

Strategic Plan

Measurement, Reporting and Verification: AFOLU Sector

2016 to 2020



*Prepared by The South Africa Land Sector
MRV Capacity Building Project, with the
support of the Government of Australia*



environmental affairs

Department:
Environmental Affairs
REPUBLIC OF SOUTH AFRICA

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Acronyms

AFOLU	Agriculture, Forestry and Other Land Use
CO ₂	Carbon dioxide
CO ₂ e	Carbon dioxide equivalent
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DRDLR	Department of Rural Development and Land Reform
Gg	Gigagram
GHG	Greenhouse gas
GHGIP	Greenhouse Gas Improvement Programme
IGCCC	Intergovernmental Committee on Climate Change
IPCC	Intergovernmental Panel on Climate Change
M&E	Monitoring and Evaluation
MRV	Measurement, Reporting and Verification
NDC	Nationally Determined Contributions
NCCC	National Committee on Climate Change
NCCRP	National Climate Change Response Policy
NDP	National Development Plan
NEMA	National Environmental Management Act
NTCSA	National Terrestrial Carbon Sinks Assessment
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SARS	South African Revenue Service
SPLUMA	Spatial Planning and Land Use Management Act
UNFCCC	United Nations Framework Convention on Climate Change

Executive Summary

- *The what?*

This strategic plan sets out the proposed approach and actions required to develop a Measurement, Reporting and Verification (MRV) approach for the Agriculture, Forestry and Other Land Use (AFOLU) sector. The MRV of AFOLU is intended to consistently track, quantify and report both the greenhouse gas (GHG) emissions and impacts, and non-GHG impacts of emission reduction responses over a long-term period. This will enable South Africa to analyse, interrogate and combine data and inputs to generate the desired outputs (e.g. emissions profiles, management scenarios, (inter-)national reports). The ultimate intention is to develop a system as a full approach (spatially explicit) Tier 3 (country-specific disaggregated information) carbon system that can account for emissions and removals (to include other significant GHGs). Better GHG inventories for AFOLU mean better sink-source regulations and adaptation-mitigation connection.

- *The why?*

The AFOLU sector is the only sector with sources and sinks of GHGs. Furthermore, the sector has socio-economic benefits especially for marginalised communities, such as job creation. Inclusion of the land subsector in emissions estimations has shown that most of the carbon is sequestered in the soil, hence the need to implement tracking measures for soil conservation. Woodlands and savannahs also play a critical role in the sequestration of GHGs. It is therefore important to communicate, both domestically and internally, how South Africa is measuring, reporting and verifying the contribution of the AFOLU sector, in the realisation of the vision to transition the country towards lower carbon economy and climate change resilient economy.

- *The how?*

An MRV of AFOLU will be designed to meet the principles of simplicity, relevance, timeliness, accuracy, transparency and standardisation as guided by policy priorities in South Africa. Importantly, it will be a stakeholder-guided phased approach that will build on existing data sets initially, but be able to support the generation or acquisition of new or refined data when available/needed. Policy priorities and requirements will be reviewed periodically to ensure that the system continues to meet the needs of the government of South Africa. The work undertaken to date, and captured in this strategic plan, provides the foundation for a sustainable, credible and transparent MRV system for South Africa's managed lands. The intention is for South Africa to build an evidence base that will inform planning and prioritise data-collection mechanisms, including setting up mandatory monitoring, evaluation and reporting processes for all relevant stakeholders as required. This project builds on existing and related developments in the climate change discourse, land sector management, as well as the climate change response Monitoring and Evaluation (M&E) areas that South Africa has been undertaking. The MRV of Agriculture, Forestry and Other Land Use (AFOLU) will be part of the national climate change response M&E system to track the impact of economy wide emissions.

- *Key messages?*

- The National Climate Change Response Policy (NCCRP) emphasised the importance of Land/AFOLU for the stabilization and removal of GHG emissions;
- The MRV of AFOLU will evolve as part of the web-based climate change response M&E system.
- The DEA is establishing functional institutional arrangements with other government departments and other stakeholders (e.g. private sector, academia, etc.) to ensure a functioning MRV of AFOLU.

- Effective and clear communication is critical building block for the MRV of AFOLU for building trust and accountability among stakeholders;
- A practical MRV of AFOLU is being designed such that it is simple, flexible and not onerous;
- The MRV of AFOLU is not a policy instrument, nor does it provide guidance on activities within managed lands. It is being developed such that it becomes a tool to gather and communicate data/information/knowledge, to ascertain the impacts of land sector activities and the impacts of policy and strategic interventions in the sector primarily on GHG emissions. As such, it will provide a knowledge base and measurement framework that will inform both the undertaking and improvement of relevant land sector mitigation activities. Furthermore, the MRV of AFOLU will help to understand the impact of actions that enhance carbon sequestration and improved land management for multiple goals. This information will be made available to all relevant stakeholders through the web-based climate change M&E system.

Signoff

It is hereby certified that this Strategic Plan for the MRV of AFOLU for South Africa, 2016 to 2020, was developed through the guidance of the following project's steering committee:

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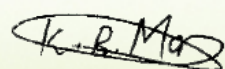
In partnership with the following consultants:

MWH Global ¹	Dr. Peter Moore
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The plan accurately reflects the strategic goals and objectives which the Chief Directorate: Monitoring and Evaluation (M&E) will endeavor to achieve on behalf of the Climate Change and Air Quality Management branch, of the Department of Environmental Affairs.

