



Measurement, reporting and verification (MRV) of NAMAs

Regional workshop on promoting international collaboration to facilitate preparation, submission and implementation of NAMAs

16 - 19 April 2013

Lehakoe Club, Maseru, Lesotho



MRV of NAMAs

- Background of MRV
- Why MRV?
- MRV of NAMAs: the 3 elements
- Who is responsible for MRV?
- Monitoring NAMAs
- Data Needs and Availability
- Reporting about NAMAs: linking up with existing reporting systems
- Verifying NAMAs





MRV Background

- MRV originates from the international climate negotiations:

***COP13, Bali 2007: decision to enhance mitigation actions
“...NAMAs by developing country Parties in the context
of sustainable development, supported and enabled by
technology, financing and capacity-building, in a
measurable, reportable and verifiable manner.”***



MRV Background

- MRV is used in multiple contexts:
 - GHG-Emissions => National MRV Systems
 - Mitigation Actions => MRV of NAMAs
 - Support for NAMAs => MRV of Support

What needs to be MRV'd?



MRV applies to GHG emissions, GHG reductions and support for GHG reductions



Why MRV?

- Facilitates **decision-making** and **national planning**
- Supports the **implementation of NAMAs** and generates feedback on NAMA effectiveness
- Highlights lessons and **good practices**
- Increases the **likelihood of gaining international support**
- May promote **coordination** and **communication** amongst emitting sectors
- May tell us if **we're on track to meeting global mitigation goals**

Transparency starts with access to information!



MRV of NAMAs

Monitoring

- **Keeping track** of GHG emissions, reductions (and co-benefits!)

Reporting

- **Communicating** information on GHG emissions, reductions and co-benefits

Verification

- **Checking** that the NAMA did what it was intended to do!



Who is responsible for MRV of NAMAs?

Monitoring

- NAMA Developer: sets up MRV approach
- NAMA Implementer: regular monitoring
- No International Guidelines for Monitoring...yet

Reporting

- NAMA Implementer/Beneficiary: reports according to procedures agreed at outset; aggregated NAMA information => national level biennial reporting to UNFCCC
- No international guidelines for reporting on individual NAMAs

Verification

- NAMA Implementer /Supporting Entity Agree on verification process
- International Consultation and Analysis (ICA) of Biennial Update Reports – guidelines for ICA exist



Data Availability: how to get needed data

- ✓ Consider which sources may be available to provide data for baseline setting and subsequent monitoring:
 - ✓ GHG Inventory (National Communications)
 - ✓ Sector-Specific Data
 - ✓ Consumption Data
 - ✓ Emissions factors

Table 1 – Citywide GHG Emissions by Sector*

	1990	2005	2008	% change 1990-2008
TRANSPORTATION	3,947,000	4,062,000	4,242,000	7%
Road	2,440,000	2,566,000	2,707,000	11%
Cars & Light Duty Trucks	1,329,000	1,433,000	1,413,000	6%
Trucks	1,063,000	1,079,000	1,229,000	16%
Buses & Vanpool	47,000	54,000	65,000	38%
Marine & Rail	278,000	300,000	291,000	5%
Ship & Boat Traffic	178,000	194,000	194,000	9%
WA State Ferries	41,000	41,000	35,000	-15%
Rail	59,000	65,000	63,000	7%
Air	1,229,000	1,196,000	1,244,000	1%
Sea-Tac Airport	1,046,000	1,067,000	1,117,000	7%
King County Airport	184,000	129,000	128,000	-30%
BUILDINGS	1,609,000	1,411,000	1,470,000	-9%
Residential	735,000	606,000	613,000	-17%
Electricity	133,000	68,000	44,000	-67%
Natural Gas	259,000	370,000	430,000	66%
Oil	323,000	152,000	122,000	-62%
Fuel for Yard Equipment	20,000	16,000	17,000	-15%
Commercial	874,000	805,000	857,000	-2%
Electricity	169,000	102,000	82,000	-51%
Natural Gas	281,000	350,000	400,000	42%
Oil	139,000	56,000	56,000	-60%
Steam	152,000	161,000	176,000	16%
Fuel for Building Equipment	133,000	136,000	144,000	8%
INDUSTRY & OTHER	1,720,000	1,413,000	1,200,000	-30%
Operations	524,000	463,000	366,000	-30%
Electricity	62,000	26,000	17,000	-73%
Natural Gas	265,000	245,000	242,000	-9%
Oil	48,000	20,000	24,000	-50%
Fuel for Building Equipment	149,000	172,000	82,000	-45%
Processes	1,019,000	853,000	749,000	-26%
Cement	1,007,000	845,000	744,000	-26%
Steel	2,000	3,000	3,000	50%
Fugitive Gases	10,000	5,000	2,000	-80%
Waste	177,000	97,000	85,000	-52%
Wastewater Treatment	3,000	3,000	3,000	0%
Closed Landfills	174,000	94,000	82,000	-53%
GHG OFFSETS		-216,000	-143,000	
City Light Offset Purchases		-216,000	-143,000	
TOTAL EMISSIONS	7,280,000	6,670,000	6,770,000	-7%
* Metric tons of carbon dioxide equivalent (CO ₂ e) rounded to the nearest thousand; sums may not equal due to rounding				
2012 Goal - 7% below 1990:	6,770,000			
2050 Goal - 80% below 1990:	1,460,000			



