International Partnership on Mitigation and MRV

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Summer School 2013 – Hanoi, Vietnam – August 20th – 28th, 2013

TRACKING PROGRESS AND MRV FOR GREENHOUSE GAS EMISSION REDUCTIONS

Documentation

Contents

Glossary

BAU	-	Business as Usual
BFIs	-	Bilateral Finance Institutions
BMU	-	German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
BOW	-	Barriers-to-Objectives-Weighting
BR	-	Biennial Report
BUR	-	Biennial Update Report
CCBA	-	The Climate, Community and Biodiversity Alliance
CCDP	-	Climate-compatible Development Plan
CDM	-	Clean Development Mechanism
CERs	-	Certified Emission Reductions
CIF	-	Climate Investment Fund
COP	-	Conference of Parties
EE	-	Energy Efficiency
ERT	-	Emissions Review Team
ERU	-	Emission Reduction Unit
ETS	-	Emissions Trading Schemes
EU	-	European Union
GCF	-	Green Climate Fund
GEF	-	Global Environment Facility
GHG	-	Greenhouse Gas
GIZ	-	Deutsche Gesellschaft für Internationale Zusammenarbeit
IAR	-	International Assessment and Review
ICA	-	International Consultation and Analysis
ICI	-	International Climate Initiative
IKI	-	The International Climate Initiative
IPCC	-	Intergovernmental Panel on Climate Change
JI	-	Joint Implementation
KP	-	Kyoto Protocol
LCC	-	Low Carbon Committee
LEDS	-	Low Emission Development Strategy
MACC	-	Marginal Abatement Cost Curve
MDB	-	Multilateral Development Bank
MRV	-	Measurement, Reporting and Verification

NAMA	-	Nationally Appropriate Mitigation Action
NAPA	-	National Adaptation Programme of Action
NAPCC	-	National Action Plan on Climate Change
NC	-	National Communication
NCCRS	-	National Climate Change Response Strategy
NGMS	-	National GHG Management System
NGO	-	Non-governmental Organization
NIRS	-	National Inventory Reporting System
NMM	-	New Market Mechanism
OECD	-	Organization for Economic Co-operation and Development
PAT	-	Perform Achieve and Trade
PaMs	-	Policies and Measures
PoA	-	Programme of Activities
QELRC	-	Quantified Emissions Limitation and Reduction Commitments
RE	-	Renewable Energy
REDD+	-	Reducing Emissions from Deforestation and Forest Degradation
SNIERPA	-	National System for GHG Emissions and Removals
TMS	-	Target Management System
UK	-	United Kingdom
UNEP	-	United Nations Environment Programme
UNFCCC	-	United Nations Framework Convention on Climate Change
VNEEC	-	Energy and Environment Consultancy Joint Stock Company
WRI	-	World Resources Institute

1. Introduction

1.1. Background

The International Partnership on Mitigation and MRV was launched at the Petersberg Climate Dialogue in May 2010 in Bonn (Germany), by South Africa, South Korea and Germany. The overall aim of the Partnership is to support a practical exchange on climate change mitigation-related activities and MRV practices through capacity building and knowledge management between developing and developed countries.

To this end, the activities of the Partnership contribute to the design and effective implementation of:

- Low-Emission Development Strategies (LEDS) and Plans
- Nationally Appropriate Mitigation Actions (NAMAs) and
- Measurement, Reporting and Verification (MRV) systems

The Partnership seeks to foster mutual learning between peers, identify best practices, establish a shared mitigation-related knowledge base, and disseminate lessons learnt by bringing together climate experts from a variety of countries. During the last meeting following COP 17 in Durban, the International Partnership on Mitigation and MRV agreed to help build capacity to promote mutual learning and networking among its member countries –approximately 40, more than half of which were developing countries. As part of the capacity-building, the Partnership offers one school session every year, either in summer or autumn.

The Partnership's 2012 Autumn School focused on issues related to measurement, reporting and verification (MRV), and was held in Berlin, Germany from 15 to 23 October 2012.

This year's Summer School (2013) took place from 20 to 28 August 2013 in Hanoi, Vietnam, and focused on **"Tracking progress and MRV for greenhouse gas emission reductions"**. It brought together 24 representatives from developed countries and developing countries who work at the interface between the technical, organizational and political levels of mitigation actions. It was organized by the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, with the technical support of Energy and Environment Consultancy Joint Stock Company, Vietnam (VNEEC), Perspectives GmbH (Germany), South Pole Carbon Asset Management Ltd. (Switzerland) and Ricardo-AEA (United Kingdom) and financing from the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU).

The topic "tracking progress and MRV for greenhouse gas emission reductions" is being discussed in the international climate negotiations as one of the main elements for a new climate regime. The term MRV is used to describe all measures that are being undertaken to (1) collect and process data on emissions, mitigation actions and support to non-Annex I countries, (2) report on this information, and (3) make it available for international assessment of some kind. A functioning and approved MRV system is very

important in ensuring the transparency of emission reductions achieved and the establishment of transparency and trust in the international climate negotiations and for tracking progress towards the international target to keep global warming below 2^0C.

Accounting (tracking progress) is a process to track mitigation efforts in order to know whether they add up to sufficient emission reductions on a global scale, which therefore plays a role in the effort to close the ambition gap. Accounting also allows countries to receive recognition for their efforts and enables appreciation of their additional mitigation actions. It contributes to safeguarding the national interest of countries as it increases the capacity of governments to plan and implement national policies.

The Summer School was designed as an opportunity for its participants to discuss and understand the issue of tracking progress/accounting rules including possible ways to master the rules, help develop nationally appropriate targets/pledges, and work on an appropriate set of standards for this purpose. It thus contributes to a better understanding of the topic, its aspects, its urgency and relevant methodologies, and is conductive to the decision making processes at the international negotiations. The participants were given the opportunity to get a good knowledge of fundamental aspects of the international climate negotiations and the corresponding process in their respective countries.

Photo: Summer School 2013 - Participants, Speakers and Organizers

1.2. Objectives

The Summer School sought to enable participants to:

(i) be aware of the diversity of voluntary national pledges/targets, the discussion on accounting/tracking progress, and the linkages of accounting with MRV, market-based mechanisms and pledges;

(ii) understand methods for defining and comparing an (absolute or intensity) emission reduction target, for setting baselines, accounting progress of domestic mitigation policies, and identify best practices;

(iii) compare and prioritize different NAMA options by applying suitable selection criteria and define indicators for transformational impact and sustainability of domestic mitigation progress.

In general, after the Summer School the participants could act as multipliers in their respective countries and help establish appropriate and effective rules for the MRV of emissions and mitigation actions. The School placed particular emphasis on the exchange of knowledge between participants, and presentation of good practices and experiences.

(From left to right): Anna Pia Schreyoegg (BMU), Nam Nguyen (Vietnam), Vahakn Kabakian (Lebanon), Ann Gan (Singapore), Hanchang Choi (Rep. of Korea), MiYoun Min (Rep. of Korea), Botagoz Khakimzhanova (Kazakhstan)

1.3. Participants

Participating the Summer School were representatives from ministries (e.g. Ministries of Environment, Economy and Finance, Energy, etc.), agencies (e.g. Thailand Greenhouse Gas Management Organization; UNDP Georgia, etc.), responsible figures in the climate change sphere such as negotiators, implementers, policy makers and experts, from the following countries:

- Argentina
- Belgium
- Brazil
- Chile
- Dominican Republic
- Georgia
- Germany
- Israel
- Kazakhstan
- Kenya
- Lebanon
- Morocco
- Panama
- Singapore
- South Africa
- South Korea
- Thailand
- Tunisia
- United Kingdom
- Vietnam

1.4. Training concept

The training concept was built upon the main objectives of the Summer School including exchange of knowledge between participants, presentation of good practices examples, and sharing of experiences.

The Summer School gave participants opportunities to be actively involved in developing ideas and sharing best practices by including interactive elements like group work and role-play focused on real-life situations. The participants were divided into small groups for brainstorming and discussion as well as participating in the role-play activities.

In order to best impart knowledge to the participants, the Summer School applied a wide range of modern educational methods like transparency, participation, holistic thinking and an orientation towards practical experiences to achieve the learning objectives. It communicated with the participants via, inter alia, lectures, debates, debriefings, interactive seminars, case study analyses, and group exercises. After the Summer School, most of the participants stated that the teaching methods were appropriate for the tasks and suitably varied. The materials provided during the course e.g. presentations, explanation of exercises, etc. were helpful to the participants in better understanding the subjects. The peer-to-peer learning at the School between participants from different backgrounds (negotiators, implementers, etc.) enhanced the knowledge-building and enabled fruitful discussions. They exchanged experiences in developing nationally appropriate targets/pledges, introduced a sensible set of standards, and contributed to a better understanding of the decision making processes at the international negotiations.

The Summer School consisted of seven days of training and one day of excursion. The contents covered were as follows:

Day 1 – 20 August 2013:	Introduction and background on recent debates on MRV and tracking of progress
Day 2 – 21 August 2013:	Inventories and development of emission scenarios and baselines
Day 3 – 22 August 2013:	Prioritization and selection of NAMAs
Day 4 – 23 August 2013:	NAMA finance
Day 5 – 24 August 2013:	Excursion day
Day 6 – 26 August 2013:	MRV of NAMAs
Day 7 – 27 August 2013:	Tracking progress
Day 8 – 28 August 2013:	Event wrap-up

1.5. Further information

See more detailed information, as well as photos and presentations from the Summer School, on the Partnership website: www.mitigationpartnership.net. The participants in the Summer School may register for the login area here. By doing so, they can download further background material and share their experience with peers.

(From left to right): Sarah Kuen (Belgium), Neta Meidav (UK)

(From left to right): Julio Moisés Alvarez (the Dominican Republic), Amel Akremi (Tunisia)

2. Main findings

2.1. Emission scenarios and baselines

Identifying the baseline scenario is very important for designing a pledge. It involves choice of projection methodology, timeframe, identification of emissions drivers and defining assumptions, etc.

In **development of emission scenarios**, the participants acknowledged that an inventory is a necessary starting point while sufficient institutional capacity is needed to enable continuous data collection and processing for the Biennial Update Reports (BURs) or the National Communications (NCs). In order to successfully develop an emission scenario, it is recommended not to try to invent new things, but build upon existing data collection efforts.

There is a wide range of possible modeling tools for the development of scenarios, using bottom-up or top-down approaches. They vary in terms of complexity and information needs and hence there is no single model that fits all countries. Each country should use the model that is most appropriate for its situation. However, sometimes model developers do not know which key issues make the model more effective.

Furthermore, the emission scenario development process shows that the underlying assumptions are main concerns and should be given sufficient attention. There are in fact “black box” modeling approaches that do not allow decision makers to understand how the mitigation potential has been determined. Such a situation, which is often linked to modeling done by external consultants, makes it difficult to come up with a specific pledge or mitigation target.

Regarding the development of baselines, several questions were raised:

- Should a country go with many scenarios and one baseline? Or one scenario and many baselines?
- Which mitigation policies are to be included in the baseline?

Each country should have a range of different scenarios and from them select the one to be used for the approach (business-as-usual baseline (BAU)). Among participants, there was a general feeling that baselines should not include any mitigation policies. Eventually, it is acknowledged that the baseline choice is a political decision.

2.2. NAMA development and prioritisation

NAMAs are an essential element in achieving emission reductions and thus compliance with a set of targets.

In the context of **NAMA development,** there is a wide range of options for NAMAs including projects, policies, and strategies or target levels. However, the stance of countries towards NAMA development varies due to perceived fallout in negotiations. To develop robust NAMAs, a strong governmental agency is needed to coordinate, mediate stakeholder inputs and avoid ministry or agency turf wars.

In **setting up criteria for NAMA prioritisation**, it was agreed that LEDS would be a useful starting point for NAMA development, but that development of LEDS should not slow down the identification of NAMAs. In each country, the stakeholders will have different views about NAMA priorities, which thus require government agencies to have an effective coordination strategy. Multi-criteria analysis may be difficult to implement due to difficulties in agreeing on weighting of criteria, and in making them operational in the policy process. In many countries, co-benefits of NAMAs are prioritised by a large number of host country stakeholders while donors want to achieve a transformational GHG emissions reduction effect. Criteria for such transformational effects are likely to be qualitative and consensus remains to be developed. One of the most important findings in this context is that the prioritisation has been linked to how NAMAs have been financed.

2.3. NAMA implementation

In the **implementation of NAMAs**, financial sources are crucial. NAMA finance is one big issue that countries are trying to deal with; and is seen in most cases as the elephant in the room. The transformational impacts of NAMAs can only be achieved if the transaction costs for overcoming barriers can be covered by the NAMA finance. Countries that have set up a NAMA and planned to implement it are now seeking significant financing from donors while the donors expect substantial financing to come from implementing countries. So far, financing chiefly focuses on NAMA development, and not implementation. The new NAMA Facility funded with 70 million euros by Germany and the UK is considered as the first step for the implementation. In the process of structuring and implementing a NAMA, technical assistance plays an important role.

The implementation of a NAMA also brings questions to the table such as “should old and new market mechanisms come to the rescue?”. In the current context of low price levels in the carbon market, the answer is “impossible”. In order to rescue the mechanisms, increased ambition by industrialised and advanced developing countries would be required.

The few NAMAs currently on going or under implementation have a mix of financing options. For example, Chile’s renewable energy NAMA is financed by grants, guarantees, etc. and the Mexican housing NAMA is financed by a mix of grants, concessional loans and normal loans, from a variety of financial institutions.

2.4. MRV of NAMAs

Where NAMAs are used to achieve compliance with a set of reduction targets, a robust MRV is required to assess whether a NAMA has contributed to the target as desired.

MRV of NAMAs is done in compliance with **UNFCCC level-** criteria, which are pragmatic, non-prescriptive, non-intrusive, and country driven- while taking into account the voluntary nature of NAMAs.

The NAMA MRV should be reported in the Biennial Update Reports (BURs), which are to be submitted to the UNFCCC every two years from 2014 onwards.

The main findings regarding the MRV of a NAMA are that there are still different opinions regarding MRV for domestic NAMAs and the fear of some countries that guidelines might de facto become prescriptive.

Now, many options are available for building an MRV system. Regarding **GHG emissions**, MRV options take different forms concerning aggregation levels e.g. project-based NAMAs can apply MRV approaches used by the Kyoto Mechanisms; policy-based NAMAs can orient MRV on a new World Resources Institute (WRI) draft standard; and national-level strategy-based NAMAs can apply the IPCC inventory guidelines.

The **co-benefit** should also be taken into account when developing a NAMA MRV system. Especially in the forestry sector, approaches have been developed in the past like Social Carbon, Carbon Community and Biodiversity Standard (CCBS). It was agreed that the Gold Standard could be applied in the NAMA context as well.

Another point to be mentioned is the role of stakeholders in MRV. There is a need to make MRV consistent so that the data collected and mitigation results are widely accepted. For the purpose of verification, national implementers themselves have to decide to use internal and/or external verifier(s), that is, 2nd/3rd parties.

2.5. Pledges

There are different types of pledges at the national, regional and global levels. Pledges include base year versus baseline, absolute pledge versus intensity pledge, and single versus multiple target year pledge. There is no pledge type universally preferable, given the diverse country circumstances, and this makes it difficult to make pledges comparable.

Ambition and its increase – Ambitions differ from country to country, and are increasing over time depending on the stringency of accounting and conditionality of targets. However, the increase in ambitions will be a long and difficult process and requires:

- countries' willingness to move forward (pioneers)
- increase in strength of interest groups supporting mitigation action
- clear benefits of leadership in mitigation technologies
- carrots (e.g. financing) and sticks (e.g. trade measures)

Regarding **tracking of progress**, the participants acknowledged that avoidance of double-counting of mitigation action is challenging but crucial.

There are also considerations of voluntary reporting in BURs or Biennial Report (BR) in contrast to non-UNFCCC mechanisms.

3. Summary of contributions

This chapter presents the key information delivered by presenters during the Summer School, including points made in discussions and group exercises.

Murray Ward (GtripleC)

"Setting the scene – mitigation efforts in all countries and in the context of the UNFCCC"

Mitigation reduces the emissions of GHG to the atmosphere or increases the removal of GHG from the atmosphere (e.g. sequestration of carbon dioxide by growing biomass).

Mr. Ward gave the participants a quick explanation about the history of mitigation in the UNFCCC context. It first appeared in 1992 in the Agreement of the UNFCCC at the "Earth Summit" in Rio, and the mitigation "ball" started rolling from then on.

Mitigation targets should be described in quantitative terms. They can be binding or non-binding (e.g. most pledges), conditional or unconditional, expressed in many different metrics (e.g. emissions, percent renewable energy, 'carbon neutrality', annual reduction in deforested areas), economy-wide or sectoral.

Under the Kyoto Protocol, developed countries have the quantified emissions limitation and reduction commitments (QELRCs) established as legally binding Annex B Party commitments. 'Flexible mechanisms' for countries with QELRCs, allow them to buy/sell emission units as well as offset credits from the Clean Development Mechanism (CDM) and use them to meet their obligations. The CDM has been a major means for the financing of project activities undertaken by private actors. It also required the establishment of a very large institutional framework for mitigation in developing countries.

National Communications (NCs) require all countries to periodically publish GHG emission inventories and describe how climate change is affecting them and what actions they are undertaking to address it. Recent decisions introduced BRs for developed countries and BURs for developing countries. These have to follow specific guidelines. BURs are to be prepared by developing countries every two years between the years for which they do NCs, and include an inventory. Reports of developed countries are evaluated through the International Assessment and Review (IAR) Process, while International Consultation and Analysis (ICA) is done for reports of developing countries. Thus NCs, BRs, BURs, IAR and ICA are elements of MRV.

Accounting can be done at various levels. National registries such as New Zealand's Emission Units Register are electronic national accounting systems that hold all emissions units (by individual serial number) under the control of the country and its entities in various types of accounts; one of these

accounts is a “retirement account” and the test of a country’s compliance at the end of the period is that they hold sufficient units in this account to equal their GHG emissions during the period.

An international transaction log administered by the UNFCCC tracks the trading between countries of emission units, including units originating from CDM projects (CERs).

Mr. Ward finally described the relationship between mitigation and sustainable development explaining that understanding and enhancing the linkages between development and mitigation is a key factor in increasing the interest and ownership of mitigation programmes.

Group exercise – “Developing the big picture including discussion on differences in perception”

The exercise was facilitated by Johanna Bergmann (GIZ). Participants were divided into four groups and given the task of drawing a big picture describing the different elements of an MRV system in the context of international and national mitigation actions.

The participants worked in groups for 25 minutes, and then presented their results at a plenary session.

Detailed results of this group exercise are described in Annex III.

From the results of each group, it was found that the MRV system might come in different forms. It could be a hierarchical form that starts with international elements and ends with national components; a logical framework; a stairs form aiming to highlight the stages that are interconnected and built from each other; or a wheel diagram that starts with planning, pledge, NAMA, and action including capacity building to measurements (MRV).

Axel Michaelowa (Perspectives)

Participants’ expectations for MRV Summer School

Through the questionnaires provided to participants before the start of the Summer School, Mr. Michaelowa presented a synthesis of participants’ expectations for the School.

Firstly, the participants wished to learn about the MRV-related contents e.g. development of emission scenarios and baselines; tracking (methodologies, indicators and information systems) including emissions impacts of mitigation policies/actions, and finance.

Secondly, with regard to development of mitigation policies, NAMAs, LEDS, the participants wanted to identify the challenges and benefits in terms of institutional arrangements taking into account turf wars between ministries and/or agencies, the time-frame needed, and co-benefits; synergies with goals in other policy areas. They wanted to know if MRV and/or tracking have beneficial or adverse effects on other mitigation policies.

Lastly, all the participants expressed a desire to have exchanges about their lessons and experiences with each other.

Sina Wartmann (Ricardo-AEA)

"GHG inventories: necessary condition for understanding emission levels and trends"

To start the presentation, Ms. Wartmann gave the participants a brief introduction to GHG inventories.

A GHG inventory is not an MRV system but an essential element of it. The GHG inventory looks at emissions but does not consider costs or emission reductions achieved, and nor does it cover adaptation. It also gives no indication as to why the emissions have reduced or are rising and does not say anything about co-benefits.

In fact, MRV systems show past emission trends and what is happening in various sectors like energy, industrial processes, solvents, waste, land-use and land use change and forestry (LULUCF), agriculture, etc.

Ms. Wartmann further described the primary elements needed for a GHG inventory.

The speaker provided an illustration of what a national system looks like, and what elements it might contain. The UK inventory structure was taken as an example.

Finally, Ms. Wartmann ended the presentation with a summary of the main remarks for a GHG inventory.

In the Q&A session following the presentation, participants expressed concerns about the quality control and the data availability. Ms. Wartmann stressed the importance of considering the GHG inventories as a process of internal communication or a quality process. Talking about the problem of data unavailability or inconsistency, Ms. Wartmann explained that the BURs include inventory data that can be used at the beginning. Also, support from developed countries is crucial to develop GHG inventories and developing countries should start hiring people for that purpose. In the beginning, the dataset will not be complete but will get better after a while.

"Key methodologies related to GHG emission scenario development in a LEDS context"

In this session, Ms. Wartmann provided the participants with key information about the development of GHG emission scenarios in the LEDS context. Emissions scenarios are projections. They are not a part of the BUR reporting but an element of LEDS. The UNFCCC guidance on projection results includes different types of scenarios: (1) scenarios without measures (excludes everything that has happened after the base year); (2) scenarios with measures or with existing measures (includes measures that are already implemented or have been adopted; if they have been decided upon, they can be included); (3) scenarios with additional measures (measures that are currently being discussed and have a good likelihood of being adopted).

Ms. Wartmann mentioned two main approaches in developing emission scenarios bottom-up and top-down. The top-down approach uses a simple extrapolation model, an economic equilibrium model (e.g. WorldScan[1]), or an econometric model (e.g. E3MG) while the bottom-up approach applies dynamic optimisation (e.g. MARKAL), accumulation of technological options (e.g. end-use sector models), or simulation (POLES, NEMS). Increasingly, hybrid models that are a mix of bottom-up and top-down approaches are being used. The important message to policy-makers is to "*Not rely on a single model but try different ones*."

Baseline scenarios were also mentioned in this plenary. According to a report by the Danish Energy Agency, OECD and UNEP Riso Centre, a baseline scenario is defined as "*a scenario that describes future GHG emissions levels in the absence of future, additional mitigation efforts and policies*". It is the scenario where mitigation options are measured with existing measures; however, it can be without measures.

