

**WORLD RESOURCES INSTITUTE SUBMISSION TO THE UNFCCC ON  
“GENERAL, VOLUNTARY, GUIDELINES FOR DOMESTIC MEASUREMENT, REPORTING AND VERIFICATION”  
WITH CONTRIBUTION FROM ECOFYS**

March 2013

Parties in Durban agreed to a detailed process for countries to produce regular reports on their greenhouse gas (GHG) emissions and actions, and a process for those reports to be reviewed. Later in Doha, Parties agreed to adopt voluntary domestic measurement, reporting and verification (MRV) guidelines by November 2013.

This submission provides elements that should be considered for the development of such guidelines to allow Parties to generate, collect and process data for measuring emissions, planning and implementing future mitigation actions, and receiving financial, technological and/or capacity building support. This submission shares and promotes best practices generated through Parties’ experiences collected through various capacity building fora. The submission follows the outline below and introduces factors that can be considered when discussing the design of domestic guidelines, as well as when developing MRV systems domestically:

1. The importance and domestic benefits of MRV, especially as a means to optimize policy design, enhance data quality and improve reporting to stakeholders and decision-makers
2. General, cross-cutting considerations and success factors (e.g. institutional and human capacity)
3. Methodological considerations for MRV of emissions, MRV of actions and MRV of support

In this submission, WRI and Ecofys collaborated to share their experience in undertaking capacity building, developing MRV tools, and supporting the International Mitigation and MRV Partnership.

Key issues to consider when developing domestic MRV guidelines:

- Effective implementation will depend on in-country institutional frameworks, which require political leadership, coordination and consultation, as well as financial resources and technical expertise. Investment in building in-house capacity, ensuring adequate training, and establishing recording/storage procedures is key.
- Guidelines, standards, protocols and tools for the collection and management of data, the estimation of GHG emission reductions, co-benefits and support are either available or under development. This submission highlights a few of them.
- The Greenhouse Gas Protocol Policies and Actions Standard introduces an internationally reviewed methodology on how to measure and report the greenhouse gas effects of policies and actions, including NAMAs. The standard is being developed by WRI through a global, inclusive, multi-stakeholder development process including over 100 active participants from developed and developing countries (see [www.ghgprotocol.org/mitigation-accounting](http://www.ghgprotocol.org/mitigation-accounting) for further details).
- Reporting emissions, actions and support in standardized formats helps ensure consistency of the information and facilitate their evaluation.
- Various types of verification, including data checking, third-party verification, continuous monitoring, and enforcement measures, at the national, subnational and/or company levels, could be used to strengthen trust amongst domestic and international stakeholders and spur improvements over time.

## I. The Importance of MRV

*“You cannot manage what you cannot measure.”*

MRV procedures are more than just an essential cornerstone of any multilateral MRV regime. As highlighted by the International Mitigation and MRV Partnership, domestic MRV can be broken into the following parts: collection of evidence, engagement with stakeholders, evaluation of efforts and progress made and enforcement at the national level.<sup>1</sup> This MRV system and process optimizes policy design, data quality and reporting. Indeed, such an MRV system can spur improvement over time by:

- identifying transformational and sustainable policies and driving more effective support to developing countries to meet their needs,
- enabling more efficient use of public budgets,
- improving access to international financial, technological and capacity building support,
- enhancing abilities to track emissions and emission reductions
- translating mitigation actions into quantified emission reductions and co-benefits, and
- enhancing countries’ credibility over their data and action.

MRV systems and processes build trust and confidence amongst national and international stakeholders by assessing whether governments (at the national and sub-national levels) and companies are on track to meet their domestic or corporate emission reduction goals by recognizing their effort to do so and ultimately by holding them accountable.<sup>2</sup> In addition, MRV systems can facilitate learning and implementation by identifying and sharing experiences, best practices, challenges and lessons learned on policy implementation and deployment of international climate finance. Each domestic MRV system could include the regular evaluation of experiences, as well as identification of best practices in order to improve the domestic system.<sup>3</sup> Feedback could be made regularly in a simple and transparent way, e.g. through email, a webportal, etc.

The domestic MRV guidelines should be designed in a way that reflects the multiple objectives and benefits mentioned above and provide the flexibility required to adapt to national and local circumstances.

