

# Climate change mitigation: A training manual

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The Energy Research Centre (ERC) has developed a training manual on climate change mitigation courses. The manual covers the following modules: Greenhouse gas inventories (GHGI), Mitigation (MIT), and the Clean Development Mechanism (CDM). These modules have been developed in response to the need for capacity building initiatives that are country driven and regionally focused, address specific needs and conditions of the country, and involve stakeholders. In doing so, the overall aim is to assist non-Annex 1 countries to participate effectively in the UNFCCC and its Kyoto Protocol, and to ensure the sustainability of these programmes. There are two important points to note. Firstly, the training manual is tailored to the specific needs and contexts of those being targeted, but with sufficient flexibility to avoid a 'one-size-fits-all' training programme. Secondly, although the manual is prepared in South Africa, it is designed in a flexible form and can be modified by using case studies and exercises relevant to the country teams with diverse backgrounds.

## **Target audience**

Targeted groups for the course fall into a variety of categories, and include: negotiators, policy analysts from governmental and non-governmental organisations, climate change focal points and country teams, and other relevant stakeholders. The main objective is to impart skills development in the field of training, while at the same time, topping up knowledge already gained. The targeted audience therefore, consists of participants who are already familiar with the topics covered, or have knowledge, but lack the skill to train or impart this knowledge. Participants follow the approach of 'learning by doing' with strong peer review. This is intended to generate a fair degree of confidence and training skills, especially since tools are well put together and supplied with detailed instructions.

The instructions in the manual are precise, and provide sufficient guidance in conducting training or workshops. The outcome is focused on filling the gaps in existing capacity building efforts, and in providing skills and competencies to strengthen national responses to climate change.

## **Overall objectives**

Consistent with the C3D desired objectives of meeting the challenges of climate change in the future and of providing support and skills, the framework developed endeavours to achieve the following:

- Improve participation in the UNFCCC process;
- Provide a better coordination and integration of national climate change policies with sustainable development policies;
- Provide a timely implementation of the UNFCCC and Kyoto Protocol;
- Contribute to a sound implementation of EC and bilateral aid to developing countries in the area of climate change;
- Enhance a South-South collaboration between regional partner countries and beyond;
- Transfer skills and know-how to trainees;
- Increase the capacity of country officials to integrate into the climate change debate; and
- Integrate climate change policies into the overall national sustainable development strategy.

## **Training methodology**

### **Approach**

- Training should be an interactive, two-way communication process.
- Combine theory and practical exercises; modules should not consist of inputs only. Training should draw on participants' experiences, enable reflection on those experiences and create capabilities for change.
- Be modular in approach, allowing flexibility for participants to choose modules that are relevant for their work.
- Should set clear learning objectives for each module. These learning objectives should relate to 'real needs out there'.

### **Training techniques**

Training methods vary, and include:

- Formal presentations with the use of visual aids.
- Hands-on exercises (for example, energy and climate models and spreadsheet tools).
- Group exercises and practical problems (for example, design a workshop for government to discuss strategy, drafting of strategies / policies

- for government to adopt on an issue.
- Case studies with illustrations on good practices for negotiation, policy analysis and co-ordination.
- Preparatory reading by participants.
- Exploratory dialogues between project partners.
- Exchange visits with institutes with specific skills.
- Briefings of negotiators on the current state of specific issues.

### ***Expected outcome of applying the training material***

- Intellectual and management skills associated with the design, development, preparation and delivery of skills training programmes in negotiation, policy analysis and co-ordination.
- Improved understanding of training methodologies.
- Improved ability on how to deliver presentations and debrief participants.
- How to conceptualise exercises/simulations and working group assignments.

### **The mitigation content**

See Table 1 on following page.

### **Material and training requirements**

In addition to dedicated staff, necessary inputs to achieve the desired objectives require, among other things, a well organised training of trainers programme to produce trainers capable of delivering high level training; information sharing, coordination and networking with other project partners; electronic and virtual network; and identification of suitable methods and technologies for training, opportunities, barriers and constraints. Success in this endeavour can be measured against increased capacity of the officials (involved in training) to integrate into the intergovernmental climate policy debate, their integration of climate change policies into the overall dimensions of sustainable development, and their following up at the national level to meet their obligations under the UNFCCC.

The training for GHG inventories closely follows the IPCC Revised 1996 guidelines for national greenhouse gas inventories, and also refers to the 2000 good practice guidance. On an on-going basis, the ERC will investigate the materials being developed by the UNFCCC for the review of GHG inventories and integrate them, where appropriate. A hands-on exercise has been developed to give participants practical experience with GHG inventories.

For general analysis of mitigation (beyond CDM and GHG inventories), there is a wide range of materials. UNEP and the World Bank each produced a series of guidebooks, as did Sathaye and Meyers. Other guidebooks focus particularly on the economic analysis of mitigation. The IPCC has, of

course, updated its assessment and also provided detailed work on technologies, policies and measures for mitigation. The reading list for the modules is extensive, and the material will be updated with developments coming to light.

The ERC has previously produced training materials for the CDM. These materials are used as the basis for further development, in particular to make them more interactive. There are also several guidebooks that have been developed which provide further resource material (some of which are downloadable).

