Training on Measurement, Reporting and Verification (MRV) and GIZ’s MRV tool

A capacity building tool for stakeholders in developing countries

Ref: ED58056

**Proposal for GIZ**

[Status]  
Date *13/12/2012*

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| **Change of Ownership of AEA**  **On 8 November 2012, Ricardo plc acquired the assets and goodwill of AEA Technology plc. A new company, Ricardo-AEA Ltd, has been constituted to operate the continuing business. All AEA Technology plc employees were transferred to Ricardo-AEA Ltd as part of the acquisition.**  **This report is therefore presented in the name of Ricardo-AEA Ltd**  **Background to the Change from AEA Technology plc to Ricardo-AEA Ltd**  **AEA Technology plc was an Energy and Environmental consultancy with 400 highly qualified employees, and had a track record of delivering and providing services to the UK public sector, the European Commission, international customers, and the private sector for many years. Many of its assignments were very high-profile.**  **In November 2011 its parent company, AEA Technology Group plc (AEAG), decided on a financial restructuring to deal with long-standing balance sheet issues, one of which is a deficit in its defined benefit pension scheme. Although this legacy scheme was closed to new members in 2003, and existing members in 2009, it became increasingly difficult to fund the scheme. The result is that on 8 November 2012 it was announced that Ricardo plc had bought the assets and goodwill of AEA Technology plc, and that the employees had transferred to Ricardo as well.**  **Ricardo plc**  **Ricardo is a provider of engineering solutions and consultancy focused on high efficiency, low emission, class-leading product innovation and strategic implementation. It has over 95 years of experience of successful project delivery within our key markets of automotive, transport, defence and energy. It is a global organisation of over 1,900 employees with headquarters in the UK and overseas technical centres and offices in 10 countries. Ricardo is a profitable and financially strong UK based plc and has in recent years successfully implemented a diversification strategy to grow and develop in a number of new sectors.**  **Robert Bell, MD Ricardo-AEA** |

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**Training on Measurement, Reporting and Verification (MRV) and GIZ’s MRV tool**

A capacity building tool for stakeholders in developing countries

**Training Concept – November 2012**

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10. **Introduction to the training**

Measurement, Reporting and Verification (MRV) are key elements for ensuring greater transparency, accuracy and comparability of information with regard to climate change. If the international community is to achieve its stated goal of keeping global warming below 2 degrees, then the generation and sharing of accurate information in a systematic and internationally agreed-upon manner is vital to monitoring progress towards this common goal.

Recent decisions within the international climate change negotiations demonstrate a growing global consensus that common forms of measuring, reporting and verifying information are needed to track progress with regard to GHG emissions, emissions reductions, and the support needed by developing countries to improve their basis of information. Along with the new commitments to MRV, come new challenges for raising national-level, sub-national-level and sectorial-level capacities for improving information. Capacity building tools and training are needed in particular to help many developing countries improve MRV systems and practices.

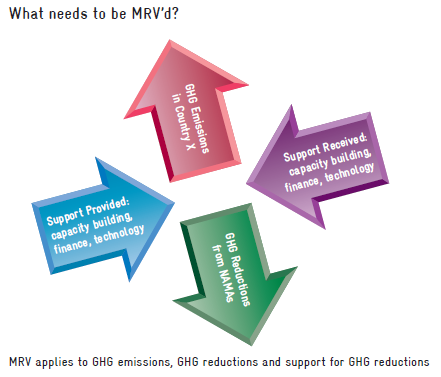
GIZ supports the Federal Government of Germany, specifically the Federal Ministry for Economic Cooperation and Development and the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, as well as the International Partnership on Mitigation and MRV, in improving technical capacities in partner countries related to international climate policy, including MRV. In this context the GIZ Support Program to the International Partnership on Mitigation and MRV commissioned AEA to develop and test a tool and training related to the three areas of MRV under discussions in the international climate negotiations, namely MRV of Emissions, MRV of Mitigation Actions (NAMAs) and MRV of Support Received.

This document introduces both the training concept and the framework in which it has been developed.

**The MRV tool**

The GIZ MRV tool is designed to provide a framework for enhancing understanding and facilitating practical implementation of Measurement, Reporting and Verification across three principal areas: EMISSIONS, NAMAS and SUPPORT. It provides an introduction to how to MRV each of the three different factors and what steps should be taken to set-up an MRV system or to improve on an existing MRV system.

Figure : The different elements of climate change policy that need to be subject to MRV – emissions (red arrow), policy actions (green arrow) and support (blue and purple arrows). Taken from GIZ NAMA example data presentation.

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The tool can be used at various levels, from those requiring a national/international level overview of the area for national or international level negotiations, to practitioners in a particular area such as those responsible for emission measurement /reporting in government ministries, industry or NGOs.

The tool itself is not intended to be used chronologically from start to finish. It has been designed in a series of modules to enable participants to meet their specific learning requirements in as much detail as they wish. Participants may choose to utilise the tool to gain a broad overview of all aspects of MRV covered or they may decide to focus in detail on one area, for example MRV of emissions.

**Aims of the training and training concept**

The aim of this training concept is to provide guidance and a proposed agenda for a 2-day workshop, using the MRV tool as one of the workshop inputs. The user of the training concept will, at least in the beginning, be GIZ and sub-contracted consultants who may deliver the workshop in future.

The aims of the training sessions are to familiarise participants with the MRV tool and to use the tool and accompanying exercises to train participants in the key MRV concepts and practices. Doing so should lead to a greater level of knowledge of MRV systems and processes but also lead to a clearer idea of next steps and actions to develop or improve an MRV system.

Evidently, the detailed aims of the training will depend on the participants and what their interests are. But regardless of this, the training should lead to some concrete outputs. If the participants are interested in learning about the general principles of MRV, an output from the training could be a clear plan setting out how they intend to adopt what they have learnt and apply it to their work. If the participants are interested in learning more about detailed aspects of MRV, such as how to calculate emissions in an GHG inventory, or how to measure costs of a NAMA, then the concrete output could be an action plan on what steps they will be taking next to develop or improve their MRV systems.

As such, this document presents one possible agenda and moderation plan for a 2-day training session, focusing on a session that teaches detailed elements of MRV. However it then also presents a set of alternative exercises that could be used instead, so that the training can be appropriately tailored to the needs of the participants.

**Target audience**

The training will focus on, but will not be limited to, training Government officials in GIZ partner countries and GIZ officials from those countries.

It is anticipated that it will be delivered in:

* Global summer schools
* Regional or national workshops.

1. **Learning outcomes**

It is anticipated that after participation on the course, participants will:

* Understand the drivers behind MRV and the importance of data;
* Understand key concepts and processes of MRV;
* Be able to follow a step-by-step process for developing and enhancing or implementing a national MRV-system;
* Leave with a clear set of ‘Actions’ to contribute effectively to MRV-related activities;
* Know how to constructively address ‘barriers’ to effectively following the MRV process for emissions, NAMAs and support.

1. **Methodology**

**Logistics**

This section provides a brief overview of some of the logistical recommendations that we would like to make with regards to the training. The details of the logistics will, however, vary depending on the resources available (including the time available in which to deliver the training, the financial support provided, and the availability of technical staff) as well as the needs of the audience.

* Recommended number of facilitators and speakers: Two facilitators. The training can be delivered by one individual, but two would be the optimum number to increase the access of participants to a diversity of experience and knowledge and to add some diversity to the training without compromising consistency. In many cases, the facilitator might be able to deliver the presentations as well (e.g. if they are GIZ or Ricardo-AEA experts), but if not, an expert or experts might need to be invited to deliver the presentations on emissions, NAMAs and support.
* Course duration: Two days. The Modules can be tailored to available time, and almost any of the PowerPoint presentations or exercises can be delivered in isolation and tailored to complement other GIZ, or external, conferences of training events. It is, however, recommended that the comprehensive two-day version of the training is delivered in order to give participants a robust overview of the GIZ MRV Tool, its content, and it’s potential to be used in their everyday work.
* Number of modules: Five. The two day training course comprises five modules. They have been developed to complement each other, with each building on the learning delivered in the last. It is, however, possible for each to be delivered in isolation.
* Number of teaching hours versus number of hours spent conducting practical activities. The two-day training programme has been developed to obtain a balance between speaker-led training and practical exercises deigned to engage and motivate participants. The two-day course outlined in more detail below comprises 6.75 hours of taught (PowerPoint based) material, and 5.25 hours of interactive training activities.