## II. Domestic MRV Systems – Key success factors

A MRV system is not just about data and the associated tools and methodologies to collect and estimate them. Indeed, once countries have adopted the necessary policies for the transition to a low-carbon trajectory, their effectiveness will depend on a number of factors, including the selection of robust institutions with adequate resources.<sup>4</sup> While adequate financial resources and the ability to manage the resources are essential, this submission will however focus on two major capacity categories that are critical to develop effective domestic MRV systems: human resources and institutional arrangements.

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<sup>1</sup> International Mitigation and MRV partnership: <http://mitigationpartnership.net/autumn-school-%E2%80%98mrv-%E2%80%93-today-tomorrow-and-future%E2%80%99-berlin-15%E2%80%93october-2012>

<sup>2</sup> Moncel, Remi et al. “Building the Climate Change Regime: Survey and Analysis of Approaches.” Working Paper. [http://pdf.wri.org/working\\_papers/building\\_the\\_climate\\_change\\_regime.pdf](http://pdf.wri.org/working_papers/building_the_climate_change_regime.pdf)

<sup>3</sup> *Id.*

<sup>4</sup> Cerqueira, Julie, Davis, Stacey and Winkelman, Steve. (Oct. 2012) “MRV of NAMAs: Guidance for Selecting Sustainable Development Indicators.” Discussion Draft. [http://ccap.org/assets/MRV-of-NAMAs-Guidance-for-Selecting-Sustainable-Development-Indicators\\_CCAP-Oct-2012.pdf](http://ccap.org/assets/MRV-of-NAMAs-Guidance-for-Selecting-Sustainable-Development-Indicators_CCAP-Oct-2012.pdf)

Capacity Category	Examples
Human Resource	<ul style="list-style-type: none"> <li>• Capacity and skills of individual staff, including managerial abilities and technical skills.</li> <li>• Recruitment and retention of skilled staff.</li> </ul>
Institutions	<ul style="list-style-type: none"> <li>• Ability to perform functions to achieve objectives.</li> <li>• Effective institutional arrangements, processes and coordination mechanisms, leadership, and institutional mandates.</li> <li>• Capability to identify problems and develop and implement solutions.</li> </ul>

### a) Human Resources - Effective and sustainable capacity building

In order to build sustainable human resources, the following considerations should be taken into account.

The training of policymakers, civil society, private sectors and other practitioners on measurement, performance and tracking will be key.<sup>5</sup> It is encouraging to note a number of capacity building initiatives, some of which have resulted in the development of technical knowledge about MRV (e.g. WRI's Measurement and Performance Tracking (MAPT) project ([www.wri.org/MAPT](http://www.wri.org/MAPT)), United Nations Development Programme Low Emissions Capacity Building project, International Mitigation and MRV Partnership).<sup>6</sup>

A wealth of methods for MRV activities exists (see also Section III), which can be used for developing customized training courses focused on the specific MRV approaches needed at the national or subnational level. The effectiveness of such capacity building activities will be facilitated by the use of harmonized tools, guidance and guidelines. Training based on standardized methods would also help reduce the administrative burden and enhance consistency of data. Examples of standardized approaches include the IPCC Guidelines for national inventories or the GHG Protocol for corporate level inventories, which are both internationally recognized. There are further guidelines and guidance under development (e.g., Greenhouse Gas Protocol Policies and Actions Standard and Greenhouse Gas Protocol Mitigation Goals Standard).<sup>7</sup>

Parties may also carefully consider the implications about outsourcing MRV-related activities both financially and in terms of institutional memory and consider the long-term benefits of strengthening in-house capacity for the production of major national outputs (e.g. national inventory reports). In both cases, designated institutions may face considerable staff turnover in their teams, resulting in capacity loss and considerable time to reach the same level of expertise related to MRV. Therefore, budget planning and contractual arrangements should ideally be set up in a way that maintains staff with MRV expertise for a longer term. Where staff changes cannot be avoided, loss of capacity can be reduced to a certain extent by continuously transcribing and archiving relevant experiences and procedures (e.g. what to focus on when reviewing reported data, key and most helpful contact in a company).

