INCAS Roadmap

Guiding the development and operation of Indonesia's national MRV platform for the land-based sectors

Ministry of Environment and Forestry
Research, Development and Innovation Agency

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The INCAS is an Indonesian Government owned and operated greenhouse gas accounting system for the land based sectors. Developed by the Ministry of Environment and Forestry (MoEF), with support from the National Institute for Aeronautics and Space (LAPAN) and others, the INCAS is designed to serve as a centralised national platform for monitoring GHG emissions and removals from the land based sectors in Indonesia. The INCAS generates credible information to support Indonesia's ongoing emissions accounting requirements; including measurement, reporting and verification (MRV) provisions for reducing emissions from deforestation and forest degradation commonly known as REDD+.

While the INCAS serves as an internal system of the Indonesian Government, its development has been supported with technical and financial assistance from the INCAS Program of support (INCAS Program) at the Center for International Forestry Research (CIFOR) with Australian Aid funding.

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Research, Development and Innovation Agency of the Ministry of Environment and Forestry

Citation is permitted with acknowledgement of the source:
INCAS Roadmap. 2015. Research, Development and Innovation Agency of the Ministry of Environment and Forestry. Bogor, Indonesia.

Published by
Research, Development and Innovation Agency of the Ministry of Environment and Forestry
Kampus Badan Penelitian, Pengembangan dan Inovasi
Jl. Gunung Batu No. 5, Bogor 16610, Indonesia
Telp: +62-251 7520068
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Support this publication was provided by the Australian Government through a partnership with the Center for International Forestry Research (CIFOR). Support was also provided through the former Indonesian-Australia Forest Carbon Partnership (IAFCP).

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Preface

The Government of Indonesia is developing the Indonesian National Carbon Accounting System (INCAS) as a national platform for greenhouse gas (GHG) accounting in the land-based sectors. The INCAS is designed to support Indonesia's national GHG data and reporting needs, such as Measurement, Reporting and Verification (MRV) requirements, including for REDD+ activities.

The INCAS is designed as a Tier 3 level GHG accounting system that provides a detailed and systematic approach to monitoring GHG emissions and removals across all of Indonesia's forests and other lands. It generates detailed information on historic, present time and future projections of GHG emissions and removals from land based activities. This level of detail will not only help Indonesia to meet its emissions reporting requirements but also allow us to better understand, manage and ultimately reduce GHG emissions in a targeted and effective manner.

The INCAS has been under development for several years now and the first national results are on schedule for completion by the end of 2015. The finalisation of these results will signal the completion of Phase 1 of INCAS development. However, the INCAS is an open and continually improving framework and a significant amount of work remains to be done in expanding the coverage of the system to include the other land-based sectors such as agriculture. Another important step will be the operationalisation of system and hence expansion of the INCAS team to include representatives from operational and mandated agencies within the Ministry of Environment and Forestry (MoEF).

To date, the Research, Development and Innovation Agency (FORDA) of the MoEF has led the development of the INCAS, with support from the Directorate General of Forestry Planning (Planology), National Institute for Aeronautics and Space (LAPAN), the Ministry of Agriculture and other national institutions. The development phase of the INCAS has been supported by the Australian Government through a partnership with the Center for International Forestry Research (CIFOR) and previously under the Indonesia-Australian Forest Carbon Partnership (IAFCP). As part of the operationalisation of INCAS, the system will need to be expanded to operate across the Ministry including Planology and the recently formed Directorate General for Climate Change.

This document, the INCAS Roadmap presents the next phases for INCAS for the period 2015 to 2018 and beyond. It outlines how the system can be expanded to account for emissions from all Agriculture Forestry and Other Land Use (AFOLU) activities in Indonesia and also operationalized as an ongoing function of MoEF to support all future official GHG data and reporting requirements.

I am very pleased to present the INCAS Roadmap and welcome collaboration with new national and international partners to support the ongoing development and operationalisation of the INCAS.

Bogor, September 2015

Dr. Henry Bastaman
Director General
Research, Development and Innovation Agency
Ministry of Environment and Forestry

Summary

The Indonesian Government is developing the Indonesian National Carbon Accounting System (INCAS) to generate national greenhouse gas (GHG) data for the land-based sector and to help meet Indonesia's Measurement, Reporting and Verification (MRV) requirements for the land-based sector, including for REDD+.

Version one of the *INCAS - Standard Methods for Estimating Greenhouse Gas Emissions from the Forestry Sector in Indonesia* has already been published and endorsed by the Minister for Environment and Forestry. The first national results from INCAS are on schedule for completion by the end of 2015. This will signal the completion of Phase 1 of INCAS development. However, the INCAS is an open and continually improving framework and a significant amount of work remains to expand the coverage of the INCAS to the national level and other land-based sectors.

Beginning in early 2016, the system will be expanded and operationalised across the Ministry of Environment and Forestry (MoEF) including to help meet ongoing emissions reporting requirements. Importantly, this includes the expansion of the INCAS team and the training of new officials and experts from other agencies including the Directorate General of Climate Change (DG PPI), Directorate General of Forestry Planning (Planology) and others.

This Roadmap has been prepared to clarify system development priorities, the establishment of supporting institutional arrangements and adequate resourcing to facilitate the efficient and effective operation of INCAS as a fully nationalised system that meets all of Indonesia's land-based sector GHG data compilation and reporting requirements.

Introduction

The scale and severity of climate change and environmental degradation requires a new paradigm for problem solving. Central to this is efficient and effective collaboration between countries, governments, institutions, and individuals. To this end, countries have agreed that deep cuts in GHG emissions are needed to avoid dangerous climate change, and almost 100 nations have committed to limiting their emissions. This includes Indonesia, which has committed to an ambitious emissions reduction target of 26 percent below business as usual by 2020, and 41 percent with international assistance.