**Teaching methods**

The training concept proposes a number of different learning techniques. In this document, we propose and elaborate on one specific agenda for the two day training session, to highlight in some detail how the sessions could be run. But to maintain maximum flexibility, we also include a range of alternative exercises that the trainers can select to meet the needs of the participants (see Table 3 in section 11 for more detail). The training will not necessarily take each delegate through the tool in a step by step process, rather the tool will provide the basis for the teaching and the exercises and each delegate will be required to use the tool interactively during the training exercises either to find key information or as a reference/prompt for the issues/questions that participants should be addressing during the exercises.

The format of each module will be tailored to the content and designed in such a way as to increase the impact of the training. Each module has some proposed guiding questions that are set out in annex 3 – these guiding questions can be used throughout the module to help steer the discussion and provoke thinking.

It is envisaged that the general structure of each module will, however, follow the following proven approach, widely used to great effect by GIZ, to building capacity:

* **Introduction and PowerPoint-based teaching**, given by the trainer or an expert speaker. This introduction and presentation will often last for 45 to 60 minutes and will:
  + Provide the necessary theoretical background;
  + Demonstrate the replicated structure of each module (with reference to circular improvement diagram and the tables on who, what, when, and how).
  + Use the tool as appropriate to highlight key points in relation to that module; and
  + Introduce participants to their task in the case work/activity.
* **Exercises** to give participants the opportunity to work in groups. This would typically last for 45 to 60 minutes.
* **Plenary/wrap up discussion** to allow participants to reflect on what has been learned, to share experiences, and facilitate mutual learning. From our experience, this is an element of training sessions that often is given insufficient time. We would recommend at least 30 minutes.
* **Questions** posed by the trainer to participants to encourage reflection.
* **Action Plan.** An ‘Action Plan’ document will be provided by the trainer at the beginning of the course. This will be held by each participant as a live document and after each exercise he/she will be expected to add to the action plan. The aim of which is to provide a clear set of immediate and medium term actions for each delegate when they return to their jobs/home countries. This task could potentially be given 15 minutes, although if time is short (for example if more time was spent on earlier tasks) then this could be set as ‘homework’ in advance of the next session (if the module is on day 1) or as a task to be completed after the training has ended and on returning to the office.

All the times above are approximate, and will need to be adjusted to suit the needs of the audience and following real time feedback on what is working most successfully. If one particular task is proving to be of real benefit to the participants then this might be lengthened at the expense of other, later, tasks.

1. **PowerPoint-based teaching presentation**

The Tool will form the basis of the training presentation. This can be done in one of two ways, depending on the preference of the trainer and the needs of the audience. Our preferred approach would be for the trainer to simply use the tool as currently constructed and navigate back and forth to relevant slides. For example, if for the MRV of emissions module the trainer wanted to focus specifically on activity data and emissions factors, and how to develop these and use them to calculate emissions, then the trainer could navigate through the tool to these slides. The benefit of this approach is that in doing so, the trainer will help familiarise the audience with the structure of the tool.

The alternative approach is to take the slides that are of relevance from the tool and splice these into a separate presentation that can be delivered in a slide-by-slide order. This could be an appropriate approach if the trainer is less concerned about the audience becoming familiar with the structure of the tool. For this training concept we have not assembled such a slide-pack as the slides that are used from the tool will depend on how the trainer wishes to develop the training sessions and what issues he/she wishes to focus on. The additional training slide pack would comprise an introduction to MRV and further introductions to each module MRV of Emissions, NAMAS and Support, along with slides focusing on the key issue(s) of interest within each module. Each juncture where a practical exercise will take place could be identified clearly within the main presentation.

1. **Practical Exercises**

The objectives of the practical sessions are to enable participants to familiarise themselves with the tool and learn interactively via a series of varied exercises and teaching techniques such as practice presentation, role plays, numerical exercises and quizzes. Both audience and trainer feedback will be sought to enhance learning. All participants will be clearly briefed on each exercise in an iterative process with clear instructions. Participants will then be given the opportunity to ask any questions and request help from facilitators before and during the exercise. Each delegate will have access to the tool either individually or in groups for the duration of the exercises and they will be able to use it to find relevant information or as a prompt to the key issues and questions that they should be addressing in the exercise.

The exercises will benefit from having someone in each group to help facilitate the discussions and ensure that everyone is clear on instructions. This could be GIZ regional staff, if they are also present at the training sessions. Their role should be as minimal as possible, with most of the discussion being done by the country participants, but the facilitators could be on hand to answer any questions of clarification or to help guide the discussions in an appropriate direction.

1. **Interaction with the GIZ MRV Tool**

As explained above, use of the tool will be via planned exercises with specific instructions and outcomes which will allow full utilisation and familiarisation with the different modules within the tool. The training has been split into the following distinct sections.

* MRV of Emissions
* MRV of NAMAS
* MRV of Support

The practical exercises will cover all three modules utilising different learning techniques.

**The need to build in flexibility**

As mentioned above, it is critically important to build sufficient flexibility into the training concept to allow for the training to be tailored to the needs of the audience. This could relate to flexibility with regard to:

* Audience
  + Level of seniority – more senior officials are likely to want a more strategic overview of MRV and discussions of the role that MRV plays in the wider mitigation framework. They are less likely to be interested in detailed practical issues regarding MRV implementation.
  + Relationships between the participants – in some cases it is possible for free and open discussion to be hindered by the presence of stakeholders from the same country. For example, a discussion regarding institutional frameworks and data availability could lead to difficult issues being raised such as certain organisations’ openness with respect to data sharing. Therefore having participants from different ministries from the same country may, depending on local circumstances, make such a discussion sensitive, and may suggest a focus instead on issues such as data calculation or baseline setting.
  + Cultural sensitivities – there may be marked differences between audiences from different countries in how openly they are willing to discuss issues and how interactive they will be. It might be necessary to tailor the training accordingly. For example, participants from some countries may prefer a focus on learning from presentations, rather than from interactive exercises. Similarly, some participants may find it unusual and awkward to be given too much creative licence in coming up with ideas.
  + Local context – evidently the training will need to be tailored to the situation in the country/countries attending the training, and what stage the development of their climate change policies is at.
* Time available for the training – various factors may lead to a requirement to deliver the training in less time, and so flexibility should be built in to allow for a revised version of the 2 day training be delivered in less time.

It is vital that training activities are designed to reflect the different needs of participating groups. For example at the highest level (national negotiators or training of trainers) participants will need to gain an overview of the breadth of the tool, its structure and the value of its application in particular areas, as well as focusing on the high level issues regarding MRV.

For practitioners in line ministries or industry, whilst a general understanding of the tool will be required, the main emphasis should be on using the tool to drill down into specific and detailed problem areas such as emission reporting or measuring financial support flows.

Thus a hierarchy of training instruments will be required, each designed to support the learning outcomes required by specific groups of participants across or within emissions, NAMAS and support.

**High-level training**

At the highest level it will be important for participants to gain an overall understanding of how the tool works and familiarity with how it can be applied, along with an overview of MRV, its relevance and strategic links to other issues. This can best be achieved by looking in outline at how the core structure of the MRV cycle (getting started, measurement, reporting, verification, continuous improvement) is replicated across the areas of Emissions, Support and NAMAs and how in each case they address the success factors. In practice, this will probably mean that the presentation will focus heavily on the earlier slides in each module – the success factors and getting started – and having a more detailed discussion around these, followed by a run through of the key issues relating to M, R and V, but without necessarily getting into the detail of these slides.

In order to emphasise the overall value of the tool, practical exercises at this level of training could be cross cutting in nature. For example, each exercise could focus on one step in the MRV cycle e.g. step 2 Reporting. Different groups could investigate, using the tool, key issues relating to reporting within one of the three areas, Emissions, NAMAS or Support, reporting back to plenary specific points on which they were tasked e.g. donor requirements, national capacity constraints etc. The emphasis at this level being on the value of the tool and the high-level principles and strategic implications of MRV, as much as on the detailed material in the supporting slides, case studies and external links. Further exercises (4/5 in a two day workshop) would cover each phase of the MRV cycle. Thus emphasising the common core of WHAT WHO HOW and WHEN and highlighting the different problems across the three areas and how the tool and its links facilitate detailed analysis of problems and possible solutions.

