

# «National Forest Monitoring systems in the context of REDD+, importance of data collection»

Tokyo, 6-7 February 2014



# FAO supporting data collection - Mandate

When the FAO was established, one of its core functions was to collect, analyze and disseminate information on agriculture, ***forestry*** and fisheries.

This is still the case and stems from the simple but powerful belief that ***better information leads to better decisions, which lead to better actions.***



# Why is forest monitoring important ?

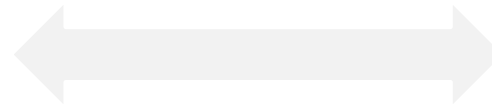
- 
- Providing key data for international reporting obligations (National Communications, REDD+, CBD, etc.)
  - Forest management planning – making best use of forest resources



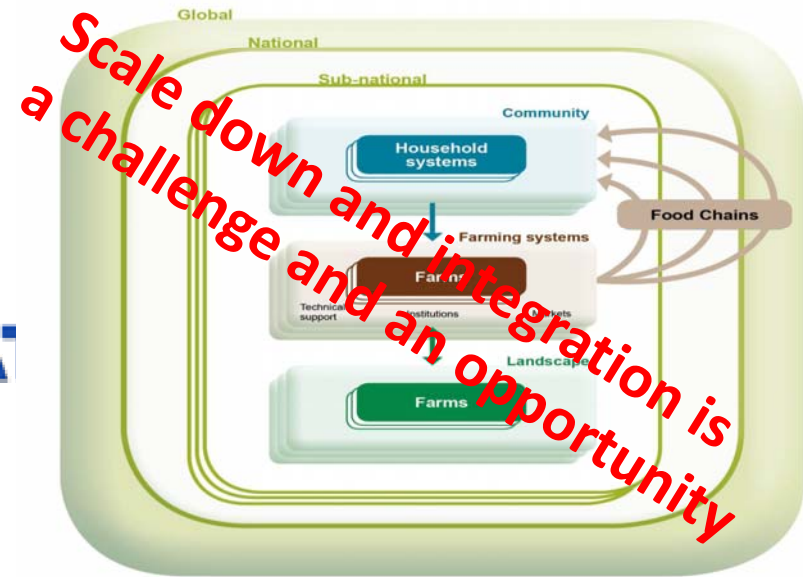
# FAO Data Collection - global

## DATA COLLECTION, DATABASES, STATISTICS AND ANALYSIS

DATA COLLECTION



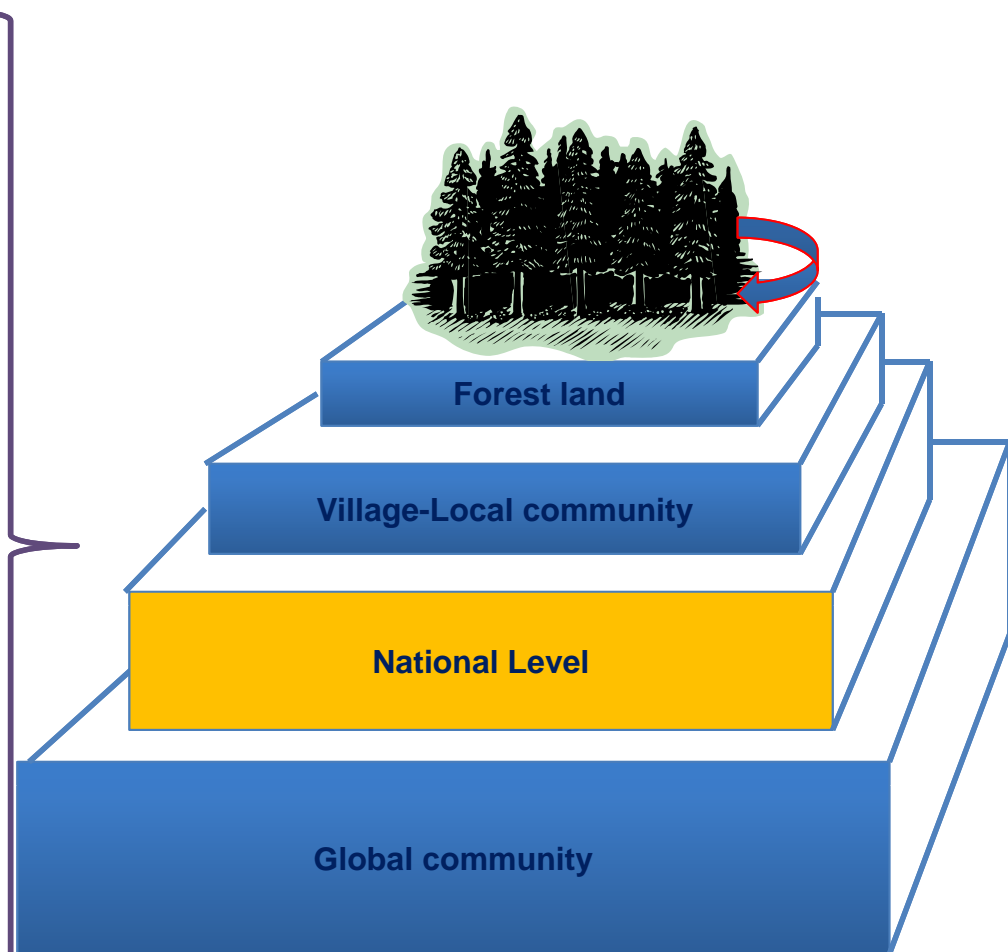
SCALES



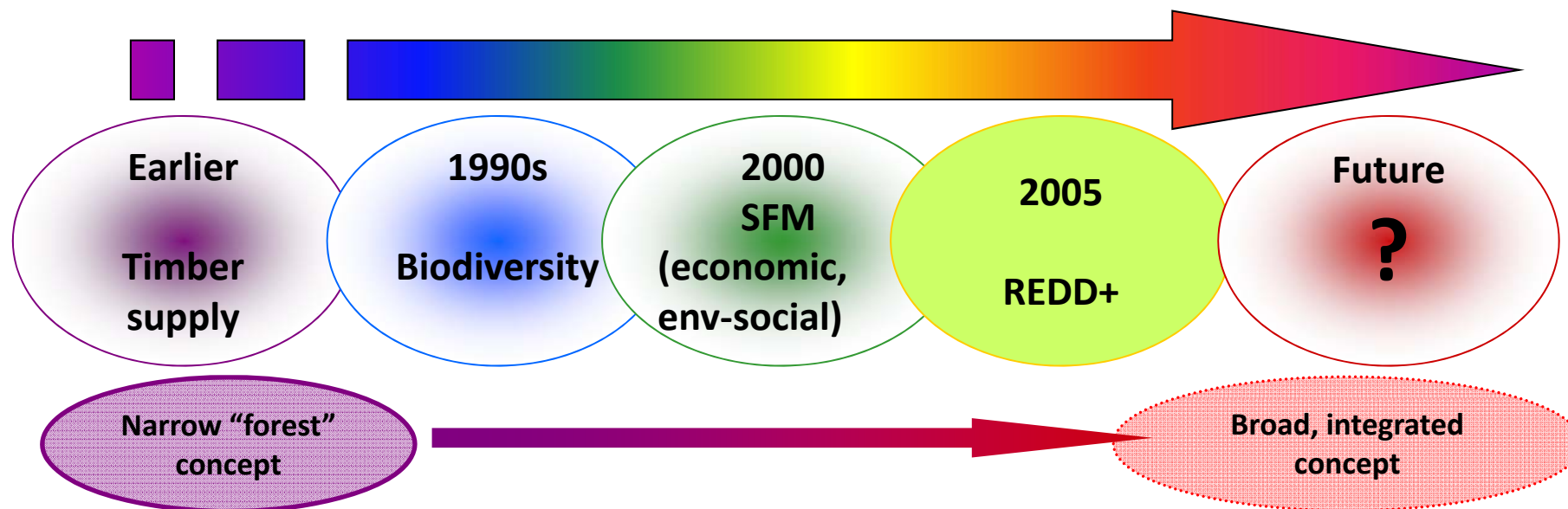