### **How to present the material**

#### ***Using the manual***

Each module in the training manual contains detailed instructions and basic material needed to conduct training. The introductory chapter of each training module gives specific instructions on how to use the training manual. The manual may be used as a 'train-the-trainer' and/or a 'train-the-learner' tool. The manual is suitable for use by three different groups of people: the facilitator where trainers are trained; the trainers once they are trained for training others; and the learners whom the trainers train. Each of these groups will be able to use the same tool.

The facilitator or the trainer, as the case may be, is guided on how to use the page codes used in the manual. A complete chapter will contain pages marked T for the trainer, and pages marked L for the learner participants.

#### ***Running a training session / workshop***

To make the training interesting and successful, participants are divided into three groups, which are allowed to rotate. The groups consist of the Facilitator (trainer), the Learner, and the Reviewer / Evaluator. Division into these groups is done arbitrarily by the Moderator. The system of rotation makes it possible for participants to assume different roles (to train, to be a learner and to review) with different training modules. Groups should be distinguishable by some colour, and participants are to remain in their groups for the entire duration of the workshop. The intention is for the three groups learning to always work as a three-some or in pairs, but as one in the context of role-plays. A necessary check is to ensure that people from the same organisation / centre are not in the same group.

Division of responsibilities to participants were as follows:

- The Moderator. The Moderator is ideally the focal person for the workshop, with responsibilities that include the following functions: organising the workshop itself, ensuring that the training materials and equipment are available to the Facilitators / trainers beforehand, to enable them to prepare for the workshop, and controlling

**Table 1: The mitigation content**

<i>Module</i>	<i>Training needs</i>	<i>Learning objectives and outcomes</i>
<p><b>Greenhouse Gas Inventories</b>  <b>Outline:</b>                      1. Introduction                      2. Greenhouse gas computation                      3. Exercises                      4. Greenhouse gas reporting</p>	<p>The training need is to develop better understanding of the following issues:</p> <ul style="list-style-type: none"> <li>• Methodologies available for GHG inventories</li> <li>• Type and sourcing of data required for GHG computations</li> <li>• Use of computer software for computation of GHG inventories</li> </ul> <p>GHG reporting requirements</p>	<ul style="list-style-type: none"> <li>• Improved understanding of and quantification of GHG emissions.</li> <li>• Gain knowledge on the use of IPCC methodology and software for GHG computation</li> <li>• Have perception on sectors and areas for most effective mitigation and hence financially potent CDM projects</li> <li>• Have understanding on areas for further research on GHG data improvement</li> <li>• Be trained in CDM baseline development</li> </ul>
<p><b>Climate change mitigation</b>  <b>Outline:</b>                      1. Framework for mitigation                      2. Technologies, PAM                      3. Mitigation in diff. scenarios                      4. Cross-cutting policies                      5. Economic analysis                      6. Greenhouse gas reporting</p>	<ul style="list-style-type: none"> <li>• Translating GHG emission profile into relevant mitigation options</li> <li>• Linking technological and other options for mitigation with CDM and sustainable development</li> </ul> <p>Understanding multi-criteria assessments of mitigation options</p>	<ul style="list-style-type: none"> <li>• Improved understanding of the mitigation to emission of greenhouse gases</li> <li>• Understanding of country emission profile and options, economic options for reducing GHGs, ranking of mitigation options and effects of mitigation measures.</li> </ul>
<p><b>CDM Training</b>  <b>Outline:</b>                      1. CDM and climate change                      2. CDM and sustainable development                      3. CDM projects                      4. Finance and risk markets                      5. Designated National Authority</p>	<p>The training need is to develop better understanding of the following:</p> <ul style="list-style-type: none"> <li>• Evolution of CDM from UNFCCC objectives to Kyoto Protocol</li> <li>• Objectives, principles and provisions for CDM</li> <li>• The CDM concept; mitigation and development issues</li> <li>• Preparing CDM project proposal and CDM project cycle</li> <li>• CDM architecture models, governance and institutions</li> <li>• Funding for CDM projects</li> <li>• Economic analysis of CDM project</li> <li>• CDM and sustainable development</li> <li>• CDM project attraction and flows</li> </ul>	<p>By the end of the module, participants will:</p> <ul style="list-style-type: none"> <li>• Improve understanding on potential CDM projects</li> <li>• Develop ability to assess economic feasibility of CDM projects</li> <li>• Have the ability to prepare CDM project funding proposals</li> <li>• Have an overview of CDM projects funding sources</li> <li>• Have an understanding of logistical issues in development and implementation of CDM projects</li> <li>• Be able to relate CDM projects and country requirements for sustainable development</li> </ul> <p>Have an understanding of issues around appropriate environment for attracting foreign investments.</p>

group rotations and dealing with overall workshop facilitation.

- The Facilitators / trainers. The main responsibility of the Facilitators is to facilitate the ability of the participants to train the material and their understanding of the content. Facilitators are also expected to take over the training material from the previous group and commence training the next set of groups.
- The Learners. Learners have to know and understand the content so as to be able to apply it.
- The Reviewers / Evaluator. The role of the

Reviewers / Evaluators is to observe the Facilitators, to make notes of their observations, and at the end of each rotation, to do a verbal critique of the methods, approach and evident skills of the facilitator.

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