Chief Director: M&E

Mr. Brian Mantlana



Signature

¹ MWH Global is a unfaction of three major engineering firms: James M. Montgomery Consulting Engineers, Watson Hawksley Ltd., and Harza Engineering Company.

PART A: Overview

1. Vision

Establish a comprehensive, credible and evolving evidence-base of anthropogenic impacts, natural and climate change effects, on sinks and sources of greenhouse gas emissions in the Agriculture, Forestry and Other Land Use (AFOLU) sector

2. Principles

- **Simplicity:** minimising burden on participants and duplication of requirements
- **Timeliness:** set up to meet reporting deadlines and to respond in a timely manner
- **Accuracy:** delivering good quality information
- **Transparency:** a system that is transparent and accountable to stakeholders
- **Stakeholder-guided:** fully involving stakeholders in the design and implementation
- **Phased approach:** implementing the system over a number of years to allow learning-by-doing and continuous improvement
- **Standardisation:** using common approaches where possible and appropriate to improve comparability of information
- **Relevance to South Africa and building on existing systems:** building on the systems, processes, capacities, instruments and institutions already in place
- **Materiality:** potential/capacity to significantly emit and sequester/remove GHG emissions

3. Strategic goals and objectives

The long-term strategic objective for the development and implementation of the AFOLU sector MRV system is to enhance South Africa's capacity to transparently monitor and report emissions from land use and the impact of mitigation actions. This objective can be further subdivided into short-term objectives as indicated below:

Goals	Short-term objectives
Effective and efficient leadership and administration in tracking GHG emissions and removals from managed lands	<ul style="list-style-type: none">• Provide a platform for effective communication with stakeholders, including through coordinating and profiling of emissions reductions activities in the AFOLU sector• Support the compilation of the Biennial Update Reports, GHG inventory, National Communications, Annual Climate Change reports, and any reporting required in tracking the progress of South Africa's commitment under the UNFCCC• Support the verification process in the proposed carbon offset mechanism
Establish a sustainable long-term climate change response AFOLU MRV system	<ul style="list-style-type: none">• Develop guidelines and indicators that will inform stakeholders about methodological and data requirements for MRV as well as their roles and responsibilities• Monitor South Africa's progress towards implementation of the Nationally Determined Contributions (NDC)• Formalise institutional arrangements to facilitate the exchange of data and information and coordinate emissions reduction activities• Develop an impact assessment mechanism for mitigation actions• Source funding domestically and internationally to implement the

PART B: Tracking emissions from managed lands

4. Background

Climate change is an increasing threat at local, regional and global levels, and addressing that threat requires us to change our ‘business as usual’ activities. As a signatory to the United Nations Framework Convention on Climate Change (UNFCCC), South Africa has made a commitment to make a fair contribution towards reducing greenhouse gas (GHG) emissions. This has recently seen the development and submission of South Africa’s Nationally Determined Contributions (NDCs).

Acting through the DEA, South Africa published the NCCRP in 2011, which identified the ‘Land’ or AFOLU² sector as important towards the stabilisation and removal of GHG emissions. For this reason, the government of Australia is providing support to the government of South Africa through the ‘*South Africa Land Sector MRV³ Capacity Building Project*’, to develop this strategic plan and (human) capacity to undertake MRV for South. There is a need to understand and track the extent to which the AFOLU sector is making a contribution towards the reduction of GHG emissions at a national level.

The MRV of AFOLU will evolve as part of the (web-based) national climate change response M&E⁴ system to track economy wide emissions. The legislative mandate for DEA to develop and implement the M&E system is outlined in Section 12 of the NCCRP. Section 10 of the NCCRP outlines how the DEA should co-ordinate South Africa’s efforts through cooperative governance mechanisms. The over-arching objective of the M&E system (Figure 1) is to track and document South Africa’s activities in the transition towards a lower carbon economy and climate resilient society. Alongside this over-arching objective, there are two key cross-cutting objectives of ensuring communication and learning (through active, effective and sustained engagement with stakeholders) as well as tracking the needs, flows and impact of national and international climate finance support to mitigation and adaptation activities. Therefore, the M&E system will do more than merely audit climate change related actions, and will identify where South Africa can improve as a country to respond effectively to the challenges presented by climate change. The M&E system is also intended to generate regular reports to meet South Africa’s international obligations under the UNFCCC. This will provide an evidence-base to inform:

- Effective climate change response (including scope of measures), consistent with the global efforts of stabilising atmospheric GHG emissions whilst realising competitive socio-economic growth and development opportunities;
- Planning and prioritisation of data-collection mechanisms, including setting up mandatory monitoring, evaluation and reporting processes for all relevant stakeholders as required;
- South Africa’s negotiators involved in the UNFCCC processes about the impact of local mitigation and adaptation actions;
- Establishment of a learning platform for managers, government implementers, students, policy makers and researchers; and

² NB: For this document, “Land” and “AFOLU” are considered interchangeable in view of ongoing UNFCCC discussions. The 2006 IPCC guidelines for National GHG inventories divides the AFOLU sector into four sub-sectors, i.e. livestock, land, aggregate sources and non-CO₂ emissions sources on land, and other. Hence ‘land’ includes all agricultural and land use/land use change and forestry activities. In this document “AFOLU” is used throughout.

