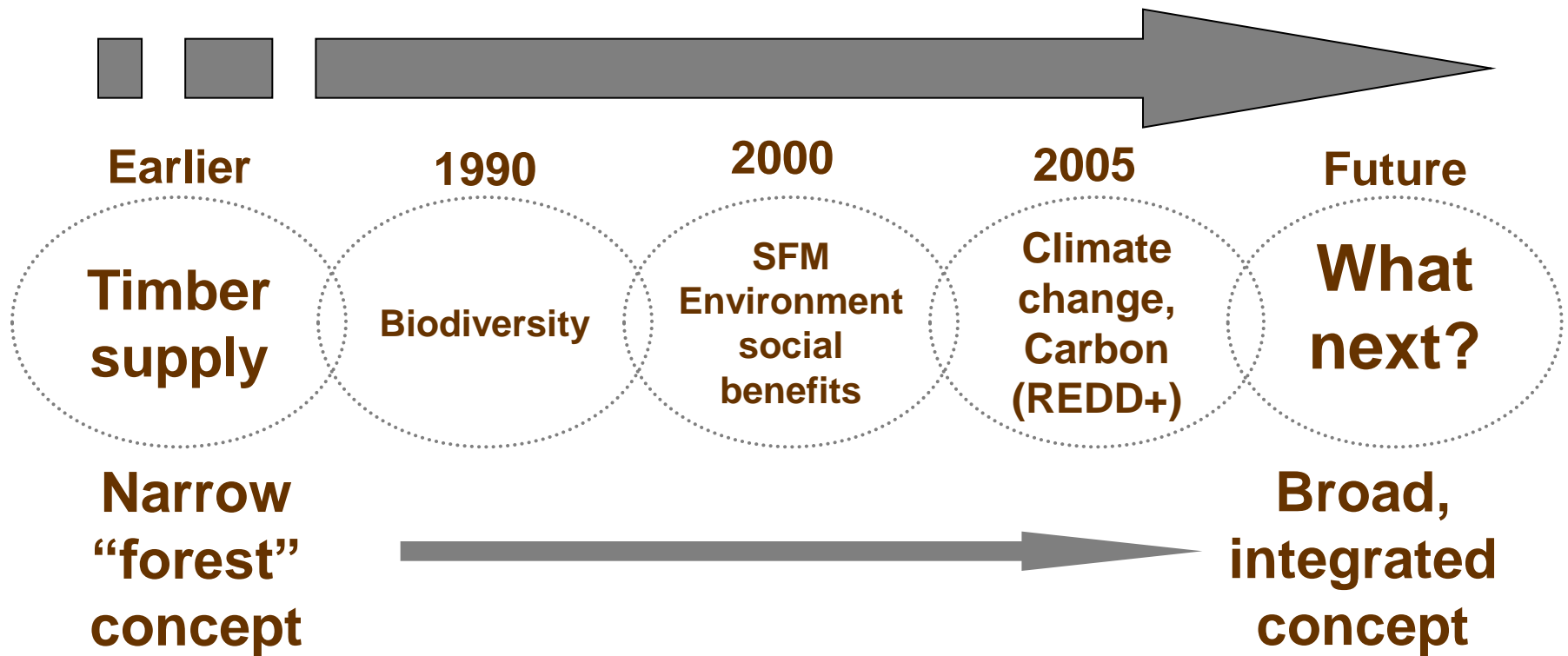
Open Foris Tools





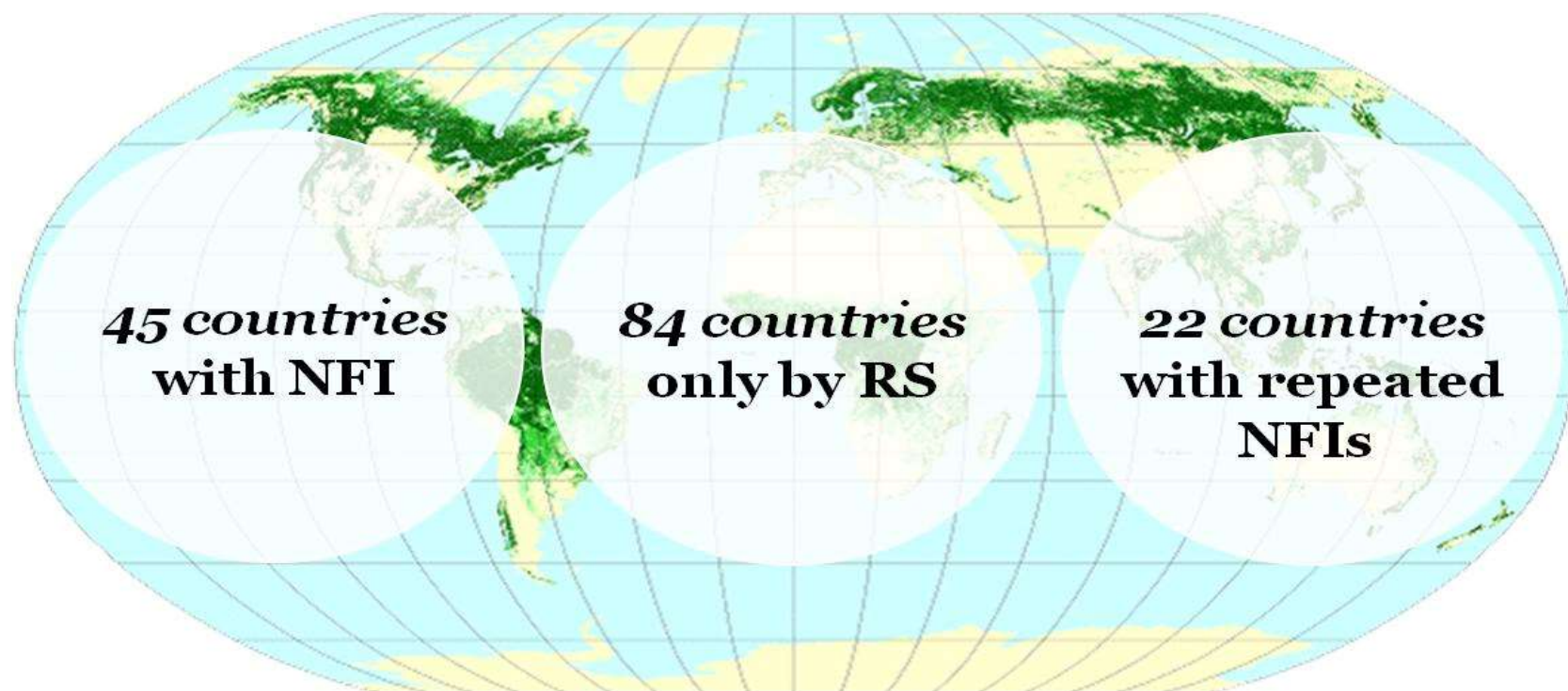
# NFI as an evolving processes...

... to respond to changing needs



**2010**

## **Existing knowledge on forests and their benefits is inadequate**



**Data status on forests (FRA 2010)**

➔ 2015

# Global Forest Resources Assessment (FRA2015)



## Forest Ecology and Management

Special Issue: Changes in Global Forest Resources from 1990 to 2015

➤ Article: **Assessing change in national forest monitoring capacities of 99 tropical countries**