Indonesia's forest and land use sector are reported to contribute to a significant source of global GHG emissions, a function of having one of the world's largest forest estates, coupled with high rates of deforestation and large areas of degraded peatlands. A significant percentage of Indonesia's proposed emissions reductions are expected to be gained from changes to the way land is managed in Indonesia. Indonesia's efforts are expected to be enhanced through access to international finance that will support policy, planning and on-ground activities to reduce emissions from deforestation and forest degradation, commonly known as REDD+.

To design, implement and monitor effective emissions reduction activities; Indonesia needs to be able to measure, report and verify (MRV) its GHG emissions and removals from the land-based sectors. A robust MRV system will empower Indonesia to make informed decisions on the design of its REDD+ interventions and improve the efficiency of its land management sector. Additionally, a credible MRV system will increase investor confidence in REDD+ activities and allow decision makers to value Indonesia's forest carbon resources alongside other economically proven land uses such as agriculture, timber production and mining.

Symbolic of the broader climate change challenge, MRV requires strong practical collaboration. Indonesia already has considerable technical expertise, data, information, systems and processes to support a credible MRV system for the land-based sector. To ensure consistency and hence credibility, the Indonesian Government needs to consolidate its land sector MRV activities into **one nationalized platform for GHG accounting and reporting.**

For this purpose, the Indonesian Government has been developing the INCAS as a centralized and systematic approach for accounting GHG emissions and removals from the land-based sectors. The INCAS has been under development for several years and the national methodology for the forestry sector (including peatland) was published in early 2015 by the Ministry of Environment and Forestry: *Standard Methods for Estimating Greenhouse Gas Emissions from the Forestry Sector in Indonesia (version 1)*. The system has already been trialed over the REDD+ Pilot Province of Central Kalimantan, with the results documented in *Estimation of Annual Greenhouse Gas Emissions from Forest and Peat Lands in Central Kalimantan*.

The INCAS will produce a nationally consistent GHG dataset for the land use sector. This dataset should form the national GHG dataset and inform emissions reduction activities and aspirations in Indonesia's land-based sectors. This data can be used to support Indonesia's various international GHG reporting requirements (e.g. UNFCCC) and should be consistent with subnational GHG accounts at both the jurisdictional and even REDD+ project level. The GHG dataset produced by the INCAS will not only ensure consistency but will vastly improve the efficiency and effectiveness of MRV activities in Indonesia. One national platform that all REDD+ stakeholders can use will drastically reduce the need for provinces, districts and other REDD+ proponents to develop and maintain their own GHG accounting system which will reduce monitoring and transaction costs, timeframes and ensure consistency which should ultimately lead to an increased uptake of REDD+ activities in Indonesia.

Using the INCAS framework, expansion of the estimates of GHG emissions and removals to the national level is on schedule for completion by the end of 2015, in time for reporting to the UNFCCC's COP21 in Paris. Following this, the expansion of the INCAS to include the other land use sectors will commence along with the process for continual system improvement and development.

INCAS Brief Description

The INCAS generates historical GHG accounts, future emissions scenario projections and can form the basis for ongoing annual emissions monitoring requirements for the land-based sector. It produces results on an annual basis across the entire country and can also be scaled to provide subnational GHG accounts. It is designed to support GHG reporting and other priorities such as the establishment of emissions baselines and in particular forest reference emissions levels (FREL) or forest reference level (FRL).

The INCAS is not one technical solution, software package, data input or a one-off technical analysis. It is instead a systematic approach to quantifying net GHG emissions in a transparent, accurate, consistent, complete, and comparable (TACCC) manner. The INCAS is an open and transparent framework that uses the best available data, methodologies, expertise and technology to account for net GHG emissions in the most credible manner possible.

INCAS Approach

The INCAS framework is designed to bring together best available data including spatial, biophysical and land management data to quantify changes in carbon stocks and greenhouse gas emissions in the agriculture, forestry and other land use (AFOLU) sectors in Indonesia. This involves a series of processes that collate and transform spatial and non-spatial data into formats that can be input into models.

The models are then used to track carbon flows between carbon pools arising from natural and human induced events to generate estimates of GHG emissions and removals.

The types of models include forest and crop growth models, soil models (mineral and organic[1]), debris decay models, fire models and wood products models, all of which are brought together with annual area data from spatial analysis through integrating tools to produce consistent outputs in formats required for reporting. The integrating tools enable the systematic organization of the large amounts of data required to produce GHG estimates in a national level system and help reduce inconsistencies and human error.

The INCAS framework is designed to enable new data and new models to be integrated into the modeling process to continuously improve the estimates of annual GHG emissions and removals in Indonesia. The first series of models used for INCAS focused on the forest sector. This can be expanded to other land use sectors over time through the INCAS continuous improvement plan.

The current stage of development of INCAS uses an event-driven process to model the impact of forest disturbances and other management events on forest condition. This approach tracks the flow of carbon between the different carbon pools in forests, from which estimates of GHG emissions and removals are generated. These are used to quantify net emissions of each relevant greenhouse gas by event type. The comprehensive coverage of greenhouse gases and flexible model structure enables GHG emissions and removals to be reported for any scale (e.g. national, provincial, district, project), for any timeframe (i.e. historical, current, future) and for any reporting categories (e.g. UNFCCC land uses, REDD+ categories).

The INCAS approach allows combinations of events to be easily modified and rerun through the system to reflect different events, definitions and forest management decisions. It also allows for continuous review and improvement as technical capacity increases and reporting needs change. As new data becomes available it is simply added to the system and the models rerun for the entire time period within a consistent framework.