**More detailed, practical level training**

For individuals tasked with detailed application of MRV within or across the areas of Emissions, NAMAs or Support, training giving an overall understanding of the range and value of the GIZ MRV tool will still be important and should be addressed in plenary. However the practical exercises should focus on an in-depth use of the tool in specific areas, for example funding sources and their reporting and verification requirements, or methodologies for CDM, thus leading participants to look in detail at these areas using the tool (main slides, supporting slides, case studies and external links).

1. **Structure of the course**

**Agenda**

Below is an example agenda for a training course aimed at officials tasked with setting up and/or developing/improving MRV systems in their countries (as opposed to a higher-level training course aimed at senior officials). The agenda is then explained in more detail below. Section 11 then provides a ‘toolkit’ of alternative exercises that could be used instead, to allow the training to be tailored to the needs of the audience.

Figure : Proposed agenda for the 2 day training session

|  |  |  |  |
| --- | --- | --- | --- |
| **Module** | **Time** | | **Activity** |
| **Start** | **Finish** |
| **Background case for MRV** | **09:00** | **09:15** | **Icebreaker and Introductions – Pictures** |
| **09:15** | **09:45** | **Background case for MRV** |
| **09:45** | **10:30** | **Exercise 1 – an introduction to MRV** |
| **10:30** | **10:45** | **Objectives of the workshop** |
| **10:45** | **11:30** | **Exercise 2 – the importance of data** |
| **Coffee break** | **11:30** | **11:45** |  |
| **MRV of emissions** | **11:45** | **12:45** | **MRV of emissions – introduction and presentation** |
| **Lunch** | **12:45** | **13:45** |  |
| **MRV of emissions (continued)** | **13:45** | **14:45** | **Exercise 3 – Choice of methodology and suitable data to estimate emissions** |
| **14:45** | **15:15** | **Recap and action plan** |
| **MRV of NAMAs** | **15:15** | **16:00** | **MRV of NAMAs – introduction and presentation** |
| **16:00** | **16:45** | **Exercise 4 – a focus on the ‘success factors’ for the MRV of NAMAs** |
| **16:45** | **17:15** | **Recap and action plan** |
|  |  |  |  |
| **Module** | **Time** | **Activity** | **Comments** |
| **Start** | **Finish** |
| **MRV of support** | **09:00** | **10:00** | **MRV of support – introduction and presentation** |
| **10:00** | **11:00** | **Exercise 5 – Support project data set and related questions** |
| **11:00** | **11:30** | **Recap and action plan** |
| **Coffee break** | **11:30** | **11:45** |  |
| **Barriers to implementation of MRV** | **11:45** | **12:00** | **Introduction** |
| **12:00** | **13:00** | **Exercise 6 – techniques and methods for overcoming barriers** |
| **Lunch** | **13:00** | **14:00** |  |
| **Next steps** | **14:00** | **15:00** | **Recap and action plan** |
| **15:00** | **15:30** | **Next steps** |

1. **Module 1: Background case for MRV**

**Key learning objective**

To ensure that the participants understand the wider context for and importance of MRV, to set clear goals for the training session, to relax the participants and encourage them to be open and communicative.

**Icebreaker and introductions**

The facilitator can use their own knowledge of the audience and/or training techniques to consider what type of icebreaker might be most appropriate to the group. This could range from participants each introducing themselves and their backgrounds, to a short and light-hearted multiple-choice answer quiz.

**Introduction to measuring, reporting and verification**

This introductory component of the training will comprise of three PowerPoint slides that contain very high-level information about MRV, with a focus on why it’s important and an overview of the structure of the training. This part of the training will be interactive, and after a relatively short contextual presentation by the facilitator it will comprise of two exercises to encourage participants to engage with the underlying concepts from the start.

**Exercise 1 – introduction to MRV**

The purpose of this exercise is to get participants thinking early on about what MRV is and what it means to them. This will help the trainer gauge the level of understanding of the group, but will also allow participants to come back to this question at the end of the training to see how their views have changed.

The participants will be split into three groups – M, R and V – and will be asked to gather thoughts about each and report back to the wider plenary group on what they are, why they’re important, what are key related issues and what elements or similar approaches already exist in their country (ISO, General Accounting Office, etc). This exercise can be tailored to the level of knowledge of the group (i.e. could focus on ‘why’ rather than ‘how’ if more appropriate).

* Benefits:
  + Interactive way of introducing key concepts
  + Gets individuals engaged and reflecting on own experience of MRV
  + Provides broad overview of issues to be discussed
  + Gets participants thinking along the same lines/reduces impact of differences in experience
* Disadvantages:
  + Could be asking too much of participants before the training has started?

**Objectives of the workshop**

This short activity will help the trainer to provide an overview of the broad scope of the training session, and to introduce some of the key principles and learning outcomes that the course should comprise. If desired, and if time allows, this activity could be extended by soliciting views from participants on what they want to get out of the training and to ascertain their current level of knowledge. This could alternatively be done in advance, so that participants are requested to send in their views a few days before the training on what they want to get out of the training. This means that their views can be more adequately reflected in the training session, as it will allow the trainer and assistants to ensure that the training is appropriately tailored to these needs. See separate attachment for a pro forma questionnaire that can be sent out.

**Exercise 2 – Importance of seeing the wider picture (media based / facilitated large group discussion)**

*Purpose of exercise*: To energise participants by generating a discussion surrounding the ‘importance of data’ and why it needs to be measured, reported and verified.

*Exercise targeted at*: Any Audience.

*Overview of exercise*: To build upon the context of the course by highlighting the rationale behind MRV and the requirement for robust data and the processes and procedures that support this.

*Detail of exercise:* Provide brief introduction to explain to all participants that they will watch the following video clip and they will then be asked to comment on what they thought the clip tells them. Play video clip, and then ask the participants why they thought we showed them that clip / what the relevance of it was? This will almost always generate some interesting discussion on the topic area. The clip shows a group of people passing basketballs between each other. The video asks the viewer to count the number of passes. When doing this, most viewers will not notice that a person in a gorilla costume walks across the screen (something that should in theory be very obvious!). The clip therefore demonstrates that when concentrating on detail it is easy to miss the bigger picture. The facilitator can steer the conversation to cover certain angles that he/she feels is important for the purposes of the workshop, in particular getting participants to think beyond the potentially narrow scope of their role (e.g. collecting data on industrial activity) and to think about what the wider picture is and how their work fits into that wider picture. The video clip also acts as an engaging and memorable ice breaker.

Web link - <http://www.youtube.com/watch?v=vJG698U2Mvo>

For an alternative video, see alternative exercises section at the end of this document.

*Sensitivities*: None.

**Plenary/wrap up discussion**

When the video clip (2-3 minutes) is complete, select participants at random to explain what they thought the relevance of the clip was. The answers will generate a good facilitated discussion surrounding the importance of data. From experience some of the answers provide more thought-provoking discussion than was initially intended. It is the role of the facilitator to decide when to draw the discussion to a close based on relevance, time and usefulness.

**Action plan**

This is not relevant for this exercise.

1. **Module 2: MRV of emissions**

**Key learning objective**

To introduce the basic principles and aspects of GHG inventories and to ensure a basic level of understanding regarding what gets measured, reported and verified, who carries this out, how they do it and when they do it. Also to get participants thinking about detailed aspects of MRV-ing emissions, such as measurement methodologies, data collection techniques, institutional frameworks, how to carry out QA/QC etc. In the case below, the module concentrates on measurement methodologies.

**Introduction and PowerPoint-based teaching**

This presentation will start by reviewing the rationale for measuring, reporting and verifying emissions and for developing GHG inventories. It will cover the success factors that are important to deliver, and how one should get started in setting up a system of MRV for emissions. This would include some of the common institutional and methodological challenges and how these might be addressed, as well as a good practice checklist for setting up a GHG inventory. It will cover the kinds of questions that officials will need to address to carry out a gap analysis of existing processes and functions and how these might need to be improved. Also it will give ideas on useful sources of further guidance and tools that can be used in this process of setting up a GHG inventory.

The presentation will then move on to focus on measurement, with a particular emphasis on how emissions can be calculated using emissions factors and activity data, and how these types of data might be collected, with some case study examples. This will provide the necessary background for the exercise.