Ms. Wartmann ended the presentation with further "additional measures" scenarios. She elaborated with examples of ranking plus cut-off (simple extrapolation top-down approaches); different policy scenarios; "Thematic" scenarios e.g. UK Carbon Plan; and sensitivity analysis. She also apprised the participants with key assumptions in the development of emission scenarios, like GDP, climatic patterns, population, technologies and costs.

During the discussion, participants asked whether the UK Carbon Plan is a government study. Ms. Wartmann confirmed that it is a government study meant to come up with target budgets. She also gave the participants ten minutes to brainstorm the following questions:

- Have GHG scenarios been done in your country? If so, please explain to the others what approach was taken?
- If not, please discuss with others what approach might be appropriate and why.
- What data sources can you use?
- What role do you think emissions scenarios might play in your LEDS?

The answers varied from country to country and the participants had a chance to share their experiences with the others.

[1] WorldScan is a recursively dynamic general equilibrium model for the world economy, developed for the analysis of long-term issues in international economics.

Thapelo Letete (Department of Environmental Affairs, South Africa)

"Developing South Africa's baseline and mitigation scenarios – The LRMS & beyond"

The development process of **South Africa's baseline and mitigation scenarios** involves two components: scientific research and stakeholder engagement.

There were four teams conducting scientific research and the Scenario Building Team (SBT) was the one in charge of stakeholder engagement. The stakeholder engagement brought together individual leaders and strategic thinkers in particular sectors with high level of technical skills. They were from 4 different sectors in society.

On the topic of the technical approach to the development, Mr. Letete spoke about the relevant approaches for various sectors, e.g. Markal model for the Energy sector and CGE model for the entire economy. The primary scenarios in South Africa include growth without constraints which outlines the country's emissions levels if energy plans continue to be based purely on least-cost, without any constrains on growth, and the Required-by-Science scenario (e.g. South Africa's fair-share of mitigation requirement).

In developing mitigation scenarios, the country has compiled a list of all realistic mitigation actions enclosed with their model descriptions and parameters for considerations, and packaged the mitigation actions into scenarios. Mr. Letete indicated the full picture of development in South Africa to illustrate the whole process related to the development of baseline and mitigation scenarios.

He was asked how the second scenario was defined and whether equity principles have been taken into account when applying; Mr. Letete explained that the second scenario was defined based on the IPCC guidelines with observation to equity. Another participant asked what the application of the approach regarding Business-as-Usual (BAU) is and how to achieve it. Mr. Letete replied that the scenario is to be used at national level only, and the baseline is dynamic i.e. always keeps changing with time. He concluded by saying that South Africa is going to fix the baseline.

Moema Correa (Ministry of Science, Technology and Innovation, Brazil)

"Mitigation Options of GHG Emissions in Key Sectors in Brazil"

Ms. Correa presented an overview of Brazil's National Policy on mitigation options for GHG emissions. The project started in April 2013, and was implemented by the United Nations Environment Programme (UNEP) and funded by the Global Environment Facility (GEF). The main goal of the project is to assist the Government of Brazil in strengthening its technical capacity to support implementation of its actions to mitigated GHG emissions in key economic sectors (industry, energy, transportation, household and services, Land Use, Land-Use Change and Forestry (LULUCF), waste management and other cross-sectoral ones).

The project is expected (1) to successfully establish sector-specific baseline scenarios based on the newest available data (reference scenario) for the periods 2012-2035 and 2035-2050; to estimate technical and market potentials for GHG emissions abatement; (2) to increase the availability of data and information on mitigation potential in key sectors.

The speaker also expressed concern about availability and transparency, country ownership (strategic guidance and capacity-building), and continuous updating and stakeholder engagement.

Finally, Ms. Correa apprised the participants about three expected outcomes of the project, in which different alternatives for mitigation have been defined in Brazil.

In the discussion, a participant asked whether states in Brazil are duplicating the work and data. Ms. Correa explained that some states have demands to build their own GHG inventories and targets. Some of the states lack capacity to produce the inventory but they can contribute to a bottom-up process for the National Inventory. They want to avoid duplication of efforts that is why they have started motivating the process and engaging key stakeholders.

Group exercise – Methodologies for developing scenarios and their advantages and disadvantages for two real-world country case studies

The group exercise was facilitated by Stefan Wehner (Perspectives), Sarah Kuen (Belgium Federal Public Service Public Health, Food Chain Security, Environment) and Axel Michaelowa (Perspectives).

Following brief country presentations on experiences from Belgium on emission projections and setting baselines for national planning in India, a group discussion was formulated to help participants further understand the topic "*Methodologies for developing scenarios and their advantages and disadvantages*".

The participants were divided into three groups. In each group, members were required to discuss and answer the following questions raised by the facilitators:

- Which methodologies for developing scenarios do you know?

- Which model and method is used in your country?
- What are your experiences?
- Did you encounter advantages and disadvantages of one or the other methodology?
- What makes an emission scenario conservative and credible?
  - Assumptions basis?
  - Appropriate time frame?
  - Institutions involved in the baseline development?
  - Data vintage and quality?
  - Level of aggregation?
- What are critical modeling issues?
  - Technology, behavior, scale, time, uncertainty

After ten minutes of discussion, each group came up with different results, described in detail in Annex III. From the results, it was found that different types of models are utilised to develop GHG scenarios e.g. LEAP (Morocco and Tunisia), MESSAGE, MARKAL (Singapore), McKinsey (Dominican Republic), Excel, MAED, T21, etc. Each has its own advantages and disadvantages. For instance, LEAP model, used in Morocco and Tunisia, is easy to use, but influences the ownership. MARKAL is time consuming and expensive and requires external consultancy.

The working groups acknowledged that data quality and availability and willingness are key factors that make an emission scenario conservative and credible. They also suggested potential improvement measures and solutions to the difficulties, e.g. comparison of bottom-up and top-down approaches, capacity building, how to obtain funding and development of cost-effective model.

Sarah Kuen (Belgium Federal Public Service Public Health, Food Chain Security, Environment)

"Measuring impact of policies and measures in Belgium"

Ms. Kuen started her presentation by explaining the situation in Belgium. The country is a federal state composed of 3 regions, 3 communities and 1 Federal state. Climate change competence is shared between the federal administration and the 3 regions. With regard to reporting modalities, there is a common agreement among the regions and communities for data/information exchange between the federal state and the regions.

Belgium committed to reduce its GHG emissions by 7.5%, under the Kyoto Protocol, so it is on track to achieve this target as the total GHG emission decreased by 12.3% between 1990 and 2011.

A National Climate Commission approves the institutional arrangements for GHG inventories in Belgium. The GHG inventory system consists of 3 regional inventories aggregated for final approval from the National Climate Commission.

In terms of policies and measures, the institutional structure is following the same arrangement; the National Climate Commission compiles and keeps progress reports of the National Climate Plan.

Ms. Kuen elaborated on the "overlapping Policies and Measures (PAMs')" in the Belgium case. In order to proof the problem they were facing with regard to the socio-economic impact of federal PAMs, a study was conducted to evaluate the socio-economic impact of an offshore wind NAMA. The study evaluated the CO_2 emissions and the fossil-fuel imports avoided, but did not address the loss of employment in the sectors displaced, thus not taking into account the socio-economic impact.

Ms. Kuen also presented some internationally reviewed recommendations of the fifth national communication of Belgium (2011). The ERT encouraged Belgium to undertake a number of improvements, including *aggregate the impacts of PAMs at the sectoral level.*

She concluded with the opportunities and challenges that Belgium is facing:

- concrete involvement of sub-national levels
- system developed with a bottom-up approach based on specific needs/situations
- comparability at a national level (aggregation level).

Axel Michaelowa (Perspectives)

"Links between baselines and potential emission scenarios"

Emission scenarios indicate possibilities in the future while baselines indicate a BAU path; that is the main difference between the two concepts.

The speaker emphasized that there are various parameters for emission scenarios influencing baselines, including GDP growth, population growth, autonomous energy efficiency improvement, etc.

Mr. Michaelowa shared with the participants experiences gained in setting baseline for CDM. Experts play a main role in deciding on baseline methodologies, and initial political decisions trigger the development of "families" of baseline methodologies. He gave examples of electricity grid emission factor with Build versus Operating Margin and waste-related methane with the first order decay model from the IPCC.

In his experience, some, but not all methodologies try to capture mitigation of non-additional emissions under the baseline. The mitigation policies introduced in the past were not taken into account while those to be introduced in the future will not be considered for 7 years after their introduction. The setting of baselines for CDM is differentiated by host country types, and varies from country to country.

Mr. Michaelowa's presentation was followed by two group discussions. In the first, the participants were asked to answer the following question: "What criteria should be used to define values for parameters that are used to determine emission scenarios in order to derive baselines?" The participants based their discussion on a list of suggested criteria: conservativeness; internal consistency; appropriateness/adequacy; accuracy, measurability and reliability of underlying data; and limited level of uncertainties. There was also a suggestion from participants to add transparency as an important criterion.

The second discussion was set around the question: “What policies should be considered in the baselines?” Participants suggested the following considerations: NAMA objectives, updating frequency, support and existing policies.

Frauke Roeser (Ecofys)

“From Scenarios to Emission Reduction Pledges”

A pledge is a voluntary commitment under the United Nations Framework Convention on Climate Change (UNFCCC) to reduce national GHG emissions. It appeared first in the Copenhagen Accord (18th December 2009). In this context, many countries have put forward pledges for 2020, for example, carbon neutrality in Maldives; 20% - 30% reduction below 1990 levels in European countries; China to improve carbon intensity by 40% - 45% compared to 2005. For the new agreement under the UNFCCC, binding commitments beyond 2020 will be negotiated.

Ms. Roeser gave the participants an overview of current status of pledges, which shows the big gap in ambition between countries. She introduced the UNEP Gap Report that gathers results related to global emission scenarios from research teams around the world.

The current pledges will have an impact on temperatures. According to the Climate Action Tracker aggregating countries’ pledges result in a global average temperature increase of approximately 3.3°C above the preindustrial level in 2100.

In her presentation, Ms. Roeser went into the details of the links between scenarios and pledges. There are several factors that influence the determination of a pledge, including global efforts, technical mitigation potential, capacities, responsibilities of individual countries, etc. Further, national emission scenarios can give insights to national (development) priorities and capacities and the mitigation potential. National emission scenarios can thus be one of the inputs for designing the pledge in countries.

The design of a pledge should take into account the type of pledge that would be put forward, for example, pledges including absolute GHG energy targets, relative targets (e.g. BAU), commitment to policies or activities, and conditions of such pledges. She also spoke about the stringency of the pledge, whether binding or voluntary and the choice of reference year. After all, the type and stringency of a pledge determines the level of ambition (e.g. absolute GHG vs. relative GHG targets).

Ms. Roeser pointed to the role of international support in the designing of pledges and methods to monitor progress towards the pledge. At the same time, she provided the participants with an overview of effort sharing approaches, which quantitatively distribute global efforts to countries. These approaches were first discussed in Rio 1990 and a number of approaches have been developed so far.

Ms. Roeser elaborated the concept with examples for different approaches like Contraction and Convergence or Multistage, or the combined approach under the EU proposal.

In the discussion, a participant asked about linking scenarios and pledges and how the elements can be determined. Ms. Roeser explained that ideally the pledge would be based on what happens in future, including expectations, mitigation measures, economic parameters and population. However, in practice, expectation is the element that determines pledges.

Another participant asked how different types of pledges and carbon market flexibilities could be linked. Ms. Roeser said this could be done by allowing some flexibility into the mechanisms.

Group exercise – Defining a pledge

This group exercise was facilitated by Frauke Roeser.

After the presentation on the link between scenario development and the definition of pledges, the participants joined a breakout group discussion. They were divided into four groups and each was given 30 minutes to go through the information given for an example country. Members of the group discussed the different parameters of potential emission-reduction pledges for the country, filling out the templates provided (one for each country and group) and presenting their results at the plenary. In their presentation, they had to answer the following questions:

- What parameters should be included for monitoring?
- What is the role of international support?

Detailed results are described in Annex III.

The groups came up with two types of pledges: absolute target for developed countries and intensity target or relative target for emerging countries. According to the participants, the most important parameter among the factors that should be included for monitoring is the amount of Greenhouse Gas (GHG). The groups also acknowledged that international support plays an important role. For instance, a country could come up with an unconditional pledge of 25% below BAU, but with international support, the pledge could increase to 50%.

Frauke Roeser (Ecofys)

"Development of NAMA ideas based on national development strategies and priorities, including LEDS"

A NAMA is a voluntary mitigation intervention by a developing country government. It is in line with national and/or local development priorities, receives support from domestic and/or international sources, directly or indirectly effects GHG emission reductions, measureable, reportable and verifiable to ensure transparency of the NAMA outcomes.

Ms. Roeser gave an overview of NAMAs worldwide by countries and sectors. NAMAs in Latin America and the energy supply sector are the predominant ones, with 56% and 36% respectively.

The NAMA development process goes through three main stages, starting with an idea that is then elaborated into a concept and finally submitted as proposal to potential financiers. At the idea stage,

policy priorities, sector strategies, and GHG profiles, are considered to find a preferred mitigation approach. In the concept stage, NAMA ideas will be prioritised based on a set of previously defined criteria. The selected concepts are then refined as proposals.

Ms. Roeser illustrated the NAMA prioritisation with a case study in Chile. To prioritise NAMA options, different criteria were scored.

Ms. Roeser also outlined the lessons learnt from designing a NAMA. She said the NAMA development process should involve stakeholders due to need for capturing their knowledge. During the process, the expectations should be carefully managed and there should be clarity about the role of stakeholders to know who makes decisions, ensure the 'right' balance between different stakeholder groups, and organize multilateral meetings and/or workshops to raise awareness among stakeholders and ensure process validation.

The speaker ended her presentation with valuable conclusions regarding NAMA identification and selection. Once again, she emphasised the importance of stakeholders' involvement throughout the process and the strong (political) leadership is also important.

During the discussion, there was a question about how to define the bottom-up approach in case there is no LEDS. Ms. Roeser explained that the bottom-up approach is very difficult and the goals aligned with the stakeholders are crucial. Each country should develop its own approach (criteria) appropriate for its context. It is also very helpful if one country could share its experiences with other countries about what success factors are.

Sebastian Wienges (GIZ)

"NAMA Prioritization"

According to the speaker and also what happens in reality is that the first thing countries look at is what is doable and affordable before prioritising actions based on this idea. Defining actions and targets, raises the ambition. Mr. Wienges asked the audience how this process could be organised, and he pointed out that a NAMA can be approached from two angles:

(1) NAMAs are mitigation actions, what countries have done for years;

(2) NAMAs are supposed to generate models: self-sustain dynamic trends (implementer's point of view)

The countries themselves can decide what their NAMAs are and what are they going to look for. The speaker asked the participants to propose NAMAs based on their own objectives but gave participants qualities of good NAMAs:

- Have robust MRV systems

- Create transformational change: many donors are interested in this criterion.
- Countries can develop LEDS in parallel while developing NAMAs.

Mr. Wienges also shared the NAMA prioritization approach developed by GIZ and applied in Indonesia. This approach is supposed to help countries prioritise national NAMA concepts, a step further to NAMA ideas.

Finally, Mr. Wienges presented the supported stepwise approach in the prioritization of NAMAs. It comprises eight steps. Step 1 is to look at all the objectives the stakeholders want to achieve. Steps 2 to 4 are about co-benefits. And steps 5 to 8 are focused on multi-criteria analysis.

During the discussion, there were a lot of questions regarding the criteria for NAMA prioritisation and selection. The speaker highlighted the difference between NAMAs and CDM; CDM can work without governments but NAMAs cannot. A NAMA can avoid focusing on short-term emission reductions but can also add transformational change (long-term). The speaker pointed out that it would be very helpful to have criteria that measure transformation. The countries start developing the MRV systems by starting to implement individual mitigation actions. These systems may be linked in future, but are separated for the time being.

Manish Shrivastava (The Energy and Resources Institute - TERI)

"Mitigation and Development Strategies in India"

Mr. Shrivastava presented a case study on GHG mitigation strategies in India developed by the Low Carbon Committee (LCC) under the Planning Commission and in the context of the National Action Plan on Climate Change (NAPCC).

While the LCC never issued final recommendations, the NAPCC missions include many LCC recommendations. While to date, the Indian government has not notified any NAMA, a wide range of mitigation actions could qualify as NAMAs. Financial incentives could include capital/operational subsidies and taxes and revenues from trading schemes, whereas non-financial policy action could include standards and regulations as well as capacity building and support in data gathering.

Mr. Shrivastava explained the innovative Perform Achieve and Trade (PAT) market-based mechanism to enhance cost effectiveness of energy efficiency improvements in energy-intensive large industries and facilities. PAT gives specific energy-saving targets on gate-to-gate basis to 478 companies in 8 sectors. Companies exceeding their targets can sell units. Initial support was provided through a technology compendium, a project assessment unit, Venture Capital Fund, and initial purchase of units by the government.

During the discussion, a participant asked about the factors that would mobilise enforcement, make the policies really work and start the transformation process. Mr. Shrivastava admitted that there are enforcement issues with PAT, but stressed that if the government realises there is great potential and increasing market and if the mechanism overcomes institutional and capacity issues in policy implementation, it has a bright future.

Group exercise – Development of criteria for prioritisation and selection of NAMAs; Prioritising and selecting NAMAs according to previously defined criteria and weighting

The group exercise was facilitated by Murray Ward (GtripleC), Stefan Wehner (Perspectives) and Patrick Bürgi (South Pole).

The participants were divided into four groups and tasked with defining criteria for prioritisation and selection of NAMAs and describing an approach for prioritisation and selection of NAMAs.

In doing this task, the groups were required to answer the following questions:

- What criteria do you find important for prioritisation and selection of NAMAs?
- Define at least one approach on how to prioritise and select a set of NAMAs based on the criteria selected under the above question.
- What is the context of prioritisation and selection of mitigation actions in your country? How does it compare to the criteria and prioritisation/selection approach (es) developed by your group?

After 30 minutes of discussion in groups, each group was required to present its results. See detailed results in Annex III.

The participants acknowledged that the most important criteria for prioritisation and selection of NAMAs should be GHG emission reduction, co-benefits, alignment with national priorities, practicability of MRV, financial support, and feasibility. They also found that in order to successfully prioritize and select a NAMA, a country would need to take into account other factors such as availability of technologies, stakeholder engagement and support in order to make sure who does what, especially when achieving the support from the government about transformational impacts.

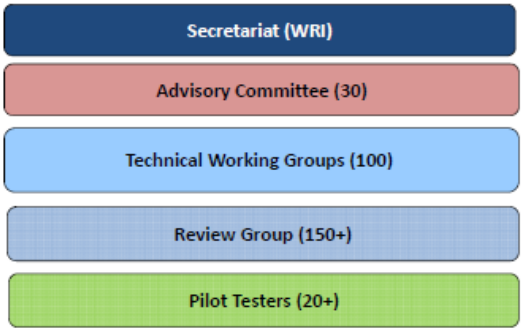
With respect to the approach, the participants agreed that different methods are utilized to prioritise and select NAMAs depending on the criteria selected. For some countries, an LEDS-based approach is preferable, for others, the two-stage approach or the yes/no criteria and more/less criteria.

It was recommended that the enabling factors could be weighed depending on the situation of each country.

Yamide Dagnet (WRI)

"Ex-ante assessment of NAMAs: Overview of WRI GHG Protocol Mitigation Accounting Standards"

NAMAs have been framed in terms of projects, policies, and goals. For the purpose of GHG reductions quantification in projects, there exist methodologies e.g. under the CDM, which provide detailed guidelines on how to calculate and verify emission reductions. Unfortunately, no international guidelines exist for quantifying GHG reductions from policy-based NAMAs or goal-based NAMAs. Therefore, WRI is developing a Policy and Action Standard and Mitigation Goals Standard, building on work done in the context of WRI's GHG Protocol for companies developed in the last 15 years.

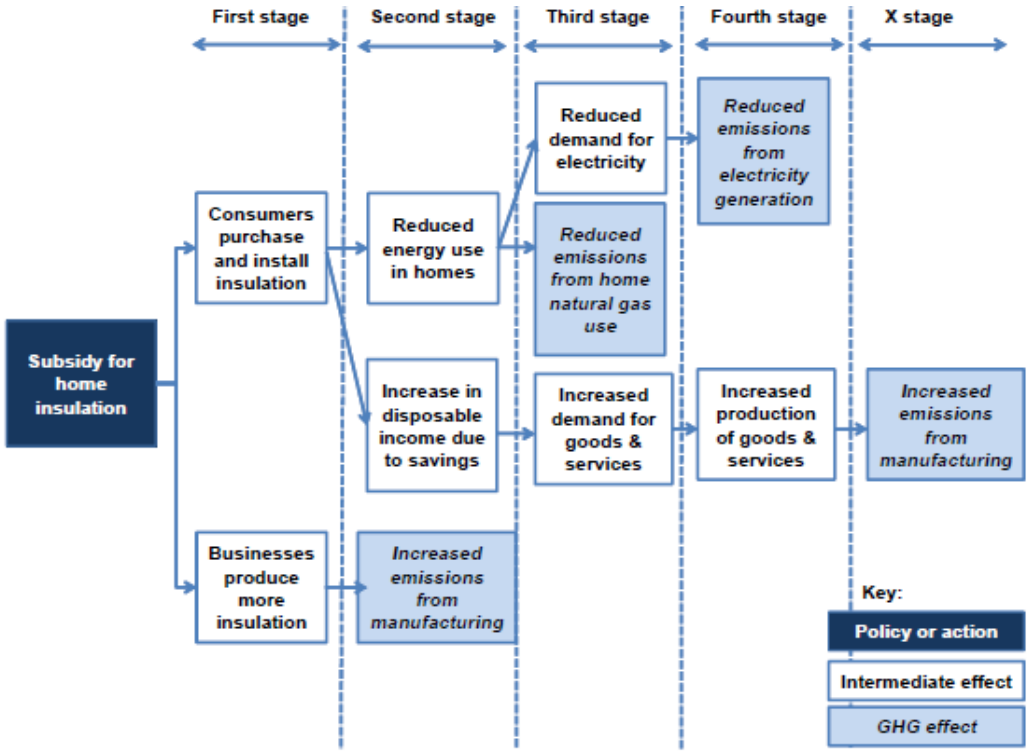


In order to provide further details on the two new standards, Ms. Dagnet presented a comparison between them. In general, the Policy and Action Standard provides guidelines on how to estimate GHG effects from specific policies and actions (e.g. NAMAs), while the Mitigation Goals Standard gives instructions on how to assess and report progress toward national, sub-national, and sectoral GHG reductions goals e.g. absolute reduction from base year, intensity-based goals, etc.