Subnational GHG accounts will be able to be generated from the national platform as well. This will be achieved by using jurisdictional boundaries to 'cookie-cut' the spatial datasets to produce activity data (area) inputs for modeling. Additional local data can be added to the national datasets and the same modeling processes used. As long as the local data is shared and incorporated into the national system the subnational GHG inventories will be entirely consistent with the national GHG inventory. Such data sharing will also enable rapid advancements in the accuracy of GHG emissions and removals outputs at the local and national level.

The option also exists to develop an online interface that links to the INCAS. Subnational jurisdictions and registered REDD+ project could log on to gain access to the national datasets, methodologies and tools and allow them to generate their own subnational GHG inventories and projections. This would further ensure consistency and most importantly will significantly reduce system operating costs and transaction costs for REDD+ proponents in Indonesia.

1 Organic soils are commonly referred to as peat, which when exposed through deforestation and conversion to intensive land management practices can release large quantities of greenhouse gases for many years.

Figure 1 below summarizes the INCAS framework.

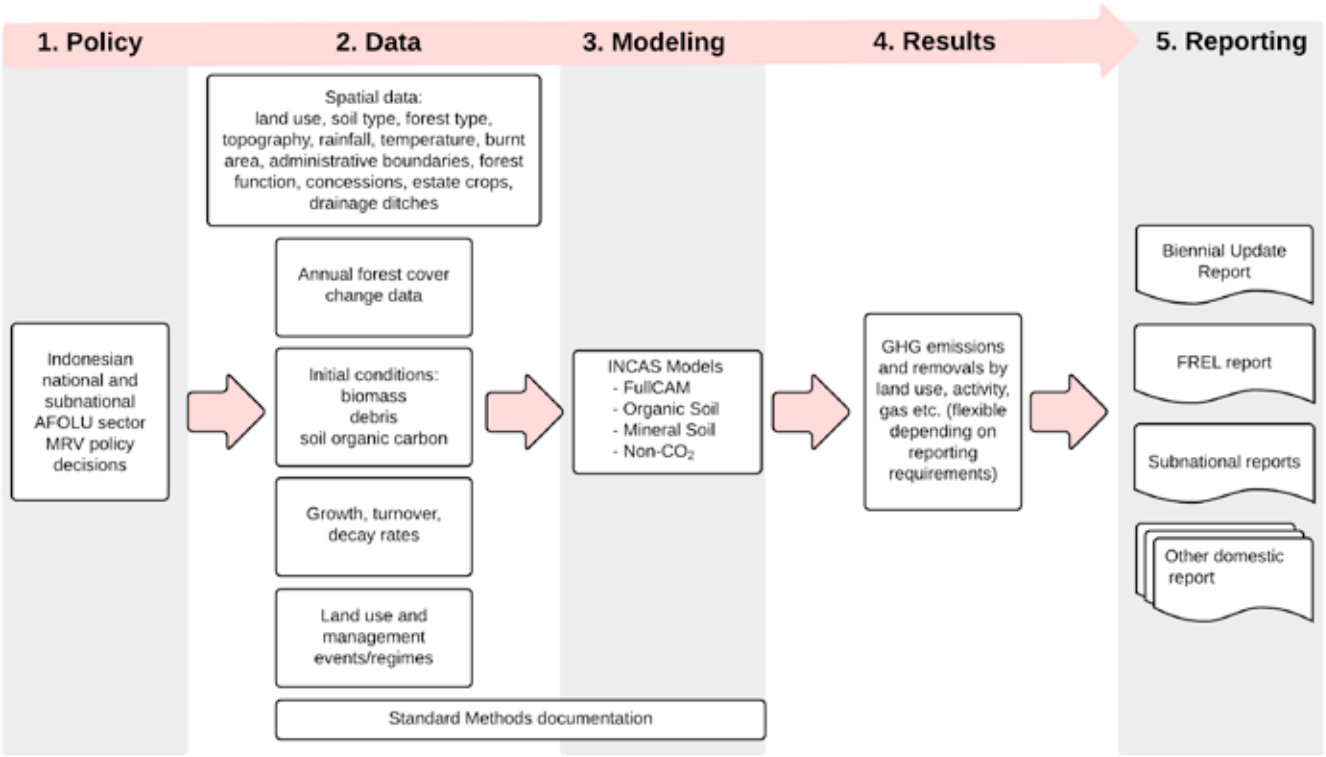

Figure 1. INCAS framework summary

INCAS Outputs

The INCAS can provides the Indonesian Government with the following:

- A GHG dataset of emissions and removals to support land sector emissions reductions activities and improved land management practices across Indonesia
- Credible information to track progress towards Indonesia's GHG emissions reduction targets
- Informing the design of Indonesia's REDD+ architecture, including calculating a forest reference emission level (FREL) and selecting an appropriate base year
- Estimates for Indonesia's national GHG inventories as the basis for UNFCCC reporting
- Credible information and systematic data management processes to support domestic policy development, including sustainable management of forests, land-use planning and management decisions, and watershed management
- Ability to value Indonesia's forest carbon resources alongside other land uses such as agriculture, timber production and mining
- Regulatory basis for supporting participation in future carbon markets, including REDD+
- Subnational GHG accounts for jurisdictions and REDD+ projects, produced within a nationally consistent framework
- Support detailed planning for high value areas for rehabilitation and reforestation efforts.

MRV System Framework – from Data to Policy

Figure 2 below summarises the broader MRV process, showing the pathway from raw data inputs to the outcomes which an MRV system should support and help to achieve. The INCAS has been designed to function as part of a whole-of-government owned, operated and utilised MRV framework, as displayed below.