The presentation will finish by running relatively quickly through the slides on reporting and verification, to summarise the what, who, how and when.

**Exercise 3 – choice of methodology and suitable data to estimate emissions[[1]](#footnote-1)**

*Purpose of exercise*: to familiarise participants with different methodological approaches to estimating GHG emissions data and what the pros and cons of the different approaches might be.

*Exercise targeted at*: officials that do not have much prior experience in developing GHG inventories. For example, this exercise will be well suited to officials who have recently been recruited to the inventory team but have not yet had much experience in actually calculating emissions data. This exercise would not be well suited to officials who already have some experience of running a GHG inventory, for example an official from the inventory team who has been in place for more than 6 months and who had already had to make choices about methodologies to use and locate suitable data.

*Overview of exercise*: participants are given sets of real-world data from their country and in groups they have to decide on how best to use the available data to calculate emissions by source for a particular sector.

*Detail of exercise*: participants are given data for an important industrial source complex – with a) two power stations to generate electricity for i) the industries on the site (autogeneration), and ii) export to the national electricity grid, and b) other large combustion sources providing process steam to the industrial complex. The data consists of sectoral data on fuel input/fuel mix, product output (for different types of product) and carbon contents of fuels plus some default emission factors for those fuels, along with some point source data from specific sites. The participants will need to decide whether the point source emissions data is better to use than the product of fuel used and carbon contents of the fuels, or default factors. They will need to consider the accuracy of the activity data, emission factors, and the point source data. They will need to ensure no double-counting. The participants will need to decide how to report the emissions due to autogeneration (i.e. which IPCC category), supply to the electricity grid and from the steam raising activities. This exercise will include the estimation of CO2, CH4 and N2O.

The participants will need to report back on the methodology they took in calculating the emissions, explain the approach they took (e.g. why they did or did not include point sources) and describe any particular problems they encountered.

*Materials required*: a series of real-world data sets. Activity data on fuel consumption. Emission factors (including carbon contents of fuels determined through measurement), IPCC default emission factors. Uncertainties associated with the activity data and emission factors, but not for all data. Ideally the data should also show a discrepancy between emissions that can be calculated from activity data and emission factors, and point source data from the same source. The participants will need to decide which data set is the most appropriate to use. The data will need to be prepared in advance of the training sessions, when the attendees are known, taking publicly available data from the relevant countries.

*Sensitivities*: none.

**Plenary/wrap up discussion**

Each group will be asked to nominate a speaker to report back to the plenary discussion. This session will be used to collect feedback on the approach they took and why, and any difficulties they encountered. This will be recorded by a nominated scribe. The trainer will be responsible for grouping the issues that are raised and prioritising them, so that a clear summary of the main issues is recorded.

**Questions**

The trainer will then pose any questions that might usefully stimulate the reflection on how participants can apply any lessons learned on this exercise to their own situation. Such questions might include:

* Have you encountered the same problems yourself when managing the MRV of emissions?
* What actions could you take to address these problems? Who would need to be involved in addressing them?
* Are there any particular barriers that are likely to permanently prevent you from taking a certain approach to measuring emissions?

**Action Plan**

Participants will then be encouraged to spend some time writing up (on laptops if desired) some key actions to take away as next steps in terms of improving the way they measure emissions in their inventory, or proposals for how to measure emissions in an inventory system that they are currently setting up or plan to set up.

1. **Module 3: MRV of NAMAs**

**Key learning objective**

To ensure that participants realise that they need to demonstrate what impacts the policies that they are intending to introduce will have. The MRV of NAMAs needs to be considered from the very early stages of their development and the aim of this Module is to give participants a clear overview of all of the related stages – from initial thoughts regarding the MRV of NAMAs to processes to support the continuous improvement of their MRV.

**Introduction and PowerPoint-based teaching**

The presentation for this module will follow a similar structure to that of the previous module, Module 2, which sought to build capacity in the MRV of emissions. It will start by providing participants with an overview of the success factors behind developing an MRV plan for NAMAs. It focuses on the core principles that should be followed, which include good communication, transparent guidance, and high quality and reliable data. The MRV tool can then be used to guide participants through the process which starts at the conceptualisation of NAMAs, emphasising the fact that MRV should be considered from the earliest stage of NAMA development.

The Module highlights the fact that while there is a wide and long-established body of evidence regarding the MRV of emissions, the MRV of NAMAs (and indeed policy in general) is less well-defined. This translates into less detailed international guidance, and less prescriptive approaches. The trainer will outline the implications of this (both positive and negative) before providing an overview of how to measure NAMAs.

The trainer will guide participants through the fundamental aspects of the measurement of NAMAs (focusing on what should be measured, how, when and by whom), before doing the same for reporting and verification. This forms the body of the PowerPoint presentation, which will equip participants with the information that they need to develop an MRV plan and to engage the relevant stakeholders and to optimise its robustness. The presentation finishes by drawing on these lessons and highlighting ways in which an MRV system can be continuously improved. Lessons for improvement are presented in the context of measurement, reporting and verification to ensure that participants leave with an understanding of both how a basic NAMA MRV plan can be developed, and of how it can be enhanced and built upon over time.

**Exercise 4 – a focus on ‘success factors’ for the MRV of NAMAs**

*Purpose of exercise*: to get participants to use the GIZ MRV Tool as a starting point for developing thoughts about the breadth of success factors that can support the effective MRV of NAMAs.

*Exercise targeted at*: officials, regardless of their level of experience with MRV and/or NAMAs. It encourages participants to use the GIZ MRV Tool and draw on their own experience of factors that can facilitate effective MRV and policy processes. Where participants largely comprise more experienced officials, a more in-depth discussion about participants’ experiences of the impact of success factors (or their absence) can yield valuable insights to the rest of the team.

*Overview of exercise*: participants are divided into groups of 3 to 4 individuals and encouraged to use the GIZ MRV Tool slides (primarily slides 17 to 22 in version 9 of the tool) and their knowledge of data collection, reporting and policy in general to draw up a list of what they consider to be the five most important success factors in the MRV of NAMAs. This should be based on a discussion within groups that can then be reported back to the wider group.

*Detail of exercise*: participants are given access to the GIZ MRV Tool in order to discuss, reflect on and summarise the primary success factors in the MRV of NAMAs. The output should be a list of what they consider to be the five most important success factors in the MRV of NAMAs. A spokesperson from each group should then report the five factors that they’ve chosen back to the wider group, and these should be used as the starting point for a wider discussion of each. The facilitator could start this discussion by comparing and contrasting the factors identified by each group, and guiding an open-floor conversation encouraging participants to draw on their own experiences to justify the relative importance accorded to each success factor.

*Materials required*: laptops/computer terminals with access to the GIZ MRV Tool.

*Sensitivities*: none.

**Plenary/wrap up discussion**

The exercise will conclude with a facilitator-led open-floor conversation, where participants are encouraged to reflect on their own experience to contextualise their thoughts regarding success factors for the MRV of NAMAs. This should be followed by a more general summary of the Module by the facilitator, where there should be a concise reinforcement of the key points presented in the body of the session, namely the main points to consider around the measurement, reporting and verification of NAMAs.

**Questions**

The facilitator should encourage questions from the group to make use of the expertise of the facilitator and/or speakers. If no questions are forthcoming then the facilitator should start participants thinking about the ‘action plan’ element of the Module.

**Action plan**

This section of the Module will follow the same approach adopted in Module 2, the MRV of emissions. Participants will be encouraged to think about what the next steps that they could take after leaving the training will be. This can help to ensure that the training has a more long-term impact and that participants engage with the concepts discussed after the duration of the course.

1. **Module 4: MRV of support**

**Key learning objective**

To enable participants to utilise the MRV tool to plan Measurement, Reporting and Verification of the support to a given project. To understand the success factors and scope for continuous improvement. To appreciate what information is required with respect to the who, what, how and when of that project. To build confidence and experience in presenting complex data to groups.

**Introduction and PowerPoint-based teaching**

Three potential exercises have been developed under MRV of support which allow for a range in level of detail on support mechanisms to be acquired by participants. The exercise outlined below is a high-level, cross cutting activity that could be used in a two day training course covering a broad view of MRV of emissions, NAMAs and support. The other exercises outlined in section 11 could be used during a more detailed and technical training session on MRV of support. It is the role of the facilitator to select which exercise is most appropriate for the target audience.