# Why do we care about national forest data?

## Information on:

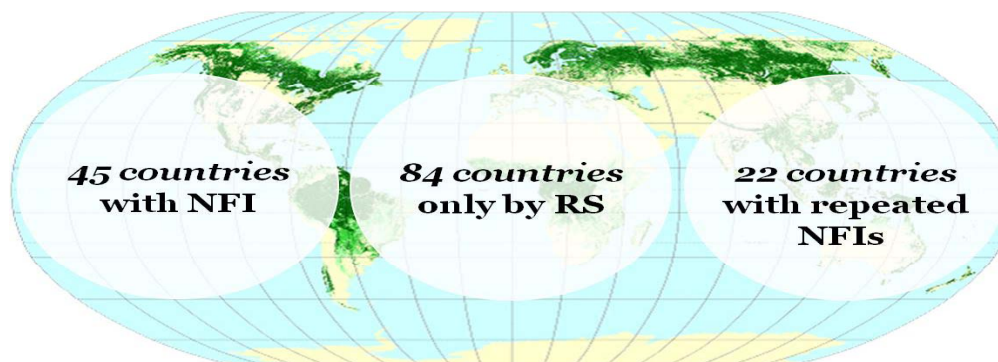
- Extent of forest resources
- Biological diversity
- Forest health and vitality
- Protective functions of forest resources
- Productive functions of forest resources
- Socio-economic functions of forest resources
- Institutional and legal framework



# Forest monitoring evolving needs...

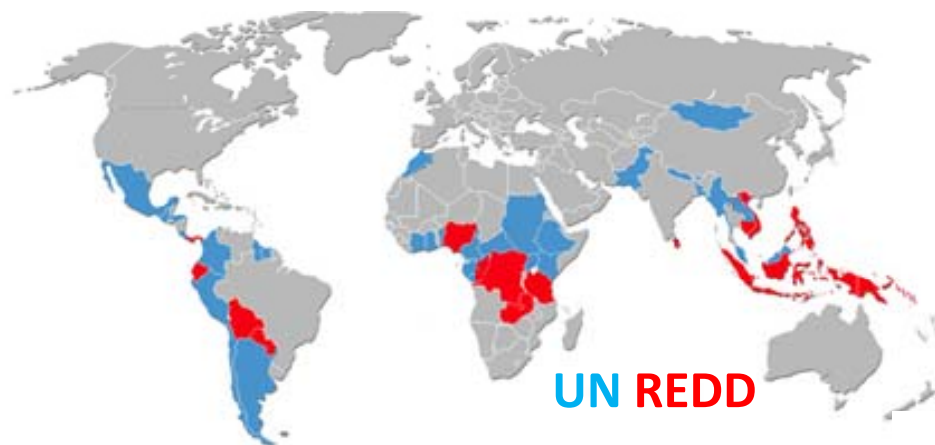


**Existing knowledge on forests and their benefits is inadequate**



Data status on forests (FRA 2010)

# FAO support for Forest Monitoring – National Level



- Countries receiving support to National Programmes
- Other partner countries

FAO provides technical assistance in forest monitoring and assessment in response to country needs in collaboration with national authorities, experts and a wide range of stakeholders, thus supporting long-term impact, sustainability and country ownership. FAO is contributing to knowledge of global forest resources.