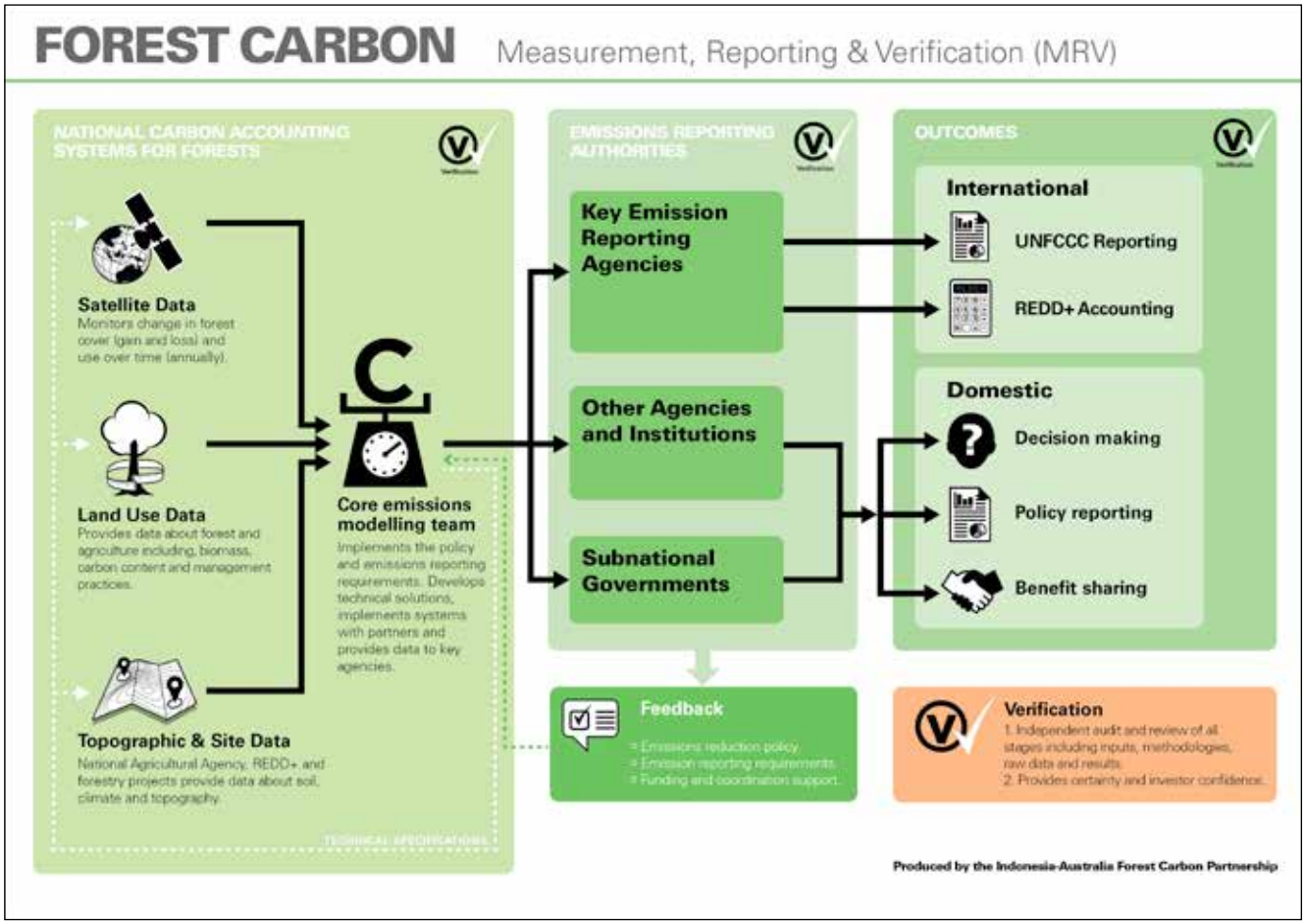

Figure 2. A complete whole-of-government MRV framework, from data to policy

INCAS Development Milestones

Trialing of INCAS in the REDD+ Pilot Province of Central Kalimantan and recently the completion of the first national results has proven the suitability of the INCAS approach to quantifying GHG emissions and removals from forest and peatlands in Indonesia. Figure 3 below proposes development milestones and priorities to expand the geographic, sectoral and temporal coverage of INCAS.