³ The acronym MRV stands for Measurement, Reporting and Verification. The Measurement component refers to the direct or indirect measurement of emissions or removals from the AFOLU sector; Reporting refers to the presentation of measured information in a transparent and often standardised manner; and Verification refers to the assessment through internal and external checks of the completeness, consistency and reliability of the reported information.

⁴ Defined in South Africa as, the legal, institutional and procedural framework for capturing, analysing and publishing information on the impact of climate change response measures, allowing this information to be used to maximise their effectiveness and to inform future climate change response measure (to support South Africa’s reporting requirements under the UNFCCC).

- Identification of resource requirements, allocations and opportunities in climate change response.

The outcome is to monitor, understand and report South Africa's progress against national goals envisaged for the economy and society, and the success of responses in terms of costs, outcomes and impacts. This will enable South Africa to effectively engage in the international climate change discourse, support domestic planning and policy design and in international carbon markets as they form.

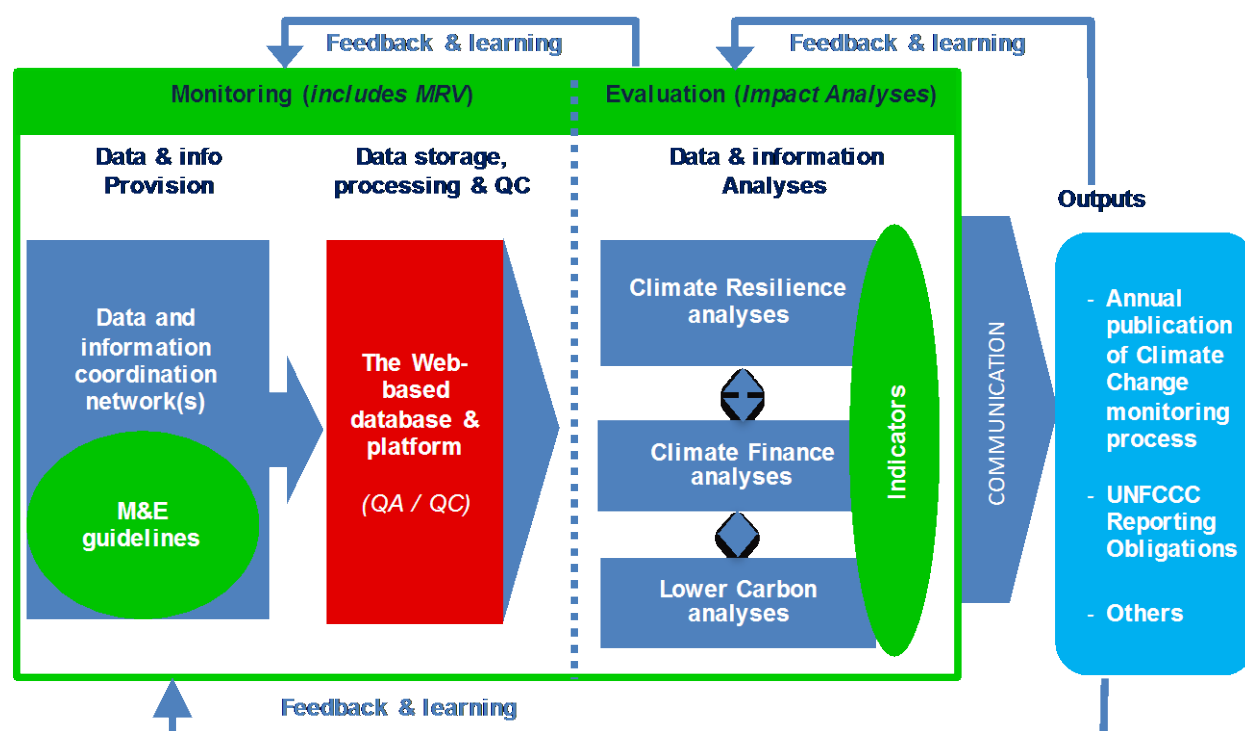


Figure 1: Summary of South Africa's climate change response Monitoring and Evaluation system

South Africa is implementing numerous measures such as the Climate Smart Agriculture, LandCare and the Extended Public Works . All these have a direct effect on sources and sinks of GHG emissions. As a response to the expectation of providing evidence-based progress towards national priorities, there is a need to develop an approach that will inform, monitor, co-ordinate, report and support emissions reductions activities; support the on-going GHG inventory improvement (GHGIP), the compilation of the Annual Climate Change Report, Biennial Update Reports (BUR), National Communications and any reporting requirement domestic and international reporting requirement on GHG emissions from the AFOLU sector. Hence there are compelling reasons for developing an MRV, which in the GHG emissions' context should be multi-level, multi-functional, tailored to end-user needs. Within DEA, there is on-going work to track the:

- GHG estimations (at national and sectorial levels);
- Mitigation actions - this includes GHG and non-GHG parameters/indicators on implementation, impact and effectiveness of policies and measures;
- Non-GHG impacts (e.g. co-benefits of mitigation actions); and
- Climate finance, in making a contribution towards the transition to lower carbon and climate resilience.

There is scope and also the need to better understand the drivers of land use change that directly affect GHG emissions. The ultimate intention is to develop an MRV of AFOLU as a full approach

(spatially explicit) Tier 3 (country-specific disaggregated information) carbon system that can account for emissions and removals (to include other materially significant GHGs).

5. Document purpose

This document sets out the proposed approach and actions required to develop the MRV of AFOLU.

