NATIONAL CARBON ACCOUNTING SYSTEM

INDONESIA

NATIONAL CARBON ACCOUNTING SYSTEM

is a system to provide a comprehensive and credible account of national land based GHG emissions and sinks.

Why an NCAS is needed

- **To measure carbon/GHG emissions/sinks to**
  - **meet international reporting requirements**
  - **meet potential market demands**
- **Large values of carbon in Indonesia's forest, and landcovers**
- **Markets require accurate, verifiable estimation of GHG.**
- **Quality of accounting system influences carbon values & credits of forests and landcovers**

THE DEVELOPMENT OF NCASI

OBJECTIVES:

→to provide monitoring capabilities for GHG emissions/sinks

→to establish a credible Reference Emission Level.

→to support the development of policy and guidelines on GHG emissions/sinks and their mitigation from land based systems.

→reduce uncertainties that surround estimates of emissions and sinks

→provide a scientific and technical basis to international negotiations including negotiations on REDD

NCASI will have capability to estimate emissions from:

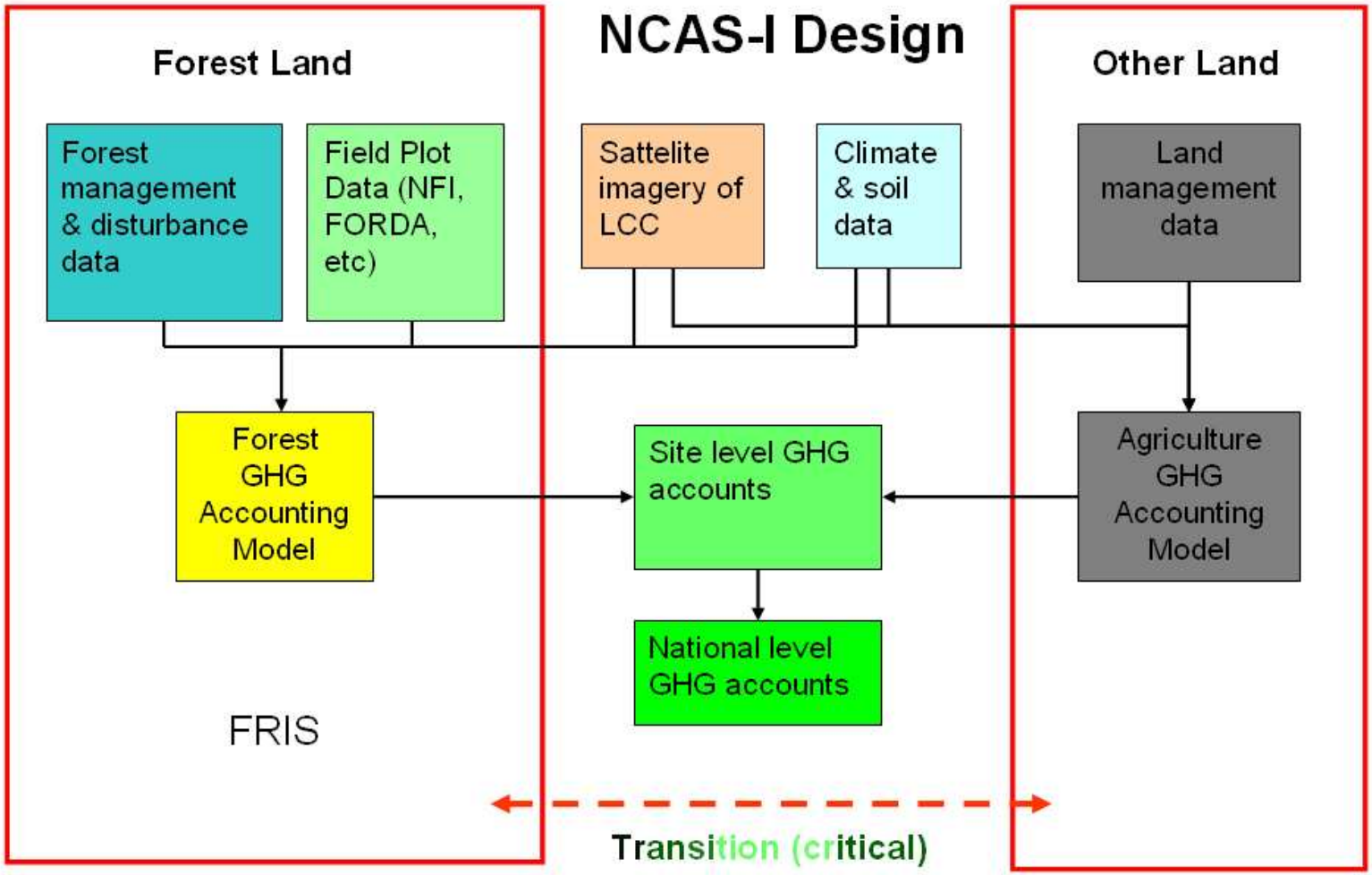
.. Forest management (e.g. silviculture intervention) and Disturbance (e.g. Fire)