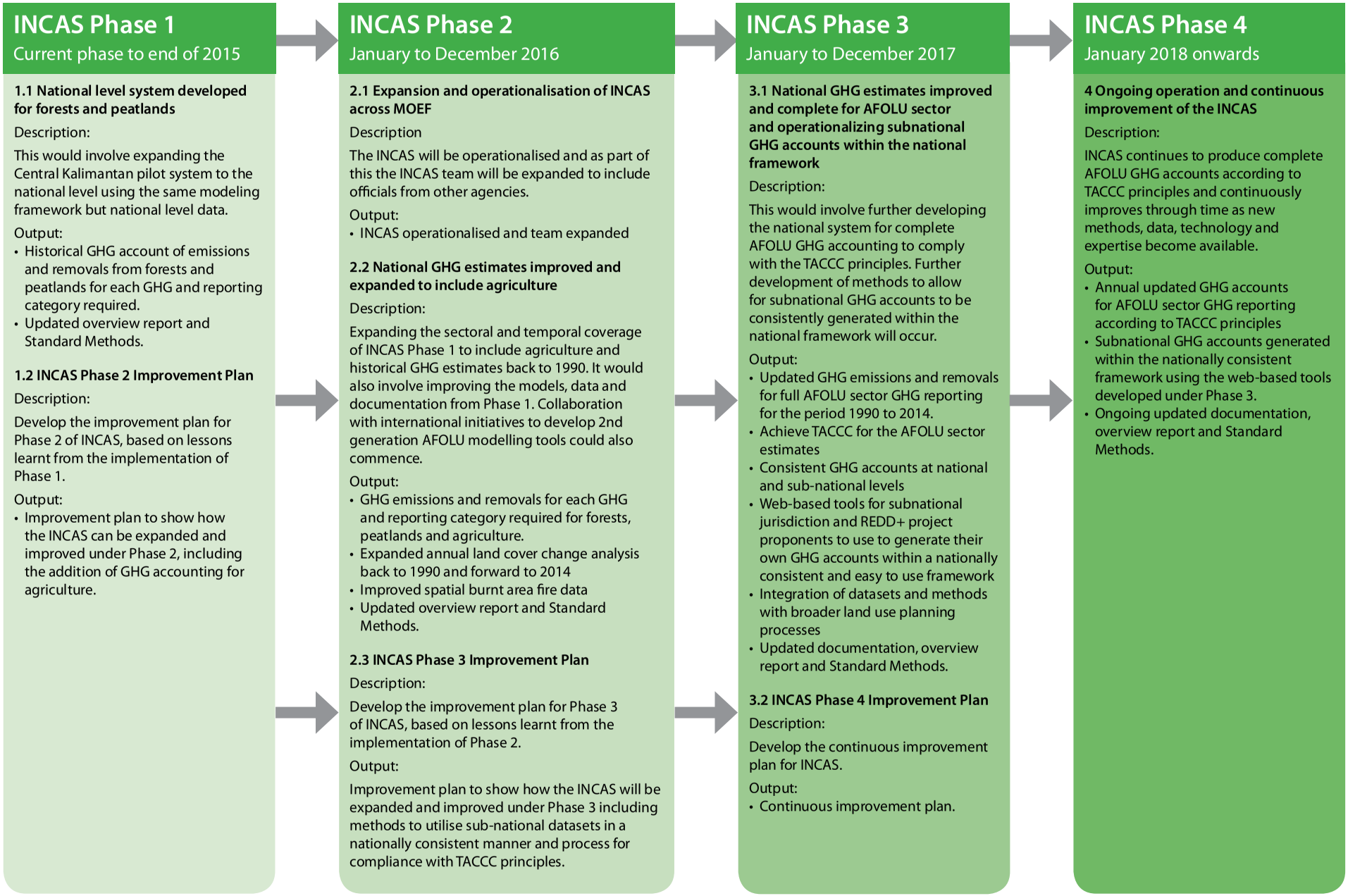

Figure 3. INCAS Roadmap - development milestones

INCAS Development Milestone – Timeline

Table 1 below outlines an approximate timeline for the commencement, implementation and completion of the phases of INCAS development and operation as the adopted national MRV platform for the land sector.

Table 1. Timeline for the commencement, implementation and completion of the proposed INCAS development phases

INCAS Development Phases	Jul - Sept 2014	Oct - Dec 2014	Jan - Mar 2015	Apr - Jun 2015	Jul - Sep 2015	Oct - Dec 2015	Jan - Mar 2016	Apr - Jun 2016	Jul - Sep 2016	Oct - Dec 2016	Jan - Mar 2017	Apr - Jun 2017	Jul - Sep 2017	Oct - Dec 2017	2018 - onwards
Pilot system over Central Kalimantan finalised for forests and peatlands.															
1.1 National level system developed for forests and peatlands															
1.2 Develop INCAS Phase 2 Improvement Plan															
2.1 Expansion and operationalisation of INCAS across MOEF															
2.2 National estimates improved and expanded to include agriculture															
2.3 Develop INCAS Phase 3 Improvement Plan															
3.1 National GHG estimates improved and complete for AFOLU sector and operationalizing subnational GHG accounts within the national framework															
3.2 Develop INCAS Phase 4 Improvement Plan															
4 Ongoing operation and continuous improvement of the INCAS															

INCAS Complete Framework

Figure 4 below shows the entire INCAS process for the fully developed system as Indonesia's national MRV platform for the AFOLU sector. To ensure consistency, each discrete task needs to be undertaken within a systematic framework such as that provided by the INCAS. The establishment of a clear management structure to oversee this process and fully resourced technical team to undertake each task within this systematic framework will also be essential for ensuring consistency.