Designing a monitoring system for a Housing NAMA in Mexico

National Circumstances:

- 50 Million Mexicans live in poverty, 80% of which have no access to funding for appropriate housing.
- Mexico committed to ambitious GHG emissions reductions until 2020, dependent on support

Proposed NAMA:

- Sustainable Housing Program to target mortgage market to provide low-income families with low GHG-emitting homes

Monitoring to focus on GHG and non-GHG metrics:

- GHG Reductions - GHG Metrics needed
- Increased access to energy-efficient housing - non-GHG metrics needed



Data Availability: how to get needed data

Data needs /sources for a Housing NAMA in Mexico:

Data to monitor	Type of monitoring
Electricity consumption	Direct and continuous metering of electricity consumption (including generation from PV). If available, utility billing records can be used.
Emission factor of the grid electricity	As per CDM Tool to calculate emission factor for an electricity system, or use published data.
Transmission & distribution loss	Data from utility or an official government body.
Fuel consumption	Direct and continuous metering of fuel consumption. If available, utility billing records or fuel purchase invoices can be used.
Net calorific value of the fuel	Values provided by the fuel supplier in invoices, own measurement, or regional or national default value.
CO ₂ emission factor of the fuel	Values provided by the fuel supplier in invoices, own measurement, or regional or national default value.
Gross floor area of a building unit	Building plan, or onsite measurement.

Source: Perspectives, Thomson Reuters



Measuring: non-GHG Metrics

Non-GHG Metrics for a Housing NAMA in Mexico

- Number of Houses constructed / year
- Demographic data
- Inhabitants/house (to compare baseline and NAMA houses)
- Energy costs for poor families
- Peak-load of the electricity grid*
- Air quality
- Water use (NAMA in water sector under consideration)

**Low-energy houses will need no/smaller air-conditioners and therefore consume less electricity at peak hours*

Implementing the MRV Plan for a Housing NAMA in Mexico

	Measure	Report	Verify
What to...	<ul style="list-style-type: none"> • Electricity and fuel consumption; emission factors (grid electricity and fuel); transmission and distribution loss, including electricity theft; net calorific value of fuel; floor area of building unit, heating degree days 	<ul style="list-style-type: none"> • Description of NAMA activities • Assumptions and methodologies • Objectives of the actions and information on progress 	<ul style="list-style-type: none"> • Emissions reductions (level of stringency tbd) • Increased access to affordable and efficient housing
How to...	<ul style="list-style-type: none"> • Electricity / fuel meters and/or utility bills • CDM Tool for emissions factors • Data from utility providers on losses • Default values • Data on air temperature for HDD 	<ul style="list-style-type: none"> • National-level reporting procedures (i.e. biennial update reports to UNFCCC) • NAMA-level reporting procedures, tbd 	<ul style="list-style-type: none"> • Biennial Update Reports to be verified by international experts (ICA) • NAMA-level verification, tbd
Who should..	<ul style="list-style-type: none"> • NAMA implementer 	<ul style="list-style-type: none"> • NAMA implementer 	<ul style="list-style-type: none"> • NAMA supporter (national and/or int'l)
When to...	<ul style="list-style-type: none"> • Continuous metering • Performance monitoring annually • Baseline updates every 3-4 years 	<ul style="list-style-type: none"> • National-level, biennially • NAMA-level, TBD 	<ul style="list-style-type: none"> • National level every 2 years (ICA) • NAMA-level, TBD



Reporting about NAMAs

- NAMA Reporting Guidelines do not exist. Can we simply build on existing reporting systems?