5.1 Compilation of the document

The development of the plan draws together a significant and substantial amount of work that has been done for the MRV of AFOLU capacity building project, the GHGIP and climate change response M&E system. In formulating this plan, the DEA has sought out international examples and experiences as part of capacity building, as well as drawing extensively on domestic knowledge and processes. While not all of the work undertaken is detailed in this plan, all relevant work has been considered and has played a role in informing the development of this plan.

To effectively prepare this Strategic Plan, workshops were held and stakeholder consultations undertaken in addition to the quarterly Steering Committee meetings. In parallel to these efforts, relevant documentation, reports and materials were compiled and reviewed. As part of the MRV of AFOLU capacity building project, the DEA's M&E chief directorate commissioned studies to inform the design of the MRV programme for the South African AFOLU sector: These include:

- *Promethium Carbon*: A National Climate Change Monitoring and Evaluation system of the AFOLU Sector. A study to inform design, development and implementation (2015); and
- *Institute for Commercial Forestry Research (ICFR)*: Current carbon stock estimation capability for South African commercial forest plantations (2014)⁵.

The review of materials, notes and inputs of meetings, workshop outcomes and deliberations of the Steering Committee (see signoff page in this document) have all been applied to the development of this Strategic Plan.

5.2 Problem statement

The AFOLU sector is multifunctional, diverse, complex and a critical one for South Africa. It is unique in having both sources of GHGs, as well as the capacity to sequester emissions. Furthermore, the sector provides environmental services which contribute towards improving food security for marginalised communities. In South Africa, the GHG emissions from this sector are relatively low, with most coming from livestock. With the inclusion of the *land sub-sector* for the first time in the national GHG inventory, emissions from AFOLU decreased from 30,497 Gg CO₂eq in 2000 to 25,714 Gg CO₂eq in 2010 (National GHG inventory, 2014). Hence through the Desired Emissions Reductions Outcomes (DEROs), South Africa has committed to the emissions reduction targets of 6% (in 2020) and 19% (in 2030) for the AFOLU sector.

Unique features of the sector include, but are not limited to:

- **Non-permanence:** The susceptibility of terrestrial carbon to be re-released into the atmosphere due to natural and/or anthropogenic (i.e. human) causes, or permanently removed from the atmosphere;
- **Impacts of natural effects can be relatively large:** Examples include the impact of droughts, floods, wind storms and fires;
- **Non-anthropogenic and indirect effects:** Changes in AFOLU emissions and removals may also relate to indirect effects such as carbon dioxide (CO₂) fertilization and nitrogen deposition – therefore it is difficult to separate natural and man-made impacts. The IPCC

⁵ Reports available on: <https://www.environment.gov.za/documents/research>

states that distinguishing causal factors in the land sector that result in emissions or removals is difficult;

- **Trends can be cyclical:** An example is harvesting cycles;
- **Legacy effects:** These include past management decisions, in particular actions that affect the age-class distribution of forests (e.g. harvesting or reforestation) can have a long-term effect on carbon fluxes, including sequestration rates;
- **Emissions and removals are diffuse:** Emissions from other sectors, such as the energy sector, tend to come from point sources (e.g. a power plant, cement factory, etc.). In contrast, land covers large areas and involves multiple land holders and stakeholders in its management;
- **Uncertainties can be high:** Uncertainties in the AFOLU sector can be significantly higher than those in other sectors, depending on data availability and methodological approaches;
- **Recalculations can result in significant changes in reported emissions/removals:** Recalculations in the AFOLU sector tend to be more frequent, and often lead to large changes in revisions of historic emissions;
- **Policy overlap:** There are many land management policies and acts in South Africa, with mandates spreading across numerous national Departments of State and other authorities; yet there are no tools to track, quantify and document the effectiveness of interventions under those policies and legislation; and
- **Diversity and complexity:** the practices in the sector that contribute to the emission or sequestration of carbon dioxide vary considerably and the approaches to measure or manage these impacts need to reflect this diversity.

6. MRV of AFOLU for South Africa

The MRV of AFOLU provides the ability to understand and consistently track, quantify and report both the GHG emissions trends and impacts (according to the methods in the 2006 IPCC guidelines), and non-GHG impacts of emissions reduction responses. This will enable South Africa to analyse, interrogate, manipulate and combine data and inputs to better understand observed GHG emissions profiles and sustainable development impacts of relevant policies and measures.

6.1 Carbon Tax

South Africa is finalising the Carbon Tax Policy scheduled to come into effect on 01 January 2017 through the National Treasury Department. The Carbon Tax forms an integral part of the mitigation system for implementing government policy on climate change as outlined in the NCCRP and the National Development Plan (NDP). South Africa has committed to reduce GHG emissions below business as usual by 34% by 2020 and 42% by 2025, as outlined in South Africa's NDC. The design of the carbon tax is informed by the administrative feasibility and practicality to cover most GHG emissions. Below is a high level summary of the carbon tax design as envisaged in the Draft Carbon Tax Bill⁶:

- A basic 60% tax-free threshold during the first phase of the carbon tax, from 2017 to 2020;
- An additional 10% tax-free allowance for process emissions;
- Additional tax-free allowance for trade exposed sectors of up to 10%;
- Recognition for early actions and/or efforts to reduce emissions that beat the industry average in the form of a tax-free allowance of up to 5%;
- A carbon offsets tax-free allowance of 5 to 10%;

⁶ Source: DRAFT CARBON TAX BILL and DRAFT EXPLANATORY MEMORANDUM FOR THE CARBON TAX BILL, 2015 [2 November 2015], National Treasury of South Africa. Available online: <http://www.treasury.gov.za/public%20comments/CarbonTaxBill2015/Carbon%20Tax%20Bill%20final%20for%20release%20for%20comment.pdf>

- To recognise the role of carbon budgets, an additional 5% tax-free allowance for companies participating in phase 1 (2016 - 2020) of the carbon budgeting system;
- The combined effect of all of the above tax-free thresholds will be capped at 95%; and
- An initial marginal carbon tax rate of R120 per ton CO₂e will apply. However, taking into account all of the above tax-free thresholds, the effective carbon tax rate will vary between R6 and R48 per ton CO₂e.