<sup>5</sup> Wartman, Sina. (Dec. 2012) "First Autumn School of the International Mitigation and MRV Partnership: MRV – Today, Tomorrow and the Future."

<sup>6</sup> For examples, see Moncel, Remi et al. (Nov. 2011) "The International Partnership on Mitigation and Measurement reporting and Verification (MRV): Lessons and Next Steps." Working Paper.

[http://pdf.wri.org/working\\_papers/international\\_partnership\\_on\\_mitigation\\_and\\_mrv.pdf](http://pdf.wri.org/working_papers/international_partnership_on_mitigation_and_mrv.pdf) and the work of MAPT at <http://www.wri.org/project/low-carbon-development/measurement-and-performance-tracking>.

<sup>7</sup> The GHGP draft policy accounting guidelines can be found at <http://www.ghgprotocol.org/files/ghgp/GHG%20Protocol%20Policies%20and%20Actions%20Standard%20-%20Draft%20for%20Review%20Group%20-%20November%202012.pdf>

## **b) Checklist towards effective institutional arrangements**

A coherent set of governance and institutional arrangements need to be deployed. Effective implementation will require political leadership, coordination and consultation, as well as financial resources and technical expertise. The “implementation deficit” that separates laws on the books from their intended effects on the ground is well documented in a number of policy sectors.<sup>8</sup> This deficit has been called “one of the major problems confronting developing nations,”<sup>9</sup> and more recently has been identified as a barrier to climate policy effectiveness in the EU.<sup>10</sup> Developing the requisite institutional capacity to measure and manage the emissions associated with climate policies across a range of sectors is central to effectively controlling and reducing GHG emissions in a given country. However, the emerging nature of this issue means that many countries have to adapt existing institutional setups or create new systems and procedures, which presents numerous challenges. Some of the major recurring issues that emerged from WRI’s MAPT scoping exercise<sup>11</sup> included a need for:

- Clearly designated mandates of authority, i.e., all entities are aware of their specific responsibilities, as well as the roles designated to other institutions;
- Strong leadership from the designated lead institution;
- Effective coordination and information sharing mechanisms across bodies and within a specific institution, as well as a systematic procedure for ensuring that climate and MRV concerns were successfully integrated into national priorities and policies;
- Data sharing agreements, such as a Memoranda of Understanding (MOUs) and/or legal mechanisms requiring the necessary data between the lead institution and data providers (e.g. trade associations or companies), which could be a solution to overcome private companies’ reluctance to provide data due to the efforts connected and for reasons of confidentiality;
- Open access to data, which support experience exchange with other countries as well as research activities.
- Long-term retention of institutional memory and capacity, i.e., institutional knowledge is not lost with changes in personnel or over time.
- Staff with the skills to effectively carry out the institutional responsibilities outlined above; and
- Financial resources for institutions.

## **III. MRV Methodologies**

This section provides an overview of potential steps and tools that should be adopted to:

- Measure emissions, impacts of mitigation actions (including their co-benefits) and support (a distinction between measuring emissions, impacts, and support is made with regards to monitoring/measuring, while the approaches presented for verification and reporting are applicable for these three areas ;
- Create an effective reporting system; and
- Enhance credibility and trust through a verification process.<sup>12</sup>

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<sup>8</sup> Makinde, Taiwo, 2005. “Problems of Policy Implementation in Developing Nations: The Nigerian Experience.” J. Soc. Sci., 11(1): 63-69.

<sup>9</sup> Makinde, p. 65

<sup>10</sup> Haug et al., 2007. “How Effective Are European Climate Policies?” ADAM 15/10/2007.

<sup>11</sup> For the MAPT Scoping Reports, see <https://sites.google.com/site/maptpartnerresearch/home>

<sup>12</sup> Bell, Ruth Greenspan et al. (2012) “Building International Climate Cooperation: Lessons from the Weapons and Trade Regimes for Achieving International Climate Goals.” WRI: Washington, DC.  
[http://pdf.wri.org/building\\_international\\_climate\\_cooperation.pdf](http://pdf.wri.org/building_international_climate_cooperation.pdf)

### a) **Measurement/Monitoring**

Measurement/monitoring is typically associated with data collection, storage and assessment in order to build the evidence that will inform policy makers. Due to their important role in national implementation, corporate actors play a key role in collecting, accessing and sharing relevant data with interested parties. They are, therefore, key stakeholders in the development and reporting of any environmental guidelines.<sup>13</sup> Providing the same data in different formats with little understanding about how the information will be used and how this could affect their competitiveness can increase administrative burden, confusion and distrust. Streamlining some of the requirements (e.g., air quality and climate data; sectoral regulations and gas specific directives; information and education) and reinforcing cooperation between different ministries could reduce administrative burden for all interested parties, build trust and, as a result, facilitate the internal or external reporting of relevant data.