.. Conversion (forest → agriculture, estate crops, timber plantation)

.. Deforestation and forest degradation

.. Afforestation

NCASI DESIGN MODEL



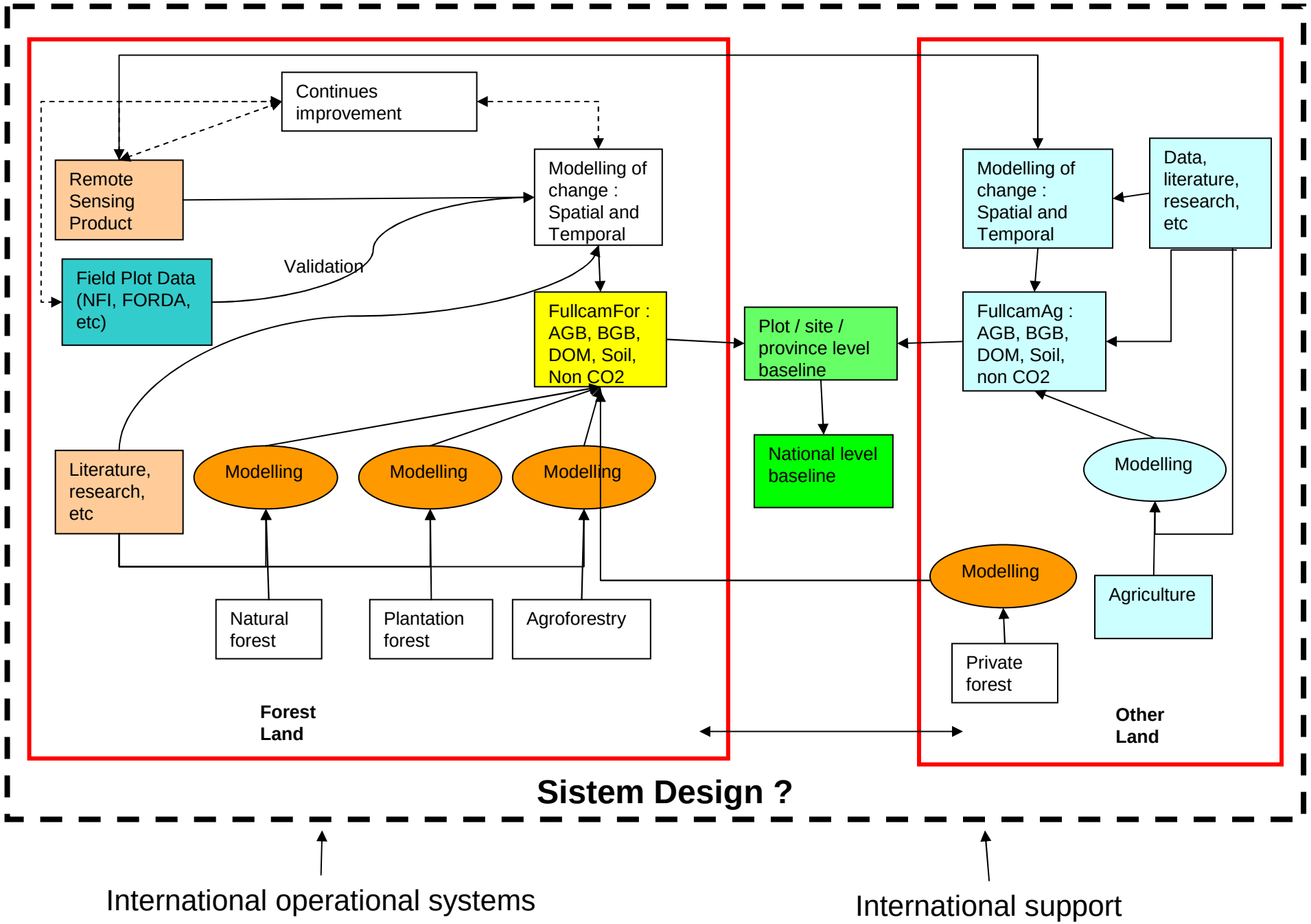
Technical elements and activities in the NCASI development