FAO Forestry

Global Forest Resources Assessment:

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

National Forest Monitoring and Assessment:

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

UN-REDD Programme:

[www.un-redd.org](http://www.un-redd.org)

FAO – FIN Programme (5 countries)



**DIFFERENT Programmes – similar GOALS**



# FAO and its role in REDD+ readiness

- ❑ FAO's key role in REDD+ readiness is to help countries develop, implement and operationalise their National Forest Monitoring System (NFMS)
- ❑ FAO also assists countries in conceptualizing and implementing REDD+ activities and in the development of policies and measures

## REDD+ elements to be in place

- ✓ *A national strategy or action plan*
- ✓ *Forest reference emission level and/or forest reference level*
- ✓ ***A robust and transparent national forest monitoring system for the monitoring and reporting REDD+ activities***
- ✓ *A system for providing information on how the safeguards are being addressed and respected"*

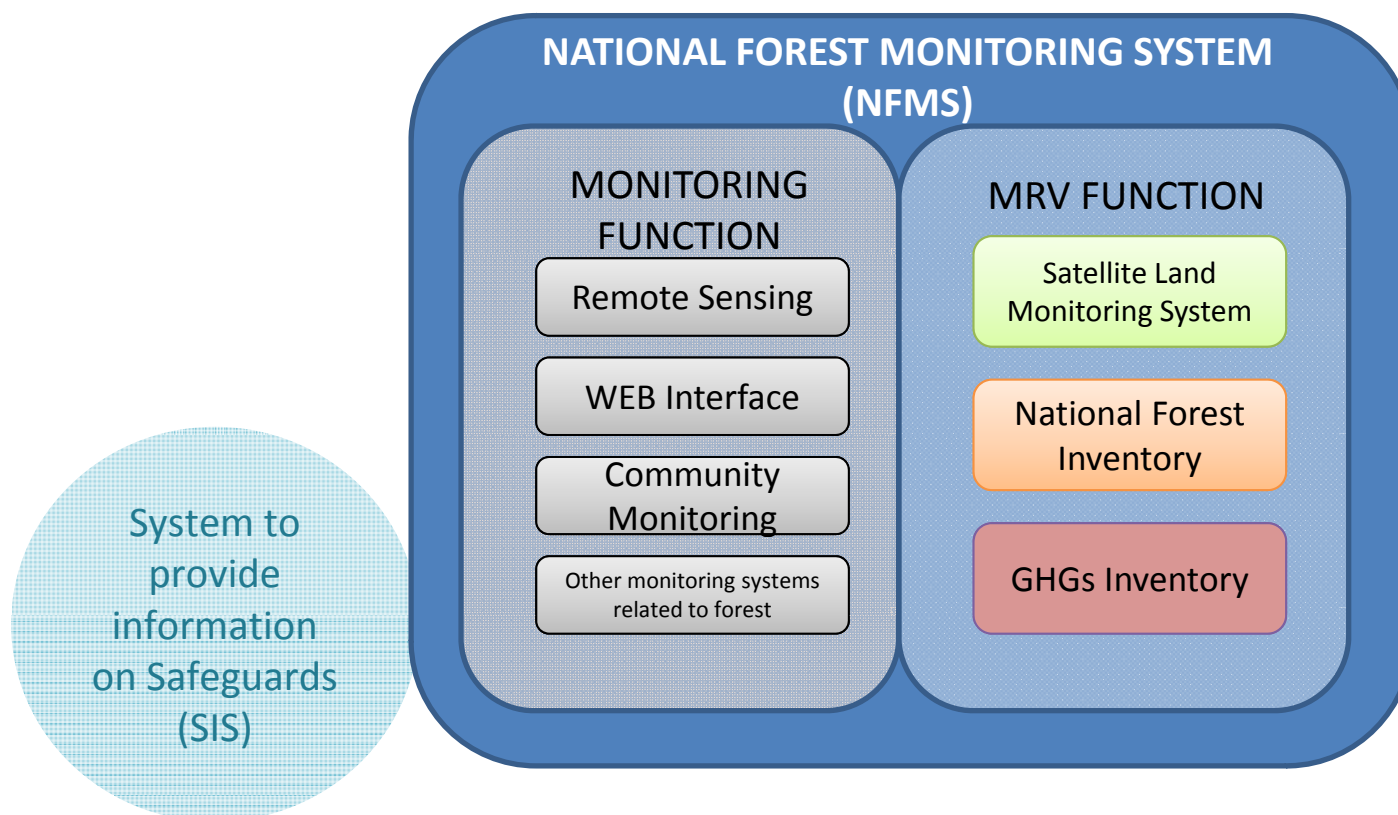




# The NFMS in the context of REDD+

Fully tailored and based upon existing efforts while respecting UNFCCC requirements....

Through the UN-REDD Programme, FAO published a guidance document on REDD+ National Forest Monitoring Systems (NFMS) in early 2013\*



\* <http://www.un-redd.org/UNREDDProgramme/InternationalSupport/MeasurementReportingandVerification/tabid/1050/language/en-US/Default.aspx>

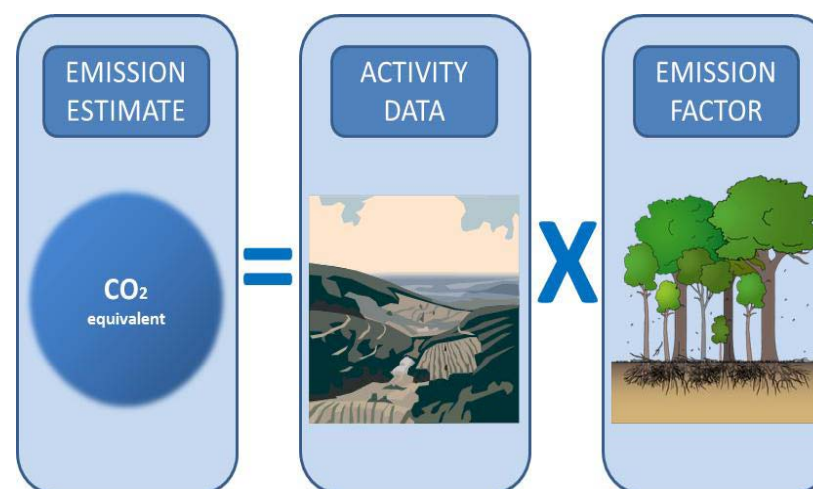
# The NFMS (REDD+) Pillars -

Fully tailored and based upon existing efforts while respecting UNFCCC requirements....

The monitoring function can be defined broadly, depending on national circumstances

The MRV function is composed of three main pillars:

- Collect AD through a satellite land monitoring system (SLMS)
- Gather information to obtain emission factors through the national forest inventory (NFI)
- Provide emissions and removals estimates through the national GHG inventory.