This module will begin with a teaching style presentation that will be accompanied by introductory power point slides. It will draw out the key factors for getting started in MRV of support and go on to give an overview of the materials available on MRV of support held within the tool with case study examples. Best practice examples of who what when and how support should be measured reported and verified will be discussed in brief (the best practice examples can be taken from the MRV tool – see annex 1 for details). This would include some of the common institutional and methodological challenges and how these might be addressed. Success factors for optimum MRV mechanisms will be identified. This will provide the necessary background for the exercise.

**Exercise 5 –MRV of Support, Project data set and related questions (Research and Presentation)**

*Exercise targeted at*: This exercise could be carried out at either High-level training of country officials or detailed practitioner training in its varying formats. The exercise could be split down into sub sections of M R and V and made into 3 distinct exercises – regrouping after each. This style of exercise could also potentially be adapted for use in the modules on Emissions or NAMAs, in so much as the scenario can be easily modified and mapped on any of these areas.

*Overview of exercise*: Participants are provided with the role profile and scenario in the table below (the content of the table can be tailored to any given audience but format will remain the same).Their objective is to create a plan for M R and V of the support received. They will be split into groups and asked to complete answer questions (detailed in table B) based on M R and V of support Participants will then be asked to present their findings back to the group.

*Detail of exercise*: Participants groups are all given the same role of ‘Transport Minister in one of the African-Caribbean-Pacific States’ as outlined in the table below. Different roles and scenarios could be created but the comparison in MRV plans will be simplified if all roles and scenarios remains the same.

Table : role for exercise 5 (MRV of support)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Role** | **Scenario** | **Funding Body** | **Amount** | **Project** |
| You are a transport minister in one of the Africa-Caribbean-Pacific Group of States | You have applied for funding and completed an endorsed investment plan under The World Bank’s Clean Technology Fund (CTF) | The World Bank’s Clean Technology Fund (CTF)  <http://www.climatefundsupdate.org/listing/clean-technology-fund> | $ 35 million has been approved (1st tranche) | Mass Transport and Bus Rapid Transit in your capital city |

The starting point for the exercise assumes funding has been granted. The participants’ groups will all be provided with the information in the table and then briefed orally on what tasks they must carry out with respect to M R and V.

The oral briefing will state that each group has been tasked with setting up a component of a successful MRV plan for this project with respect to information and funding flows. Each group will be assigned with either M R or V.

Each group will receive a hand out of table B below defining the areas they need to address within M R and V, referencing the relevant slides within the tool. Each group will then be required to utilise the core slides, links and case studies within the tool to write an MRV plan for the project funds. Each group will have access to the tool for the duration of the exercise.

All groups will present their plan back to the wider group highlighting key issues and barriers they think they might encounter. Below is an example of the template that could be provided to assist in this exercise.

Table : Questions and tips for exercise 5

|  |  |  |  |
| --- | --- | --- | --- |
| Area | Questions and tips  *Ensure that What, How, Who and When are addressed for each.* | | Source slides in MRV tool |
| Measurement | **Question** | Tips | Core 27 Links 126/7/131 |
| What do you think will be the greatest capacity needs for measuring appropriate data flows for funds and why?  What issues are you likely to face. | Think about where you are today and where you are with respect to reduction goals and benchmarking with respect to other countries. |
| Reporting | **Question** | Tips | 128/131 Links |
| What are the Key factors you will need to take into account when setting up reporting processes for the funds?  What are the biggest problems you think you might face in terms developing these processes in the support sector? | Think about how you will demonstrate good reporting mechanisms for tracking support (tangible evidence) to others. Creating Case Studies and evidence of best practice to enable others to learn from successes.  Likewise look at outside successful project case studies so you can learn from others. |
| Verification | * **Question** | Tips | 130/131 Links |
| What issues will you need to address when deciding on appropriate verification measures for the support received.  What barriers may be in place when developing these processes? | Transparency will be key in the verification process, think about how you will achieve this. |
| Continuous Improvement | What factors could you implement to ensure that the project improves year on year. | |  |
| Success Factors | Ensure all success factors are addressed | |  |

*Materials required:* Tables as above, flip charts, pens, props.

*Sensitivities*: none.

**Plenary/wrap up discussion**

For the purposes of this example we will assume that each group has been assigned one of the areas M R and V for Support. All groups must address continuous improvement and success factors. Given more time each group would write up an entire plan.

At the beginning of the exercise all participants will have been told that the outcome of the exercise will be a presentation. All groups will present their plan back to the wider group highlighting key issues and barriers they think they might encounter. Flip charts and props provided can be used. Groups are encouraged to provide diagrams and memorable key points. The presentation to the wider audience can be carried out either individually or in groups.

The key outputs of the exercise will be written up and circulated amongst the group post presentation.

**Questions**

After each presentation the wider group will then be encouraged to ask questions based on the presentation itself and their knowledge and experiences in the area of support.

The trainer will then pose any questions that might usefully stimulate the reflection on how participants can apply any lessons learned on this exercise to their own situation. Such questions might include:

* Have you encountered the same problems yourself when managing the MRV of support?
* What actions could you take to address these problems? Who would need to be involved in addressing them?
* Are there any particular barriers that are likely to permanently prevent you from taking a certain approach to measuring support received?

The barriers identified will be captured and used in the ‘Barriers exercise’ at the end of the training session.

**Action Plan**

Taking part in the above exercise is likely to generate some specific actions for each delegate on returning to their jobs/ home countries. Participants will then be encouraged to spend some time writing up these actions in the action plan provided. If time is short, this task could be set as ‘homework’ after the training has ended.

1. **Barriers to implementation of MRV**

**Exercise 6 – Techniques and methods for overcoming barriers (Media based/ Group work/ Facilitated discussion and presentation)**

*Purpose of exercise*: To draw thoughts together regarding the MRV of emissions, NAMAs and support, and to equip participants with knowledge of techniques and processes that can be used to overcome barriers in implementing MRV.

*Exercise targeted at*: Any Audience

*Detail of exercise:* This is a three phase exercise. The phases are as follows:

**Stage 1.** Participants are put into groups (normally this will be relevant to their type of work/ country/ position), with the aim of grouping participants together who may experience similar barriers owing to similarities in their backgrounds or roles. Having now completed the workshop and all modules addressing MRV of Emissions, NAMAs and Support, participants are likely to have identified barriers to implementation in their own countries/ projects. These could be related to levels of communication, procedures already in place, finance etc. The role of the facilitator will be to draw these out of the participants to get them started on the exercise. The groups will then have breakout discussions amongst their groups and identify the key barriers on a flip chart. Some of the barriers can then be discussed within the wider group (facilitated and time bound).

**Stage 2.** Participants are asked to watch the Apollo 13 video clip

[Apollo 13- Let's Build a Filter](http://www.youtube.com/watch?v=Z3csfLkMJT4) – <http://www.youtube.com/watch?v=Z3csfLkMJT4>

**Stage 3**. The trainer will then facilitate discussion in the wider group context to encourage participants to think about how the clip was useful in relation to addressing their barriers. The facilitator will first put the question to the group ‘why do you think we showed this clip?’ The video is a clip from the Apollo 13 film, showing NASA scientists being tasked with coming up to a solution to a seemingly impossible problem with very little time. The key message from the clip is that there are ways round seemingly intractable problems. The Facilitator can use this over-arching message to then facilitate a group discussion about their own barriers and problems in relation to development and improvement of their MRV systems. The list of barriers and guiding questions below can be used to prompt participants. The trainer will then divide the participants back into their groups and each group will discuss potential novel and creative solutions to each of their identified barriers.

*Materials required:* Video Clip-Apollo 13 Carbon Dioxide Filter/ Flip Charts.

*Sensitivities*: None.

**Plenary/wrap up discussion**

The facilitator will then pick specific barriers for each group and ask them to explain to the wider group how they intend to overcome each of the barriers defining process, actions and solutions. A good process is to take one from each group in a round room fashion.

**Action plan**

Those Barrier mitigation techniques that are relevant to each of the participants will be captured in the individual action plans in order to apply them to their own scenarios, jobs, countries and projects.

This exercise can also be used as a ‘train the trainer’ exercise. To be utilised by the participants on returning to their own countries to enable their teams to overcome barriers.