Three major activities linked

- Remote sensing program
  (Consistent complete fine scale time-series land cover change with history)
- Modeling and measurement program for GHG accounting & reporting.
  - Biomass (all pools)
  - Soil carbon
  - Non CO2
- Data program
  (for modelling)

Stage of design and development for NCAS-I

- ***System Design (by November 2008)***
- ***System Development (Synthetis and model selection, etc)***
- ***Initial system Implementation.*** ASAP.
- ***Research and Development*** program to improve components and meet emerging demands feeding into program
- ***Continuous Improvement*** in methods, data, models to evolve system


Continues improvement
Remote Sensing Product
Modelling of change : Spatial and Temporal
Field Plot Data (NFI, FORDA, etc)
Validation
FullcamFor : AGB, BGB, DOM, Soil, Non CO2
Plot / site / province level baseline
National level baseline
Modelling of change : Spatial and Temporal
Data, literature, research, etc
FullcamAg : AGB, BGB, DOM, Soil, non CO2
Literature, research, etc
Modelling
Modelling
Modelling
Modelling
Modelling
Natural forest
Plantation forest
Agroforestry
Agriculture
Private forest
Forest Land
Other Land
Sistem Design ?
International operational systems
International support

Remote Sensing Task

- Identify select and acquire time series of medium resolution image data (Landsat and L-band SAR) covering all of Indonesia, and other data DEM, selected MODIS
- Conduct pilot study (proposed Kalimantan) of time series optical-radar processing to produce NCAS landcover change time series.
- Set up infrastructure and personnel for national program.
- Implement National System for forest-nonforest NCAS inputs
- Evaluation of remote sensing for comprehensive indicators of disturbance, degradation
- R&D for biophysical estimates using (a) nation wide data sets (b) emerging technology radar & optical
- R&D Set up test site for benchmarking and developing new & improved methods for forest measurement, GHG measurement and modeling, and remotes sensing

Data Programm Task

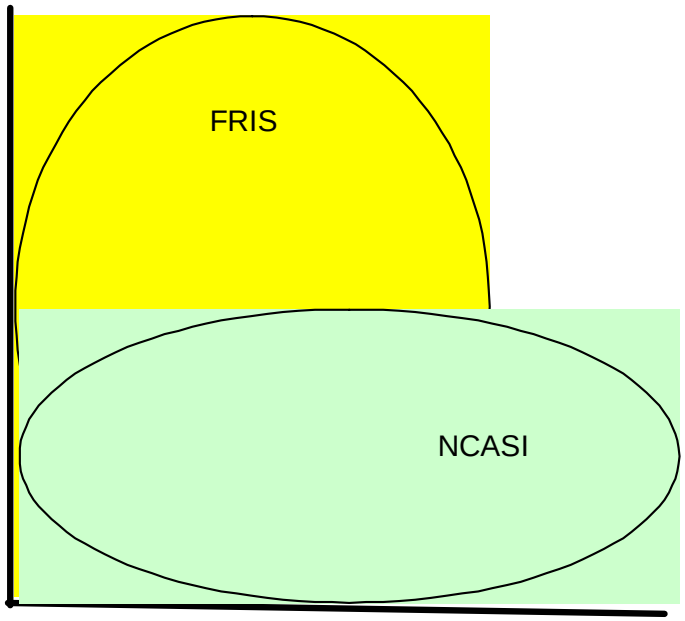
- Review & Specification of spatial and temporal data required to run NCAS models at stage 1 and desired; Identify source of existing data and likely sources of improved. Infrastructure to house data
- Acquire NCAS-suitable data from FRIS
- Acquire, process other required data (climatic, maps etc)
- CI – Improved measurement data from forest plots – based on priority areas

Modelling Task

- Review and specify spatial model structure and requirements: current and anticipated
- Build operational model
- Apply model to pilot remote sensing area (Kalimantan)
- Review model inputs and outputs and identify key gaps for improvement (RS, data model.
- Implement agreed model V1
- Apply to national data
- Continuous improvement and R&D, based on evaluation of priorities (policy, quality)

NCAS & FRIS

Information requirements
(precision and detail)