- ✓ Reducing emissions from deforestation
- ✓ Reducing emissions from forest degradation
- ✓ Conservation of forest carbon stocks
- ✓ Sustainable management of forests
- ✓ Enhancement of forest carbon stocks





# The combined monitoring and MRV functions

Fully tailored and based upon existing efforts while respecting UNFCCC requirements....

## DEVELOPMENT OF FOREST INFORMATION VISUALIZATION TOOLS



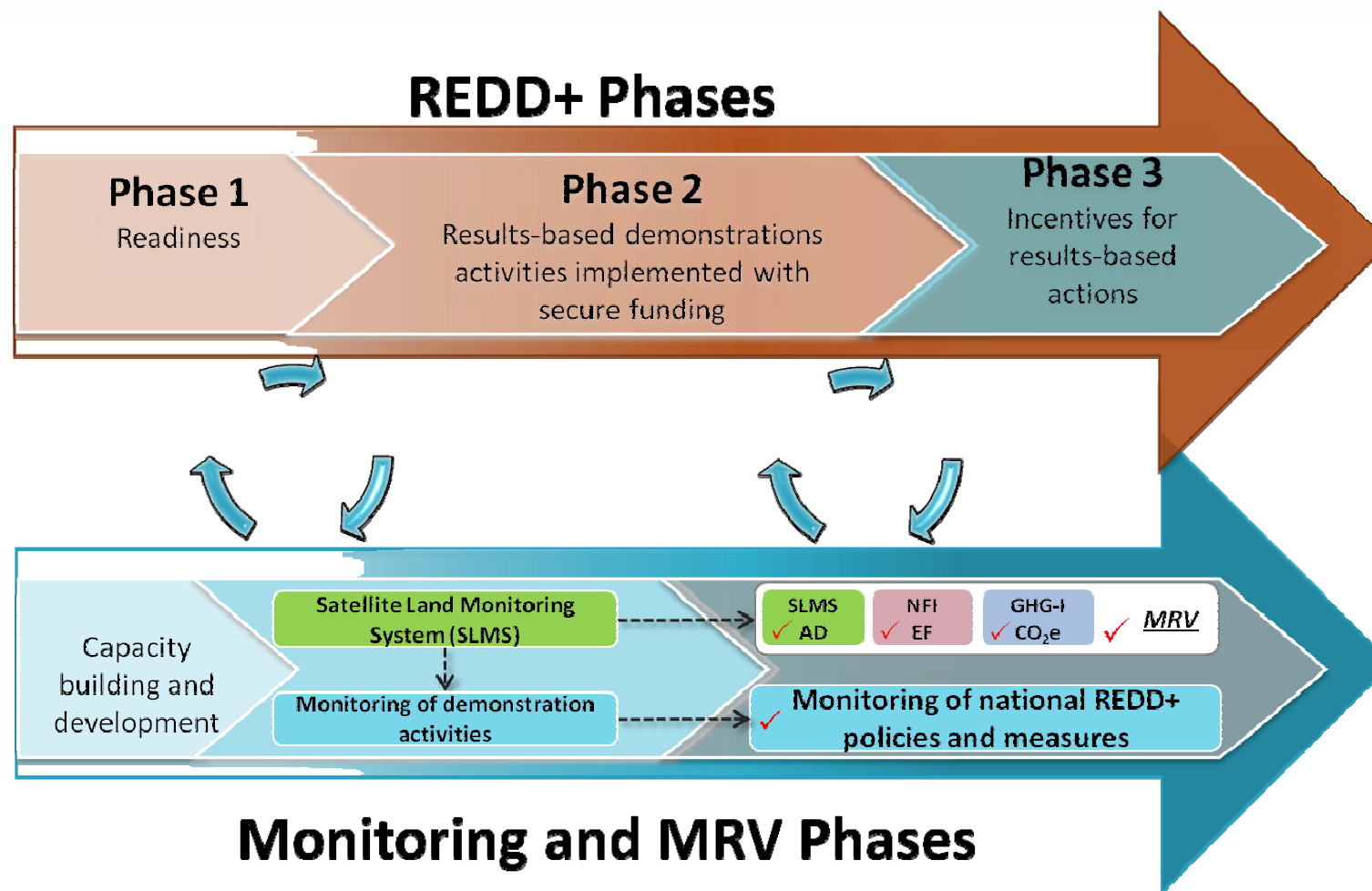
<http://paraguay-smf.org>



<http://www.rdc-snsf.org>



# Phased implementation of the NFMS

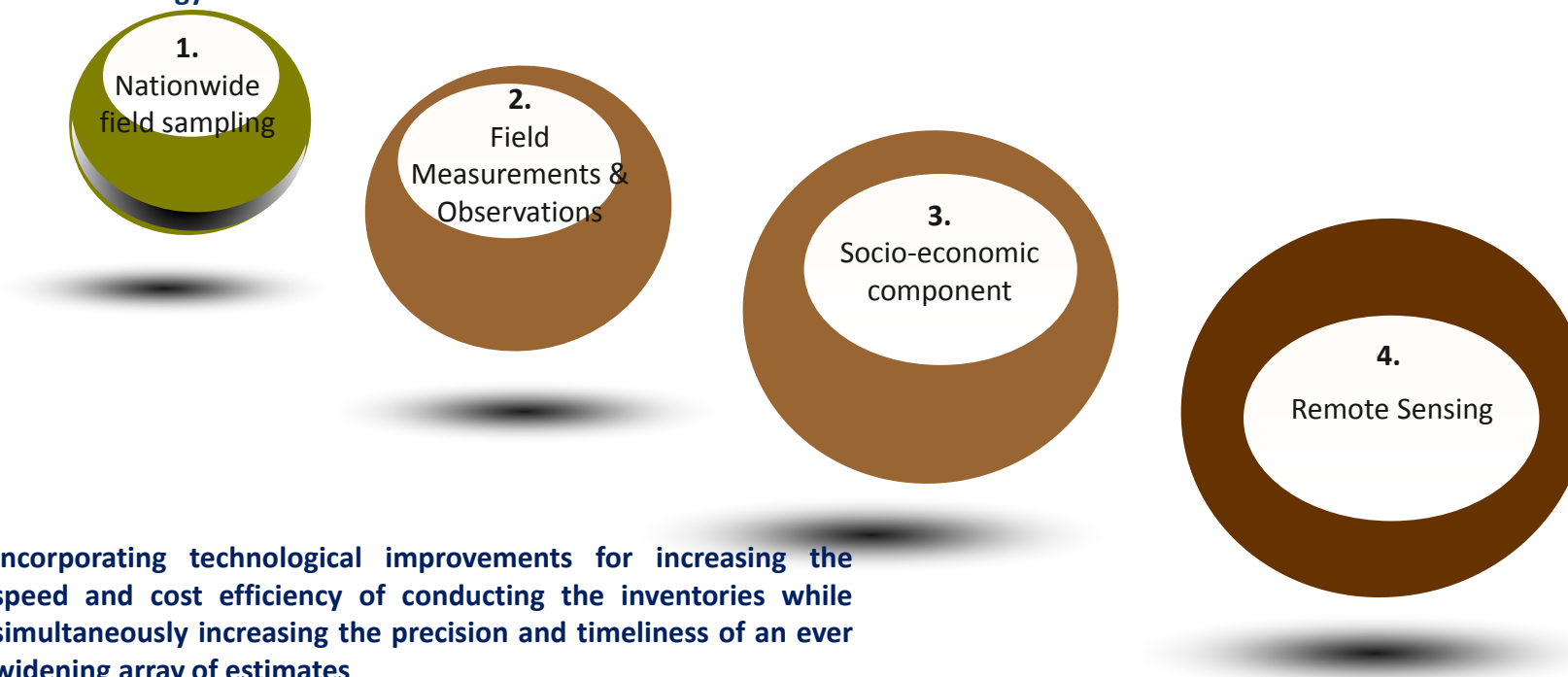




