



Republic of South Africa

An integrated MRV system in South Africa

Activity	Development of an integrated MRV system for comprehensive climate action in South Africa.
Country	Republic of South Africa
Sector(s) involved	All (Energy, Industrial Processes, AFOLU, Waste)
Time frame	2012-ongoing

Case summary

South Africa is among the leaders in its development of a comprehensive MRV system that is integrated into national monitoring and evaluation (M&E) processes, tuned to international Measuring, Reporting and Verification (MRV) requirements. The monitoring encompasses the whole of MRV process, and the evaluation component provides “continuous assessment and feedback” to the monitoring system. Besides covering climate change mitigation and adaptation, the system also includes M&E of all atmospheric emissions (such as PM, NO_x, SO_x, etc.) through a web-based platform called the National Atmospheric Emissions Inventory System (NAEIS). This integration aims at enabling the federal, provincial and local governments to track progress on the transition towards a climate-resilient and lower-carbon economy and society (NCCRP 2011). The system will also help to update the National Climate Change Response Database (NCCRD), which was developed in 2009, and formalise key data reporting mechanisms through participatory technical working groups.

The system is considered good practice as it establishes the **regular tracking** of GHG emissions across a wide range of sectors and is in line with the **international BUR requirements** for MRV.



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Republic of South Africa

An integrated MRV system in South Africa

Background

South Africa launched its National Climate Change Response Database (NCCRD), a web-based database on climate change mitigation, adaptation and research projects, in 2009. Then, in 2011, the government released the National Climate Change Response White Paper, which outlined an approach for the development of a comprehensive national policy and institutional system for the transition of the country towards climate-resilient and lower-carbon development. Given that continuous feedback on progress is necessary for an efficient and integrated climate response, specific emphasis was given in the White Paper to building a transparent and integrated MRV system that would build on the NCCRD and cover different segments of the economy and their impact on GHG emissions. The MRV system also aims to collect information on the flow of climate finance and to communicate climate related information to the municipal, provincial, national as well as international levels.

The creation of an integrated MRV system is of strategic value for South Africa. Before the establishment of the new system, there was a disconnected process of data collection that involved multiple agencies and stakeholders, and resulted in substantial inefficiencies due to duplication of efforts and lack of coordination. Hence, the MRV system also helps to improve the national emissions governance infrastructure. Given the importance of MRV for receiving international support for mitigation actions, the system contributes to improving the possibilities of South Africa's access to international financial, technological and capacity building support. The National Climate Change Response White Paper will evolve with international measuring, reporting and verification (MRV) requirements.

Activities

- » **Creation of overarching policy guidelines:** Launched in 2011, the National Climate Change Response White Paper provides the national and international political and development context against which the MRV system has been developed. One key instruction was to ensure consistency with international MRV requirements.
- » **Establishment of international cooperation on background research and capacity building:** In 2010, South Africa, South Korea and Germany launched the International Partnership on Mitigation and MRV. After the publication of the White Paper, several workshops were organised and many studies were commissioned, focusing on the assessment and improvement of MRV capacities, scoping of MRV, identification of possible institutional architecture for M&E, and inclusion of sub-national governments in the MRV system design.
- » **Formation of the M&E Technical Working Group (TWG):** The TWG was established in 2013 comprising representatives from government departments, civil society, labour, business, local governments and state owned research institutions. The objective of the TWG was to outline a framework for stakeholder engagement to map, understand and identify existing MRV practices, data flows and capacity needs. The TWG completed its report in 2014, which helped development of the M&E system in the context of the 2011 policy, national development plan (NDP) and national circumstance.

Elaborating a framework of the M&E system:

- » Based on the report of the TWG, the Department of Environmental Affairs developed an institutional framework for a time-bound, four-pronged M&E system (to be published soon) focusing on: ex-ante appraisal of policies, ongoing monitoring of progress, evaluation of impacts and feedback into the policy-making cycle through annual publications, and reporting to UNFCCC as required. The framework describes in detail the M&E System's who, how, what, and at what frequency. The proposed system is to be implemented in three phases:

Republic of South Africa An integrated MRV system in South Africa

Implementation of the M&E System in Three Phases

Phase 1 (to end 2016) > Setting-up

- » Setting up & piloting of the web-based platform
- » Setting up the legal & regulatory framework
- » M&E system institutional setup
- » Mapping climate monitoring systems & stakeholders
- » Refining adaptation M&E networks
- » Developing MRV guidelines
- » Produce 1st & 2nd annual M&E reports

Phase 2 (2017-18) > Operationalization

- » Web-based platform operationalization & training
- » Adoption of standardized MRV methods
- » Testing of adaptation data-sharing networks
- » Learning and documentation of lessons
- » Improvement of annual M&E reports; publication of the 3rd & 4th Annual reports

Phase 3 (2019-20) > Refinement & inalization

- » System improvement based on lessons learnt
- » Setting up a fully operational system structure
- » Accuracy, completeness & consistency pursued
- » System outcomes fully integrated into decision-making processes
- » Publication of the 5th & 6th annual M&E reports

Source: Own compilation.