1. **Training recap and action plan**

This final session will consist of a summary of the scope of the course, which participants will then be asked to spend some time reflecting on in pairs. In their pairs they will be asked to consider different ways in which they could apply the training to their roles in the short-term. This could be anything from informing colleagues about the training content to taking steps to start the development of, or thoughts around, an MRV plan.

1. **Alternative exercises**

The above moderation plan demonstrates in detail one possible approach to running a two day training session on MRV. However, as outlined at the start of this document, it is important to build in flexibility so that the training session can be adapted to meet the needs of the audience and the circumstances.

The following section provides a selection of alternative exercises that can be used in place of those set out in the section above. We state clearly whether these exercises are specific to one particular module or could be used in two or more modules (albeit with some minor adaptation).

Table : Alternative exercises for the MRV training

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Exercises for Core training session** | | | | | |
| **Exercise 1** | **Exercise 2** | **Exercise 3 - MRV Emissions** | **Exercise 4 - MRV NAMAS** | **Exercise 5 - MRV Support** | **Exercise 6 - barriers** |
| **“MRV Experiences”**  (teaching method = facilitated group discussion) | **“Importance of seeing the bigger picture”**  (teaching method = Media based wider group) | **“Choice of methodology and suitable data to estimate emissions”**  (teaching method = numerical analysis) | **“A focus on ‘success factors’ for the MRV of NAMAs”**  (teaching method = interactive tool base learning) | **“Project data set and related questions”**  (teaching method = research and presentation) | **“Techniques and methods for overcoming barriers”**  (teaching method = media based discussion and presentation small and large groups) |
| **Alternative Exercises** | | | | | |
| Alternative A:  “General principles of MRV”  (teaching method = group brainstorming) | Alternative A:  “Bicycle shower video clip”  (teaching method = video observation and discussion) | Alternative A:  “Choice of methodology and suitable data to estimate emissions (alternative)”  (teaching method = numerical analysis) | Alternative A:  “Institutional frameworks”  (teaching method = presentation and feedback) | Alternative A:  “Identification of appropriate support mechanisms”  (teaching method = research presentation and feedback) | No alternative suggested |
| Alternative B:  “MRV – problems and barriers”  (teaching method = group brainstorming) |  | Alternative B:  “Mapping data availability and flows”  (teaching method = group brainstorming and assessment) | Alternative B:  “NAMAs and MRV of co-benefits”  (teaching method = lateral thinking) | Alternative B:  “Defining an appropriate implementation plan for an MRV of support project”  (teaching method = role play) |  |
|  |  | Alternative C:  “QA/QC of data and emissions”  (teaching method = numerical analysis) |  |  |  |

**Exercise 1 – introduction to MRV**

**Alternative A:** Split into groups (approx. 4 participants in each) to discuss general principles that it is important to recognise and follow in relation to MRV. This could require less background knowledge and instead rely more on lateral/ logical thinking, with principles that they could suggest including:

* + Consistency, transparency, comparability, credibility, conservativeness, etc.

**Alternative B:** Split into small groups and discuss, and then share with the group, examples of where:

* + MRV has helped to solve a problem
  + Lack of MRV has acted as a barrier.

This would help to highlight the rationale/importance of the training event.

**Exercise 2 – importance of seeing the bigger picture**

Alternative A: Show participants the bicycle shower video clip. This is a clip from a UK science TV show and shows an attempt to power a shower by bicycle ‘pedal power’. Ask the participants what they thought of the clip and what they thought it might mean in the context of MRV. The facilitator can choose to steer the discussion towards the point that you can’t manage what you can’t measure. This is demonstrated in the video by the fact that the cyclists now when to pedal harder by watching real time data on the power output of their bikes compared to the power requirements for the shower. The discussion can be led in this direction by the facilitator by asking questions such as “how did the cyclists know when to pedal harder?”. This can then lead to a wider group discussion about why it is important to measure data.

[Bicycle Shower](http://www.youtube.com/watch?v=C93cL_zDVIM) video clip – http://www.youtube.com/watch?v=C93cL\_zDVIM

**Exercise 3 – MRV of emissions**

**Alternative A: A different exercise to demonstrate choice of methodology and suitable data to estimate emissions**

*Purpose of exercise*: to familiarise participants with different methodological approaches to estimating GHG emissions data and what the pros and cons of the different approaches might be.

*Exercise targeted at*: officials that do not have much prior experience in developing GHG inventories. For example, this exercise will be well suited to officials who have recently been recruited to the inventory team but have not yet had much experience in actually calculating emissions data. This exercise would not be well suited to officials who already have some experience of running a GHG inventory, for example an official from the inventory team who has been in place for more than 6 months and who had already had to make choices about methodologies to use and locate suitable data.

*Detail of alternative exercise*: participants are given data for an imaginary sector (e.g. iron and steel). The data consists of sectoral data on fuel input/fuel mix, product output (for different types of product) and emissions factors, along with some point source data from specific sites. Some of the data will vary by type of iron and steel product, so the participants will need to decide how to sub-divide this sector and carry out different calculations for the different products. As well as calculating emissions data from activity data (product output) and relevant emissions factors, they will need to decide whether to use the point sources and, if so, how. They will need to ensure no double-counting by just calculating the sector-wide emissions figures for the product output from sources other than the point sources for which they have information. A further elaboration could be to have some tier 1 and tier 2 emissions factors for the same activities, to get participants thinking about the pros and cons of using them.

**Alternative B – mapping data availability and flows**

*Purpose of exercise*: to get participants thinking about the datasets they will need to develop/improve their GHG inventory, who holds this data and whether this data is currently already shared. Ultimately, they will be able to develop a process map showing these data flows and identifying where the blockages are.

*Exercise targeted at*: officials looking to develop their GHG inventory, and/or officials keen to review their current data arrangements and improve existing processes.

*Overview of exercise*: participants from the same country will get into groups (e.g. of 3 or 4) and first list all the data sources they will need for the inventory. If this feels too overwhelming then it could be agreed to focus on one section of the inventory (e.g. a couple of key categories).

*Detail of exercise*: the exercise will start with a short brainstorming exercise within the group to list the data sources that are needed for the inventory. They can do this by considering a data hierarchy – in the first instance, what data is needed for a particular sector (e.g. activity data and emissions factors). If the ‘first-order’ data needs to be calculated then secondly they can consider what data sets will be needed to calculate the first-order data (e.g. what data will be needed to calculate emissions factors). The result of this initial brainstorming exercise will be a list showing data requirements in different columns (first order, second order etc). They should then start writing alongside each data set which organisations hold the data. As part of this they should identify whether this data is already shared or not and whether there are any particular barriers to sharing this information (e.g. confidentiality, silo-thinking from the organisation, lack of data supply agreements etc). Participants will be encouraged to discuss what to do in the cases where important data is missing altogether – how might they use proxy data to gap fill an incomplete time series, or to generate a complete time series where no suitable data are available. Participants will be encouraged to discuss the quality (accuracy and uncertainty) associated with the data, and to discuss how this factor should be used to help choose the most appropriate data when there are multiple choices. This point on data quality will be reinforced in the next exercise (alternative exercise C).

Following this, there are a few different options for how the exercise be taken forward. One option is for participants to use the list of organisations to identify which are most important (e.g. which hold the most data, or have access to data that is particularly important). Alternatively, a data flow map could be developed showing where the data is held and where it is currently shared (and where it isn’t). Following this, a plenary discussion could be held on what barriers exist with sharing of ideas of how to address them (with these ideas being captured by the facilitator).

*Materials required*: Flip charts and post-it notes for brainstorming data sets.

*Sensitivities*: Depending on who the participants are, there may be some reluctance to talk about barriers to data sharing where it involves government departments. These barriers can often be institutional and may result from deep-seated suspicions from some departments about how the data will be used and what the implications for that department might be. If participants come from different departments, they may want to avoid any discussions that could lead to arguments and finger-pointing, e.g. the environment ministry accusing the transport ministry of not sharing key data on emissions factors and transport activity data.

**Alternative C – QA/QC of data and emissions**

*Purpose of exercise*: to give officials practice at QC procedures and of using different data sources to make judgements on the quality of data. To encourage thought and discussion on how this can then feedback to QA procedures, to improve methodologies and processes.