# FAO NFMA Programme

## FAO NATIONAL FOREST MONITORING AND ASSESSMENT PROGRAMME

### Methodology – Overview



① **Nationwide field sampling**  
Includes all land uses - in and outside forests

② **Field Measurements & Observations**  
Data collection in the field

③ **Socio-economic Component**  
Key informants  
Focus groups or individuals (users of trees resources)  
Local households

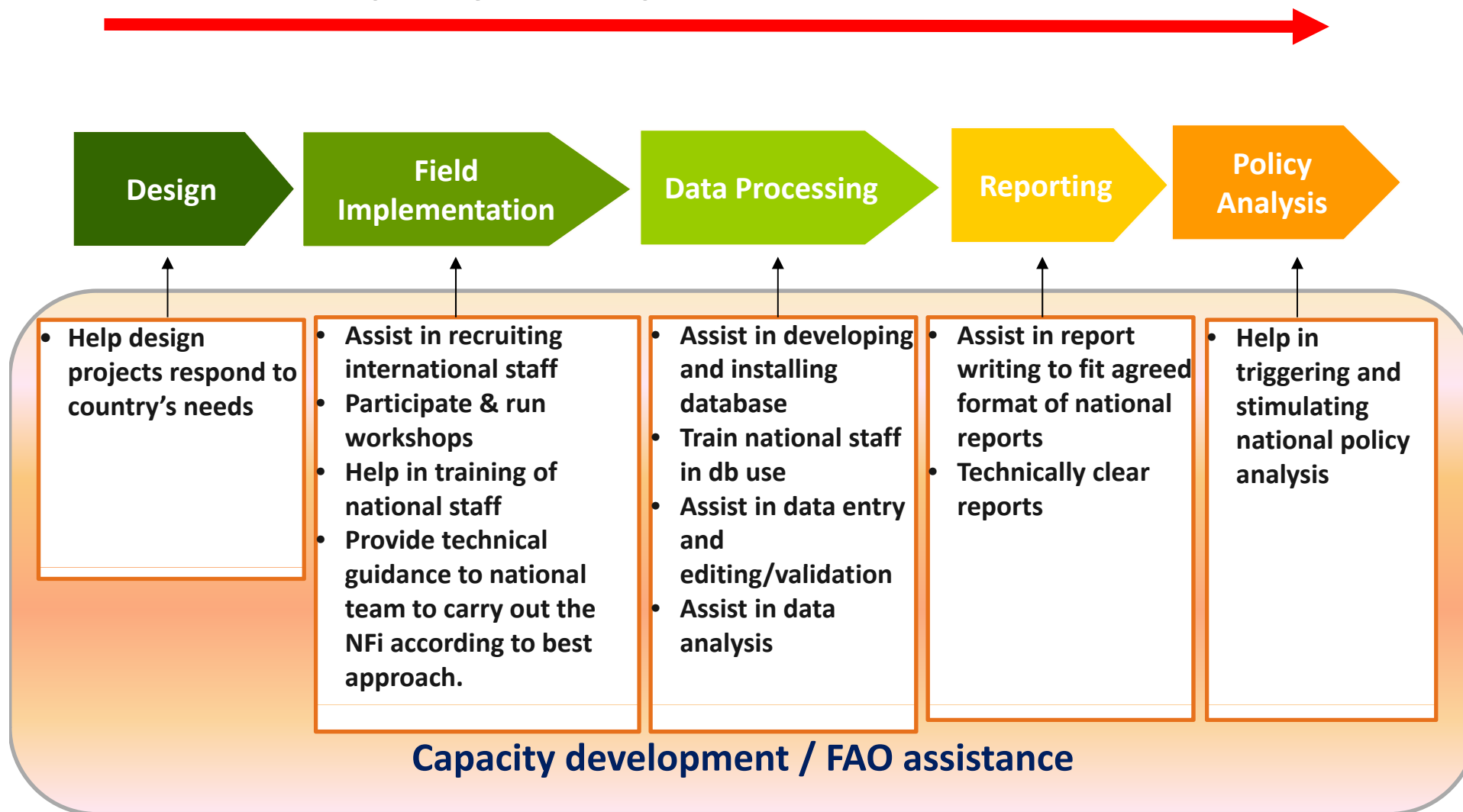
④ **Remote Sensing**  
Remote sensing is used as a complement for final analysis and reporting.  
  