Ms. Dagnet also provided the participants with an overview of the development process of standards. She mentioned that the standards are being piloted in 20 countries around the world, with the contributions of an Advisory Committee composing governments (e.g. the Department of Environmental Affairs of South Africa, etc.), banks (e.g. Asian Development Bank (ADB), World Bank (WB), etc.), consultants, NGOs, etc. totaling 30 members.

The purpose of the Policy and Action Standard is to guide users with regard to the following questions: "What effect is a given policy or action likely to have on GHG emissions before implementation (ex-ante assessment)?", "How to track progress of given policy-based NAMA during the implementation?" and, after the implementation, "What effect has a given policy-based NAMA had on GHG emissions?". According to Ms. Dagnet, the focus of the Standard is to correlate changes in GHG emissions to specific policies and actions, rather than other factors that affect emissions.

The assessment goes through four steps (see picture); the two most important steps are **identifying the effects of policies and actions** considering all types of effects e.g. intended effects and unintended effects, short-term effects and long-term effects, etc., and **quantifying** them.



During the discussion, participants asked how much could be quantified in terms of emissions based on the methodology. Ms. Dagnet explained that it depends on how much data there is. Sometimes there isn't enough data to do a proper assessment, and so it is almost impossible to quantify emissions. Sometimes a cluster of policies has to be considered, and a cluster of outputs is the result. The approach will generate not only quantitative data, but also qualitative data. Another participant asked whether the standard can be kept open. The speaker responded that the standard is voluntary, so if a country has its own proper set of guidelines, it is not necessary to use the standard.

Manish Shrivastava (TERI)

"A Framework to Facilitate Design and Evaluation of NAMAs at the National Level"

In his presentation, Mr. Shrivastava provided the participants with an overview of three main issues:

- key steps in the NAMA cycle,
- identifying constituent elements defining national appropriateness, and
- facilitating a choice of the most 'appropriate' mitigation action from a broad spectrum of options using a multi-criteria evaluation framework.

In general, a NAMA cycle has ten key steps, including data collection, policy interaction and cost analysis. Among them, the two most important steps are defining a policy or an action and identifying effects and mapping causal chain.

The need for a framework derives from the fact that instruments that work well in one country may not work in another country with different social norms and institutions. Mr. Shrivastava stated that each NAMA should be a policy making exercise and so would need to rely on institutional arrangements in a country. A multi-criteria approach is unavoidable because it captures the complexity and multiplicity of perspectives that are central to environmental decision-making and provides comprehensive, participatory and qualitative assessment. On this basis, a NAMA Evaluation Framework has been set up in India. The Framework is composed of criteria clusters scored using weights and preference (-1, 0, +1). It is supplemented with readiness assessment regarding capacity of stakeholders, resource availability and governance framework.

Role-play: How to prioritise NAMAs in a real-life political setting

The role-play was conducted by Axel Michaelowa and Stefan Wehner (Perspectives) and Yamide Dagnet (WRI).

The exercise aimed to highlight the basic criteria that can be used for prioritisation of NAMAs, and the potential diverse perception and valuation by different stakeholders.

The participants were split into five groups representing different ministries and one NGO in a fictitious state of “LowerCarbonia”, a fast advancing developing country with a rapidly changing economy and industry on one hand, but also a poorer region with limited access to electricity/modern transportation etc. on the other hand. There is substantial wind and solar power potential on the coast, whose cost is higher than those of coal power currently dominating electricity supply. There are frequent power outages due to an electricity demand surplus. In order to prevent public unrest, electricity and fuel prices are subsidised.

The participating groups were:

Group 1: Ministry of Electricity (representing the power sector and utilities)

Group 2: Ministry of Transport (representing the transport sector)

Group 3: Ministry of Economics (representing the industrial sector)

Group 4: Ministry of Environment (DNA/NAMA coordinator/UNFCCC communication). The Ministry’s role is to provide general guidance to the NAMA development process and coordinate all stakeholders involved ensuring consistency with national government policies, or in other words, effectively mobilising multiple ministries in the design of the NAMA, and getting line agencies to support mitigation actions under the NAMA, and administering financial resources independently of the general state budget.

Group 5: National Non-Governmental Organization (NGO) called EMPONGO – “Empowering NGO” in “LowerCarbonia”

Each group had 20 minutes to respond to specific tasks assigned by the facilitators. After that the participants had 30 minutes to discuss the results. Group 4 moderated a roundtable discussion between the Ministries including the NGO as a stakeholder. The discussion aimed to achieve a common agreement on 3 potential NAMAs and a set of evaluation criteria.

Each group presented its activities and its set of criteria and tried to reach an agreement on the decision support tools and the criteria for prioritizing the NAMA ideas.

The results of the exercise are described in Annex III.

Ann Gan (National Climate Change Secretariat, Singapore)

From NAMA selection to the definition of pledges: "Singapore's NAMA – Journey to a Pledge"

Ms. Gan brought along to the Summer School a case study of a NAMA in Singapore. According to the speaker, a NAMA is actually an Emissions Reduction Pledge. It is used to undertake mitigation actions leading to a reduction of GHG emissions by 16% below BAU levels by 2020, in the case of Singapore, contingent on a legally binding global agreement in which all countries implement their commitments in good faith. Although a legally binding agreement has yet to be achieved, Singapore will nonetheless begin to implement the mitigation measures.

Ms. Gan said Singapore targets 7-11% reduction in GHG emissions below BAU levels by 2020. Singapore's mitigation measures include improving energy efficiency, greening fuel mix, and adopting low-carbon technologies, and there are being applied in various sectors like power generation, waste/water, households, buildings, transport and industry. In order to implement these measures, effective tools such as policies, capacity building and incentives, will be used.

Ms. Gan also introduced key elements to build a pledge in the particular case of Singapore. She spoke about the government's approach towards setting the pledge. The approach involves various agencies and activities, and especially the engagement of stakeholders.

The journey to the pledge, as she called it, is also paved with projections, in which the government set a definite percentage of emission reduction for each sector, for example, industry has a 60.3% target and buildings 13.8%. The setting-up process also involves prioritisation and consolidation, and leadership and political will. She also provided three typical sector examples for the mitigation measures to illustrate her presentation: the fuel-mix switch and mitigation measures in the transport and the building sector.

Ms. Gan finally told the participants the benefits of a pledge: responsibility, action guiding, common goal across sectors and mainstreaming of climate-change priorities.

Maritza Jadrijevic (Ministry of Environment, Chile)

From NAMA selection to the definition of pledges: "NAMAs in Chile"

In Chile, the NAMA concept started in October 2010 under a process where different ministry representatives wanted to identify NAMAs for sectors with higher emissions.

After this initial process, the Ministry of Environment and the Ministry of Foreign Affairs launched a process of international fund-raising to support the development of NAMAs in Chile.

Ms. Jadrijevic said that a key element to successfully raise international funds is to have a minimum level of national co-financing (public and/or private). It is important that the Chilean Government shows to the international community that the country can provide at least half of the national resources needed to reduce emissions by 20% by 2020.

MRV systems for domestic NAMAs are also being developed in Chile so that such NAMAs could be inscribed in the registry of the UNFCCC. Ms. Jadrijevic spoke about various NAMAs in different sectors submitted to UNFCCC NAMA to seek support and recognition, e.g. a forestry NAMA and a waste management NAMA, among others.

NAMAs in Chile have their own criteria for selection, and they are based on several criteria: the potential for emission reduction, institutional capacity, and stakeholder engagement, among others.

Murray Ward (GtripleC)

"NAMA Finance"

Mr. Ward opened his session with some questions to the participants:

- Who has never borrowed money?
- Who has never been an investor?
- Who makes a 100% payment using sources from banks or financial institutions?
- Who pays with his/her own money?

Mr. Ward expressed concern about the definition of NAMA finance. There is no agreed definition for climate finance, especially NAMA finance.

Climate finance with regard to the UNFCCC, for National Adaptation Programmes of Action (NAPAs), NCs and adaptation and mitigation activities, comes from GEF, including the Special Climate Change Fund; Adaptation Fund; a range of donor country group funds via MDBs (e.g. CIFs); and a wide range of bilateral flows, direct and via Bilateral Financial Institutions (BFIs).

In the Copenhagen and Cancun Agreements, developed countries committed to a goal of mobilising 100 billion USD per year, by 2020 to address the needs of developing countries. This funding would come

from a variety of sources, public and private, bilateral and multilateral, including alternative sources of finance. A significant portion of such funding should flow through the Copenhagen Green Climate Fund. Mr. Ward emphasized that investment needs – in just the energy sector – are of the order of trillions of USD and illustrated this with the total global investment for power generation in a 450 ppm concentration stabilisation scenario.

For elaboration purposes, the speaker provided the participants with some illustrative statistics. Current climate finance has been estimated at 343 -385 billion USD (2010/11) per year globally, with mitigation finance accounting for 35 billion USD, of which 70% is private finance. Participants questioned these figures, which come from an extremely broad definition of climate finance by the Climate Policy Initiative in Venice.

Mr. Ward also introduced the main NAMA finance instruments: grants; loans (debt finance); equity (investors); guarantee facilities; insurance facilities which offer political, policy, and technology risks; debt relief; and carbon finance, including new market mechanisms. NAMA implementation finance is so far restricted to the recently set up NAMA Facility (to which the German and British Governments are contributing) containing €70 million of funding to support developing countries with implementing ambitious climate protection measures (NAMAs).

During the discussion, participants raised concern about the risk management of mitigation investments and emphasised the importance of getting investments and said the government could lower or increase the risk. Mr. Ward explained that all risks accumulate on the side of mitigation investment and the government can intervene with various policy instruments such as guarantees, and policies that move some of the risk to the highly emitting investment options and lower the ones for mitigation technologies. This however, requires that the underlying technology costs are the same, which is not yet the case with many mitigation technologies.

Stefan Wehner (Perspectives)

"The Mexican Housing NAMA finance"

Mr. Wehner presented a case study on NAMA housing in Mexico. The objectives of the NAMA development were to reduce GHG emissions from residential buildings.

NAMA support was made available by the German Ministry of Environment (BMU) and implemented by GIZ. The local executing agency was the Mexican Ministry of Environment and Natural Resources (SEMARNAT).

The housing NAMA in Mexico was the world's first in the new housing sector, aimed at effectively contributing to GHG mitigation in the medium

to long term. Mr. Wehner spoke about the main elements of the sustainable housing NAMA e.g. sector, emission reduction, NAMA timeframe, NAMA type, etc.

He went into the details while presenting the technical design and financial scheme of the "sustainable housing NAMA". The housing NAMA considers primary energy demand (electricity and gas) in kWh/m^2 plus water consumption based on the "whole house" approach.

At the end of the presentation, Mr. Wehner provided an updated financing structure of the sustainable housing NAMA in Mexico. Mexico is the first country to access the World Bank's Clean Technology Fund (CTF) via a NAMA for sustainable housing.

In the Q&A session, a participant asked whether Mexico is using credits to meet its pledge. Mr. Wehner explained that credits are not included because predating the NAMA was a CDM Program of Activities (PoA) that did not achieve validation. The NAMA is now in the implementation stage. Some pilot houses are already built. In 2012 they drafted the MRV concept for this NAMA.

Group exercise – Identification of financing sources and mechanisms for a NAMA

The group exercise was facilitated by Axel Michaelowa and Stefan Wehner (Perspectives) and Murray Ward (GtripleC).

The participants were given an assumption where they were provided with three example NAMAs:

- Renewable energy feed-in tariff
- Subsidy for residential energy efficiency improvement
- Programme for methane destruction from landfills

They were required to select the most appropriate financing mechanism for implementing the NAMA from the following list, enumerating the three most relevant advantages and disadvantages:

- State budget (tax revenues)
- New, earmarked domestic finance sources
- Grants by industrialised countries/MDBs
- Concessional loans by industrialised countries/MDBs
- International climate funds (GCF, CIFs, etc.)
- New market mechanism (NMM/FVA)
- Combination of the above (specify mix)
- Others

The participants were divided into four groups. Each group had 25 minutes to discuss and write down their results on the board. After that, they presented their results for comments. The detailed results of each group are described in Annex III.

The outcomes of the exercise showed that there were different financing sources relevant to each project type e.g. state funding/grants from developed countries for renewable energy feed-in tariff, concessional loans from developed countries for subsidy for residential energy efficiency improvement, and new market mechanism for the programme for methane destruction from landfills. It was also recommended a

combination of financing sources from the new market mechanism, international climate funds (ICF) and state budget depending on the scale of the project.

The participants also acknowledged that each financing source/mechanism has its own advantage and disadvantage. For instance, the disadvantages of grants from developed countries are risks, certainty of fixed price and importantly the money does not come back to the carbon seller; or continuity with state budget or no certainty beyond loan period in case of concessional loan.

Thapelo Letete (Department of Environmental Affairs, South Africa)

"Carbon Tax in South Africa"

Mr. Letete gave an overview of the policy background for carbon tax in South Africa. The key feature of the policy is to recycle the tax using an approach of wide-range and mixed measures that optimise mitigation, as well as other sustainable development benefits. Furthermore, the approach also uses economic instruments, including appropriate pricing of carbon, economic incentives and use of emission offsets.

The speaker emphasised the primary objectives of the carbon tax policy. The policy is expected to facilitate a fair and viable transition to a low carbon economy and also to correct market failure because the costs of pollution are not reflected in the costs of goods, for instance.

The design of the carbon tax is characterised by self-assessment, verification by the government, and a percentage-based threshold, below which, tax is not payable for the first 5 years. It is expected that the carbon tax will be introduced in 2015 at R120[2] (approximately, 12 USD) per tCO_2e, and increase at 10% per year through 2019.

Mr. Letete also spoke about the revenue recycling and transitional support measures, some of which measures are proposed to overcome market failures and incentives are provided for the poor through free electricity.

Asked how to control total GHG emission and how to avoid the double counting, Mr. Letete explained that the government might promulgate relevant provisions to control the GHG emissions. A participant suggested that the carbon tax should be linked with an offsetting system. Another participant asked what the criteria for the revenue recycling are. Mr. Letete explained that it is still at a "hold on" stage and represents a big challenge for the government with regard to its objectives.

Sebastian Wienges (GIZ)

"NAMA Financing Options"

Mr. Wienges started his presentation with the expectations and the reality of NAMAs. He stressed that only a small part of the 100 billion USD pledged for climate finance would consist of grants and public

[2] South African Rand (currency)

money. Therefore the largest part of NAMAs needs domestic financing, he said. This point of view triggered a hot debate among the participants. A participant argued that if the majority of NAMAs need to be financed by developing countries, it would be inconsistent with the outcomes of the UNFCCC negotiations to date.

Mr. Wienges added the leverage and mobilisation of private investments as needed concepts, especially with regard to the huge sustainable development co-benefits of NAMAs.

In his presentation, Mr. Wienges also mentioned the following findings:

- The availability of needed financial sources
- NAMAs are perceived as nothing substantially new
- Appropriate financing instruments for allocation to (sectoral/national) investment programmes exist.

As for the accessibility of climate finance, international climate financing instruments along the whole cascade exist. However, they are not equally available in all regions and countries, and not all instruments are equally accessible.

Finally, Mr. Wienges gave an overview of leveraging private-sector finance for NAMAs. It is important to understand local barriers to private sector investment. He said to lower risks for investors and assure appropriate returns to attract private capital, NAMA resources could be used (via financial intermediaries), for example, to lower development costs of investment projects under a NAMA through technical assistance; reduce the cost of capital through equity and debt co-financing instruments; cover the incremental costs of financing the riskier aspects of investments; lower risks through credit enhancement, etc. Such mechanisms can further bring down market barriers, bridge financial gaps and share risks with the private sector.

Anna Pia Schreyoegg (German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety - BMU)

"International NAMA Facility"

The international NAMA Facility was announced by the German and British governments at COP-18 in Doha 2012. The two countries provided 70 million euro in initial funding, but the facility is open to other donors. The first call for NAMA Support Project Outlines was published on July 10, 2013, and closed on September 2, 2013. The first NAMA supported by the facility will be low carbon housing in Mexico.

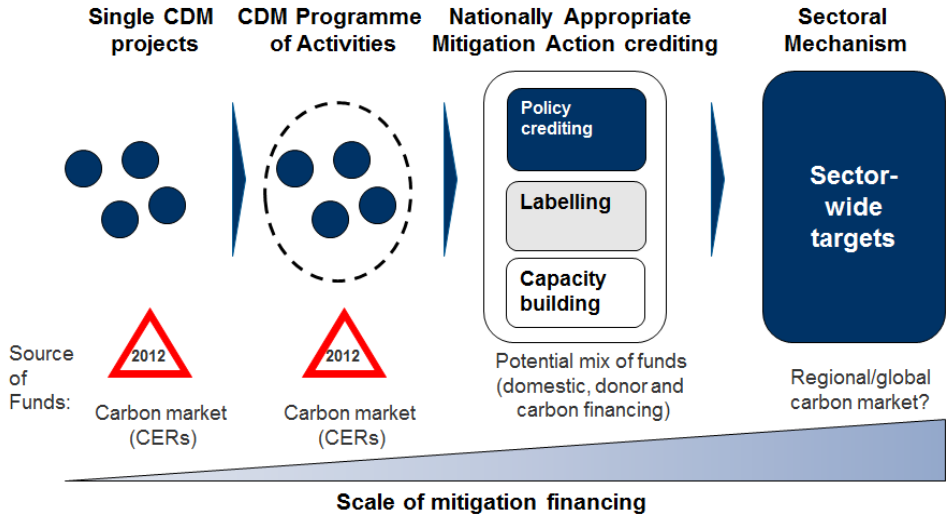
Ms. Schreyoegg stressed that the International NAMA Facility envisages enlarging the ambition to close the emission gap and address the lack of NAMA climate finance, demonstrate a framework for providing tailor-made climate finance for developing countries in the field of mitigation, and generate lessons for the further development of international climate finance.

The Facility provides support by various means including financial support instruments (e.g. grants, concessional loans, and guarantees) and technical cooperation instruments (e.g. capacity building).
Ms. Schreyoegg provided the participants with information about the selection of the NAMA support projects. She explained in detail the process of selection, eligibility criteria, and ambition criteria.
During the discussion, the issue of potential conflict of interest was raised, since the International NAMA Facility requires proposals to be organised by implementing agencies that have experience in Official Development Assistance (ODA) disbursement. Ms. Schreyoegg stressed that independent experts are in charge of evaluating the proposals.

Axel Michaelowa (Perspectives)

"New Market Mechanisms"

Since 1990 the market mechanisms have seen strong shifts in fortunes. The degree of support for the mechanisms has changed over time. It has declined massively in the last years.
Mr. Michaelowa shared experiences from the Kyoto Mechanisms. According to him, CDM has achieved overwhelming numerical success with 10,000 projects and billions of CERs, but some sectors have been sidelined. He added that International Emissions Trading stalled due to mistrust of buyers by government sellers. Mr. Michaelowa also mentioned another mechanism of KP, Joint Implementation (JI), which is a latecomer due to late institutional decision-making and lack of trust in governmental ERU transfers. The reason is that clear incentives for the private sector and limited government interference determine the success of the market mechanism.
New Market Mechanisms (NMMs) have seen a lot of negotiations since 2009. It is expected that NMM rules will come out soon. Like other mechanisms, NMM also have their own criteria, and the speaker presented them.
Mr. Michaelowa guided the participants through the transformation of the CDM into NMM. It started from single CDM projects and evolved to sectoral mechanisms. He provided a graph to help participants get a clear picture of it.



He went into detail with sectoral mechanisms with no-lose target, which has no penalties in case the target is missed in a given crediting period, and credits are issued in case the target is exceeded.

The speaker also expressed his concern about the incentive problems in sectoral mechanisms. Incentives for specific emitters are diluted through no-lose targets and the increase of emissions without negative consequences. Mr. Michaelowa stressed that different mechanisms should coexist depending on their appropriateness for specific sectors. Sectors with widely dispersed small emission sources could use highly aggregated mechanisms, whereas large emitters should continue to use project-based mechanisms.

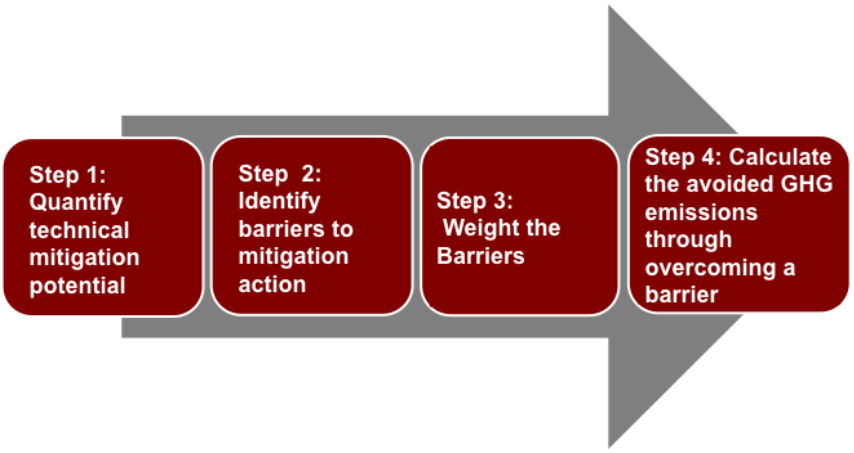
Sebastian Wienges (GIZ)

"Barriers-to-Objectives-Weighting method"

Mr. Wienges introduced a method that quantifies sustainable and transformational mitigation impacts, or impacts reflected by qualitative indicators.

During the presentation he was asked: "How can we quantify what we are actually doing in terms of impact?" In his view, if these impacts are to be taken into account for future policies, we somehow have to quantify them.

In this sense, GIZ proposed the **"Barriers-to-Objectives-Weighting" (BOW) method** that follows 4 steps:



The last step refers to the quantification of what possibly will contribute to the mitigation action, the **transaction cost for fulfilling the mitigation potential**.

In conclusion, what the method is trying to quantify are the costs to be avoided in the future. It is an ex-ante method trying to measure the mitigation actions at the same time that they are being measured.

During the discussion, the participants exchanged views on the following issues:

- Barriers assessment: when doing the assessment it is crucial to identify the barriers, their importance and measures to overcome them.
- Importance of the right indicator and parameter that considers the barrier to be overcome.
- The preference for using guidelines instead of standards like CDM, due to the support received for the guidelines compared to the standards.

Patrick Bürgi (South Pole)

"MRV Standards and metrics for GHG emissions and co-benefits"

Mr. Bürgi presented a brief overview of the scope of MRV systems under the UNFCCC, including GHG emission levels (National inventories), and mitigation actions (NAMA and mechanisms such as CDM/JI). He said that beyond these two main categories, there are additional parameters more relevant to NAMA implementing agencies but also important for MRV systems that can be done on the ground. These parameters include support measures such as: finance, capacity building, technology, etc.