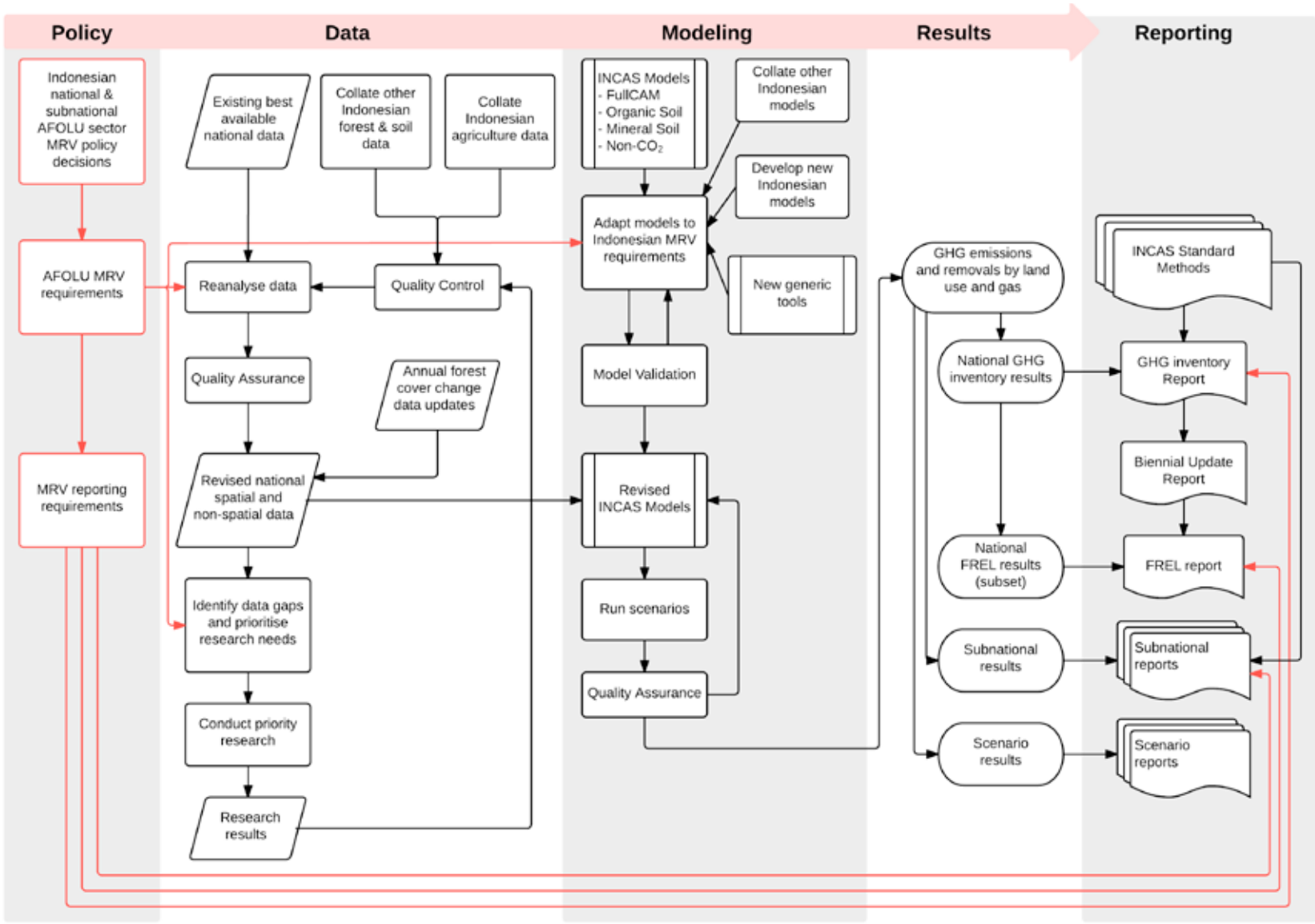

Figure 4. INCAS framework - detailed

INCAS Institutional Framework – proposed

Figure 5 below summarises the institutional arrangements that will need to be formally established to support the efficient and effective operation of INCAS as a fully nationalised system that produces the one official and authoritative GHG dataset that is capable of meeting all of Indonesia's GHG reporting requirements, including MRV for REDD+ activities.

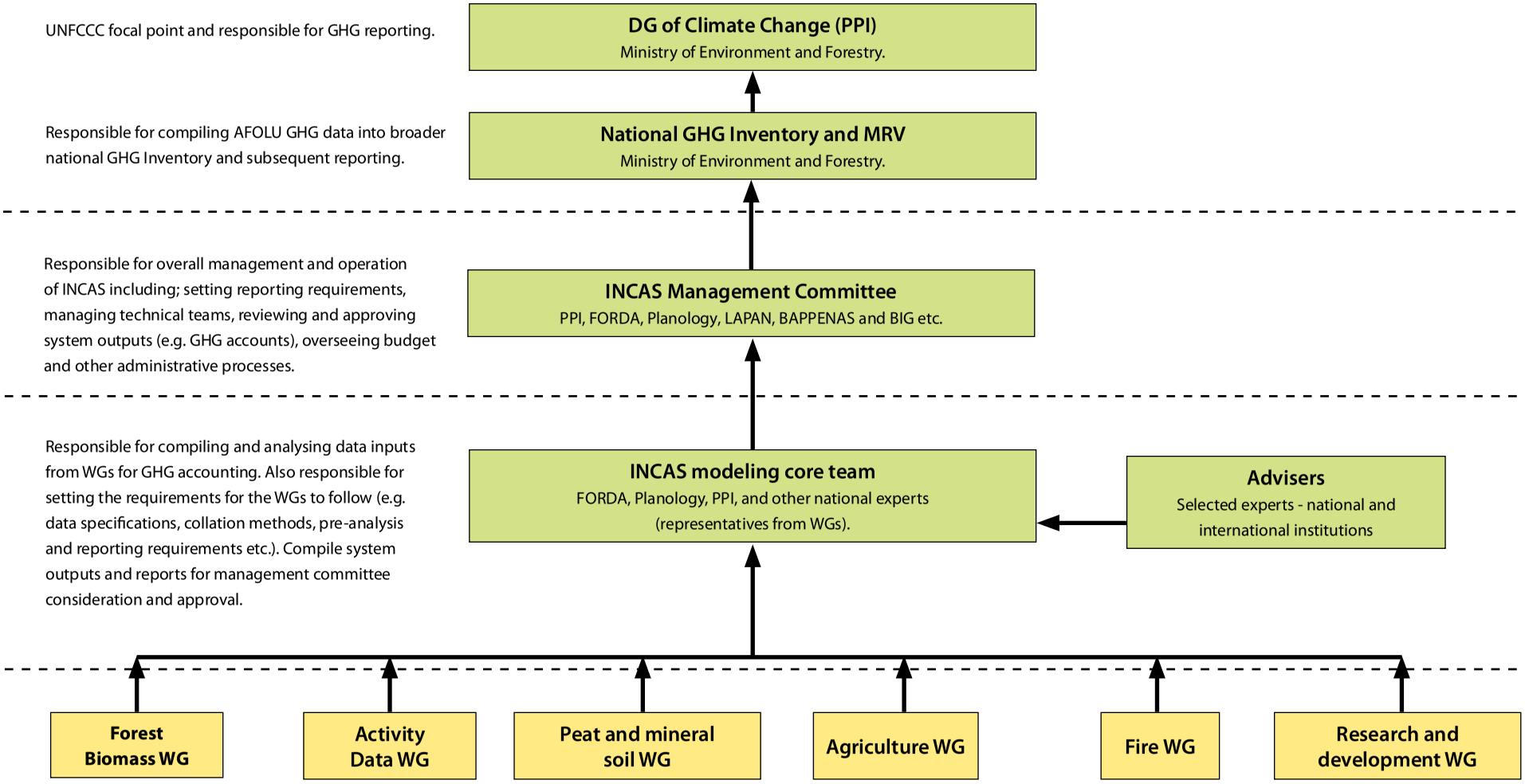

Figure 5. INCAS Institutional Framework – Proposed.