Area (coverage/scale)

NCAS covers all GHG and all sectors
Forestry data and expertise support NCAS inputs for forested area

Essential aspects of NCAS

National: One system with complete coverage - all sectors, all tenures, internally consistent

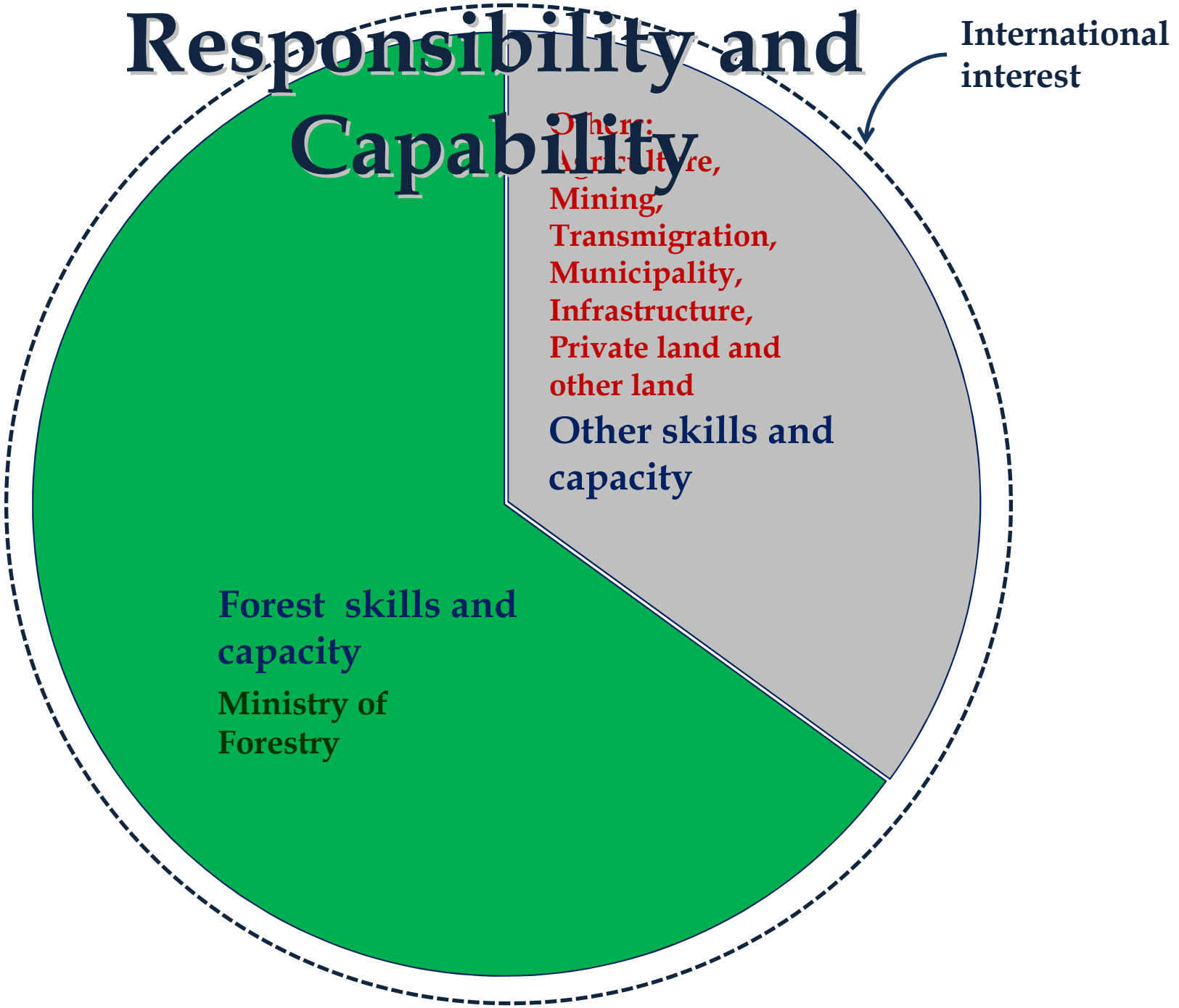
Transparency for auditing, international standard

Continuity

- Single agency headquarters with overall responsibility for NCAS
- Multi-disciplinary expertise, data from multiple agencies

(e.g. Australian model)

Responsibility and Capability



FORESTLAND AREA- NON FORESTLAND AREA