#### i. Measurement of emissions

This section is about the estimation of GHG emissions at the national, subnational, sectoral and organization/facility levels. National, subnational, and organizational/facility GHG inventories are critical for enabling government agencies and companies/organizations to track changes in overall GHG emissions. All jurisdictions and organizations should develop a GHG inventory as a first step to managing GHG emissions, following established standards such as the *GHG Protocol Corporate Standard* for companies and organizations, the *IPCC Guidelines for National Greenhouse Gas Inventories* for national governments, or the *C40/ICLEI/WRI Global Protocol for Community Emissions* for cities and subnational jurisdictions.<sup>14</sup>

In these protocols, the determination of GHG emissions is based on calculating emissions by multiplying an activity level (e.g. fuel consumption) by an emission factor. Another option, particularly relevant at facility-level, is measuring GHG emissions directly using continuous emission measurement systems.

The GHG Protocol website ([www.ghgprotocol.org](http://www.ghgprotocol.org)) provides a variety of GHG calculation tools and guidance, including several cross-sector and sector-specific calculation tools, which provide step-by-step guidance, together with electronic worksheets to help users calculate GHG emissions from specific sources or sectors.<sup>15</sup>

Further details are given in the guidelines and protocols mentioned above on how to align various measurement activities at national and facility levels and how to align methodologies to achieve accuracy of the data while avoiding duplication of efforts and managing costs.<sup>16</sup> Starting with simplified approaches and less accurate data and improving over time is a typical approach, particularly for national inventories. In order to ensure consistency of data over time, measurement and monitoring approaches should always be written at a high level of detail. Authorities should also ensure consistency

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<sup>13</sup> International Partnership on Mitigation and MRV. (June 2012) "International Workshop: MRV – Experiences from and for Implementation." [http://mitigationpartnership.net/sites/default/files/final\\_report\\_international\\_workshop\\_south\\_africa.pdf](http://mitigationpartnership.net/sites/default/files/final_report_international_workshop_south_africa.pdf)

<sup>14</sup> WBCSD and WRI (2004) "A Corporate Accounting and Reporting Standard: Revised Edition." <http://www.ghgprotocol.org/files/ghgp/public/ghg-protocol-revised.pdf>; IPCC. (2006) "2006 IPCC Guidelines for National Greenhouse Gas Inventories." <http://www.ipcc-nggip.iges.or.jp/public/2006gl/>; C4 Cities, ICLEI, and WRI. (May 2012). "Global Protocol for Community-Scale Greenhouse Gas Emissions (GPC): Pilot Version 1.0." [http://www.ghgprotocol.org/files/ghgp/GPC\\_PilotVersion\\_1.0\\_May2012\\_20120514.pdf](http://www.ghgprotocol.org/files/ghgp/GPC_PilotVersion_1.0_May2012_20120514.pdf)

<sup>15</sup> All GHG calculation tools and guidance are available at [www.ghgprotocol.org](http://www.ghgprotocol.org).

<sup>16</sup> Wartman (Dec. 2012).

and completeness across inventories by encouraging the same coverage of sectors, gases, and GWP values used. Also see III.b concerning key measurement and reporting considerations for facility-level reporting.

ii. Measurement of the impact of policies and actions

This section is about the quantification or assessment of the impacts of mitigation actions and policies. While currently the focus of effects of mitigation action is often on emission reductions, the removal of barriers to emission reductions is important for achieving emission reductions on the longer term and should therefore also be considered.<sup>17</sup> Non-GHG metrics should also be considered when assessing the effects of policies and actions with regards to sustainable development, e.g. job creation, improvement of air quality, increased income<sup>18</sup>.