INCAS Annual Schedule of Work

Table 2 below represents the proposed annual schedule of INCAS activities to ensure the completion of GHG accounts and reporting are conducted in a timely manner. It should be noted that GHG accounts will be prepared for each previous calendar year. For example, the account of GHG emissions and removal that occur in 2015 will be prepared in 2016, once data from the complete 2014 calendar year has been obtained. The below phases represent the general INCAS activities that will need to occur annually to produce a GHG account, in reality these will consist of multiple smaller steps and processes. As the system continues to improve and develop, these phases may change as some processes may become quicker, some new processes added and others removed. This plan will be updated at the beginning of each calendar year to ensure individual GHG accounts are produced on time.

Table 2. INCAS annual schedule of work

INCAS annual schedule of work	Responsible	Jan	Feb	Mar	Apr	May	Jun	Jul	Augst	Sept	Oct	Nov	Dec	Jan (year 2)	Feb (year 2)	Year 2
Clarify any updates to emissions reporting requirements and policy parameters (reporting for previous calendar year)	All															
Review results from previous year, identify improvements for next GHG account and R&D priorities	All															
Generate annual update of land cover change analysis	Remote sensing team															
Collate new forest data (e.g. biomass, land use type, agricultural data, management information etc.)	INCAS core team															
Review Land Cover Change Aanalysis and forest data inputs	INCAS core team															
Spatial data analysis	GIS team															
Prepare model inputs	Modeling team															
Run carbon models - produce interim results.	INCAS core team															
Document draft results and methodology - prepare draft report	INCAS core team															
Conduct national consultations and review	INCAS core team, Mgt Comm and stakeholders															

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Table 2. continue

INCAS annual schedule of work	Responsible	Jan	Feb	Mar	Apr	May	Jun	Jul	Augst	Sept	Oct	Nov	Dec	Jan (year 2)	Feb (year 2)	Year 2
Update results and documentation based on national consultations	INCAS core team															
Submit final annual GHG inventory report (results from previous calendar year)	All															
Share national results with subnational jurisdictions and update inputs for future GHG accounts according to local knowledge and data	All															
Training and consultation for new staff and key stakeholders	INCAS core team															
QA/QC is run on every major input. Continuous process of documenting methodology, results and improvement opportunities	INCAS core team and independent experts															
Ongoing R&D for future GHG accounting purposes	INCAS core team															
Independent verification and review	External experts															

Adoption of INCAS

The INCAS has recently been endorsed by the Minister for Environment and Forestry to become the national MRV platform for GHG accounting and reporting for the land use sector. Until recently, the INCAS has existed as a development activity within MoEF (in particular FORDA, with support from Planology and others) and LAPAN. Forest and peat lands data, methodologies and importantly human expertise currently reside within these agencies – there is a clear need to expand this as part of the operationalisation of INCAS. Forest extent data, results and human expertise developed to produce annual national land cover change analysis resides at LAPAN. Datasets and input were provided by other agencies within the MoEF, in particular DG Planology, and others, but the majority of the technical analysis was conducted by FORDA and LAPAN.

The operationalisation of INCAS as the national platform for land-based sector GHG accounting and the delivery of the above listed outputs will require INCAS's current research and development phase to end and the system be transitioned into an operational government system that continues to develop and improve over time. The existing framework will need to be expanded to provide greater geographic, sectoral and temporal coverage. To do this, the INCAS framework will need to utilize the datasets, expertise, knowledge and resources of other agencies and national experts. The INCAS technical team will need to be expanded and formal management arrangements will need to be established that equally represent the mandates of all agencies, namely FORDA, Planology, DG PPI, LAPAN, the Ministry of Agriculture, BAPPENAS, BIG and others.

Recommended Actions – legal basis for ongoing operation of INCAS

Recommended actions that should be undertaken to enable the effective operationalisation of INCAS and ensure its ownership and use across the Indonesian government are listed below.

1. **Establish the legal basis for INCAS as an operational GHG accounting system within the Government of Indonesia**

   Confirm INCAS as the official system for generating authoritative GHG data via the appropriate legal mechanism and operationalise INCAS as an ongoing system of government. The legal basis should provide a clear mandate to coordinate, develop and implement all official GHG accounting activities for the land sector in Indonesia. The legal basis should clarify the official national approach (INCAS framework utilizing inputs from many agencies and ownership across Government), a clear management structure and appoint both technical and administrative staff to form the core team (see proposed human resource plan below).

   The establishment and details of the official national platform should then be clearly communicated to all stakeholders, to ensure all MRV activities can be coordinated and aligned with the official platform. This announcement should include information about how the INCAS approach will be implemented nationally and the development priorities for its expansion, complete with realistic timeframes (see above). This should be accompanied by advice on what stakeholders, in particular subnational jurisdictions and REDD+ projects, should do in the meantime to prepare for the operationalization of the platform and the alignment of their GHG accounting and MRV activities.