Wall-to-wall mapping (forest types/ land use)

# FAO NFMA Programme

More standardized across....

Strengthen national capacities  
for long term  
forest monitoring and assessment

## Process and capacity development activities





# FAO tools – FAO FIN contribution

## New tools and approaches

- Open Foris Initiative**  
Enabling multi-purpose forest monitoring, reporting and management
- **Open** – freedom to modify and adapt to country needs without special permission
  - **Free** – software available free of charge
  - **Sustainable** – global community of users; avoids vendor lock-in and dependence on outside support
  - **Tested** – incorporates knowledge and experience of many countries and institutions
  - **Tailored** – FAO and partners working closely with countries to meet specific national requirements

### Dissemination & Reporting

1. International Reporting: UNFCCC, GHG, REDD+, FRA
2. National policies
3. Local level planning

Sampling & protocol design  
Field capacity building  
Field map production

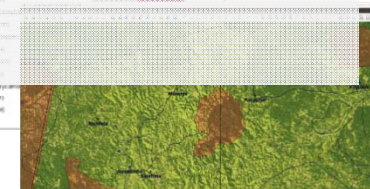
PC-based data entry  
Mobile data collection

Data validation & QA  
Statistical & thematic data analysis  
GIS/RS analysis

Management Information Systems  
Policy and operational management

Local level planning  
Participatory management planning

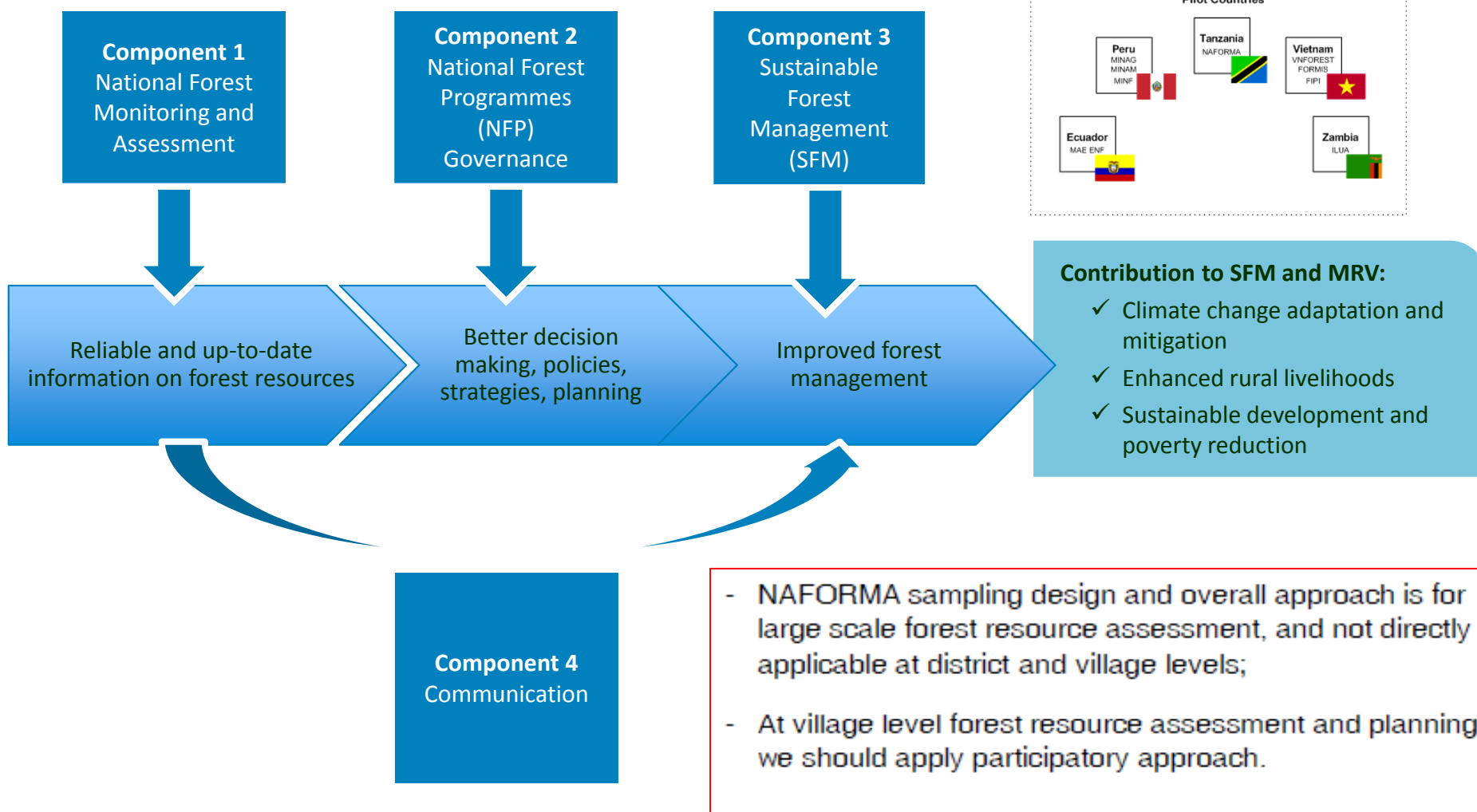
<http://www.fao.org/forestry/fma/openforis/en/>