Mr. Bürgi highlighted that "*it is easy to quantify NAMAs that have direct impact, but when we talk about policy frameworks, technology transfer, then the impacts are more indirect and these impacts are more difficult to measure and quantify*".

He provided answers to the questions Why, What, Who and How, regarding the MRV Design:

- WHY? Because it facilitates decision-making, at least in the context of the donors' perspective but also for local stakeholders wanting to know how well governments are doing.
- WHAT? The MRV that allows you to measure parameters that have to be run before measuring a NAMA: GHG mitigation, co-benefits, transformational changes.
- WHO? NAMA implementing agency, participants from private and public sector, national/regional governments, verification entities, donors.
- HOW? NAMAs can take many shapes but a common umbrella of guidelines should follow these principals: completeness, comparability, transparency, consistency and accuracy.

Mr. Bürgi also spoke about the 3 pillars of an MRV system and their key considerations in the Measuring stage, the **definition of a baseline** according to certain parameters and the **compatibility of targets to be measured**. For the Reporting stage, it is important to consider to whom we are reporting, the level of aggregation, data confidentiality and how easy it would be for a verifier to go through the report. For the Verification stage it is important to define which information is to be verified and the purpose and need for verification.

The presentation led into an overview of MRV standards, highlighting that the closest of these standards to NAMAs were the WRI/WBCSD's guidelines. Other standards named under the GHG category were the CDM/JI methodologies, the IPCC inventory guidelines and the GHG Protocol among others. with regard to standards for co-benefits, the ones followed by Gold Standard, Social Carbon and the Community, Climate and Biodiversity Standards (CCBS) were introduced; and from a broader M&E Standards the GIZ Barriers-to-objective weighting method (BOW) was also mentioned by GIZ in another presentation.

Finally Mr. Bürgi introduced the "cooking recipe" for GHG quantification, in 5 steps: boundary definition, determining the baseline, assessment of the risk of leakage, definition of monitoring parameters and collection of data. After this, some examples of MRV parameters and metrics for **GHG based on fictitious NAMA** and for **co-benefits** were presented.

Group exercise – Deciding on MRV approach for a NAMA

The group exercise was facilitated by Patrick Bürgi (South Pole), Sina Wartmann (R-AEA) and Gonçalo Cavalheiro (CAOS).

The participants were divided into three groups. Each group played the role of a NAMA implementation agency in Upper Carbonia submitting a NAMA proposal to a potential donor. The group was required to describe the main features of the MRV system of its NAMA. The proposed NAMA has the following characteristics:

- the NAMA aims to implement a large number of decentralised biogas generation facilities within the agricultural sector, using agricultural residues to produce electricity
- the biogas generation facilities are to be operated by the private sector
- the NAMA implementing agency will provide loans at favorable conditions for the construction of the biogas generation facilities. Loans will be given by a number of local banks

- the NAMA will exclusively support biogas-generation facilities that produce only electricity (no thermal energy generation is envisaged under the NAMA)
- the power produced may be used for own consumption (e.g cooling of agricultural produce) or fed into the grid
- a study conducted prior to the NAMA indicates that emission reductions due to methane avoidance (related to the use of agricultural residues such as manure) or methane project emissions due to potential leaking of biogas from the reactor are similar in size and rather small; therefore GHG emission reductions to be monitored are related only to renewable electricity generation (methane baseline or project emissions are excluded)
- electricity supply in rural areas is not very reliable and will benefit from decentralised electricity generation by the NAMA
- the NAMA would benefit from international support to scale-up its operation

Based on the information provided, each group was asked to fulfill the following specific tasks:

1. Define the most important indicators to be monitored as part of the MRV system. The indicators should address GHG reductions as well as co-benefits, negative impacts and transformational change (if applicable)
2. Describe very briefly the following aspects for each indicator:
   - Data collection method
   - Data source
   - Data collection frequency
3. Who are the main actors involved in the monitoring and what are their roles and responsibilities?
4. Describe one possible approach for verification of the monitored and reported information: Who carries out the verification and what should they do?

The results of the exercise for each group are described in Annex III.

The participants agreed that the main features of the NAMA MRV system with regards to GHG reductions and co-benefits should include quantity of electricity generated, quantity of waste, number of jobs created, renewable share in electricity mix and number of outages.

The groups also emphasised that the main players of the proposed NAMA should include grid operators, Designated Operational Entity (DOE), banks, and NAMA implementing agencies and others.

In conclusion, there were two approaches in deciding the MRV system for a NAMA. Firstly, the MRV system could be designed from a policy perspective. Secondly, it could be established based more on a CDM project perspective. In this case, it was recommended that care be taken about how the data would is collected, measured, implemented and verified.

Sina Wartmann (Ricardo-AEA)

"MRV system at different aggregation levels"

Ms. Wartmann introduced the objectives of MRV, the top-down versus bottom-up approaches, the standardisation and coordination and an example of MRV done by the UK administration.

The main objectives of the MRV are: to achieve transparency by measurement of indicators and understanding where we are and what we have done (i.e. if the implementation measures have worked), to obtain specific impacts of our mitigation actions (co-benefits, transformational change, negative impacts, costs) and to have a system in place that allows tracking.

MRV systems should be characterized by simplicity, timeliness, accuracy, transparency and confidentiality, relevance, flexibility and being built on a base of good communication and cooperation.

When presenting the top-down versus bottom-up approaches the speaker explained that the bottom-up approach starts from the measures and aggregates to form the big picture (providing more detailed information), whereas the top-down approach starts from the big picture and analyses the impacts of measures. The presentation also featured a bottom-up approach and its levels to discuss how the information can be aggregated, the data can be continuously reported to the agencies or different donors and to how to be sure that the data is MRVed properly and that there is no overlap or gap remaining.

The speaker emphasised that to be sure of all these factors and obtain a meaningful result it is necessary to assure that the **data is comparable**, the information is of the same type –using the same units- and overall, that the data is based on the same assumptions and is free from overlaps. In order to fulfill these requirements it is not necessary to disaggregate everything to the last level; there are limits to comparability and there are good alternatives, according to Ms. Wartmann. She explained that we would ideally have a final number to assess the effectiveness of measures, but if this is not possible we can look at:

- how GHG emissions have developed (inventories: emission curves)
- how other effects have developed (air quality, job creation,…)
- whether a mitigation measure was successful (policy design; and then with your ex-post estimation, you will get back to the measure to see how it has evolved)

And this assessment **increases comparability through standardisation and strong coordination**.

As a final point, Ms. Wartmann gave two examples: one related to data comparability among devolved administrations in the UK (England, Scotland, Wales and Ireland); and another to MRV of the UK Climate Change Act and how to meet carbon budgets[3].

In summarising Ms. Wartmann said there are limits to comparability but there are also good approaches that can be used. The combination of a bottom-up and a top-down approach gives good insights.

[3] Further details on the report: "Meeting Carbon Budgets – 2013 Progress Report to Parliament" from the Committee on Climate Change, June 2013. www.theccc.org.uk/publication/2013-progress-report/

Stephen Mutua King'uyu (Climate Change Secretariat; Ministry of Environment & Mineral Resources, Kenya)

"National Policy Instruments – Experiences from Kenya"

Mr. Mutua King'uyu presented a case study on Kenya's experience in the establishment and implementation of national climate change policy instruments.

The National Climate Change Response Strategy (NCCRS) was launched in 2010, which was already presented in Copenhagen in 2009. The National Climate Change Action Plan (NCCAP) operationalises the NCCRS; there were consultations at different levels – national and country level consultation workshops with different stakeholders: Government, private sector, academia, civil society and other stakeholders. He also spoke about the Kenya's Climate Change Action Plan (KCCAP) components.

After Copenhagen, there was a **need to enable policy and regulatory frameworks.** The "enabler" was the National Climate Change Action Plan endorsed by the Cabinet in February 2013, which included the subcomponents of the National Performance & Benefit Measurement, the Knowledge Management & Benefit Measurement and Finance.

Kenya's potential areas for NAMA development are forestry, which has the biggest potential; electricity; transportation, energy demand; agriculture and industrial process.

Considering the abatement potential, Kenya is now prioritizing NAMA for 2030 as follows, i.e. restoring forests on degraded lands (32.6 $MtCO_2e$), geothermal energy (14.1 $MtCO_2e$), reforestation of degraded forests (6.1 $MtCO_2e$).

Mr. Mutua King'uyu also presented Kenya's Conceptual MRV and Framework with a GHG Inventory Component and the proposed MRV and Governance structure. The salient features of the proposed MRV system are: (1) an integrated framework for MRV of mitigation and adaptation actions, (2) a common place for national/sub-national planning and monitoring, (3) simplified coordination/governance to minimise the need for extra staff. Some of the challenges that the government is facing are with regard to:

- Obtaining baseline information,
- Institutionalisation and coordination
- Ownership within government and stakeholders
- Adequacy and timely funding
- Aligning the donor preferences with national priorities
- Capacity development and knowledge management
- Public awareness versus misinformation, etc.

To conclude the presentation, Mr. Mutua King'uyu listed some important issues involved in designing and implementing national policy instruments, such as the need to meet national goals and priorities, local availability of technology, a strategy for capacity building, stakeholder involvement, and knowledge sharing platforms, among others.

During the round of questions, Mr. Mutua King'uyu stated that in the agriculture sector they are trying the adaptation and mitigation aspects of MRV system. As for the development of NAMAs, they are working on 4 mitigation momentum programs. Kenya decided to go ahead with what it can fund and start first, without waiting for the funding because it could take long and possibly even overcome the actions planned for the present legislation.

Mr. Mutua King'uyu was also asked whether he knew what was happening in neighboring countries such as Tanzania, Uganda, Ethiopia in the MRV space, and if they were applying the system like Kenya. Mr. Mutua King'uyu replied that Kenya is the only country that has a Climate Change response strategy; nonetheless, his opinion was that there is a common ground among the countries and some of them are moving at good speed.

Group exercise – Stakeholder consultation on deciding on an MRV approach for a NAMA

The group exercise was facilitated by Patrick Bürgi (South Pole), Sina Wartmann (R-AEA) and Gonçalo Cavalheiro (CAOS).

Continuing with the task initiated in the Group exercise "Deciding on MRV approach for a NAMA", the participants were involved in the next stage of development of the renewable energy NAMA, focusing on power generation through decentralized biogas generation facilities. This includes a stakeholder consultation process.

The participants played different roles within their groups - including an NGO, a donor, a Ministry of Environment, and the operators of plant - to prepare for and attend the stakeholder consultation meeting related to the MRV system. Their tasks were to develop a position on how the MRV system should look with regard to the indicators to be used and how these indicators should be measured, reported and verified.

Each group was given several minutes to discuss and they presented their results in a plenary session. The detailed results are described in Annex III.

The participants came up with different indicators from different perspectives linked to the role they were playing in the group exercise (NGO, Donor, Government and operators of a plant). From the perspective of the Ministry of Environment, the minimum indicators should include quantity of electricity generated, number of plants installed in total, mix of energy, GHG emission reduction, loans granted, among others. These indicators could be monitored through website, annual update, special report to the community, etc.

It was also recommended that a committee consisting of all stakeholders should be established to do the monitoring twice or more often a year. The process should be simplified in order to the reduce burden on the operators while the minimum data to be collected is still assured.

Hanchang Choi (Ministry of Environment)

"MRV system in Korea"

Mr. Choi presented the country circumstances of Korea and how – as an OECD member and G20 host country – it has the will to join global efforts to reduce GHG emissions. This was the main reason why Korea needed to prepare an active mitigation plan.

Over the past 17 years Korea experienced a rapid increase in emissions due to industrial development focused on manufacturing; it had a 103% increase in emissions between 1997 and 2007, the highest rate among OECD countries.

Mr. Choi said the midterm GHG emission target for Korea is 30% below BAU by 2020, in line with the IPCC's recommendation for developed countries (25-40% reduction from BAU).

He also spoke about the mandatory Target Management System (TMS) covering 63% of national GHG emissions and 580 business entities overseen by 4 government agencies (MOE: Waste, MOTIE: Energy, Manufacturing, Industry, MLT: Building, Transportation, MIFFAT: Food).

TMS data is managed by management and verification agencies. The GHG emission volume of each controlled entity is verified by the verification agency, which then is submitted to the management agency for further verification and finally confirmed by GIR (the registry) for approval.

Mr. Choi also introduced the National Inventory System of Korea and its institutional arrangement, with the National GHG Inventory Management Committee. The National Inventory Reporting System (NIRS) is currently being developed as a sub-system for the existing National GHG Management System (NGMS). This system has built-in verification.

Gonçalo Cavalheiro (CAOS)

"Different types of pledges and their implications in the context of the ambition gap"

Mr. Cavalheiro started his presentation by asking the participants how much they would be willing to contribute for the acquisition of a chocolate cake, knowing that the perfect cake costs 100 USD.

Through this exercise he wanted to explain that sometimes it is difficult to know where countries stand, with their pledges, considering the cake as the pledge a country wants to fulfill. Since Copenhagen, countries have pledged to reduce GHG emissions according to their national circumstances to contribute to the 2ºC goal: developed countries were requested to **pledge economy-wide targets** while developing countries were invited to announce **voluntary goals** and **NAMAs**.

Mr. Cavalheiro then presented the type of pledges that countries have been making (developed countries such European Union or the United States; and developing countries such as Brazil, India and China).

Pledges by developed countries incorporate an absolute emission reduction by 2020 compared to a base year, plus additional details on the reductions/mitigation actions. He also introduced the general common objectives[4] of these pledges (absolute reduction target, base year, coverage of sectors, coverage of gases and methodologies, conditions and assumptions and conditions used in carbon market units). The pledges of the EU and US were cited as an example and targets were compared based on their common objectives. Pledges by developing countries vary between a list of NAMAs (with and without ex-ante quantification of potential emissions reduction) and an emissions reduction goal (% reduction below a given baseline and % of reduction in the intensity of the economy).

Mr. Cavalheiro talked about the challenges brought by different types of pledges on two fronts:

(1) can efforts be compared? and (2) is this enough to bring us to a safe place? One quick example presented related to the comparability of efforts in developed countries regarding the choice of base year. Those countries choosing 1990 as the base year are looking for credits for their early action. Those choosing 2000 or 2005 as the base year were not so successful in reducing emissions in the 1990s. So the question here is: "How can we compare past efforts with current and future efforts?".

To conclude, Mr. Cavalheiro said that it is a reality that there are different types of pledges, but this is not necessarily a bad thing. In order to accurately assess and close the gap, we should convert pledges in a more common language: **define a set of minimum criteria that all pledges should address**.

[4] Further details in the UNFCCC Technical Paper – FCCC/TP/2012/5

Sarah Kuen (Belgium Federal Public Service-Public Health, Food Chain Security and Environment)

"State of play – Negotiations on guidelines for MRV of NAMAs"

The presentation started with an introduction of the "*SBSTA 10 – General guidelines for domestic measurement, reporting and verification of domestically supported NAMA by developing country Parties"*.

The concept of domestic guidelines has also appeared in the Cancun Agreement. The BUR guidelines require using it as part of their scope and as part of the mitigation actions. It is also included in the international presentation of ICA modalities and guidelines.

The basic principles that should be at the core of the guidelines are: voluntary, pragmatic, non-prescriptive, non-intrusive, country driven.

In the last COP in Bonn, there was already a first draft on the guidelines.

Ms. Kuen followed the session with the introduction of what has been discussed in the European Union. The principles of the guidelines are that they are supposed to be **voluntary**. They should be provided to countries that would like to use them in a way that it would be more appropriate for their contexts. These guidelines are considered important to the EU, the existing systems and the available methodologies. If the systems are not sufficient to meet the needs of the countries, the guidelines should be used to measure and focus on quantitative and qualitative data since the guidelines are supposed to set up the procedures of this data.

During the discussion, there was concern from one participant about how to make the guidelines operational. Practitioners are unsure about how to deal with domestic MRV, if there are specific methodologies and indicators that should be used. Ultimately, it was agreed that it is good to have some guidance and also this guidance will help evaluate how it is all going. Another concern among participants was how to link it to the BUR. Some countries have never reported what they are doing domestically. MRV for domestically supported NAMAs becomes a barrier for people doing NAMAs.

There was also a question about how to have guidelines that would apply to all NAMAs. Ms. Kuen responded that there is a clear recognition of the usefulness of these guidelines, so the level of detail could go quite far. However, this raised concern about the "burden and the imposition" of the guidelines. This may be then the concern about broadening the scope or keeping it more general. These are the dynamics that current efforts are facing.

Yamide Dagnet (WRI)

"Tracking of progress of mitigation policies and goals"

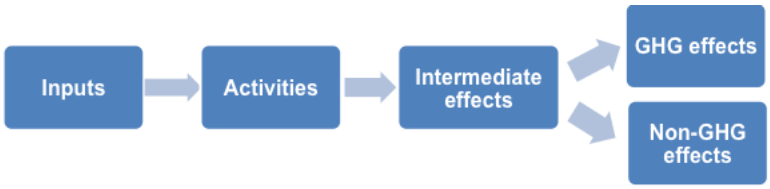
Ms. Dagnet started her presentation underlining chapters 10 and 11 from the Policy and Action Standard of the WRI GHG Protocol about "monitoring performance over time" (chapter 10) and "estimating GHG effects ex-post" (Chapter 11). The GHG Protocol addresses the following:

- assessment of GHG effect of policies (ex-ante)

- monitor progress during policy implementation,
- assessment effect of policies (ex-post),

speaking about MRV systems, she said it is important to see **who does what** (channels, instruments, collection of data, etc.). For this reason, performance indicators are key for tracking progress.

Ms. Dagnet also presented examples of indicators for a sample policy: home insulation subsidy program, and asked the participants to discuss about the inputs, activities, intermediate effects, GHG effects and non-GHG effects of such policy.



During the presentation, the **two purposes of monitoring performances** during policy implementation were listed:

1) to monitor trends in key performance indicators in order to understand whether the policy or action is on track, being implemented as planned and delivering the expected results.
2) to collect data on the various parameters needed to estimate ex-post policy scenario emissions in order to estimate GHG effects ex-post.

At the same time, she also explained **the purposes of the ex-post assessment:**

1) to evaluate policy effectiveness
2) to learn from experience to identify and share best practices and improve policy design
3) to evaluate the contribution of policies and actions toward GHG reduction
4) to ensure policies and actions are cost-effective
5) to report on the GHG effects of policies and actions over time

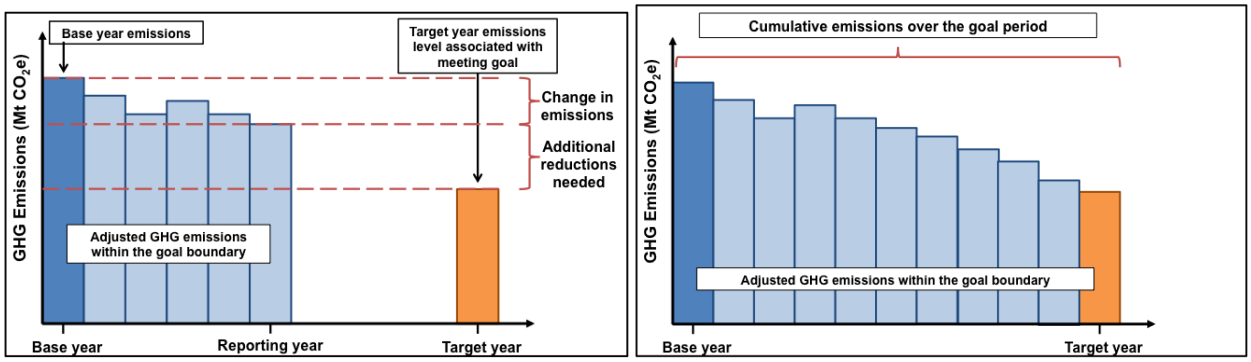
and the **steps for an ex-post assessment** illustrated in the following figure.

Ms. Dagnet presented examples of applicable ex-post methods, whether bottom-up or top-down, and the parameters considered (data availability, type of policy and sector, number of interacting or overlapping policies, number of actors influenced by the policy and capacity, resources and level of expertise).

A second part of the presentation focused more on **assessing progress during and after the goal period,** in other words, tracking and reporting progress of mitigation goals. One clear example of tracking progress towards the goal, the first approach, would be developing a GHG inventory. The first step for

tracking is to develop a GHG inventory for the reporting year. GHG inventories are critical to track progress of goals since they provide the necessary GHG emissions data. Ms. Dagnet also underlined the fact that **for countries**, inventories should be developed using IPCC methods, while for **subnational jurisdictions (e.g. cities and states)**, inventories should be developed using the *Global Protocol for Community-level Emissions (GPC)*, in addition to the IPCC methods.

Also, the user needs to adjust reporting year emissions within the goal boundary to account for the use of transferable emissions units and emissions from the land-use sector. The speaker illustrated the adjustment of inventory emissions with a figure (see figure below). She emphasised the four important aspects in terms of assessing progress during the goal period (first figure) and after (second figure).



Gonçalo Cavalheiro (CAOS)

"Tracking progress in Portugal"

Mr. Cavalheiro asked the participants a few questions during his presentation:

- Has consistency been maintained in the estimation of GHG emissions in the past 20 years?
- Have emission projections provided a solid basis for policy decisions?
- How has Portugal tracked progress?

Taking a look at all the emissions estimated for Portugal and presented in the NCs, it seems that Portugal is in good shape in meeting the Kyoto Protocol target. He presented the estimated emissions in different NCs compared to 1990, and it seemed that consistency has been maintained in the estimation of GHG emissions in the past years in Portugal.

As for the second question - if the emission projections provided a solid basis for policy decisions - Mr. Cavalheiro said that from an ex-post perspective, the tracking system in Portugal has been able to provide interesting information for policy-makers. However, they need more information to see how the future will be.

Mr. Cavalheiro also showed the participants the emissions estimated in Portugal's National Communications, which proves that emissions growth has been delayed over a decade according to the projections. What has been learnt from these numbers related to emissions?

- That tracking ex-post emissions has been a rather successful and consistent exercise
- That estimating emission projection has been a complete failure.
- That one big problem is that policy planning and decisions are made based on emissions projections.

Regarding the last question on how Portugal has been tracking progress, the speaker listed the following tracking progress systems:

1) The **National System for GHG emissions and Removals (SNIERPA):** establishes (by law) a set of institutional responsibilities and determines a QA/QC and a methodological development programme.

2) **Monitoring PAMs (Policies and Measures):** Portugal is using a program (www.cumprirquioto.pt) built to monitor implementation of measures adopted to meet Kyoto Protocol target.

3) **Projections**: Ad hoc teams, lead by consultants (including universities and research centers) with the active participation of key stakeholders (both public and private).