The Cement Sector in South Africa:	
International-level reporting	Carbon Disclosure Project
National-level reporting	Department of Environmental Affairs (DEA)
Sectoral-level reporting	The Association of Cementitious Materials Producers (ACMP)
Local-level reporting	To international holding companies and shareholders

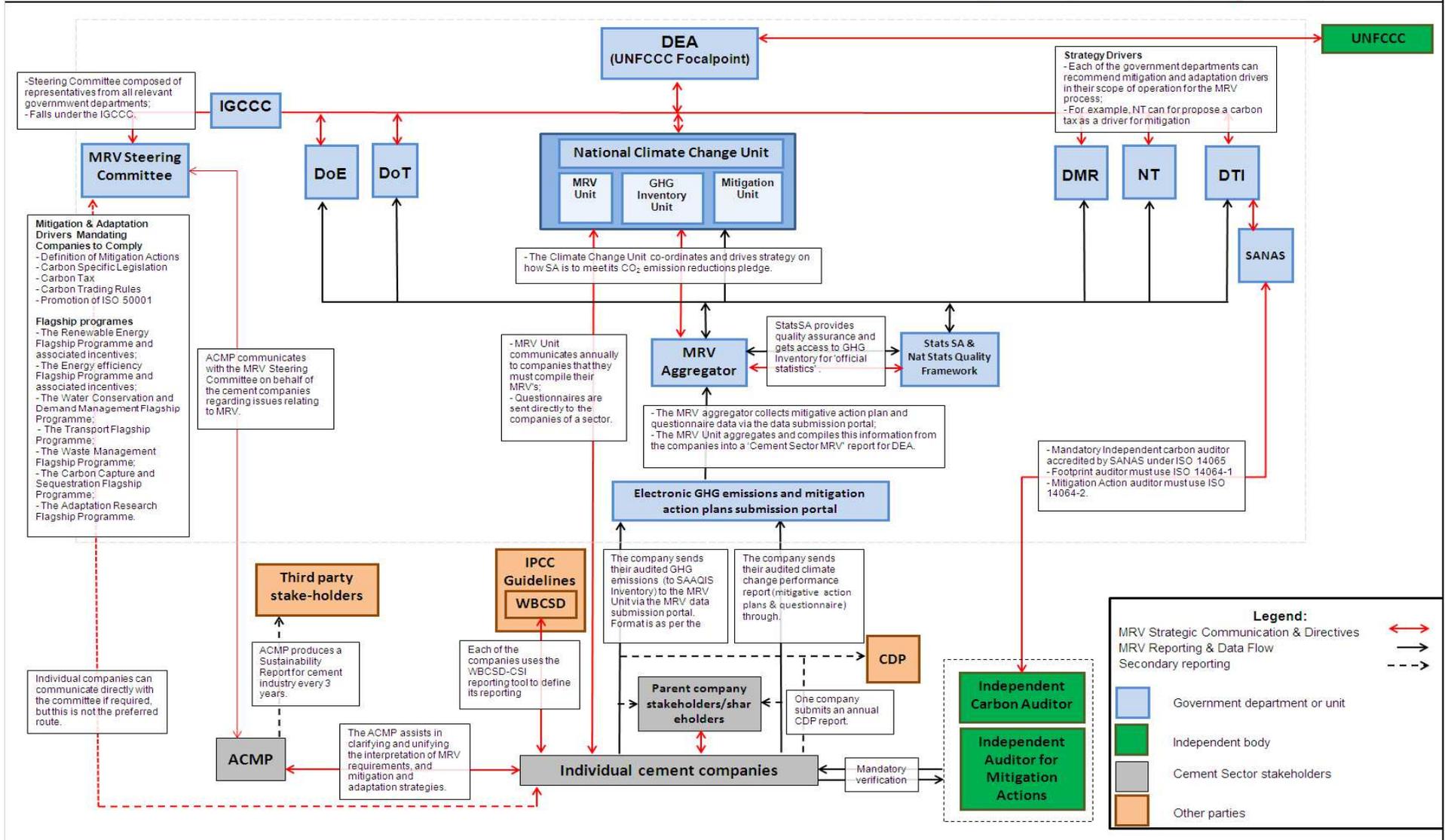
Although reporting systems can be very complex, the actual core process of reporting is fairly simple and comprises:

- ✓ the emitter,
- ✓ the submission of data on emissions and mitigation actions in a defined format,
- ✓ the aggregation of the reported data
- ✓ a national unit to handle the reported data



Proposed Reporting Structure for the Cement Sector in South Africa

Long Term (Post 2014) Reporting Structure





International Guidelines for Reporting under the Climate Convention: Biennial Update Reports (BURs)

- **Biennial Update Reports** should cover the following information related to **NAMAs** and their effects:
 - Name and description of the mitigation action
 - Information on methodologies and assumptions
 - Objectives of the action and steps taken or envisaged to achieve that action
 - Information on the progress of implementation
 - Information on international market mechanisms
 - A description of domestic measurement, reporting and verification arrangements

The complete guidelines for BURs are available [here](#) beginning on page 41.

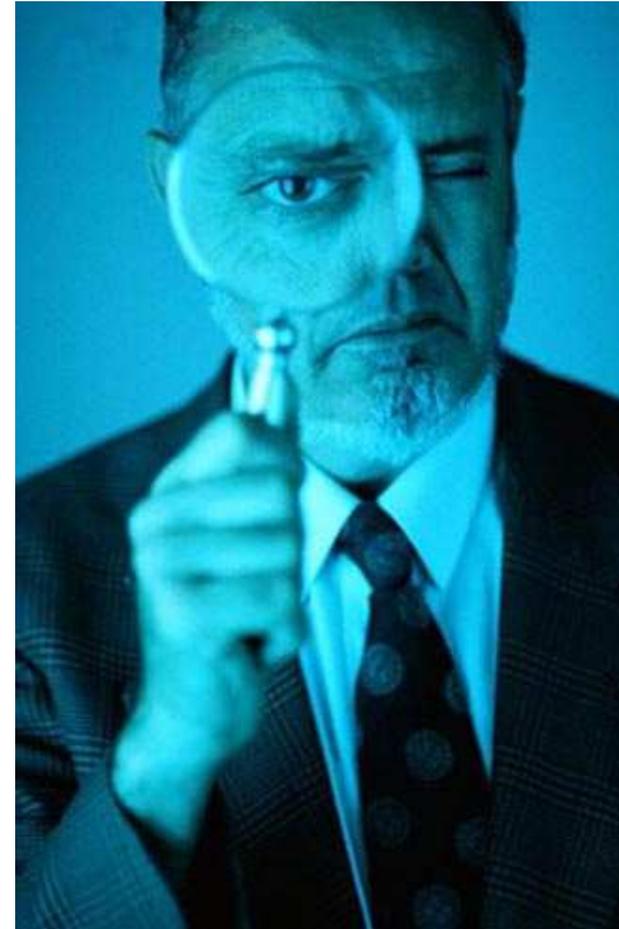


Countries have committed to submit BURs and subject them to ICA



Verifying NAMAs

- Verification guidelines for NAMAs do not exist.
- *Open question:* How stringent should verification be?
 - Is it sufficient for someone to „show up“ and check that the NAMA is doing what it said it would do?





Lessons from Verification in the CDM for NAMAs?

- Verification ensures credibility and accountability of a project's estimated GHG emission reductions
- Independence of verifiers (i.e. third party) is needed to ensure confidentiality of industry data and credibility
- Domestic capacity for verification services are often weak, need to draw on int'l auditors or build capacity
- *What to verify* must be made clear: Verifiers should only be responsible for data that is easily verifiable (e.g. data on fuel use, compliance with procedures) and not for assessing politically-influenced elements, such as baselines.



Thank you for the attention!