Romijn, E., et al. (2015). "Assessing change in national forest monitoring capacities of 99 tropical countries." Forest Ecology and Management 352: 109-123.



## Assessing change in national forest monitoring capacities of 99 tropical countries

In journal of *Forest Ecology and Management* 352 (2015)

Table 1

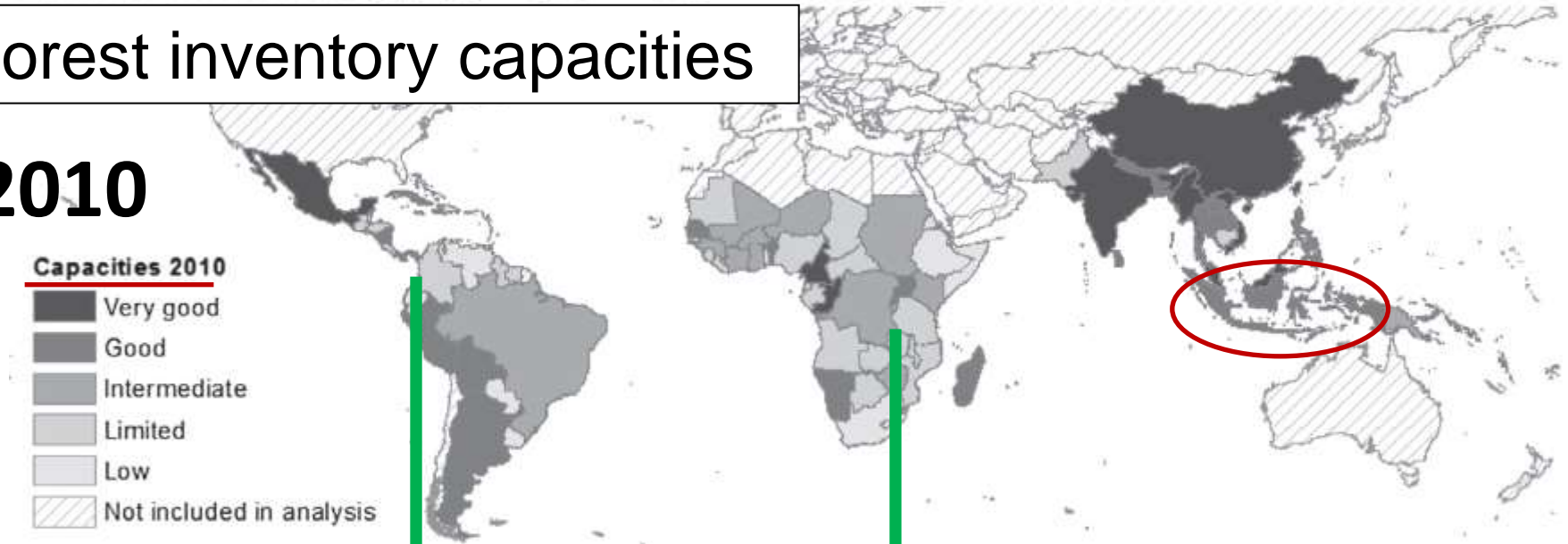
Indicators used to assess a countries' national forest monitoring capacities, the data sources that were used to gather information for each indicator, and the scoring system.