These tax-free exemptions will range between 60% and 95% of total emissions. This implies that the carbon tax will be imposed on only 5 to 40% of actual emissions during this period. The tax is based on fossil fuel inputs (coal, oil & gas) and the use of approved emission factors. Alternative procedures will be necessary in the case of process and fugitive emissions resulting from the chemical reactions of certain manufacturing processes, and coal mining. Consequently, the use of approved emission factors or alternative methodologies should be approved by the DEA. The Carbon Tax applies to all the sectors and activities except the AFOLU (in particular land use and land use change) and waste sectors, which will be exempt during the first implementation phase (up to 2020) due to methodological challenges. However, combustion activities identified for emissions reporting under the GHG inventory (or listed in Annexure 1 of the declaration of GHGs as priority pollutants) will be subject to the tax. The emissions reporting for the carbon tax will be in line with mandatory reporting requirements for GHG emissions designed by the DEA, which will approve the appropriate emission factors and procedures, in line with information published by the IPCC. For those involved in the taxable activities, producing evidence of credible and verified emissions sequestration could potentially reduce the companies' tax liability. Since a lot of activities within the AFOLU sector are not covered by the tax, they can potentially be used as carbon offsets. Work is currently underway to finalise Regulations on the specifics of the proposed carbon offset mechanism.

Given South Africa's mitigation potential within the AFOLU sector as estimated in the National Terrestrial Carbon Sinks Assessment (NTCSA) project, the need to have a robust, credible and reliable MRV of AFOLU to track the impact of mitigation of emissions for both companies within and outside the tax net. Measures in the AFOLU sector could mitigate emissions either as carbon offset projects which companies subject to the tax can use to offset up to 10% of their tax liability or as a means of directly sequestering their emissions which are then deducted from the company's total combustion emissions. However, entities will need to produce evidence of the sequestration potential of the sector if they are to derive benefits from carbon offsets. If the MRV is in place and the offsets can be quantified, then they could be utilised by entities with carbon-taxable activities to reduce their tax liability under the carbon tax. The inclusion of a carbon offset mechanism within the carbon tax design will provide additional flexibility for some companies to reduce their carbon tax liabilities whilst at the same time invest in GHG emission reduction projects. The MRV of AFOLU will however need to be linked to the National Atmospheric Emissions Inventory System (NAEIS) as this will be the system which the carbon tax will be using.

Verification of the offsets is a significant responsibility and will have to be transparent and supported by robust systems. The DEA has been nominated as the verifying agency given its mandate, and this has implications for DEA in terms of the measurement, recording, reporting and verification of the AFOLU sector. Implementation of the Carbon Tax requires an accurate system for MRV. The South African Revenue Service (SARS) will be the main implementing administrative authority on tax liability assessment. In order to audit the self-reported tax liability by entities, SARS will be assisted by the DEA.

6.2 Conservation of carbon stocks in the South African biomes

The sequestration and storage capacity of the grasslands and other woody biomes such as thickets can make a meaningful contribution to mitigation of the effects of climate change. It is therefore important to track and quantify the mitigation impact of numerous measures that the South African government is implementing in these biomes. The MRV of AFOLU will provide estimates and data relating to these activities to enable accounting for their contribution towards South Africa's transition to a lower carbon and climate resilient socio-economy.

7. What will the MRV of AFOLU do?

During a series meetings and workshops, as well as free-ranging discussions and interactions among the participants on this question, the following suggested 'wants and needs' for an MRV of AFOLU were identified:

- Design a monitoring and decision support tool that provides credible information and proof to inform relevant policies (e.g. Carbon Tax), sustainable land use planning, land management, with the ability to value carbon resources in the land sector;
- Provide indicators for long-term climate change monitoring, and guidelines for data generation and analyses;
- Provide a communications platform to create transparency, trust and partnerships among stakeholders;
- Enhance the state of mitigation knowledge and assess cost effectiveness of measures;
- Provide a spatial representation of key activities, defined as those that materially enhance or reduce the mitigation potential of the sector;
- Influence the ongoing national land cover mapping discourse to meet the needs for the MRV system of time series consistency, and reflect the land use stratification that South Africa has adopted;
- Inform the development of South Africa's REDD+ architecture;
- Support the development and implementation of methodologies to quantify, track and report GHG emissions and removals and estimating the uncertainty in each estimate;
- Support the acquisition of new data and information when identified as required to improve the reporting and outputs of MRV;
- Enable the documentation, archiving and accessibility of information used to produce the national emissions and removals estimates following specific instructions under each land-use category/change, carbon pool and non-CO₂ source;
- Support verification and implementation of quality control checks, including expert peer review of the emission estimates following specific guidance under each land-use category, pool or non-CO₂ gas;
- Contribute to guiding land use decisions, filling gaps in policy development and implementing and identifying opportunities and barriers to land use;
- Enhance the credibility and effectiveness of South Africa's participation in the international arena by having credible, independently examined data compiled under known protocols;
- Provide support to National Treasury and the South African Revenue Service in the implementation of the carbon tax scheduled for commencement in January 2017;
- Contribute to information and knowledge generation to inform planning and allocation of resources, for interventions to enhance mitigation and sequestration capacity (e.g. through restoration of grasslands and woody thickets), training and capacity building for climate smart land use management practices (e.g. conservation / no-till agriculture), etc.; and
- Generate information and awareness about the non-climate related impacts (e.g. land management) that are contributing to emissions and sequestration capacity and the need to mitigate these.