MRV of emissions focuses on the inventory and give a snapshot of a jurisdiction's emissions at a given point in time within their defined boundary. On the other hand, MRV of emissions reductions requires the calculation of emissions impacts of a policy or action against a baseline scenario. Baseline scenarios represent what would have most likely happened in the absence of a policy or action, in terms of GHG emissions.

The domestic MRV guidelines should refer to the *Greenhouse Gas Protocol Policies and Actions Standard* for a methodology on how to measure and report the greenhouse gas effects of policies and actions, including NAMAs. This international greenhouse gas accounting and reporting standard is being developed by WRI through a global, inclusive, multi-stakeholder development process including over 100 active participants from developed and developing countries. To download the first draft of the standard and for more information, please see [www.ghgprotocol.org/mitigation-accounting](http://www.ghgprotocol.org/mitigation-accounting). The new standard guides users in answering the following questions:

- Before implementation of an policy or action: What effect is the policy or action likely to have on GHG emissions (ex-ante assessment)?
- During implementation: How to track progress of the policy or action?
- After implementation: What effect has the policy or action had on GHG emissions (ex-post assessment)?

The standard also provides guidance on how to:

- Develop a baseline scenario
- Attribute changes in emissions to an individual policy or action
- Avoid double counting of GHG reductions between overlapping policies or actions
- Choose between top-down assessment approaches (based on changes in macro-level indicators) and bottom-up approaches (using bottom-up data at the source-, project-, or entity-level)
- Use tiered approaches to balance tradeoffs between accuracy, completeness, and cost

The basic approach for assessing the GHG effects of policies and actions includes:

- Defining the objectives of the assessment (e.g. domestic decision-making, international reporting, etc.)

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<sup>17</sup> Fransen, Taryn and Cronin, Casey. (Mar. 2013) "A Critical Decade for Climate Policy: Tools and Initiatives to Track Our Progress." Working Paper.

[http://pdf.wri.org/critical\\_decade\\_for\\_climate\\_policy\\_tools\\_and\\_initiatives\\_to\\_track\\_our\\_progress.pdf](http://pdf.wri.org/critical_decade_for_climate_policy_tools_and_initiatives_to_track_our_progress.pdf)

<sup>18</sup> Cerqueira et al. (Oct. 2012)

- Defining the policy or action to be assessed, and whether to assess one policy or a package of similar policies
- Mapping the causal chain to identify all possible GHG effects of the policy or action
- Selecting effects to include in the GHG assessment boundary
- Defining the baseline scenario and determining baseline emissions
- Quantifying likely GHG effects before implementation (ex-ante)
- Monitoring performance indicators during policy implementation period
- Quantifying GHG effects ex-post during or after policy implementation
- Reporting results of assessment and methodology used to relevant stakeholders

### iii. Measurement of support

The functions of monitoring support include transparency, understanding the extent of support available, assessing the effectiveness of specific instruments for providing support, as well as the effectiveness of the support provided.<sup>19</sup>

Countries can receive climate finance from many different intermediaries, e.g. unilateral or multilateral banks or agencies, at many different entrance points, e.g. various ministries or institutions. Support can also have many forms, such as capacity building, technology transfer, financing instruments (e.g., grants, concessional loans). Recent reports by the OECD might provide orientation<sup>20</sup> to enhance comparability and subsequently effectiveness of tracking support. At the national level, appointing an administration responsible for tracking support and entitled to information on support received and its use can be a step toward increasing transparency. A clear overview on the amount of support received, its sources and its uses enables more informed decisions related to the need for further funding and potentially more targeted use in the future.<sup>21</sup>

There are still challenges in measuring the effectiveness of development finance, so we still have a long way to go in accurately measuring the effectiveness of climate finance.<sup>22</sup> However, despite the challenges, some financial institutions monitor and evaluate their projects/investments to measure impact and results and understand if funds are well spent. To harmonize GHG accounting and reporting efforts, a working group of multilateral development banks and international financial institutions produced the “International Financial Institution Framework for a Harmonised Approach to Greenhouse Gas Accounting.”<sup>23</sup> Most work to date is focused on project-level financing. Institutions are beginning to look at how to account for impacts of policy level financing. When designing the domestic MRV