Indicator	FAO FRA data source	Indicator score	Value	Characteristics
Forest area change monitoring and remote sensing capacities	Section 1.2.1 in the country reports of 2005, 2010 and 2015	0	Low	No forest cover map
		1	Limited	One forest cover map (external)
		2	Intermediate	Multiple forest cover maps (external)
		3	Good	One or more forest cover map(s) (in-country), most recent produced before 2000 for 2005 assessment; before 2005 for 2010 assessment; before 2010 for 2015 assessment
		4	Very good	Multiple forest cover maps (in-country), most recent produced after 2000 for 2005 assessment; after 2005 for 2010 assessment; after 2010 for 2015 assessment
Forest inventory capacities	Section 5.2.1 in the country report of 2005; Section 6.2.1 in the country report of 2010; Section 3.2.1 in the country report of 2015	0	Low	No forest inventory
		1	Limited	One forest inventory (external)
		2	Intermediate	Multiple forest inventories (external); or in-country, but no full cover for all forests
		3	Good	One or more forest inventories (in-country), most recent before 2000 for 2005 assessment; before 2005 for 2010 assessment; before 2010 for 2015 assessment
		4	Very good	Multiple forest inventories (in-country), most recent produced after 2000 for 2005 assessment; after 2005 for 2010 assessment; after 2010 for 2015 assessment
Carbon pool reporting capacities	Section 7 in the country report of 2005; Section 8 in the country report of 2010; Section 3.4 in the country report of 2015, including Tier system of FRA	0	Low	No reported carbon stocks
		1	Limited	Above ground biomass (AGB) reported (using Tier 1)
		2	Intermediate	Minimum AGB and soil reported (using Tier 1)
		3	Good	AGB reported (using Tier 2 or Tier 3)
		4	Very good	More than one pool reported (using Tier 2 or Tier 3)

# Forest inventory capacities

## 2010

### Capacities 2010



## 2015

### Capacities 2015



# Key messages 1:

1. **Major improvements have been achieved** in forest area change monitoring capacities and in forest inventory capacities
2. The **total tropical forest area** that is monitored with good to very good forest area change monitoring and remote sensing capacities increased **from 69%** (1,435 million ha) in 2005 **to 83%** (1,699 million ha) in 2015
3. **Over half** (54 out of 99) of the countries now have **good to very good** forest area change monitoring and remote sensing capacities
4. The total tropical forest area monitored with good to very good **forest inventory capacities** increased from **38%** ( 785 million ha) in 2005 **to 66%** (1,350 million ha) in 2015
5. **Free and open source good resolution satellite data** such as Landsat remain an important data source for large areas and long time series
6. **Continued capacity building investments are needed** to ensure that remaining countries can accurately monitor tropical forest areas

## Key messages 2:

7. **Carbon pool reporting** capacities did not increase as dramatically (yet! coming?)
8. The results demonstrate that **capacity building programmes have proven to be successful**
9. **Targeted programmes**, such as those from FAO projects seem to be very effective with a success rate of 86%
10. Also, the engagement in **REDD+ capacity development** initiatives had a **positive impact** on country forest monitoring capacity.
11. This clearly shows the importance of capacity building programmes and the **need for further capacity development**
12. **Further investments** will enable countries to obtain accurate and reliable data and information on forest area and forest resources which provides the necessary input to **refine policies** and decisions to **track drivers of deforestation**, to **conserve forests** and to further improve forest management

# FAO Knowledge reference for national forest assessments

New report + online resources being planned for release late 2016

Contents:

1. National forest assessments and policy influence
2. Organization and implementation
3. Sampling designs for national forest assessments
4. Observations and measurements
5. Data collection through interviews
6. Remote sensing supporting NFI's
7. Information management
8. Modelling for estimation and monitoring
9. Scenarios