*Exercise targeted at*: officials involved in running the inventory, particularly those from countries where QA/QC procedures are under-developed or where data quality is a concern.

*Overview of exercise*: participants are given some imaginary data-sets that have certain data quality issues, along with various pieces of supporting information. Using this, they are asked to carry out a brief QA exercise, and to come up with recommendations on where data should be queried and why.

*Detail of exercise*: participants get into groups of 3-4 and each group is given a different imaginary data set of emissions (for a sector) and the underlying data (e.g. emissions from any point sources, overall activity data and emissions factors etc). The data set is designed to have certain anomalies, such as missing data and unusual trends (e.g. a particular emissions figure that is significantly higher than that suggested by the historical trend. They are also given a supporting data set of industry data, imaginary news reports etc, that can be used to ascertain reasons for some of the anomalies. For example, a number of anomalies could be included that show deviation from a historical trend (e.g. large increases or decreases against a historical trend that has been broadly flat or only increasing or decreasing slowly). For some of these increases and decreases, there will be no supporting evidence, but for others there may be explanations given in the supporting evidence pack, such as an imaginary news article from a business journal talking about a planned shutdown in a particular industrial facility to allow for maintenance. If the participants feel that the supporting evidence provides sufficient explanation for the anomaly then they can agree to leave this anomaly. However if they do not feel that there is sufficient or any explanation then they can agree that this would need further follow up (for example with the installation in question, or with the appropriate industry trade association).

Through this process, the team should come up with a proposed approach detailing what initial anomalies they found, which they can explain and which they think need further investigation. It will be useful before this exercise to explain that there is no single correct answer. One team might notice a planned shutdown in the same year that there is a marked decrease in emissions from that plant, but may feel that this is not sufficient explanation and that this anomaly should be investigated further anyway.

Having completed the exercise, there will then be a plenary session chaired by the facilitator, to discuss each team’s approach in turn and to hold an open discussion on any lessons learnt for QC procedures (such as what sources of data might be helpful in carrying out the QC), as well as how this work could feed into wider QC activities.

*Materials required*: data sets and evidence packs for each team.

*Sensitivities*: None.

**Exercise 4 – MRV of NAMAs/policies**

**Alternative A – institutional frameworks**

*Purpose of exercise*: to get participants to think about the network of organisations, departments, and individuals within each that have a role to play in the development of a comprehensive and robust MRV plan for NAMAs. This will be valuable owing to the fact that the effective MRV of NAMAs requires:

* Political ownership
* Co-ordinated inter-governmental processes
* Well-defined institutional co-ordination
* Broad stakeholder engagement
* Effective communication structures.

*Exercise targeted at*: officials who either are involved, or have the potential to be involved, in the development of NAMAs. The exercise would be valuable for any individuals from organisations who would be represented in the spider graph (see below), and also from those outside it who may play an advisory role.

*Overview of exercise*: participants should break into small groups (approximately 3 or 4) in which they should draw up a list of organisations that should be engaged in the MRV of NAMAs. At the end of the exercise the trainer should run through a comprehensive list of organisations that should be involved in the MRV of NAMAs.

If this activity is considered too challenging, then the groups should instead be given a list of the organisations that should be involved in MRV of NAMAs, and be asked to write alongside each organisation an overview of the role that they should play.

*Detail of exercise*: participants should break into small groups (approximately 3 or 4), and where officials from multiple countries are participating preferably form groups of nationals from the same country (in order to tailor the exercise to their national circumstances). They should use the ‘MRV of NAMAs’ slides of the GIZ tool, along with their knowledge of their government and the sector of the NAMA being considered, to draw up a list of organisations, and where relevant specific individuals, who should be engaged in the MRV of NAMAs. Their thoughts should be recorded on the page of a flipchart. Where time allows these could be shared with the group, and where this is not possible they should be pinned to a wall of the training room for others to consider at leisure. At the end of the exercise the trainer should run through a comprehensive list of organisations that should be involved in the MRV of NAMAs.

If this activity is considered too challenging, then the groups should instead be given a list of the organisations that should be involved in MRV of NAMAs, and be asked to write alongside each organisation an overview of the role that they should play.

Participants will be given a short description of a NAMA in the transport sector and be asked to produce a ‘spider graph’ mapping the relevant stakeholders who should be engaged in the MRV of NAMA process.

If this exercise is delivered in addition to the MRV of emission exercise ‘mapping data availability and flows’ then it should take into account the ‘process map’ developed showing data flows and blockages between or within organisations and frame this as just one small component of the stakeholders involved in the MRV of NAMAs.

*Materials required*: Flip charts.

*Sensitivities*: none.

**Alternative B – NAMAs and the MRV of co-benefits**

*Purpose of exercise*: to draw attention to the sustainable development ‘co-benefits’ associated with NAMAs. The MRV of emissions session that the MRV of NAMAs follows focused participants thoughts on the MRV of emissions, and this exercise encourages them to locate this in their broader social, economic and environmental context. The intention is that this will:

* Help participants to align their thoughts re climate change and development priorities
* Contribute to the mainstreaming of climate change into wider policy discussions.

*Exercise targeted at*: officials involved in any aspect of the MRV or policy development process.

*Overview of exercise*: participants are given a one-page description of a NAMA and asked to list the co-benefits that it could deliver, and to sketch out details for how each could be MRV’d. Participants should be split into three groups, with one tasked at looking at ‘social’ co-benefits, another ‘economic’ co-benefits, and the third ‘environmental’ co-benefits.

*Detail of exercise*: participants get into groups of 3-4 and each group is assigned a type of co-benefit (either social, economic or environmental) and is tasked to reflect on what related co-benefits the NAMA could deliver, what indicators could be used as a basis to MRV the NAMA, and to sketch out thoughts regarding an MRV plan.

This exercise will be based loosely around the GIZ MRV Tool, but will encourage participants to also think more laterally about the proposed NAMA, drawing on their experience of the sector and of development policy and effects in general.

The three groups should each report back to the rest of the group. The co-benefits and their indicators will vary between groups, but the principles behind the MRV of these factors are likely to overlap. The facilitator should seek to identify these similarities in processes and close the exercise by clearly setting these out, supplementing them with insights of their own where necessary.

*Materials required*: flipcharts.

*Sensitivities*: None.

**Exercise 5 – MRV of SUPPORT**

**Alternative A – Research and Presentation exercise to identify appropriate support mechanisms**

*Purpose of exercise*: Exercise aims to provide participants with an understanding of what types of support might be required for a range of projects.

*Exercise targeted at*: Practitioners working in the area of support or high level officials who want to gain a better understanding of support options and their related information.

*Overview of exercise:* Participants are provided with a data set comprising projects requiring a level of support. They will be required to identify the most appropriate type of support and associated funding body. On doing this, they will present findings back to the wider group. Evidently this exercise is not directly related to the MRV of that support, but this exercise could be a useful alternative for a training session with high-level officials that are less in need of detailed training on MRV, and from countries that are still in the process of identifying suitable support options, as opposed to those that have already identified (and possibly agreed) support options but now need to MRV them.

*Detail of exercise*: Participants groups are all given a role profile (see table below) either individually or in groups (depending on size of group). They are asked to use the profile and additional support and guidance to answer the following questions. This will generate in-group discussion and highlight challenges of varying support mechanisms.

1. Which funding sources or support options would you approach first and why?
2. Which design option might be appropriate and why?
3. Highlight the issues that you might encounter.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Person/Group 1** | **Person/Group 2** | **Person/Group 3** | **Person/Group 4** |
| **Part of World** | Latin America (Parasil) | Africa and pacific states  (Gamberia) | South east Asia  (Cambonaam) | Africa and pacific states |
| **Role** | Senior official ministry of Economic/external affairs | Ministry of Agriculture and farming | Minister for tourism and climate related projects | Energy Minister |
| **Type of Economy** | Largely Industrial | Largely Rural | Largely Tourism | Largely Manufacturing |
| **Type of Support needed** | National climate action fund to finance projects in carbon emissions reductions | Sustainable land management and Biofuels production | Reducing Climate Change-Induced Risks and Vulnerabilities from flooding and coastal management | low-cost solar equipment to off-grid populations |
| **Example Fund** | ADB | CTI | LDCF | GEEREF |

*Materials required*: data tables above/ flip charts. Other useful links could be provided to participants for them to refer to and research, including:

* [World Bank: Climate finance options](http://www.climatefinanceoptions.org/cfo/index.php)
* [Climate funds update](http://www.climatefundsupdate.org/data)

*Next steps:* Each group will be required to consolidate their answers and then during a facilitated group discussion one member will be identified to outline their responses to questions and challenges they faced in coming to a decision. Key challenges will be captured by a scribe (and circulated post workshop).