# FAO – FIN Programme: NAFORMA example

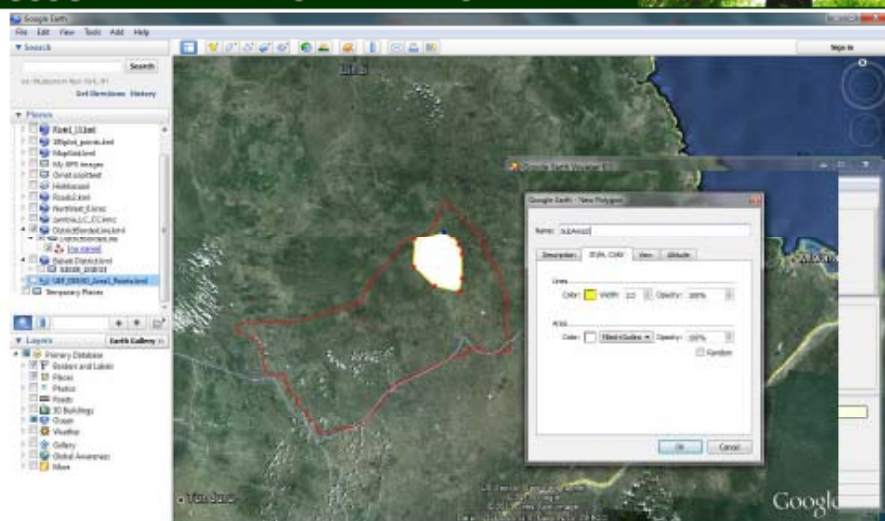
More tailored across....

**Sustainable Forest Management in a Changing Climate: FAO-Finland Forestry Programme**



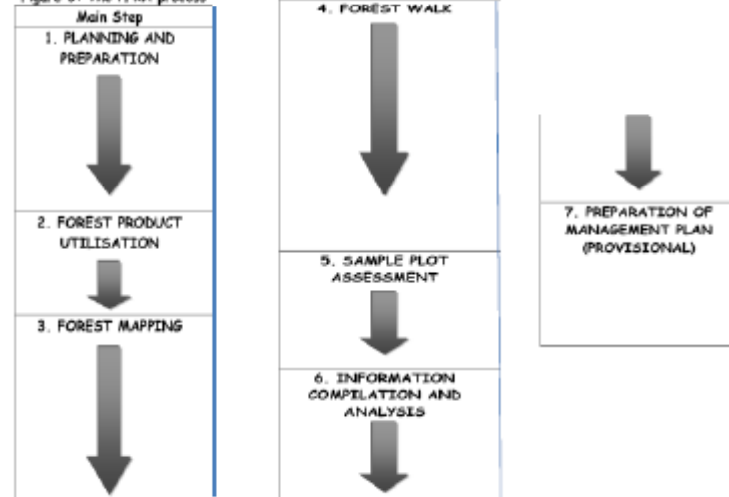
# FAO – FIN Programme: NAFORMA example

## GOOGLE EARTH DATA: ONLINE AND OFFLINE



## PARTICIPATORY FOREST RESOURCE ASSESSMENT

Figure 3: The PFRA process



- Local NAFORMA cluster/plot data can complement local assessments;
- Local tree tree height models and bole height models needs to be created and embedded into the resource assessment and simulating software;
- General NAFORMA biophysical and socio-economical data and maps can support local planning;
- However, NAFORMA multisource maps can not give accurate estimates about the growing stock and species information for the village and sub-village level management plans.

### + Extent of forest resources;

- Biological diversity;
- Forest health and vitality;

### + Productive functions and forest resources;

### + Protective functions of forest resources;

- Socio-economic functions;
- Legal, policy and institutional framework.



# FAO response to evolving needs and integration of efforts

## VOLUNTARY GUIDELINES FOR NATIONAL FOREST MONITORING

During the **last COFO**, member countries recommended **FAO to support countries in strengthening national forest information systems** and requested **FAO to prepare a set of voluntary guidelines on national forest monitoring** (FAO 2012a, FAO 2012b).

The guidelines aim to present a general framework to compile good practice principles, methodologies and tools for planning and implementing a multi-objective national forest inventory

**The Guidelines should be designed as a technical reference or framework** that can be used taking into consideration the needs and capacities of member countries.

# VOLUNTARY GUIDELINES FOR NATIONAL FOREST MONITORING

- Concept Note -

## TARGET AUDIENCE



Forest operators, such as state and local forestry agencies, timber companies, indigenous people, conservationists.



Policymakers, such as, government agencies dealing with forests, conservation, the environment and land-use planning, development and extension agencies, and civil-society organizations.



Agencies, institutions and firms interested in the ecosystem services provided by forests.



International funding and development agencies.



1

### Section I

- ✓ **Introduction**
- ✓ **Definition of the key facts**
- ✓ **Definition of major sustainability indicators**

2

### Section II

- ✓ **The principles**

WILL BE READY BY COFO 2014

WILL BE READY AFTER COFO 2014

3

### Section III

Recommendations and tools per specific thematic fields, such as:

- ✓ **Sampling Design and Field work,**
- ✓ **Remote sensing,**
- ✓ **Land Use/land cover Classification systems,**
- ✓ **Variables: Allometric Equations, Carbon Pools, etc**
- ✓ **Information systems and data management,**
- ✓ **International Reporting,**
- ✓ **Quality assurance,**
- ✓ **Other collection of information related to Forest Governance, Biodiversity, Socio-economic and forest service's aspects,**
- ✓ **Data Sharing Policy,**

References to recommended manuals of specific thematic fields

4

### Annexes



A glossary of terms





# FAO and its role in REDD+

- ❑ **FAO's key role in REDD+ readiness is to help countries develop, implement and operationalise their National Forest Monitoring System (NFMS)**
- ❑ **FAO also assists countries in conceptualizing and implementing REDD+ activities and in the development of policies and measures**

## Key principles of FAO's support

- National ownership
- Alignment with the UNFCCC process
- Step-wise approach that allows for improvement over time
- Builds upon existing capacities, available data and systems in place
- Use of open-source, freely available data and tools as much as possible
- Strengthening of national capacities (learning-by-doing)