<sup>19</sup> See Buchner, Barbara, et al. (Oct. 2011). “The Landscape of Climate Finance.” <http://climatepolicyinitiative.org/wp-content/uploads/2011/10/The-Landscape-of-Climate-Finance-120120.pdf>. The report relates the above named functions only to tracking climate finance. The authors of this document hold the view that these functions can be extended to tracking of support in general. Annex I parties currently report on the support provided in their National Communications

<sup>20</sup> Buchner, Barbara, Brown, Jessica, and Corfee-Morlot, Jan (May 2011): “Monitoring and Tracking Long-Term Finance to Support Climate Action.” <http://www.oecd.org/env/cc/48073739.pdf>; Clapp, Christa, Ellis, Jane and Corfee-Morlot, Jan. (May 2012): “Tracking Climate finance: What and How?” <http://www.oecd.org/env/cc/50293494.pdf>

<sup>21</sup> Buchner, Barbara, et al. (Oct. 2011) “The Landscape of Climate Finance.” <http://climatepolicyinitiative.org/wp-content/uploads/2011/10/The-Landscape-of-Climate-Finance-120120.pdf>

<sup>22</sup> Ballesteros, Athena et al. (2010). “Power, Responsibility and Accountability: Re-Thinking the Legitimacy of Institutions for Climate Finance.” WRI: Washington, DC. [http://pdf.wri.org/power\\_responsibility\\_accountability.pdf](http://pdf.wri.org/power_responsibility_accountability.pdf)

<sup>23</sup> Asian Development Bank et al. (Nov. 2012) “International Financial Institution Framework for a Harmonised Approach to Greenhouse Gas Accounting.”

[http://climatechange.worldbank.org/sites/default/files/IFI\\_Framework\\_for\\_Harmonized\\_Approach%20to\\_Greenhouse\\_Gas\\_Accounting.pdf](http://climatechange.worldbank.org/sites/default/files/IFI_Framework_for_Harmonized_Approach%20to_Greenhouse_Gas_Accounting.pdf)

guidelines, Parties should call for more intensive work in this particular area by encouraging the collaboration of relevant organizations.

#### **b) Reporting**

Reporting is the delivery of the monitoring results and an essential means to engage with stakeholders and build confidence. There might be several levels of reporting, e.g. company data are reported to an administration at local level, which aggregates the data and reports it to an authority at the national level which again reports on the overall mechanism at a national or international level. Key questions in reporting are: a) what data is needed by key decision makers i.e. what is to be reported and b) in which format.

When considering what to report, one again has to strike a balance between the effort incurred and the quality of information contained in the report. The monitored indicator values should be included in any case. In order to allow for a review of these values more detailed data, e.g. activity data and emission factors might be included or even further background data where this enables cross-checks of the indicator values. There are long-term benefits when information supporting exchange of experiences (including experience on barriers and costs), as well as best practices, are included.

#### ***Facility Level reporting***

The domestic MRV guidelines should include provisions related to facility-level reporting, which is a useful way to collect GHG emissions information from large facilities/installations, such as power plants and industrial facilities, and support mitigation programs. Different countries and subnational jurisdictions have set up facility-level reporting systems in a variety of ways, with respect to program design questions such as coverage (which sectors are included and which emissions thresholds are established for determining coverage by the program), which greenhouse gases are measured and reported (e.g., CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, SF<sub>6</sub>, NF<sub>3</sub>), types of emissions covered (e.g., which direct emissions sources and any indirect emissions sources related to electricity use, fuel production, or other supply chain impacts are covered), types of other activity data (such as energy use) that are collected, what emissions monitoring and quantification methodologies are used, what reporting procedures are used, and what verification procedures are used.<sup>24</sup>

#### ***Roles of standardized format***

Domestic MRV guidelines should encourage the use of standardized reporting format for the reasons highlighted below.

Indeed, experience shows that using a standardized reporting format (to report information on emissions, sources, costs and barriers to reduce emissions, costs to overcome barriers, co-benefits, individual actions, and support received) offers many advantages. It does facilitate the identification and share of good practice, the understanding of transformational impact, the impact on competitiveness, and sustainability of changes, while reducing reporting errors (since the required reporting contents are clearly delineated).