To conclude his presentation, Mr. Cavalheiro answered the questions he had started the presentation with:

- Tracking progress over time has maintained consistency over the past years.
- Emissions projections have not accurately foreseen actual emissions, thus they have potentially misled the decision makers.

In the Q&A round, a participant asked a question of all countries, not just Portugal, about whether a financial investment is required by a country in the process of responding to the comments of the Expert Review Team (ERT). Mr. Cavalheiro replied that there is always a cost to comply with Kyoto Protocol reporting: collection of new data, acquisition of satellite pictures, for the agriculture sector, etc. In such a situation, pressure from the ERT is helpful to overcome political unwillingness to spend money for reporting.

Another participant contributed from an inventory reviewer perspective adding that it is important to find the balance between cost and accuracy. It is useful that a country prioritises what can do, in terms of recommendations.

Neta Meidav (MRV Policy & Negotiations Lead, International Climate Change, UK)

"Double counting – fixing the loopholes"

Ms. Meidav made a presentation on double counting and its consequences, through the UNEP's gap report and political risks. She also explained the different types of double counting, how the loopholes are created, fixing the loops before 2020 and how the accounting regime will be after 2020.

Double counting, according to Ms. Meidav, occurs when an emission reduction effort (reflected as a quantified and measurable unit, either tradable or not) is counted more than once towards the UNFCCC goal of keeping global warming below 2°C. The consequences of that double counting are presented in "The Emissions Gap Report 2012" by UNEP. The Gap report says: "*The overall gap to mitigate a likely chance of being on track to stay below the 2ºC target is 8 to 13 GtCOe*" indicating that **a strict counting regime can reduce the gap by a third.**

Ms. Meidav then asked "What's at risk?" The political risks are mainly credibility of the pre-2020 regime and international carbon trading: for some countries, an opportunity for cheaper abatement, for others, a source of finance. With regard to types of double counting, there are a few sub-categories or practices of double counting that have a similar effect of cancelling the impact of an emission reduction effort by counting it more than once. This would particularly become relevant if mechanisms coexist under the Kyoto Protocol and outside of it, e.g. the Japanese Joint Crediting Mechanism.

Ms. Meidav also explained the loopholes from a narrow accounting perspective and from a more holistic one. The first perspective, the narrow one, looks at a particular set of rules, and determines whether these rules have been fulfilled, from a particular country's pledge / target perspective. She gave the example of double counting not occurring under the Kyoto Protocol perspective, since the Protocol does not consider non-Parties' pledges for the purpose of accounting. From a more holistic perspective, though, which takes into account what the atmosphere sees and considers all activities, which are aggregated towards the 2ºC goal, double counting occurs regardless of the type of target, pledge or Parties involved.

She asked the participants if they had **ideas about the pre-2020 regime**, within the constrains that we do not share the same accounting rulebook to either overcome double counting or fix the loopholes.

After a small debate among the participants, Ms. Meidav offered some options for technical and political fixes to double counting in the context of the existing pre-2020 regime:

1) Prohibition of double counting through non-UNFCCC contractual mechanisms.
2) Voluntary reporting of net unit flows by non-KP Parties - is there a space for that in the current reporting framework? (e.g. the BUR guidelines – Paragraph 12 (e) Annex 3, decisions 2/CP.17).

3) Is there a role for the ICA, and the "facilitative share of view", and at the same time the IAR and the "multilateral assessment"?
4) Convention Joint Implementation Activities
5) Is there a possibility of "offsetting" the mitigation gap created by double counting post-2020? How will the responsibility be allocated amongst parties?

Yamide Dagnet (WRI)

"Linking different accounting standards to different types of pledges"

Ms. Dagnet presented the link between the Mitigation Goals (MG) standard with a pledge. There are generally four types of mitigation goals: reduction from a base year, e.g. Antiqua and Barbuda with a 25% reduction below 1990 levels by 2020; reduction from a baseline scenario e.g. Brazil with a goal between 36.1% and 38.9% below projected emissions in 2020; reduction in emissions intensity e.g. China with 40-45% reduction in CO_2 emissions per unit of GDP by 2020 compared with the 2005 level; and reduction to a fixed level e.g. Costa Rica with 'long-term economy-wide transformational effort to enable carbon-neutrality.

The purpose of the standard is to provide standardised approaches and guidance on how to quantify GHG emission reductions and track progress toward national and sub-national GHG mitigation goals. It also guides the users throughout the process of GHG emission quantification.

Ms. Dagnet emphasised on the scope of the standard. It is internationally applicable to all levels of government including municipal, sub-national, and national level. The standard includes four types of mitigation goals and economy-wide and sectoral goals.

Finally, Ms. Dagnet listed 12 steps to follow when designing a pledge regardless of pledge type. The first of the 12 is that developing a GHG inventory is crucial and should be developed on the basis of IPCC methodologies for national governments.

When considering the selection of pledges, she suggested selecting them based on objectives, level of ambition required by climate science to avoid dangerous anthropogenic climate change, and feasibility of emission reductions based on mitigation assessment, cost, and national/subnational circumstances.

Julio Moises Alvarez (National Council on Climate Change and the Clean Development Mechanism, Dominican Republic)

"Way forward at the national level – getting institutional support and political buy-in in setting ambitions. What makes ambitions achievable? – The Dominican Republic Case Study"

Mr. Alvarez started his presentation with a brief introduction of the Dominican Republic, for the participants to understand the context of a country with 10 million people and 5,000-6,000 USD per capita GDP.

The outline of the presentation focused on the following topics: Institutional and Legal framework, LEDS, CDM and NAMAs.

He introduced the **National Council for Climate Change and Clean Development Mechanism**, a high-level institution headed by the President of the Dominican Republic that was set up in September 2008. The administrative structure of this organisation and the objectives were then provided in detail. At the UNFCCC the Council is the National Focus Point for climate change and it is also the Designated National Authority (DNA) for the CDM (and the NAMA NFP).

The Dominican Republic launched its **Climate-Compatible Development Plan (CCDP)**, in September 2011 and internationally launched in Durban, during the COP 17. This plan is linked with Low Emission Development Strategies.

Based on the analysis of technical abatement potential, the Dominican Republic can by 2030 reduce its emissions by 45% compared to 2010. It made a pledge of 25% reduction of emissions from 2010 as reflected in the National Development Strategy (2030). Government agencies developed several action plans for 4 main sectors: energy, transport, forestry and quick-wins (cement, waste and tourist). The speaker also mentioned that all these plans required:

- an important high-level commitment and leadership
- effective institutions and systems to put them in place
- comprehensive capability
- smart financing
- stakeholder mobilisation.

Mr. Alvarez also mentioned that the Dominican Republic has 13 registered projects under CDM and 40 in consideration, and is developing the following NAMAs: in the tourism sector, ready to participate in the NAMA Facility with support by the Center for Clean Air Policy (CCAP) and UNDP, one in the cement and waste sector supported by the German Government and already in the NAMA registry and NAMAs in the energy efficiency sector supported by the National Energy Commission (CNE) and Worldwatch.

In the questions and answers round, one participant asked which was the Dominican Republic's final decision making structure. According to Mr. Alvarez, the ones taking decisions should be the high-level organisations, in this case it is really important that the President of the Dominican Republic is also supporting this process, if not, they would not have a commitment.

Another participant asked how they deal with the possible overlapping of NAMAs, i.e. if the NAMA in the tourism sector introduces renewable energy actions linked to electricity, then it could overlap with the NAMAs in energy efficiency. Mr. Alvarez answered that the tourism sector comprises many things, not only energy but also waste (using biomass, using municipal waste), RE and EE. In his opinion, it is important to have a good registry in order to avoid this overlapping.

One participant asked about the MRV systems of the NAMAs presented, if there was a central MRV system that served the Dominican Republic for the CDM projects, the NAMAs, etc., or if they had to tailor something specific for each NAMA. Mr. Alvarez replied that they don't have anything related to MRV. They are considering starting the MRV in the cement sector, as it is the most important one with 7 factories in the Dominican Republic.

Another contribution came from the participants when they talked about co-benefits, how they dealt with them (creation of jobs, etc.) and if they include the co-benefits in the consideration of NAMAs. Mr. Alvarez answered that one big issue that the Dominican Republic is facing at the moment is waste. Considering how important the tourism sector is to the country, they took into account waste when developing the tourism NAMA and they are also considering the waste issue in other NAMAs, i.e. cement sector.

Yamide Dagnet (WRI)

"Way forward in the negotiations. Lessons learnt and ambition raising through credible MRV"

Ms. Dagnet started her presentation by setting the context for the way forward in the negotiations, which is characterized by "*Dangerous path of global warming, lack of understanding from the international community of the stakes and opportunities for a low carbon economy*".

According to Ms. Dagnet, this leads to the following problems:

- lack of leadership (political will)
- low trust among countries; also the lack of implementation.
- Injustice since not yet enough safeguards are in place to protect the most vulnerable people.
- Interpretation of equity.

Ms. Dagnet performed the stock taking from an MRV accounting mitigation space. The speaker said that it seems that we are still with Annex I and non-Annex I, and KP parties versus non-KP parties. From a mitigation point of view, Doha had a more robust regime for KP parties but it only covered 15% of the global emissions. Under the UNFCCC, there is a transitional moment: low ambition, emission gap, plenty of pledges.

Looking at all this, Ms. Dagnet put a question to the participants about their vision for 2015: **What would you like to see in 2015 on an MRV regime?**

Replies from the participants included:

- **Mitigation:**
  - In terms of pledges, ambitious pledges should come from all countries, but a lot of incentives are needed.
  - Universal criteria for all pledges and hence actions.
  - Comparability among criteria and levels; making commitments.
  - Rules to make it happen: increase transparency, which will support more pledges.
  - Definition of guidelines.
  - More and better information which helps define the potential. Support and increase the ambition for transparency rules.
  - Maintain transparency in the KP parties (in particular non-KP parties)
  - Imposing same standards may be unfair and politically impossible.
  - MRV and accounting are the core of the new agreements.
- **Carbon markets**
  - Have clear signals from carbon markets, which are functional and doable to have integrity.

Ms. Dagnet also presented some outcomes for this vision for 2015:

- Increase the number of pledges and be more ambitious to reduce the emission gap and get us closer to the 2º C objective.
- Enough robust accounting, MRV frameworks and ratchet up mechanisms in place to preserve environmental integrity, avoid double counting, improve tracking of emissions, track progress towards targets and actions, allow countries to increase their pledges overtime.
- Identification of key elements of an agreement for an equitable outcome.

After the discussion with the participants, Ms. Dagnet also presented some elements of a road map to meet the objectives of the vision. She introduced some milestones for the next Climate Change Negotiations in Warsaw, Poland (COP 19). And to wrap up her presentation, she gave some “food for thought” to the participants by raising the following questions:

1) **ICA: Elements of COP19 deals**

- Recommendations from experts + caveats?
- Guidance to experts for consistent, technical analysis?
- Role of the CGE (composition of team of experts and training +)?

2) **Implication for verification of 192 countries;** - frequency, experts, type of reviews…

3) **Accounting**

- Common elements?
- How WRI or other standards/approaches can help.

4) **Domestic MRV guidelines**

- Guidelines or no guidelines?

Annex I – Agenda

Monday, 19 August 2013
Travel day and arrival of workshop participants and organizers at Sofitel Plaza Hotel

Tuesday, 20 August 2013 - Introduction and background on recent debates on MRV and tracking of progress		
9:00	Introduction to the Summer School and its objectives, introduction to the International Partnership on Mitigation and MRV	Anna Pia Schreyoegg (BMU) Thapelo Letete (Department of Environmental Affairs, South Africa) Hanchang Choi (Ministry of Environment, South Korea) Johanna Bergmann (GIZ)
10:30	Introduction of experts and participants, supporting team	Facilitator and Axel Michaelowa (Perspectives)
11:20	Logistics	Hanh Dang (VNEEC)
11:30	Coffee break	
11:45	Re-cap and main take-aways from last year's Autumn School	Sina Wartmann (R-AEA) with support of last year's participants
12:30	Lunch	
13:45	Setting the scene – mitigation efforts in all countries and in the context of the UNFCCC: Brief overview and introduction to the international and national mitigation architecture (negotiations, types of pledges, BUR, MRV, inventories, LEDS, KP, BR, NCs, scenario development, NAMA selection, ambition level and ambition gap, existing requirements, tracking of progress)	Murray Ward (GtripleC)
14:15	Group Exercise "Developing the big picture", incl. discussion on differences in perception	Johanna Bergmann (GIZ)
15:15	Coffee break	
15:45	Open discussion	Patrick Bürgi (South Pole)
16:15	Participants' expectations and special interests in the context of the summer school (within the context of the key topics introduced in the previous "Big Picture" session).	Axel Michaelowa (Perspectives)
17:00 - 17:30	Wrap-up of the day	Facilitator
19:00	Welcome dinner	

Wednesday, 21 August 2013 – Inventories and development of emission scenarios and baselines		
9:00	Start of the day: summary of previous day and preview of the day's programme	Facilitator
9:15	GHG inventories: necessary condition for understanding emission levels and trends	Sina Wartmann (R-AEA)
9:45	Key methodologies related to GHG emission scenario development in a LEDS context	Sina Wartmann (R-AEA)
10:45	Coffee break	
11:00	Case studies: Developing South Africa's baseline and mitigation scenarios – The LTMS & beyond Mitigation Options of Greenhouse Gas Emissions in Key Sectors in Brazil	Thapelo Letete (Department of Environmental Affairs, South Africa) Moema Correa (Ministry of Science, Technology and Innovation, Brazil)
11:45	Group exercise: methodologies of developing scenarios and their advantages and disadvantages for two real-world country case studies, with subsequent presentation and discussion in plenary Case study countries: India and Belgium	Sarah Kuen (Belgium Federal Public Services) and Stefan Wehner (Perspectives) with comments by Axel Michaelowa (Perspectives)
13:00	Lunch	
14:15	Links between baselines and potential emission scenarios (presentation followed by group discussion)	Axel Michaelowa (Perspectives)
15:00	Coffee break	
15:15	From scenario development to the definition of pledges, including group exercise	Frauke Roeser (Ecofys)
17:00 - 17:30	Wrap-up of the day	Facilitator
19:00	Dinner	
Thursday, 22 August 2013 - Prioritization and selection of NAMAs		
9:00	Start of the day: summary of previous day and preview of the day's program	Facilitator
9:15	Development of NAMA ideas based on national development strategies and priorities, including LEDS Prioritization and selection of NAMAs (presentation and Q&A)	Frauke Roeser (Ecofys) Sebastian Wienges (GIZ)
10:30	Case study: Mitigation and Development Strategies in India	Manish Shrivastava (TERI, India)
11:00	Coffee break	
11:15	Group exercise: - development of criteria for prioritization and selection of NAMAs; - prioritizing and selecting NAMAs according to previously defined criteria and weighting	Murray Ward (GtripleC) supported by - Stefan Wehner (Perspectives) - Patrick Bürgi (South Pole)

12:30	Lunch	
13:45	Group exercise: (continued) - development of criteria for prioritization and selection of NAMAs; - prioritizing and selecting NAMAs according to previously defined criteria and weighting	Murray Ward (GtripleC) supported by - Stefan Wehner (Perspectives) - Patrick Bürgi (South Pole)
14:00	Methods to estimate impact of a NAMA (ex-ante)	Yamide Dagnet (WRI)
14:30	A framework to facilitate design and evaluation of NAMAs at the national level	Manish Shrivastava (TERI, India)
14:45	Case studies from participants: Prioritization and selection of NAMAs at national level	Amel Akremi (Ministry of Environment, Tunisia) Vahakn Kabakian (Ministry of Environment, Lebanon) Manish Shrivastava (TERI, India)
15:30	Coffee break	
16:00	Role play: How to prioritize NAMAs in a real-life political setting, incl. 5 minute discussion	Axel Michaelowa (Perspectives) Supported by: Stefan Wehner (Perspectives); Yamide Dagnet (WRI)
17:00	Case study: From NAMA selection to the definition of pledges (15 min case study and 15 min discussion)	Maritza Jadrijevic (Ministry of Environment Chile) and Ann Gan (National Climate Change Secretariat Singapore)
17:30 – 17:45	Wrap-up of the day	Facilitator
19:00	Dinner	
Friday, 23 August 2013: NAMA finance		
9:00	Start of the day: summary of previous day and preview of the day's programme	Facilitator
9:15 – 9:45	NAMA finance - Principles of NAMA finance / finance architecture of a NAMA - Different options of NAMA finance and the strings attached (e.g. domestic, international (incl. NAMA Facility, GCF, GEF, IKI), public, private funding)	Murray Ward (GtripleC)
9:45 – 10:15	NAMA finance (cont.) Discussion: Financial architecture of a NAMA – how to make a NAMA work financially, triggered by two approaches from participating countries	Chile example (Frauke Roeser and Maritza Jadrijevic (Ministry of Environment, Chile) Mexican example: Stefan Wehner (Perspectives)
10:15	Coffee break	
10:30	Group exercise: Identification of financing sources and mechanisms for a NAMA	Axel Michaelowa (Perspectives) Supported by: Stefan Wehner (Perspectives); Murray Ward (GtripleC)

12:00	Case study on innovative domestic finance option: Carbon tax in South Africa		Thapelo Letete (Department of Environmental Affairs, South Africa)
12:30	Lunch		
13:45	Selected NAMA finance options in depth: - Innovative domestic finance options - NAMA Facility - (New) Market Mechanisms, incl. discussion about their role in a world of a variety of enhanced actions		Sebastian Wienges (GIZ) Anna Pia Schreyoegg (BMU) Axel Michaelowa (Perspectives) for the part on New Market Mechanisms
15:00	Coffee break		
15:30 – 16:00	Wrap-up of the day		Facilitator
16:30	Travel (by bus) to Ninh Binh province for excursion on following day		
19:30	Dinner (in Ninh Binh province)		
20:00	Cultural event: Traditional singing and dance		
Saturday, 24 August 2013: Full day excursion – NAMA development and implementation			
8:00 – 10:00	Tour of Cuc Phuong National Park: Wildlife Conservation Zone		
10:00 – 12:00	Interaction with NAMA stakeholders		Facilitator: Hanh Dang (VNEEC)
	10:00	"Low Carbon Development and Nationally Appropriate Mitigation Action" - Status and the Development of Wind NAMA	Trang Dao on behalf of Huynh Lan Huong (IMHEN – MONRE, Viet Nam)
	11:00	Coffee break	
	11:30	- Pilot Programme for Supporting up-scaled Climate Change Mitigation Action in Vietnam's Cement Sector under the Nordic Partnership Initiative: Road-map and challenges - General introduction of Master Plan for Cement Development in Vietnam for period 2011 – 2020 with vision to 2030	Luu Linh Huong (MoC) Nguyen Cong (MoC)
12:00	Lunch at Cuc Phuong resort		
13:00	Travel to But Son Cement Factory		
15:00	Introduction to But Son Cement Factory		Representative of the Factory
15:15	Tour of But Son Cement Factory (30 minutes)		
15:45	Travel back to Hanoi		
19:00	Dinner		

Sunday, 25 August 2013: Day off		
6:00	Bus to Ha Long bay (Optional)	
8:00	City tour of Hanoi (optional)	
16:00	Bus back to Hanoi	
19:30	Thematic dinner: Vietnam climate change policy	
Monday, 26 August 2013: MRV of NAMAs		
9:00	Start of the day: summary of previous day and preview of the day's program	Facilitator
9:15	State of play: negotiations on guidelines for MRV of NAMAs	Sarah Kuen (Belgium Federal Public Services) with others
9:30	Introduction to MRV standards and metrics for GHG emissions and co-benefits, including different approaches (WRI, GEF, BOW) to the actual measurement, reporting and verification of such metrics based on concrete examples	Sebastian Wienges (GIZ) Patrick Bürgi (South Pole)
10:45	Coffee break	
11:00	Group exercise: Deciding on MRV approach for a NAMA	Patrick Bürgi (South Pole) Sina Wartmann (R-AEA) Goncalo Cavalheiro (CAOS)
12:30	Lunch	
13:45	MRV systems at different aggregation levels	Sina Wartmann (R-AEA)
14:45	Coffee break	
15:00	Case studies on MRV of NAMAs	Stephen Mutua Kinguyu (Climate Change Secretariat, Kenya), Hanchang Choi (Ministry of Environment, South Korea)
16:00	Group exercise: Stakeholder consultation on deciding on an MRV approach for a NAMA	Patrick Bürgi (South Pole) with Sina Wartmann (R-AEA) and Goncalo Cavalheiro (CAOS)
17:00 - 17:30	Wrap-up of the day	Facilitator
19:00	Dinner	
Tuesday, 27 August 2013: Tracking Progress		
9:00	Start of the day: summary of previous day and preview of the day's program	Facilitator
9:20	Different types of pledges and their implications in the context of the ambition gap	Goncalo Cavalheiro (CAOS)
10:20	Coffee break	
10:35	Case study on Annex-I countries' experience with tracking progress under UNFCCC/Kyoto Protocol	Sarah Kuen (Belgium Federal Public Services)

11:00	Key concepts and issues surrounding tracking of progress	Yamide Dagnet (WRI)
11:45	Case study II on Annex-I countries' experience with tracking progress under UNFCCC/Kyoto Protocol	Goncalo Cavalheiro (CAOS)
12:30	Lunch	
13:45	Double counting – fixing the loopholes (including discussion)	Neta Meidav (Department of Energy and Climate Change, UK)
16:00	Linking different accounting standards to different types of pledges, including WRI standard (presentation, building upon sessions from the previous and the current day, followed by group exercise, possibly world café method)	Yamide Dagnet (WRI)
17:00 - 17:15	Wrap-up of the day	Facilitator
19:00	Farewell dinner	
Wednesday, 28 August 2013: Event wrap-up		
9:00	Start of the day: summary of previous day and preview of the day's program	Facilitator
9:15	Looking back at the "big picture"	GIZ/BMU
10:00	Way forward at the national level – getting institutional support and political buy-in in setting ambitions. What makes ambitions achievable? Incl. short case study (e.g. Dominican Republic)	Inputs from Julio Moisés Álvarez (National Council on Climate Change, Dominican Republic) Followed by a group discussion
10:30	Coffee break	
10:45	Way forward in the negotiations; lessons learnt and ambition raising through credible MRV	Yamide Dagnet (WRI) with participants
11:15	Stimuli for the International Partnership on Mitigation and MRV	Brian Mantlana (Department of Environmental Affairs, South Africa) Anna Pia Schreyoegg (BMU) Hanchan Choi (Ministry of Environment, South Korea) Johanna Bergmann (GIZ)
11:45	Overview of main findings during the Summer School	Axel Michaelowa (Perspectives)
12:30	Lunch	
13:30	Closing session – incl. ideas regarding future cooperation	
14:15 – 15:00	Feedback and evaluation session	GIZ and Facilitator
18:00	Dinner	