8. Legislation and Policies

As part of implementing the NCCRP, the role of MRV of AFOLU is to track and understand the impact of existing legislation and policies on land-based activities (e.g. agriculture and forest land management, land degradation etc.) that influence GHG emissions over time. The selection of these activities needs to be influenced by:

- National circumstances and land-based policy imperatives (e.g. SPLUMA, NCCRP, NDP);
- Domestic and international reporting requirements (e.g. Annual Climate Change Reports, BUR, National Communications); and
- An understanding of the extent to which these activities enhance or reduce carbon sinks.

South Africa has a strong legislation for environmental protection; however, understandably, there is tension between sustainable environmental management and economic growth. An assessment of policies influencing the AFOLU sector identified three groups (NTCSA, 2015⁷):

- Agricultural landscape
 - The *Medium Term Strategic Framework* and the *NDP*, which are all Presidential Policies, aim to influence agricultural expansion which could lead to a substantial increase in land under cultivation; and
 - Policies from the Department of Agriculture, Forestry and Fisheries (DAFF) and the Department of Rural Development and Land Reform (DRDLR) have integrated targets and strategic directions that align with these Presidential policies. However, improved sustainable agricultural practices seem secondary to other objectives which, if successfully implemented, could lead to substantial increased GHG emissions due to the turnover of soils, increased fertilizer use, and land degradation.
- Natural and semi-natural landscape
 - The *National Environmental Management Act* (NEMA) and its *Biodiversity Act*, *Protected Areas Act* and *Air Quality Act* and related frameworks and strategies are wide-ranging policies that can provide significant protection to ecosystems and associated carbon stocks. The NEMA takes a conservative approach to land-use, adopting the precautionary principle, calling for assessments to be undertaken before developments are approved and applying restrictions on the exploitation of forests, woodlands, and sensitive, threatened or vulnerable ecosystems;
 - The *Protected Areas Act*, *Biodiversity Act*, the *Air Quality Act*, the *Environmental Framework Regulations*, and the *National Forests Act* could contribute to improved environmental management and the conservation of natural and semi-natural landscapes. If enacted this group of policies could be some of the largest contributors to avoiding GHG emissions from land conversion;
 - The *Biodiversity Act* supports the use of Bioregional Plans, which involve land-use plans and spatial analysis tools;
 - Ecosystem conservation is encouraged rather than enforced. The *Municipal Property Rates Act* and the *Revenue Laws Amendment Act* provides for tax rebates and deductions for private landowners undertaking conservation activities⁸; while the *National Forest Act* allows for individuals or juristic persons to voluntarily enter into forest management agreements; and
 - Conservation of ecosystems aside, only two policies, the *National Sustainable Development Strategy* and *Strategic Plan for the Department of Agriculture, Forestry and Fisheries*, have set specific targets for the restoration of natural landscapes.

⁷ South African National Terrestrial Carbon Sinks Assessment Report (NTCSA). 2015. <https://www.environment.gov.za/documents/research>

⁸ The Income Tax Act under Section 37C and 37D provides a tax allowance for landowners in respect of environmental conservation and maintenance. Hence if a landowner participates in the Biodiversity Management Agreements (5 years), Biodiversity Protected Areas (20 years) or nature reserve/national park (30 years).

- Built environment
 - The *NDP* makes references to existing environmental legislation, which is otherwise largely omitted from the other documents. Due to the broad nature of policy, it is difficult to identify the casual link and impact of built environment expansion on terrestrial carbon stocks.

A key observation is that all these policies are expected to result in significant changes in land-use and GHG emissions.

9. Institutional arrangements

The development of the MRV of AFOLU, the system components, and their interaction will require ongoing in-depth consultation through existing platforms such as the Inter-Governmental Committee on Climate Change (IGCCC) and the Ministerial Technical (MinTech) Working Group 10. Climate change is a cross-cutting issue with no formal institutional arrangements in the MRV and M&E space. However, the role of DEA is to lead the co-ordination of climate change responses as the UNFCCC focal point. An analysis and exploration of the mandates, capabilities and capacities of South African agencies, academia and stakeholders have indicated possible institutions with which formal arrangements should be setup (Figure 2). Many of these organisations have very high levels of competence, capacity and capability.