2. **Establish an MRV management committee with representation from all key national land sector agencies.**

   This committee should oversee the operationalisation of the INCAS framework and its ongoing development as Indonesia's official MRV platform for land-based sectors. The committee should also ensure effective institutional cooperation and allow for the smooth development and operation of the policy and technical requirements of the national MRV platform and the associated GHG accounting system (INCAS framework). This committee should decide the development priorities for the system and ensure it is sufficiently resourced, with inputs from their home agencies, to deliver its required outputs. The MRV management committee should report to the DG of PPI in MOEF and subsequently to the Minister for Environment and Forestry (see INCAS Institutional Arrangements above.).

3. **Establish formal cooperation arrangements between key agencies.**

   Formalize cooperation via written agreement (i.e. Decree, MOU or similar) to allow for ownership across Government of the system and its outputs. This should also create smooth and effective cooperation on the development and operation of the system, including on matters such as data sharing, information exchanges and technical interactions.

4. **Expand the INCAS technical team – see below**

   Expand upon the existing INCAS team to establish a fully resourced technical team as per the below listed human resource plan. This team should include officials from other key agencies and national experts who have already been working on MRV activities, have unique skillsets and access to data/information/knowledge. The existing members of the INCAS team can train new team members.

5. **Appoint a system manager – government official**

   This position should take responsibility for the day-to-day operation and development of the system and ensure outputs are delivered on time and according to requirements. The position will ensure the technical works are sufficiently supported and will be responsible for reporting progress and any issues to the management committee. The person in this position should understand all of the components of the system, inputs, outputs, policy needs and administrative matters.

6. **Engage policy advisers to advise on MRV and GHG data requirements**

   The position will be responsible for working with the national committee to clarify the GHG reporting and data requirements (international and domestic) and then working with the technical team to ensure the GHG accounts are compiled according to these requirements.

7. **Establish ongoing administrative functions**

   To establish the MRV system as an official operational system within Government and between the different agencies will require strong supporting administrative functions, including permanent full time staff, office space, equipment and IT systems, support staff and an operating budget. The system needs to be established as an operational function of government, not just a once yearly technical process.

8. **Seek ongoing budget arrangements to sustain INCAS as an operational system**

   To date, the development of the INCAS has been supported by funding provided by the Australian Government. Some internal government funds have also been provided by FORDA and LAPAN. However the current funding arrangements are only temporary and a more permanent budgeting arrangement from Treasury will need to be secured to fully operationalise and sustain INCAS as an official government system.

9. **Seek continued international support and collaboration from donors**

   Continue to consult with international experts and donors to provide advice and guidance on the development and operationalisation of the system. Donor support will likely need to be maintained until at least the end of the development phase of INCAS, scheduled for the end of 2017. This support will likely include advice and guidance from international experts, training opportunities, development of new tools and products, collection of new data and participation in international MRV forums.

Human Resource Plan

Table 3 below represents an indicative human resourcing plan to sustain the development and eventual operation of INCAS according to the development priorities listed above. The size of this team will require a standalone system manager to coordinate team members and ensure milestones are met.

The mechanism through which these officials are engaged to work on the INCAS as the backbone of Indonesia's national MRV platform has not been suggested in this version of the roadmap. Options for ensuring the engagement of these staff will need to be considered by the proposed MRV management committee, but options may include establishing a partnership between agencies or engaging officials.

Table 3. Proposed human resource plan to develop and operate the INCAS as Indonesia's national land sector MRV platform.

Position	Role and responsibility
MRV management committee	• Oversee the operation and ongoing development of Indonesia's land sector MRV platform • Decide the development priorities for the system • Ensure effective institutional cooperation to allow for the smooth development and operation of the system, including sufficient resources etc.
System manager	• Overall responsibility for the development and operation of the system • Part time role to be filled by existing official amongst other responsibilities
MRV policy adviser	• Responsible for ensuring the system produces GHG accounts according to emissions reporting requirements (UNFCCC, LOI, carbon markets etc.) • Guiding the development of the system and GHG accounts to meet Indonesia's REDD+ program requirements
GHG accounting technical manager	• Leading technical expert responsible for developing and operating the technical components of system according to the emissions reporting requirements • Close liaison with MRV policy adviser and system manager

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Table 3. continue

Position	Role and responsibility
Government liaison and coordination manager	• Responsible for ensuring smooth coordination between different government agencies and stakeholders • Responsible for ensuring the transition to full GOI ownership and institutionalization of the system
Model operators	• Responsible for the development and operation of INCAS models, including model inputs and pre-analysis
Forest data analysts	• Responsible for the collation and pre-analysis of data and model inputs
GIS operators	• Responsible for the preparation and pre-analysis of spatial data
GIS operator and data manager	• Responsible for the preparation and pre-analysis of spatial data • Responsible for general server and data management
Remote sensing manager	• Responsible for leading remote sensing component and ensuring forest/non-forest products are produced according to GHG accounting requirements.
Remote sensing data processors	• Responsible for generation of annual forest/non-forest products.
Administrative assistant	• Responsible for all system and program administration (staff admin, finance, workshop facilitation, travel etc.).

Budget Requirements

An indicative budget to support the continued development of the INCAS according to the priorities proposed in this roadmap, can be provided up on request. In general the development and operating costs of INCAS are relatively minor, when compared to the potential benefits available from emissions reductions and specifically REDD+ activities. The cost of the development phase of the INCAS (until 2018) will continue to be slightly higher than ongoing operational costs, owing to the need for frequent training exercises, equipment purchases, data collection and collation and support from international experts etc. Once INCAS reaches an operational phase, these costs are expected to decrease significantly. The main expenses beyond 2018 would likely be staff, domestic travel for data collation and consultation, seminars and stakeholder consultation, plus publications and system/office overheads.

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