- » **Evolution of web-based data systems:** The 2011 White Paper outlined two critical elements of the M&E system. First, a separate national system for the GHG inventory. A web-based system has been developed and is currently being tested. Second, an M&E system to move beyond collection of information, and be able to analyse impacts of interventions in terms of climate change, sustainable development, cost etc.
 - » In 2014, the web-based system, NCCRD, was upgraded, supported by the development of indicators, associated information/data requirements, and the design of supporting institutional arrangements. The critical improvement was the inclusion of a reporting system on response measures, climate impacts and vulnerability that will enable assessment of needs as well as progress. The system is currently in pilot phase, and the DEA is in the process of developing guidelines.
 - » The web-based system was integrated with the SAAQIS (air quality) database (online but not public) in 2014. This was in the light of the expanded mandate of NCCRD to move away from data collection and towards analysis of impacts, vulnerabilities and climate finance. The same team manages the GHG Inventory and SAAQIS.
 - » The NCCRD is now a platform for transparent access of information on climate actions and their potential impacts. From March 2016, the system will generate annual climate change progress reports based on the analysis.
- » **Integration of data managers:** The Climate Change Response M&E system is tasked with integrating the whole network of databases maintained by various agencies. These databases exist at the municipal level, national departments, in public entities and research institutions. The M&E system also tracks flow of climate finance and communication on climate-related information nationally as well as internationally.

Republic of South Africa

An integrated MRV system in South Africa

Institutions involved	<p>National Departments These include various line ministries, which collect and report sector-specific data, such as Department of Energy (DoE), Department of Transport (DoT), Economic Development Department (EDD), Department of Mineral Resources (DMR), Department of Trade and Industry (DTI), Department of Science and Technology (DST), National Treasury (NT), Department of Public Enterprises (DPE), Department of Agriculture, Forest and Fisheries (DAFF), etc. It may also be noted that each line ministry reports to the Presidency on a quarterly basis at ministerial level.</p> <p>Department of Environmental Affairs The Dept. of Environmental Affairs is the nodal agency that reports climate data to the Dept. of Performance Monitoring and Evaluation in the Presidency. The former is tasked with collecting and integrating information on climate change implementation across government departments.</p> <p>Statistics South Africa Stats SA is the agency that coordinates institutional arrangements between the South African private sector, the various line ministries, local governments, civil society and other research organisations.</p> <ul style="list-style-type: none"> » Research institutions » Local government units » Civil society organisations
Cooperation with	<ul style="list-style-type: none"> » The German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) via its International Climate Initiative (IKI) in particular the Climate Support Programme (CSP), implemented by GIZ » Government of Australia » Multilateral organizations such as United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP) » World Resources Institute (WRI) » Royal Danish Embassy » International and national research organizations
Finance	<p>Funding for the MRV activities is received from a combination of domestic, bilateral and multilateral sources. International NGOs such as ICLEI also contribute a part of the finances required.</p>
People	<p>The members of the Climate Change Department at the DEA are the chief coordinator of the MRV system in South Africa. Apart from the DEA, people from various government entities, international organisations, public bodies, state-owned enterprises, private sector, civil society and local governments also contribute in the MRV system.</p>
Impact of activities	<ul style="list-style-type: none"> » Revival of the NCCRD: The NCCRD was dormant during 2010-12. It was upgraded in 2013 and now maintains a growing project database on mitigation and adaptation. » More Systematic Collection of Data: South Africa now is heading towards a more systematically organised data system. Through structured reporting procedures, it is reducing double counting as well as improving data alignment across sources so that similar and consistent info is available at all data sources. » Capacity building: The new regulatory framework for data collection requires accreditation by the South African National Accreditation System (SANAS). These, and other new verification requirements, have created significant potential to increase the number of skilled experts and develop capacities at the national level.

Republic of South Africa

An integrated MRV system in South Africa

Why is it good practice

- » **Basis for Future MRV System:** The evolution of MRV initiatives taken by the government provides a sound basis for a coordinated system in the future. It facilitated the updating of the national GHG inventory for the first Biennial Update Report (BUR), which was submitted in 2014.
- » **Based on internationally recognised methodologies:** South Africa is one of the few developing countries to adopt a comprehensive MRV framework to track activities relating to climate change mitigation, adaptation and finance. The system is consistent with IPCC 2006 or later guidelines and is flexible for updating accordingly. The South African GHG inventory also feeds into this MRV system.
- » **Wide coverage of sectors:** The South African MRV system covers a wide range of economic sectors, with some of them – for example, the power sector – in accordance with international best practices (e.g. International Performance and Measurement Verification Tool)
- » **Regular annual analysis:** The Department of Environmental Affairs is tasked with annual analysis and publication of emissions trends, the impact of various intervention, and financial flows and projects.
- » **Regular reporting in line with international standards:** In the context of Nationally Appropriate Mitigation Actions (NAMAs), South Africa is expected to domestically report on its mitigation actions rather than emissions reductions only. To this end, reporting in the South African MRV system is undertaken according to ISO or IPCC standards. The outputs of these processes feed into the National Communications and BURs. The methodology to measure the emission impact of policies in the MRV strategy will be based on the GHG Protocol Policy and Action Standard, developed under the Measurement and Performance Tracking Project (MAPT) of BMUB's International Climate Initiative (IKI).
- » As far as verification is concerned, the new energy efficiency tax regulation has outlined a rigorous verification system that stipulates all M&V consulting teams consisting of energy efficiency and GHG verifiers must be SANAS-accredited.