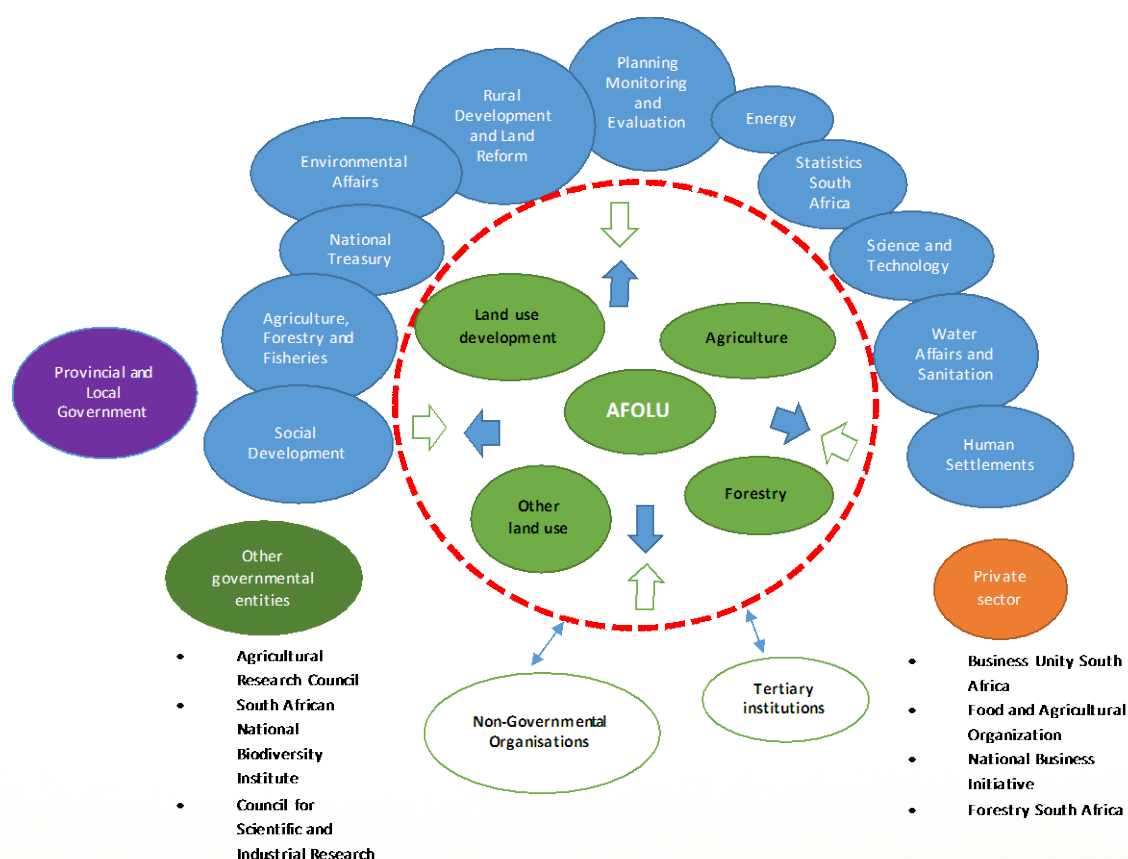


Figure 2: The diverse representation of the AFOLU sector across the national departments of the Republic of South Africa and other institutions⁹

⁹ Modified from the report of a study commissioned by DEA, and undertaken by *Promethium Carbon*: A National Climate Change Monitoring and Evaluation system of the AFOLU Sector. A study to inform design, development and implementation (2015). <https://www.environment.gov.za/documents/research>

10. Implementation

10.1 Steering committee

This work shall be guided by a steering committee, which will undertake the following:

- Support DEA in establishing institutional arrangements that will facilitate the acquisition of resources data and information from stakeholders;
- Advise on the content of the technical data and information needed for the MRV system;
- Contribute to activities that affect the improvement of the AFOLU GHG inventory through liaison, linkages and co-ordination as appropriate;
- Support DEA in facilitating communication and exchange of learning experiences; and
- Review plans, products and documentation of the MRV of AFOLU.

10.2 The MRV system design process

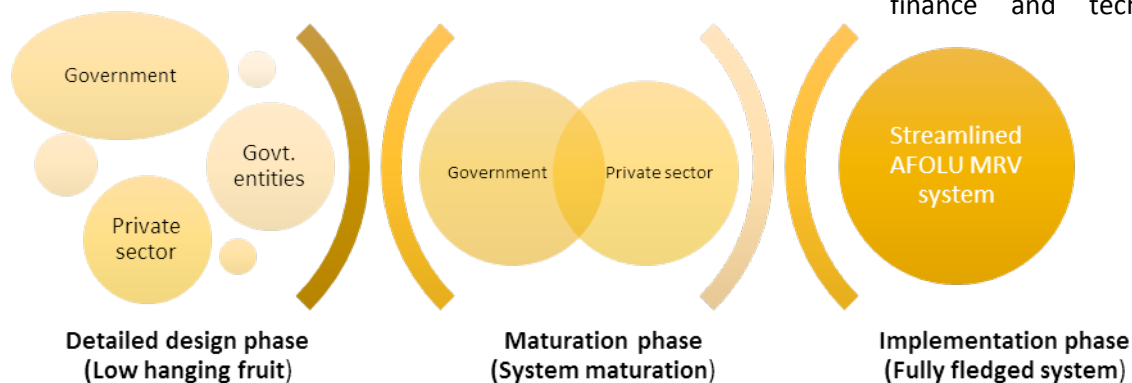
The MRV of AFOLU will be continuously improved and implemented in phases (Figure 3)(source, see Figure 2). To be effective, the MRV of AFOLU is envisaged to be simple, flexible and not onerous. The short term (2016/17) actions will build on the significant work undertaken to-date through the capacity building project supported by the government of Australia, as well as other related work that has been identified and documented. One of the key deliverables during the short term phase will be a Detailed Design Document, whose preparation will involve a series of thematic working groups convened as required to consult, frame and document the detailed design to the required level for a fully funded to take the MRV of AFOLU to implementation. The process will be continuous and include learning-by-doing and reporting. Additionally, there will be consistent messaging, synergies, and alignment to national policies on land management throughout the design and implementation of the programme. A framework for the programme will be populated initially with coarse data that will be replaced as new or refined data becomes available. Policy priorities and requirements will be reviewed every five years to ensure that the system continues meet the requirements of the Government of South Africa. Furthermore, close collaboration between policy areas and technical areas is required to ensure the system remains relevant to the government's objectives.