Standardized formats reduce learning efforts for new participants to a mitigation measure, where the learning from application of the format is written in guidance documents or made available through capacity building. Similar experiences were made at the international level. Participants in the

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<sup>24</sup> David Rich, "Designing a US Greenhouse Gas Emissions Registry," World Resources Institute, 2008.

International Mitigation and MRV Partnership workshop in South Africa in June 2012 acknowledged that standardized formats could reduce reporting effort, make data comparable, highlight differences among countries' actions/targets/finance, support completeness and facilitate independent evaluation of reports. However, this is not always easy given the different nature of Parties' actions or commitments. The UNFCCC reporting guidelines and its common reporting format (CRF) for the quantitative information related to GHG emissions and a structure for the supporting qualitative information should serve as model and be adapted to national circumstances.

Reporting formats work best when tailored to the capabilities of the entities involved in MRV. There might be situations where electronic reporting formats might not be applicable and paper formats have to be used. Wherever this is not the case, electronic formats allow easy data transfer and handling, time while not having to be sophisticated: simple Excel worksheets or web portals might be fully sufficient.<sup>25</sup>

### **c) Verification and peer-to-peer learning:**

Verification can have many different forms. Its key aim is evaluating reported data, which can cover a range of approaches with differing levels of stringency and potentially including enforcement actions.<sup>26</sup>

Evaluation is not the only function of verification. Verification also plays an important role in facilitating implementation by highlighting areas where no further attention is needed and those in need of improvement. This could assist in better targeting financial or technical assistance. Another key aspect is prioritization, by identifying areas with highest relevance (e.g. largest emission sources) and processes or data with higher risk of error. The results of verification will mostly be improved by an on-site visit, which allows detailed oversight of documentation and discussion with responsible staff members.

Independence is a key issue in verification.<sup>27</sup> Whatever the strictness of verification might be, the entity performing the verification should be independent from the entity providing the data to be verified. This is necessary to avoid conflicts of interest. One can often observe that countries encouraging in-house validation of data, a domestic surveillance, audit by an accredited third party based on detailed legal requirements, and enforcement system tend to be more confident and prepared for effective participation in the international verification process (International Consultation and Analysis) and tend to benefit more from the exchange of views, share of experience.<sup>28</sup> Further cooperation that catalyzes the sharing of best practices on domestic monitoring, surveillance, and control and enables countries to establish or maintain adequate national systems to check the accuracy of the reported data could be helpful.<sup>29</sup> The domestic MRV guidelines should encourage such best practice.

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<sup>25</sup> See Ellis, Jane, Briner, Gregory, and Dagnet, Yamide (2011). "Design Options for International Assessment and Review (IAR) and International Consultation and Analysis (ICA)." OECD: Paris, France. <http://www.oecd.org/environment/cc/49101052.pdf>

<sup>26</sup> Bell et al. (2012).

<sup>27</sup> Lütken, Søren et al. (Mar. 2012) "Measuring, Reporting, Verifying: A Primer on MRV for Nationally Appropriate Mitigation Actions." [http://mitigationpartnership.net/sites/default/files/mrv\\_namas\\_primer.pdf](http://mitigationpartnership.net/sites/default/files/mrv_namas_primer.pdf)

<sup>28</sup> Ellis, Jane, Briner, Gregory, and Dagnet, Yamide (2011). "Design Options for International Assessment and Review (IAR) and International Consultation and Analysis (ICA)" OECD: Paris, France. <http://www.oecd.org/environment/cc/49101052.pdf>; Falconer, Angela et al. (2012) "Tracking Emissions and Mitigation Actions: Evaluation of MRV Systems in China, Germany, Italy, and the United States." <http://climatepolicyinitiative.org/wp-content/uploads/2012/05/Tracking-Emissions-and-Mitigation-Actions-Evaluation.pdf>

<sup>29</sup> Ellis, Jane, Briner, Gregory, and Dagnet, Yamide (2011). "Design Options for International Assessment and Review (IAR) and International Consultation and Analysis (ICA)" OECD: Paris, France. <http://www.oecd.org/environment/cc/49101052.pdf>