Annex II – Participant list

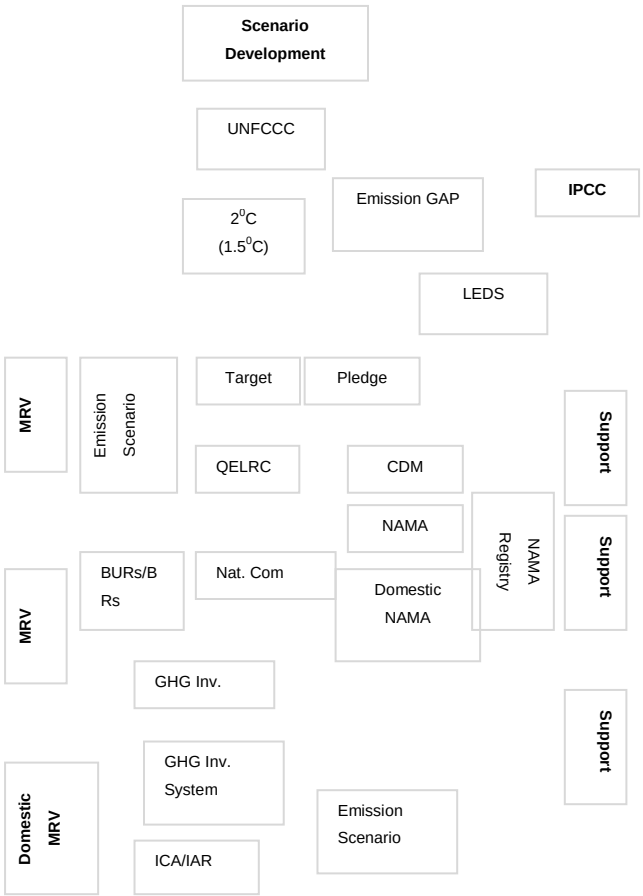
No	Country	Name of participant	Organization	Position	Email Address
1	Argentina	Camila Rodriguez Taylor	Climate Change Unit, Secretariat of Environment and Sustainable Development	Technical Consultant on Mitigation of Climate Change and GHG Inventories	cami_rt@hotmail.com
2	Brazil	Moema Correa	Ministry of Science, Technology and Innovation	Public Policy Specialist	moemacorrea@gmail.com moema.correa@mct.gov.br
3	Belgium	Sarah Kuen	Belgium Federal Public Services - Public Health, Food Chain Security and Environment	Climate Change Policy Advisor	sarah.kuen@environment.belgium.be
4	Chile	Maritza Jadrijevic Girardi	Ministry of Environment	National Policy Officer, Climate Change Office	mjadrijevic@mma.gob.cl
5	Dominican Republic	Julio Moisés Alvarez	National Council on Climate Change and the Clean Development Mechanism	Technical Director	moisesal.c21@gmail.com
6	Israel	Ronnie Cohen-Ginat	Ministry of Environmental Protection	Climate Change Coordinator	ronyg@sviva.gov.il
7	Georgia	Marina Shvangiradze	UNDP Georgia Ministry of Environment	Coordinator of Georgia's Third National Communication to the UNFCCC	mshvangiradze@gol.ge mshvangiradze@hotmail.com
8	Kazakhstan	Botagoz Khakimzhanova	Ministry of Environmental Protection	Leading Expert at the Low Carbon Development Department	hakibota@rambler.ru
9	Kenya	Stephen Mutua King'uyu	Climate Change Secretariat; Ministry of Environment & Mineral Resources - Kenya	Deputy Director (Adaptation & Mitigation); Coordinator of the Kenya Climate Change Action Plan	king_uyu@yahoo.com skinguyu@environment.go.ke
10	Lebanon	Vahakn Kabakian	Ministry of Environment	Project Manager	vahakn@more.gov.lb vahakn.kabakian@gmail.com
11	Morocco	Jaouad M'Hamdi	Department of Environment – Ministry of Energy, Mines, Water and Environment	Statistical Surveys and Data Collection / Climate Change Team Member	mhamdijaouad@gmail.com

No	Country	Name of participant	Organization	Position	Email Address
12	Panama	Angel Urena	Panama Canal Authority	Environment Protection Specialist	aurena@pancanal.com
13	Singapore	Ann Gan	National Climate Change Secretariat	Assistant Director	ann_gan@nccs.gov.sg
14	South Africa	Brian Mantlana	Department of Environmental Affairs	Chief director: Climate Change Monitoring & Evaluation	BMantlana@environment.gov.za
15	South Africa	Thapelo Letete	Department of Environmental Affairs	Director: Climate Change Mitigation MRV	tletete@environment.gov.za
16	South Korea	Hanchang Choi	Ministry of Environment	Deputy Director	closer0@naver.com closer0@korea.kr
17	South Korea	Mi Youn Min	Korea Environment Corporation	Deputy Director Manager, Dept. of Climate Change Action	mymin1@empas.com
18	Thailand	Paweena Panichayapichet	Thailand Greenhouse Gas Management Organization	Senior official	paweena@tgo.or.th
19	Tunisia	Amel Akremi	Ministry of Environment	Deputy Director	akremi_amel@yahoo.com
20	United Kingdom	Neta Meidav	Department of Energy and Climate Change	UK Lead Negotiator, MRV (International Climate Change)	neta.meidav@decc.gsi.gov.uk
21	Vietnam	Hoa Vuong	Vietnam Institute of Meteorology, Hydrology and Environment	Researcher	hoa.vuongxuan@gmail.com
22	Vietnam	Trang Dao	Vietnam Institute of Meteorology, Hydrology and Environment	Researcher	daominhtrang@gmail.com
23	Vietnam	Hung Pham	Ministry of Natural Resources and Environment	Specialist	hungphamnam@gmail.com

Annex III – Exercises

14:15 – 15:15	Group Exercise "Developing the big picture", incl. discussion on differences in perception
Format: Discussion in break-out groups Task: **Draw the big picture of MRV system**	

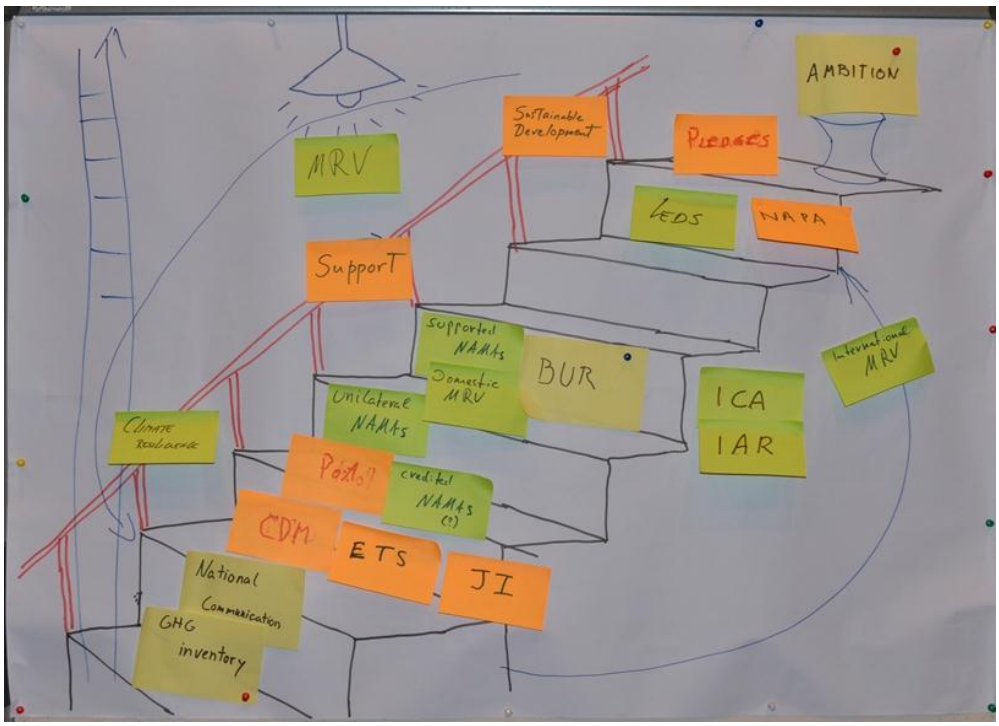
Group I



Group II


International
SUST. DEVPT
UNFCCC
IPCC IARS
Nat. Com
GHG Inventory
BUR + BR
National
ADAPTATION
mitigation
PLEDGES
TARGETS
LEDS
LCDS
NAMAs
MRV

Group III



AMBITION

Sustainable Development

PLEDGE

MRV

Support

LEDS

NAPA

Supported NAMA

BUR

ICA

International MRV

Domestic MRV

IAR

Unilateral NAMAs

Climate Resilience

PoA

Credited NAMAs (?)

CDM

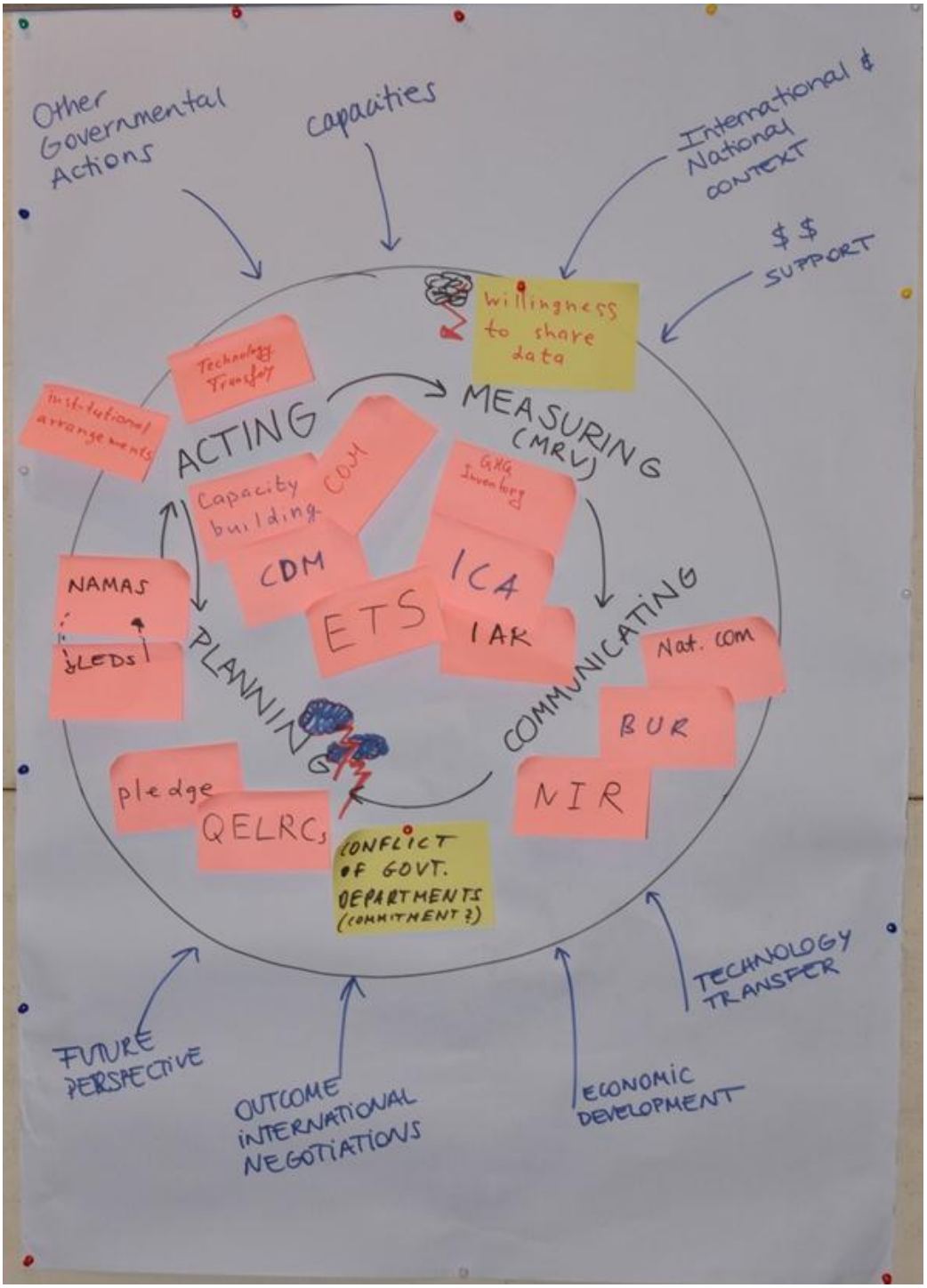
ETS

JI

National Communication

GHG Inventory

Group IV


Other Governmental Actions
capacities
International & National context
$ $ support
willingness to share data
Technology Transfer
institutional arrangements
ACTING
MEASURING (MRV)
Capacity building
CDM
GHG Inventory
ICA
NAMAS
LEDs
ETS
IAR
PLANNING
COMMUNICATING
Nat. com
BUR
NIR
pledge
QELRCs
CONFLICT OF GOVT. DEPARTMENTS (COMMITMENT?)
FUTURE PERSPECTIVE
OUTCOME INTERNATIONAL NEGOTIATIONS
ECONOMIC DEVELOPMENT
TECHNOLOGY TRANSFER

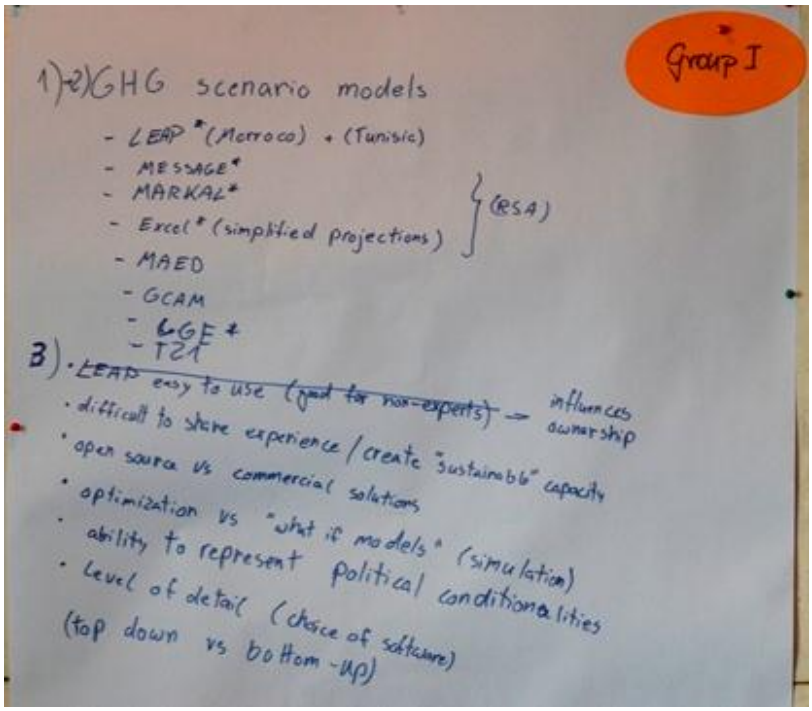
11:45 – 13:00	Group exercise: methodologies of developing scenarios and their advantages and disadvantages for two real-world country case studies, with subsequent presentation and discussion in plenary Case study countries: India and Belgium

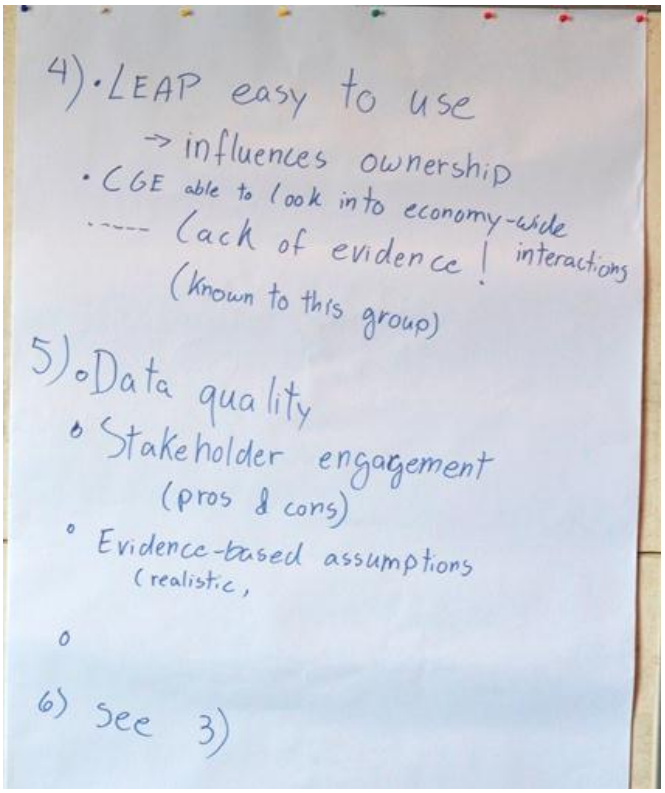
Format: Discussion in break-out groups

Task: **Discuss and answer the following questions**

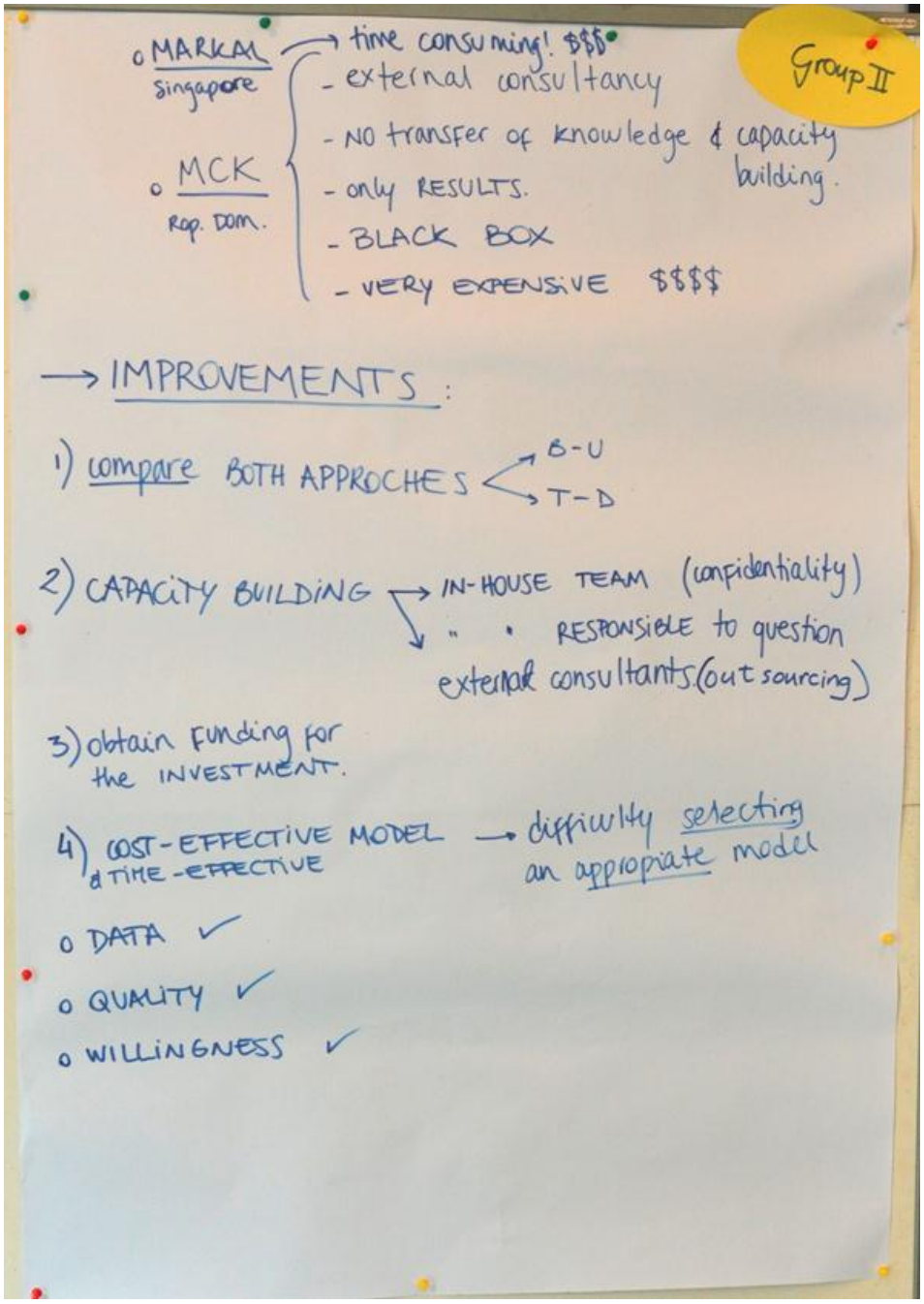
- Which methodologies of developing scenarios do you know?
- Which model and method is used in your country?
- What are your experiences?
- Did you encounter advantages and disadvantages of one or the other methodology?
- What makes an emission scenario conservative and credible?
  - Assumptions basis?
  - Appropriate time frame?
  - Institutions involved in the baseline development?
  - Data vintage and quality?
  - Level of aggregation?
- What are critical modelling issues?
  - Technology, behaviour, scale, time, uncertainty