There are public and private sector actors, including industry associations and umbrella groups, which collectively cover the multitude of industries, land uses, primary products, conservation and management that takes place on land in the country. While the 'coverage' of the AFOLU sector by public mandates and private interests is likely complete, it is made up of many actors who do not necessarily yet provide a coherent set of ideas and representation for the sector. The different land uses and industry sectors are separately represented and act independently (Figure 3). It is therefore necessary to find a way to work together, through developing functional institutional arrangements as mentioned previously. The system will initially plan for Tier 2 emissions factor approach but aims to utilize Tier 3 methods as more detailed data are developed. The system will be a highly integrated, yet flexible, capable of accepting a range of available inputs (and input types) and able to perform both point-based, spatial area-based estimation and full spatial accounting.

For the MRV of AFOLU that has to collect, transform, analyse and report GHG emissions and removals for all land, this differentiation is a significant hurdle to implementation. The approach to be taken for the development of the system is to work in the short term with the existing structures and through current processes to collaborate with various role players and sectors. In the medium term the effort will focus on expanding the coverage systematically across the AFOLU sector and improve communication, collaboration and exchange. In the long term the goal is for a streamlined

MRV of AFOLU that has streamlined structures in place for mandated and collaborative data collection involving all the required information both public sector and private.

For the process described above to work, especially within government, a capacity building programme should be established, supported and institutionalised; with clear roles, responsibilities and timeines for deliverables by all stakeholders (e.g. see Figure 2).The evolution of an MRV system for the AFOLU sector must be communicated, promoted and supported (in terms of capacity, finance and technical



specifications) as a national programme.

Institutional arrangements

- Use existing data collection processes as a base
- Coordination of quality assured data flow
- Communication and management arrangements
- Description of roles and responsibilities
- Recognition of legal and legislative mandates
- Work with existing technical working groups

System features

- Processes and policy setting for MRV operation
- Description of the MRV system and identification of requirements
- Decisions on design elements, system hardware and software
- Methods and tools to estimate GHG emissions and removals, and to quantify impact of mitigation actions
- AFOLU MRV guidelines and indicators

Effort required

- Stakeholder engagements
- Detailed design and technical/validation workshops on system elements, steps and activities
- Agreement on standard land cover/land use definitions and classification
- Alignment and integration of various relevant projects
- Design an implementation plan for an AFOLU programme

Institutional arrangements

- Expand structured system to include additional indicators
- Improve communication
- Resource mobilisation between government and the private sector
- Risk assessment (e.g. fiduciary and environmental)
- Institutionalise a programme for capacity building

System features

- National spatial data infrastructure
- Performance indicators and improvement plan
- System hardware and software
- Reference levels for estimating GHG emissions and removals
- Integrated Earth Observation and ground-based observations for GHG emissions and removals
- Agility to update rapidly in line with the scale and approaches in AFOLU

Effort required

- Stakeholder engagements
- Source funds (inter-)nationally
- Deepen an understanding of the impact of climate change on land use
- Promotion of (co-)benefits
- Pilot the AFOLU MRV system by tracking selected/key activities
- Local factors and standards
- Develop a verification approach for GHG emissions and removals

Institutional arrangements

- Institutionalise the robust AFOLU MRV system
- Streamline structures in place between government departments and private sector

System features

- Mandated and compulsory data collection processes in place and web-based
- Hierarchy of data collection

Effort required

- Stakeholder engagements
- Clear lines of communication
- Funding and technical support
- Move towards more complex Tiers for reporting

Figure 3: A proposed phased approach for the development of an MRV of AFOLU for South Africa

10.2.1 Summary of costs for short term implementation (2016/17) ¹⁰

MRV system requirement	Proposed cost (approximate)
Development of an electronic, web-based and interactive system	R2 000 000
Human resource requirement	R 1 226 000
Additional project roll-out – consulting fees	R 1 000 000
TOTAL	R4 226 000

11. Milestones

- Functional institutional arrangements to facilitate data and information flows developed, formalised and implemented;
- Frameworks for social and environment safeguards developed;
- Annual work plans developed and completed;
- MRV of AFOLU guidelines in line with those of Southern African Development Community and the IPCC developed and accepted;
- An impact assessment approach for mitigation actions in the land sector developed;
- A human capacity development plan within national government for MRV work developed; and
- Communications strategy developed and adopted.

To achieve these milestones, the overall approach will be refined and revised as work continues and will be further informed by stakeholders and partners in this work.

Short Term
2016 - 2017

Medium Term
2017 - 2019

Long Term 2020 Continuous
refinement and improvement)



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¹⁰ Source: A report of a study commissioned by DEA, and undertaken by *Promethium Carbon*: A National Climate Change Monitoring and Evaluation system of the AFOLU Sector. A study to inform design, development and implementation (2015). <https://www.environment.gov.za/documents/rese>