After each presentation the wider group will then be encouraged to ask questions based on the presentation itself and their knowledge and experiences in the area of support.

The trainer will then pose any questions that might usefully stimulate the reflection on how participants can apply any lessons learned on this exercise to their own situation. Such questions might include:

* Have you encountered the same problems yourself when identifying support mechanisms?
* What actions could you take to address these problems? Who would need to be involved in addressing them?
* Are there any particular barriers that are likely to permanently prevent you from taking a certain approach to measuring support received?

The barriers identified will be captured and used in the ‘Barriers exercise’.

**Alternative B – Role Play exercise to decide on a suitable implementation plan for MRV of support project**

*Purpose of exercise*: To provide participants with a good level of understanding of MRV of support mechanisms with the opportunity to put their knowledge into practice.

*Exercise targeted at*: This exercise could be used within a more detailed training session for practitioners on any of the three areas of emissions, NAMAs or support. Any variation can be placed on the theme and projects. This is aimed at people who have experience in writing MRV plans (or who have completed research-based exercise 5 in main section) – people who now feel confident in aspects of MRV plan and would like to put their knowledge into practice.

*Overview of Exercise*: The exercise involves a role play-type scenario using a real data set to be used to make a decision on how an MRV of support plan will be constructed. The outcome of the exercise is very similar in nature to the exercise proposed in the main agenda above (see section 8 on Module 4) but with a different methodology – whereas the main exercise is based on research and presentation, this is based on role play.

*Detailed Overview of exercise*: A given project has been identified (see below) Participants are required to have a debate to come with a high level MRV plan. They will need to decide.

* What type of support is required
* Potential funding bodies (they may not have this knowledge –not vital output)
* What they will need to consider in developing an MRV Plan for the project funds.
* What aspects they will need to verify
* What and how they will report their progress.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Country** | **Project Aim** | **Funding Body** | **Support type** | **What, Who, How and When will things MRV’d** |
| Fictional (Kenopia) Africa-Caribbean-Pacific Group of States | Exploit renewable energy potential to offset fossil-based energy supply | **TBC in exercise**  *SREP (example only)*   |  |  | | --- | --- | |  |  | | **TBC in exercise**  *Co-financing, Equity, Grant, Loan*  *(example only)* | **TBC in exercise** |

Each person/group plays a different ministry (e.g. Ministry for the Environment, Ministry of Finance, Ministry of Economy, Energy ministry). The scenario is that they need to negotiate the best MRV options for getting started and implementation with respect to the type of support received. Different roles have different objectives –each person gets a piece of paper stating their objectives and limitations that no one else will see.

Each person/group is given a breakdown of their key objectives and or personality types, e.g.

* *Minister of finance does not agree with other ministers spending time on understanding this project when they should be spending more time developing their economy. He/she is generally quite disagreeable and tends to pick holes in suggestions*
* *Minister for Tourism minister wants to apply for more projects as there is funding available. Tends to brush over detail but keen in principle*
* *Energy minister keen to push for renewables projects*
* Finance minister wants to get finance as quickly as possible but does not agree with WB funding mechanisms as not had good experience in past
* *Chair…..*
* *Etc. etc.*

This exercise needs to be facilitated closely or it may be subject to chaos. Clear objectives need to be established and clear required outcomes need to be agreed. An end point must be defined in advance (probably time bound). Clear time frames for this exercise will need to be established with the group at the start of the exercise. For example:

* Preparation 30 minutes
* Debate 30 minutes
* Wrap up 45 minutes

When the allocated time end the exercise will be stopped. Each person will then explain to the group what their role was and what its specific characteristics were. They will also be asked to reflect on why these characteristics may have added to or assisted in limitations barriers.

Facilitated group discussion will then take place surrounding ‘what went well’, ‘what went badly’ and ‘why’. This information will be drawn up on a flip chart and then captured and sent out to the group post workshop.

Taking part in the above exercise is likely to generate some specific actions for each delegate on returning to their jobs/ home countries. Participants will then be encouraged to spend some time writing up these actions in the action plan provided.

**Annex 1 – best practice examples of climate finance**

* Case Study 1: Climate Fiscal Framework Initiative in Thailand. This case study looks at the institutional framework for MRV of climate finance, along with definitions of climate expenditure that are used and lessons learnt so far.
* Case study 2: Kenya National Climate Fund. This case study looks at underpinning principles of climate finance reporting, governance and the information that projects have to provide.
* Case Study 3: Indonesian Climate change trust fund. This case study looks at criteria for monitoring and reporting climate finance, and arrangements for verification.
* Case Study 4: The French Development Agency (AFD). AFD has a climate-financing goal of 50% of AFD’s foreign-aid funding and 30% of PROPARCO’s. AFD Group has reached an average level of approximately 40% of ‘climate’ projects in its annual commitments portfolio. The case study looks at governance, screening criteria, measuring and reporting.
* Case Study 5: Kreditanstalt für Wiederaufbau (KFW), German Development Bank. KfW has a climate-financing goal of 50% of all development investment (i.e. by KfW Entwicklungsbank) and 30% of all investment for the whole bank group should be climate change or environment related investment. The case study looks at governance, screening criteria, measuring and reporting.
* Case Study 6: International Finance Corporation (IFC). The International Finance Corporation (IFC), as a member of the World Bank Group (WBG), aligns its climate policies and processes with the World Bank’s Strategic Framework for Development and Climate Change (SFDCC). In January 2012 the IFC’s Sustainability Framework was revised to better integrate risk management in IFC’s operations. This case study assesses the commitment, reporting and verification.

**Annex 2 – barriers to developing and improving MRV systems**

For use in exercise 6 (techniques and methods for overcoming barriers). You can use this table as a prompt, to think about the kinds of barriers you have encountered or might encounter when developing or improving an MRV system. The list below may not be exhaustive and you may think of other barriers that are specific to your situation.

|  |  |
| --- | --- |
| **Barrier** | **Guiding questions** |
| Institutional | Which organisation will be responsible for/coordinate the MRV? |
| Which organisations will need to also be involved, e.g. in data collection? |
| Can existing organisations be used or are new institutions needed? |
| Are appropriate legal instruments, memoranda of understanding etc in place to allow good working practices? |
| Are there any organisations that have a vested interest in supporting/blocking MRV? |
| Capacity | Are key members of the organisations involved in MRV well trained up on technical aspects of the MRV? |
| Are sufficient numbers of staff trained up, to minimise disruption to the MRV process in case key staff are not able to carry out the work? |
| Information | Are there good information management systems in place to ensure that processes are not affected by change in personnel? |
| Does the data exist to properly carry out MRV? |
| Who holds the data that is needed to carry out the MRV? |
| Financial | Are there sufficient funds available to pay for a fully functioning/improved MRV system? |
| Where would the funds come from? |

**Annex 3 – guiding questions for each module**

|  |  |
| --- | --- |
| **Module** | **Guiding questions** |
| Module 1 – introduction | Why/how is MRV relevant to your job/interests? |
| What are the drivers for MRV in your country? |
| Module 2 – MRV of emissions | What arrangements currently exist in your country for [measurement methodologies, data collection techniques, institutional frameworks, how to carry out QA/QC] and how might they be improved? |
| What are the barriers to improving existing arrangements (institutional, technical understanding, resource capacity etc)? What would improved arrangements mean in terms of capacity building requirements? |
| [For anyone wanting to set up an inventory where one doesn’t currently exist] What arrangements and processes are needed to set up a GHG inventory, and what current arrangements and processes could be used/adapted? |
| Module 3 – MRV of NAMAs/policy impacts | Who are the stakeholders that will be interested in policy impacts and how might their requirements for MRV differ? |
| For a particular NAMA, what data will be needed and who holds this data? |
| Module 4 – MRV of support | If you were a donor country, what would you expect from any system for the MRV of support, and why? |
| Module 5 – barriers to implementation of MRV | What are the key barriers to developing/improving a fully functioning MRV system (for emissions, policies and support) in your country? |



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