Group I

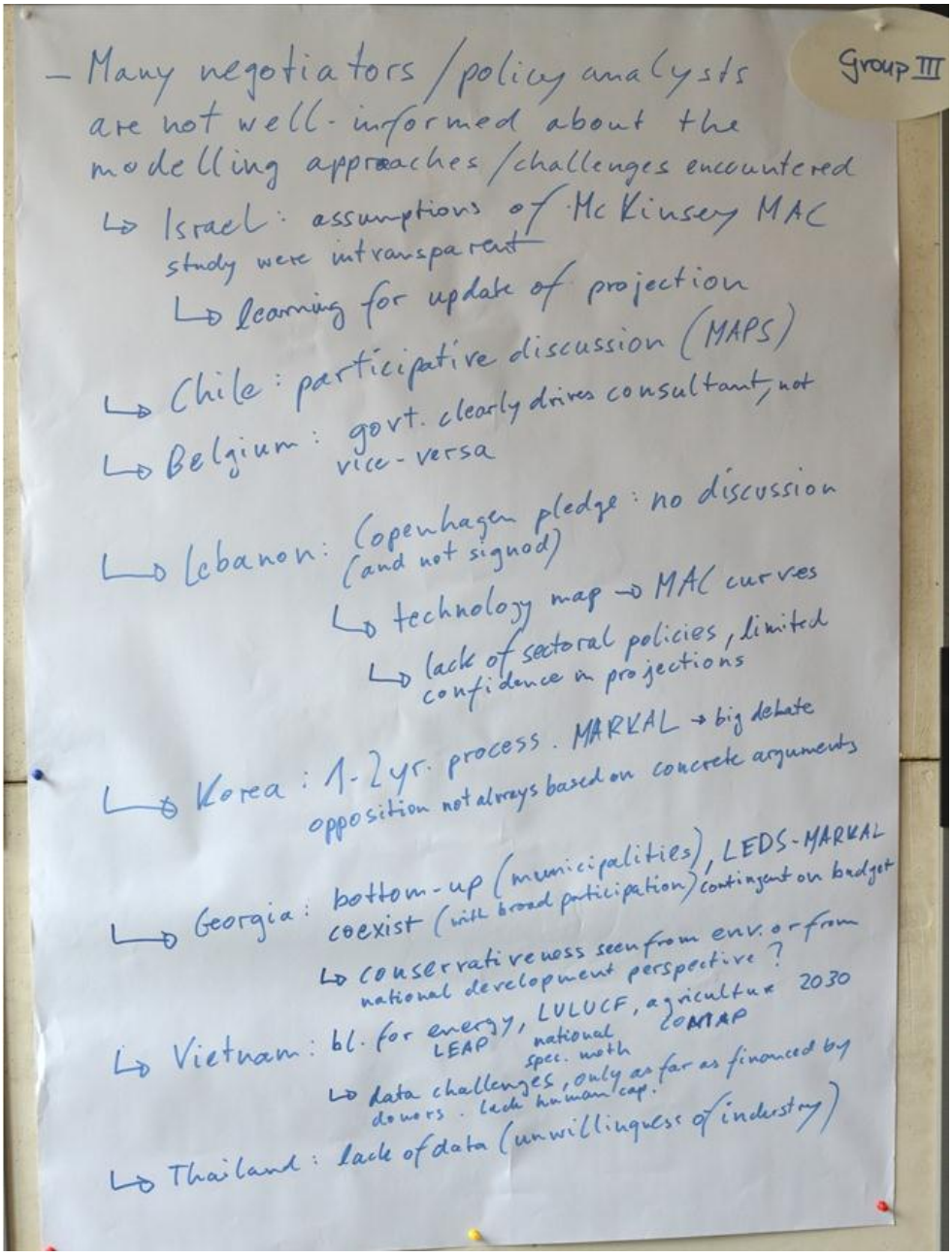

Group I
1)-2) GHG scenario models
- LEAP* (Morroco) + (Tunisia)
- MESSAGE*
- MARKAL*
- Excel* (simplified projections) } (RSA)
- MAED
- GCAM
- CGE*
- T21
3). LEAP easy to use (~~not for non-experts~~) → influences ownership
· difficult to share experience / create "sustainable" capacity
· open source vs commercial solutions
· optimization vs "what if models" (simulation)
· ability to represent political conditionalities
· Level of detail (choice of software)
(top down vs bottom-up)


4). LEAP easy to use
→ influences ownership
· CGE able to look into economy-wide interactions
---- Lack of evidence!
(known to this group)
5). Data quality
° Stakeholder engagement
(pros & cons)
° Evidence-based assumptions
(realistic,
°
6) See 3)

Group II


Group II
o MARKAL
Singapore
o MCK
Rep. Dom.
→ time consuming! $$$
- external consultancy
- NO transfer of knowledge & capacity building.
- only RESULTS.
- BLACK BOX
- VERY EXPENSIVE $$$$
→ IMPROVEMENTS:
1) compare BOTH APPROCHES B-U T-D
2) CAPACITY BUILDING → IN-HOUSE TEAM (confidentiality)
" • RESPONSIBLE to question
external consultants (out sourcing)
3) obtain Funding for the INVESTMENT.
4) COST-EFFECTIVE MODEL → difficulty selecting an appropriate model
& TIME-EFFECTIVE
o DATA ✓
o QUALITY ✓
o WILLINGNESS ✓

Group III


Group III
– Many negotiators / policy analysts are not well-informed about the modelling approaches / challenges encountered
↳ Israel: assumptions of McKinsey MAC study were intransparent
↳ learning for update of projection
↳ Chile: participative discussion (MAPS)
↳ Belgium: govt. clearly drives consultant, not vice-versa
↳ Lebanon: Copenhagen pledge: no discussion (and not signed)
↳ technology map → MAC curves
↳ lack of sectoral policies, limited confidence in projections
↳ Korea: 1-2 yr. process. MARKAL → big debate opposition not always based on concrete arguments
↳ Georgia: bottom-up (municipalities), LEDS-MARKAL coexist (with broad participation) contingent on budget
↳ conservativeness seen from env. or from national development perspective?
↳ Vietnam: bl. for energy, LULUCF, agriculture 2030 LEAP national COMAP spec. meth
↳ data challenges, only as far as financed by donors. lack human cap.
↳ Thailand: lack of data (unwillingness of industry)

16:00 – 17:00	From scenario development to the definition of pledges, including group exercise
Format: Discussion in break-out groups Task: **Each group was provided with references of historic and projected GHG emissions and required to define a pledge**	

Group I

Defined three types of pledge:

1) Absolute target that will go for long hanging defined by a McKinsey model
2) Intensity target (GDP) until certain peak in year and then go for an absolute target (benefit from international support)
3) Baseline target

Stringency: the more we go the more stringent will be

Monitor: focus on the GHG or in the development of the country itself. The monitor should include not only GHG but other indicators.

Consequences: in case of economic crisis, development indicators will decrease.

Group II

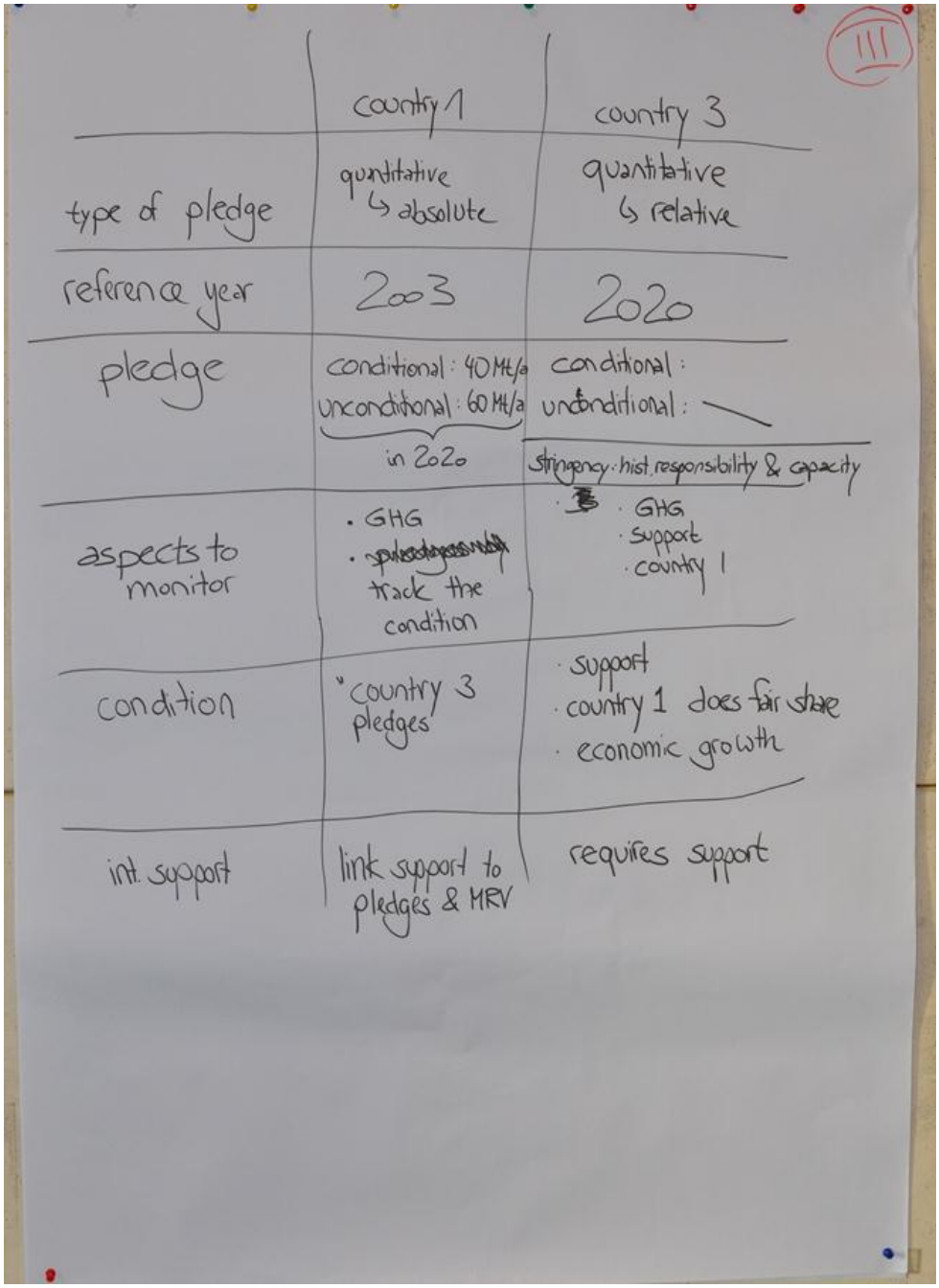
Type of pledge:

- Absolute pledge
- Stringent pledge

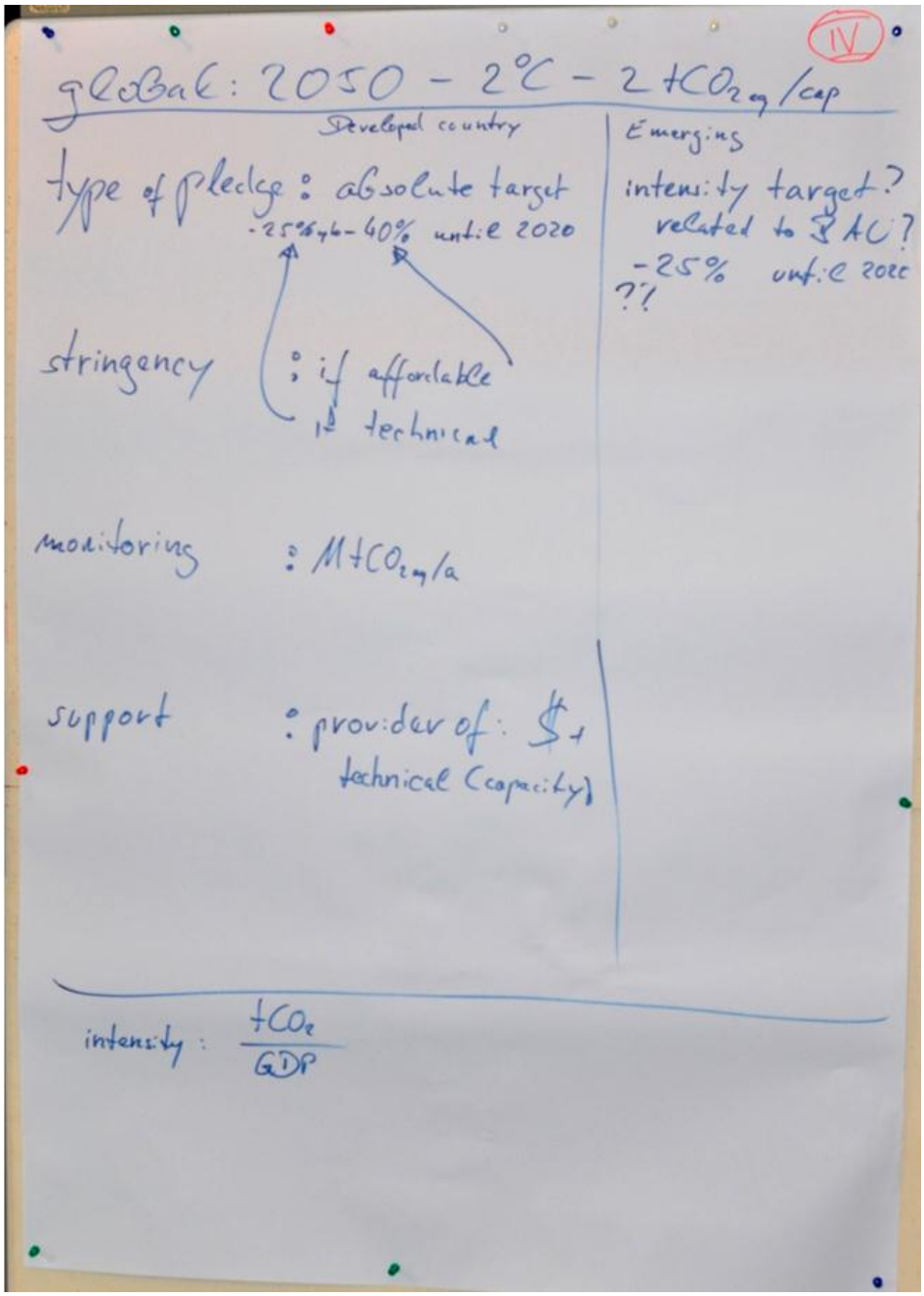
Condition:

- 50% unconditional without international support
- 25% unconditional below BAU; with international support, it could go up to 50% (in developing countries)

Group III


III
country 1
country 3
type of pledge
quantitative
↳ absolute
quantitative
↳ relative
reference year
2003
2020
pledge
conditional: 40 Mt/a
unconditional: 60 Mt/a
in 2020
conditional:
unconditional:
stringency · hist. responsibility & capacity
aspects to monitor
· GHG
· track the condition
· GHG
· support
· country 1
condition
· country 3 pledges
· support
· country 1 does fair share
· economic growth
int. support
link support to pledges & MRV
requires support

Group IV


IV
global: 2050 – 2°C – 2 tCO2eq/cap
Developed country
Emerging
type of pledge: absolute target
-25%-40% until 2020
intensity target?
related to 2°C?
-25% until 2020
?!
stringency
: if affordable
1st technical
monitoring
: MtCO2eq/a
support
: provider of: $,
technical (capacity)
intensity: tCO2e / GDP

13:45 – 14:45	Group exercise: - Development of criteria for prioritization and selection of NAMAs; - Prioritizing and selecting NAMAs according to previously defined criteria and weighting

Format: Discussion in break-out groups

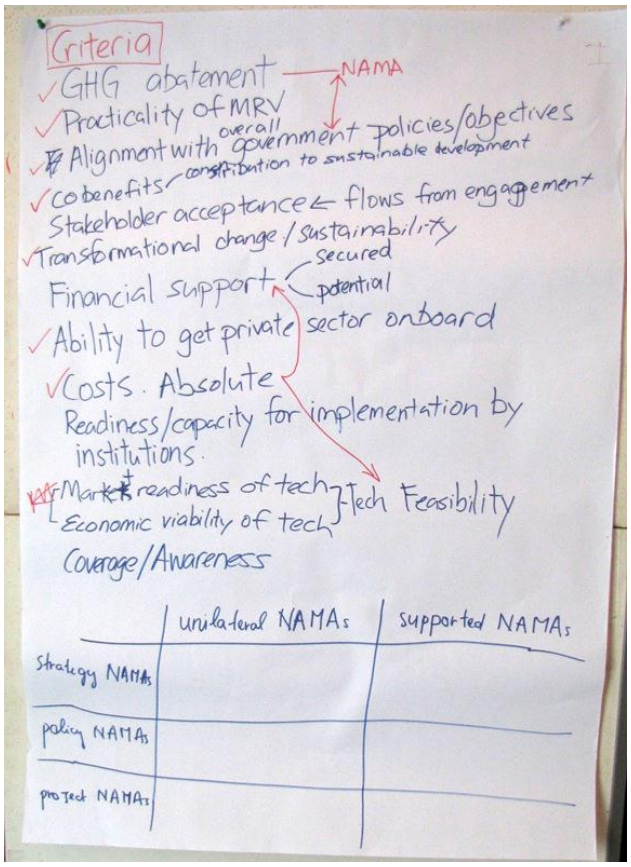
Task**:**

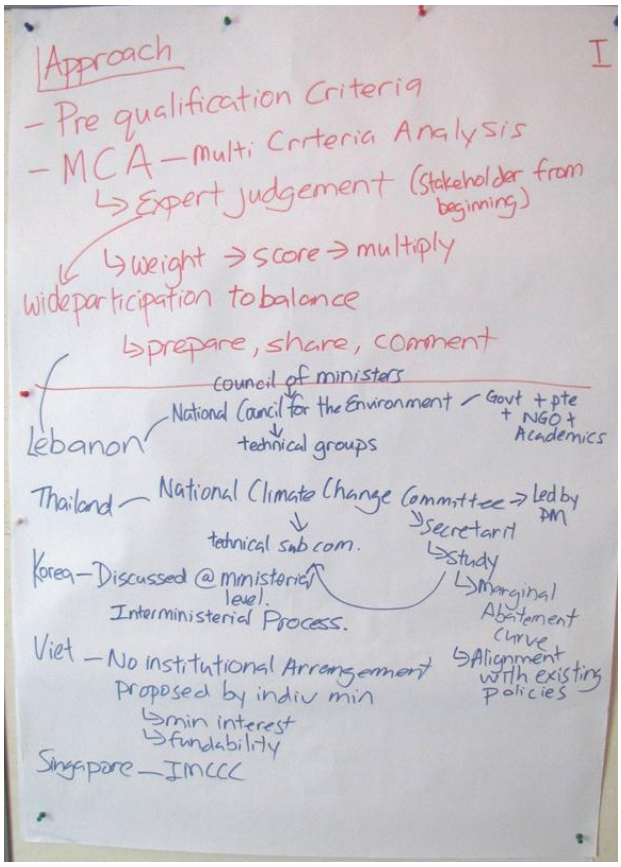
- **Define criteria for prioritization**
- **Define approach for prioritization and selection of NAMAs**

Questions:

1. What criteria do you find important for prioritization and selection of NAMAs?
2. Define at least one approach on how to prioritize and select a set of NAMAs based on the criteria selected under question 1)
3. What is the context of prioritization and selection of mitigation actions in your country? How does it compare to the criteria and prioritization/selection approach (es) developed by your group?

Group I


Criteria
GHG abatement
NAMA
Practicality of MRV
Alignment with overall government policies/objectives
constribution to sustainable development
co benefits
Stakeholder acceptance ← flows from engagement
Transformational change / Sustainability
Financial support
secured
potential
Ability to get private sector onboard
Costs. Absolute
Readiness/capacity for implementation by institutions.
Market readiness of tech
Economic viability of tech
Tech Feasibility
Coverage/Awareness
unilateral NAMAs
supported NAMAs
Strategy NAMAs
policy NAMAs
project NAMAs


Approach
I
- Pre qualification Criteria
- MCA — multi Criteria Analysis
↳ Expert Judgement (Stakeholder from beginning)
↳ weight → score → multiply
wide participation to balance
↳ prepare, share, comment
Lebanon
council of ministers
National Council for the Environment
technical groups
Govt + pte + NGO + Academics
Thailand — National Climate Change Committee → led by PM
technical sub com.
Secretariat
↳ study
↳ Marginal Abatement Curve
↳ Alignment with existing Policies
Korea — Discussed @ ministerial level.
Interministerial Process.
Viet — No institutional Arrangement
Proposed by indiv min
↳ min interest
↳ fundability
Singapore — IMCCC

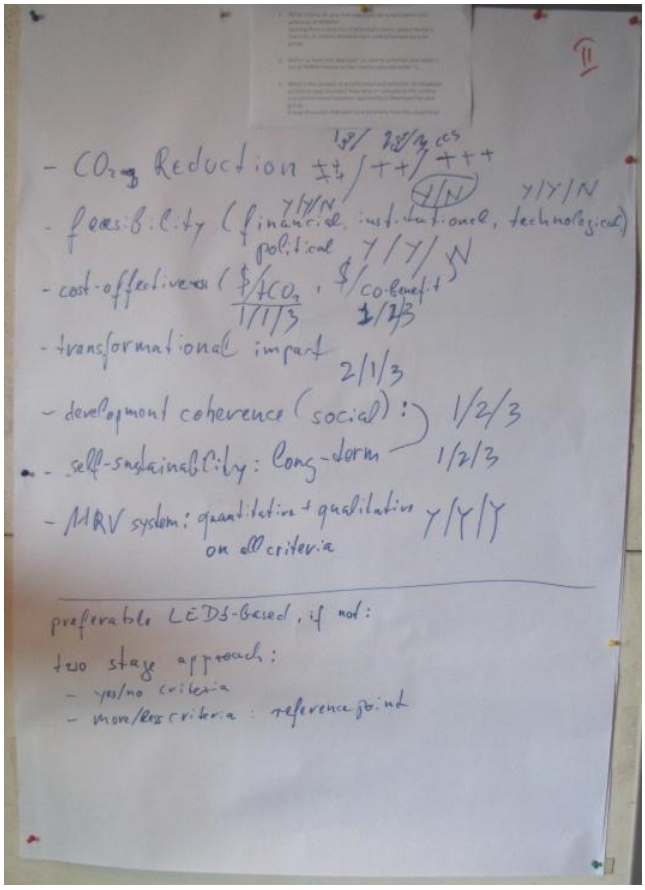
Group II

- CO_2 Reduction
- feasibility (financial, institutional, technological, political)
- cost-effectiveness (co-benefit)
- transformational impact
- development coherence (social)
- self-sustainability: long-term
- MRV system: quantitative + qualitative on all criteria

Preferable LEDS-based, if not:

Two stage approach:

- yes/no criteria
- more/less criteria: reference point



Group III

CRITERIA

Top 5

1) GHG emission reduction/potential

2) Co-benefits

- sustainable development (social, economic, environment)
- others (security) adaptation / resilience

3) Alignment with national priorities (including development goals)