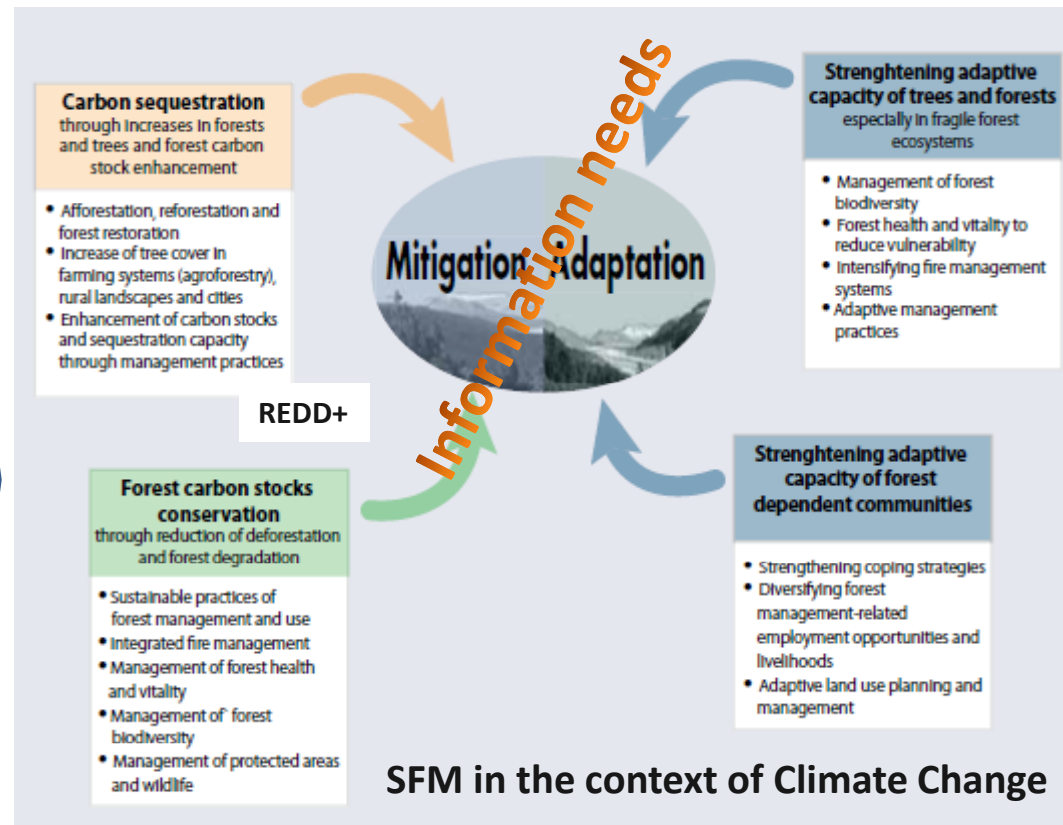
# Information needed for SFM ⇌ REDD+

## Sustainable Forest Management

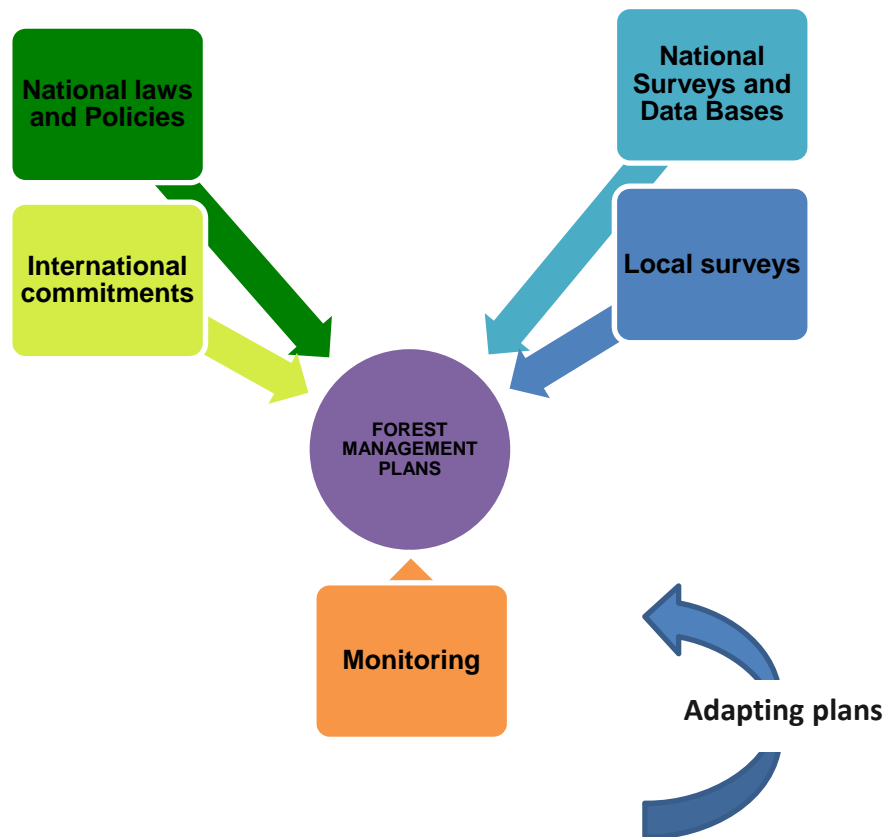
The General Assembly of the United Nations adopted in December 2007 the most widely, intergovernmentally agreed definition of *Sustainable Forest Management (SFM)*:

*Sustainable forest management as a dynamic and evolving concept aims to maintain and enhance the economic, social and environmental value of all types of forests, for the benefit of present and future generations. It is characterized by seven elements, including: (i) extent of forest resources; (ii) forest biological diversity; (iii) forest health and vitality; (iv) productive functions of forest resources; (v) protective functions of forest resources; (vi) socio-economic functions of forests; and (vii) legal, policy and institutional framework.*

(Source: UN 2008, Resolution 62/98)



# Information needed for SFM ⇌ REDD+



- ✓ REDD+ schemes are emerging and can help meet the costs of actions to reduce GHG emissions due to deforestation and forest degradation and to increase the stock of carbon in forests
- ✓ Robust forest monitoring and reporting systems are key aspects of forest-based responses to climate change, both for mitigation and adaptation
- ✓ SFM practices can help reduce the economic, social and environmental vulnerability of forests and forest-dependent people to climate change as well as generating multiple benefits, including mitigation benefits.





*thank you!*

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