Success factors

- » **Regulatory Framework:** A basic regulatory framework for the MRV system is in place, through various acts e.g. the National Energy Act (2008) and the Air Quality Act. The DEA is also proposing a standalone Climate Change Act as an overarching regulatory framework to cover all climate action in South Africa. The 2011 White Paper provides a reference for using the evolving regulatory framework for effective and integrated MRV. The success of this initiative has enabled the adoption of various further regulations to support MRV-related activities.
- » **Transparency of processes and data collection:** The formalisation of key data reporting structures, with a clear assignment of responsible institutions and agencies, as well as transparent data collection processes, including technical working groups with stakeholder discussions at sub-national levels, contributed to the creation of a comprehensive and sound database for subsequent MRV activities.
- » **Integrated step-by-step approach:** The holistic approach followed by South Africa, including official reporting responsibilities that are clearly assigned to the institutions involved, provides a systematic framework for the MRV system. Most importantly, the approach outlines a step-by-step approach for the preparation, set-up, pilot and up-scaling of MRV-related activities.
- » **International cooperation and background research:** In the process of developing an integrated M&E system, South Africa built on international cooperation for capacity building and detailed studies to provide the necessary technical inputs for defining the scope and structure of the M&E system.

Republic of South Africa

An integrated MRV system in South Africa

Overcoming barriers/ challenges	<p>What were the main barriers/challenges to delivery? How were these barriers/challenges overcome?</p>
Financial	<p>The majority of the professional Measuring and Verification M&V teams are not SANAS-accredited, bringing cost implications for developing in-house capacity</p> <p>While a significant portion of the MRV activities are outsourced or supported by international cooperation, national budgetary support is also provided to develop in-house capacity which can reduce the cost of MRV</p>
Institutional	<p>The governance structure has multiple poles and entry points for MRV and the relevant actors, and institutions lack a common coordination mechanism.</p> <p>Many climate-relevant datasets were maintained by different departments in the government.</p> <p>The South African Government is currently undertaking institutional reforms that will promote stronger linkages between institutions at the national and sub-national levels for developing a coordinated MRV system. The National Statistics System Division currently coordinates institutional arrangements between Statistics SA and line ministries.</p>
Capacity	<p>New policies adopted in the energy sector, such as the energy efficiency tax regulation, require additional capacities in the form of M&V professionals certified by SANAS.</p> <p>The South African Government is investing significantly in training and capacity building in technical areas such as the issuance of building audits, technical commissions and management of databases, to enable coordinated development of the MRV system.</p>
Political/Policy	<p>An MRV framework for a carbon tax, a recently introduced policy to incentivize demand for low carbon goods and services, was not yet clearly defined.</p> <p>A new regulatory framework for a carbon budget and carbon tax has been adopted which enables MRV related activities. South African Revenue Service (SARS), a centralised agency, reports emissions with taxes to record emission reduction.</p>
Lessons learned	<p>a) A clear policy direction is required for the various institutions involved in an MRV system, to encourage and enable linking of data sources and to avoid double counting.</p> <p>b) Mainstreaming international MRV requirements within national development strategies and governance structures can put the role of MRV design in a better perspective and highlight significant governance benefits.</p> <p>c) Knowledge based cooperation plays an important role for capacity building and policy innovation.</p>
How to replicate this practice	<ul style="list-style-type: none"> » Conceptualise MRV needs in the context of national development priorities, then build in international requirements. » Periodic assessment and reforms of institutions to encourage efficient data collection and management. » Develop data management guidelines and standards that are in accordance with international best practices such as the International Performance and Measurement Verification Tool, the International Standards Organisation (ISO) and Inter-Governmental Panel on Climate Change guidelines. » Provide sufficient funding for training activities in order to strengthen and create the necessary capacities for a structured and well-coordinated MRV system.

Republic of South Africa An integrated MRV system in South Africa

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Further key resources	<ul style="list-style-type: none">» Haries et al. (2013), Draft Climate Change Response Monitoring and Evaluation System, www.environment.gov.za/sites/default/files/docs/publications/climatechange_response_me_system.pdf» Boyd, A. (2012), MRV Across Multi-Level Governance: National, Provincial and Municipal Institutions in South Africa. MAPT Institutions Case Study Series, www.erc.uct.ac.za/Research/publications/13-Boyd-MRV_Multilevel_Governance.pdf
Website(s)	<ul style="list-style-type: none">» www.climateresponse.co.za/home
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References	<ul style="list-style-type: none">» Anya Boyd, Britta Rennkamp, Anthony James Dane and Herald Winkler (2014) Current Approaches to MRV in South Africa: A Scoping Study, <i>Climate Policy</i>, 14:3, 397-416» Government of South Africa (2011) National Climate Change Response White Paper.» Government of South Africa (2014) South Africa's 1st Biennial Update Report.