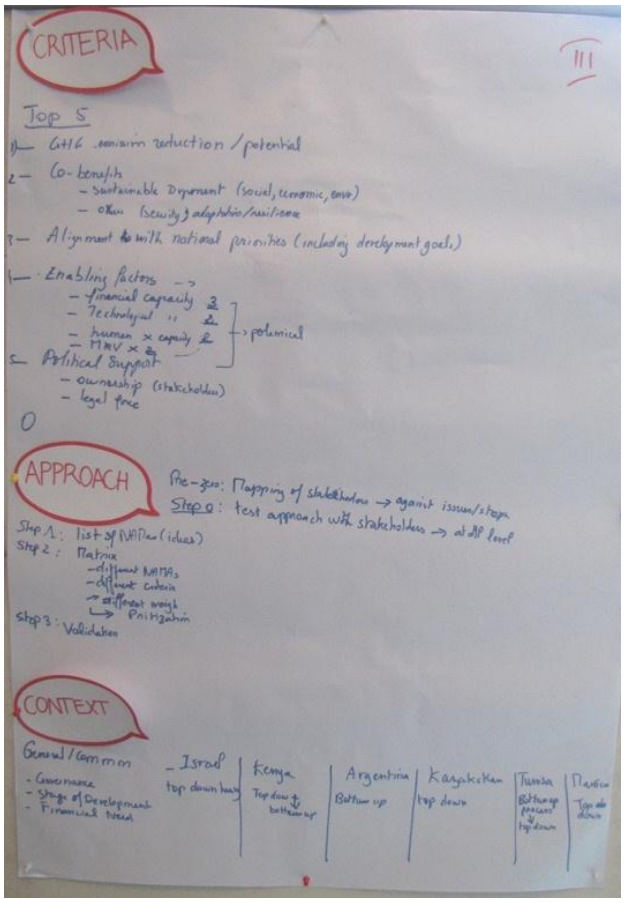
4) Enabling factors →

- financial capacity - 3
- technological – 2
- human + capacity – 2
- MRV x 2

→ polemical

5) Political support

- ownership (stakeholders)
- legal power



APPROACH

Pre-3 cas: Mapping of stakeholders → against issues/steps

Step 0: test approach with stakeholders → at all levels

Step 1: List of NAMAs (ideas)

Step 2: Matrix

- different NAMAs
- different criteria
- different weigh

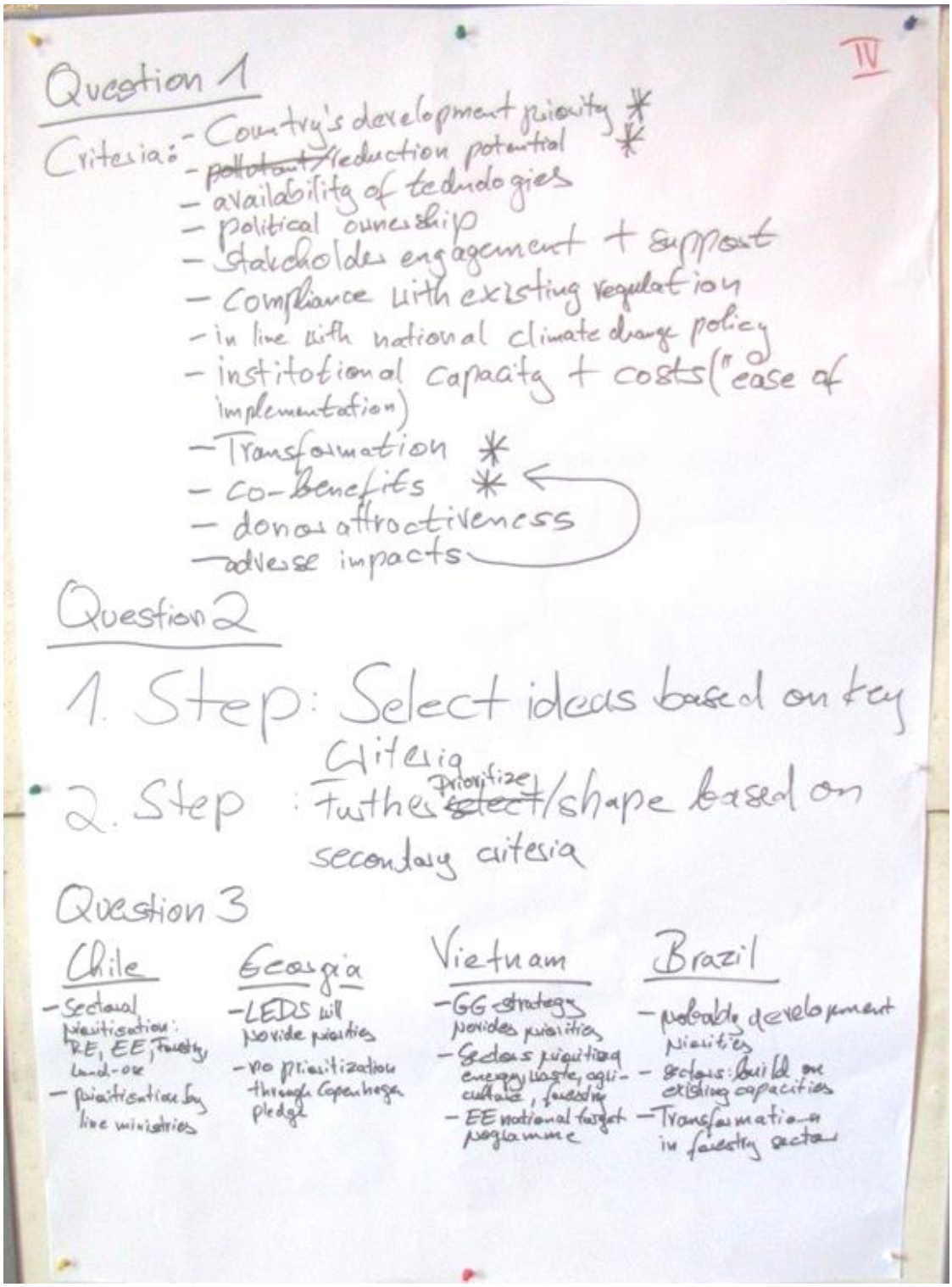
→ prioritization

Step 3: Validation

CONTEXT

General/Common	Israel	Kenya	Argentina	Kazakstan	Tunisia	Marocco
- Governance						
- Stage of development	Top down	Top down -> bottom up	Bottum up	Top down	Bottom up process → top down	Top down
- Financial need						

Group IV


IV
Question 1
Critesia:
- Country's development priority *
- ~~pollutant~~/reduction potential *
- availability of technologies
- political ownership
- Stakeholder engagement + support
- compliance with existing regulation
- in line with national climate change policy
- institutional capacity + costs ("ease of implementation)
- Transformation *
- co-benefits *
- donor attractiveness
- adverse impacts
Question 2
1. Step: Select ideas based on key Critesia
2. Step: further ~~select~~/prioritize/shape based on secondary critesia
Question 3
Chile
- Sectoral prioritisation: RE, EE, Forestry, Land-use
- prioritisation by line ministries
Georgia
- LEDS will provide priorities
- no prioritization through Copenhagen pledge
Vietnam
- GG strategy provides priorities
- Sectors prioritized energy, waste, agriculture, forestry
- EE national target programme
Brazil
- national development priorities
- sectors: build on existing capacities
- Transformation in forestry sector

16:00 – 17:00	How to prioritize NAMAs in a real-life political setting, incl. 5 minute discussion

Format: Role play

Group I: Ministry of Electricity (representing the power sector and utilities)

Group II: Ministry of Transport (representing the transport sector)

Group III: Ministry of Economics (representing the industrial sector)

Group IV: Ministry of Environment (DNA/NAMA coordinator/UNFCCC communication)

1. Your role is to provide general guidance to the NAMA development process and coordinating all stakeholders involved, and ensuring consistency with national government policies.
2. You should be able to effectively mobilize multiple ministries in the design of the NAMA and instigate line agencies to support mitigation action under the NAMA.
3. You are supposed to administer financial resources independently of the general state budget.

Group V: National Non-Governmental Organization (NGO) called EMPONGO - "Empowering NGO" in "LowerCarbonia"

Preparation (20 min) for the tasks.

Tasks for groups I to III:

1. **Define 3 potential NAMA ideas for your respective sector**
   - What kind of information would be helpful and necessary to facilitate the identification process, e.g. which specific documents could provide useful information with regards to national strategies and mitigation potential?

2. **Discuss and provide a list of decision support tools that exist and could be used for the NAMA prioritisation process**

3. **Propose a minimum of 3 criteria for prioritization along the NAMA process and rank them by the level of importance from the point of view of the role you are playing**
   - Which criteria could be used to prioritise NAMAs?
   - Which criteria are most relevant from your sectoral point of view?

Task for groups IV:

1. **Define the 3 potential NAMA ideas with activities within the mentioned sectors**
   - What kind of information would be helpful and necessary to facilitate the identification process,

e.g. which specific documents could provide useful information with regards to national strategies and mitigation potential?

2. **Discuss and provide a list of decision support tools that exist and could be used for the NAMA prioritisation process**.

3. **Propose a minimum of 3 criteria for prioritization along the NAMA process and rank them by the level of importance from the point of view of the role you are playing**

- Which criteria could be used to prioritise NAMAs?
- Which criteria are most relevant from your national point of view?

Task for groups V:

1. **Define the 3 potential NAMA ideas for the country that supports your interest as a national NGO**

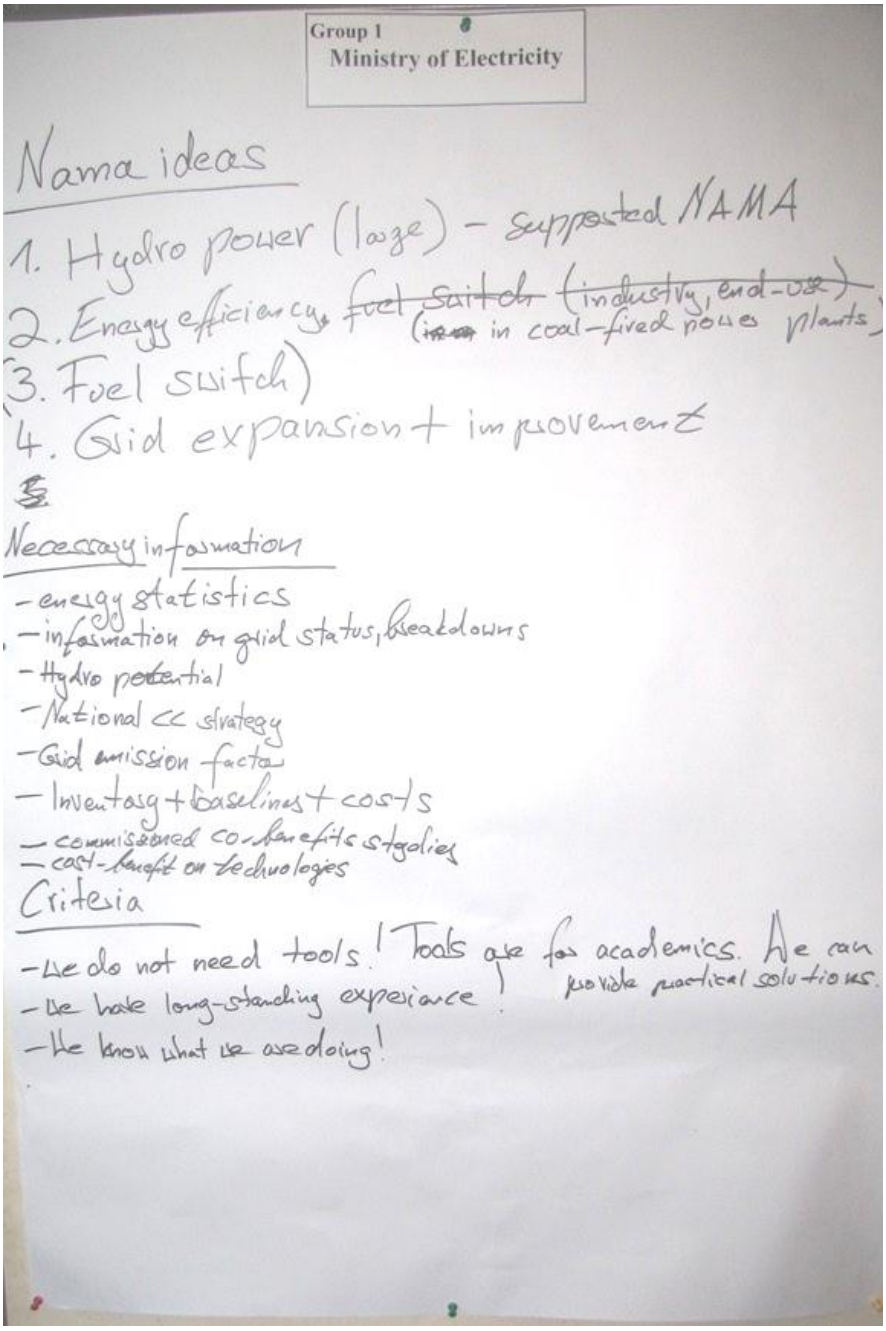
- What kind of information would be helpful and necessary to facilitate the identification process, e.g. which specific documents could provide useful information with regards to national strategies and mitigation potential?

2. **Discuss and provide a list of what kind of decision support tools exist and could be used for the NAMA prioritisation process**.

3. **Propose a minimum of 3 criteria for prioritization along the NAMA process and rank them by the level of importance from the point of view of the role you are playing**

- Which criteria could be used to prioritise NAMAs?
- Which criteria are most relevant from your point of view?

Group I

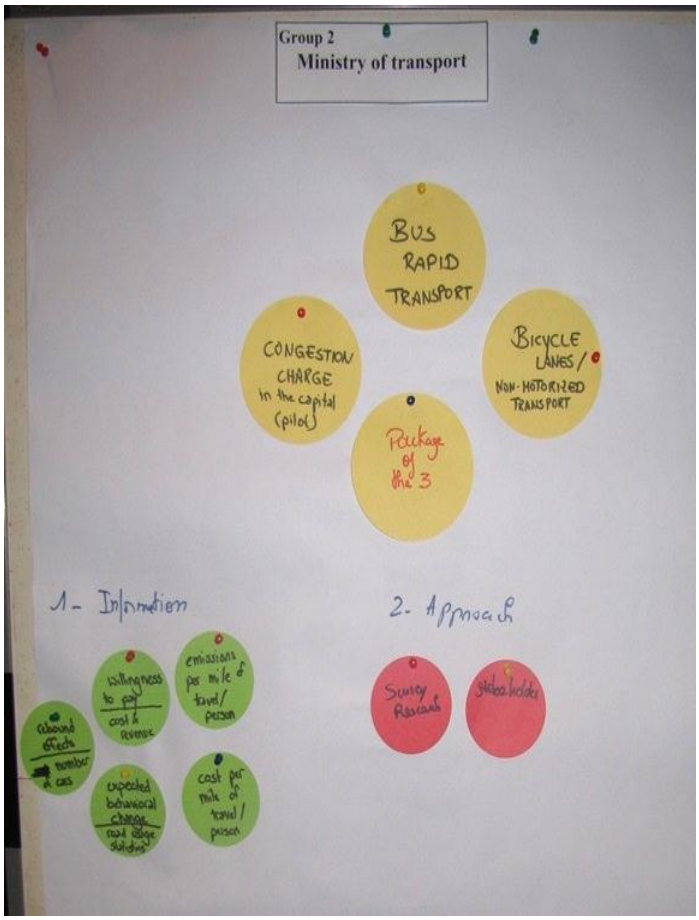

Group 1
Ministry of Electricity
Nama ideas
1. Hydro power (large) - supported NAMA
2. Energy efficiency, fuel switch (industry, end-use)
(in coal-fired power plants)
3. Fuel switch)
4. Grid expansion + improvement
Necessary information
- energy statistics
- information on grid status, breakdowns
- Hydro potential
- National cc strategy
- Grid emission facta
- Inventory + baselines + costs
- commissioned co-benefits studies
- cost-benefit on technologies
Critesia
- We do not need tools! Tools are for academics. We can provide practical solutions.
- We have long-standing experience.
- We know what we are doing!

Group II

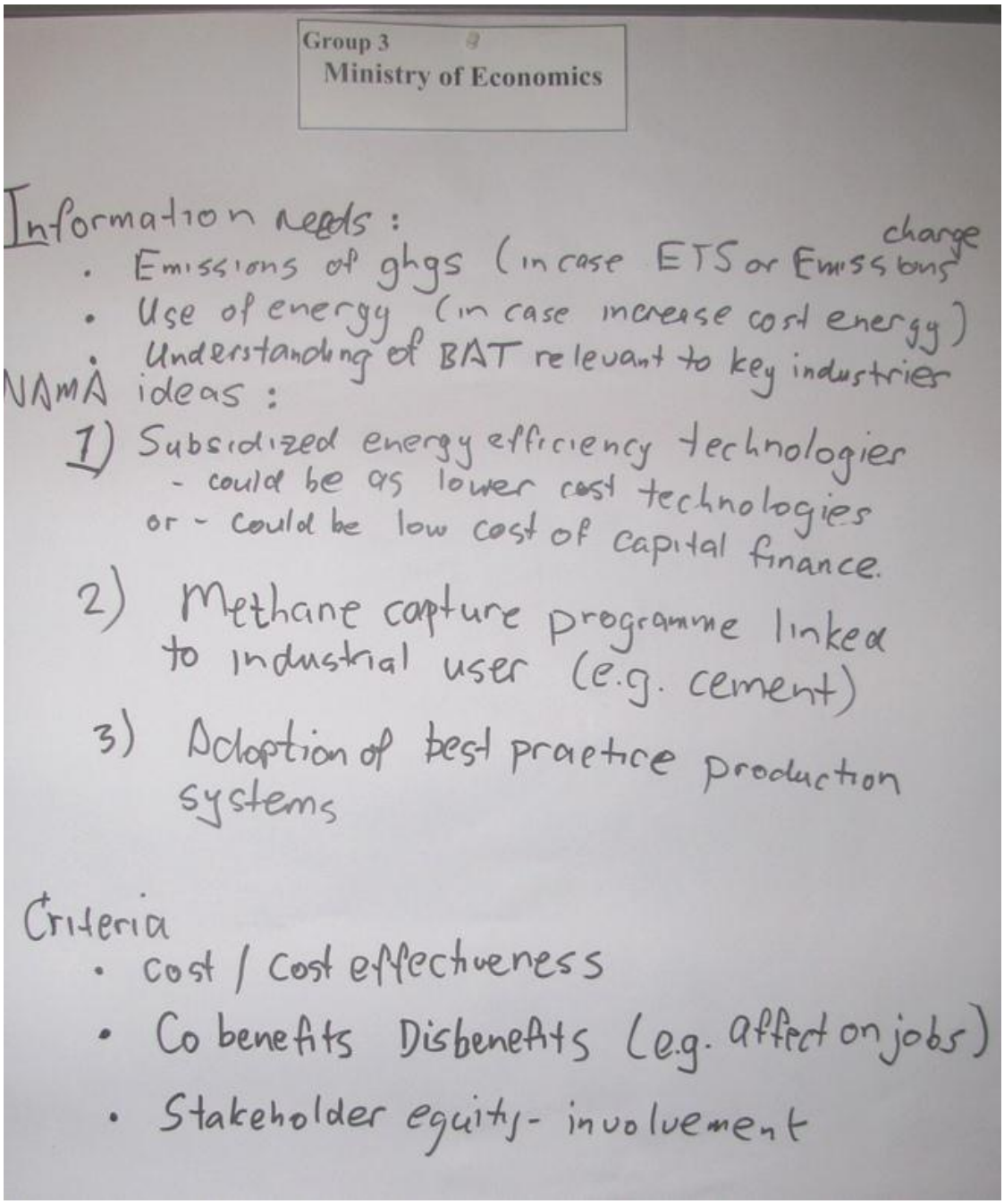
- BUS RAPID TRANSPORT
- CONGESTION CHARGE in the capital (pilot)
- BICYCLE LANES/NON-MOTORIZED TRANSPORT
- Package of the 3

1. Information
- Willing ness to pay / cost & revenue
- Emissions per mile of travel/person
- Rebound effects / number of cars
- Expected behavioral change / road usage statistics
- cost per mile of travel / person

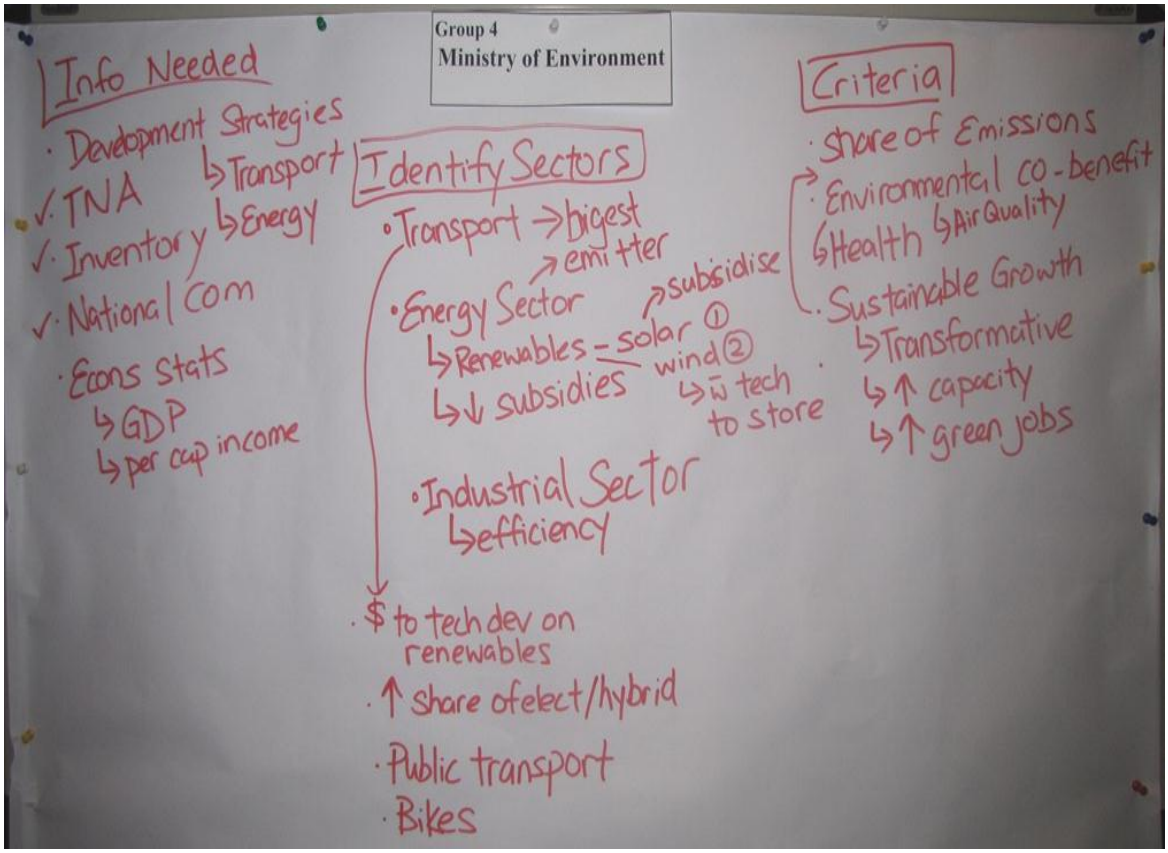
2. Approach
- Survey / Research
- Stakeholder



Group III


Group 3
Ministry of Economics
Information needs :
• Emissions of ghgs (in case ETS or Emissions charge
• Use of energy (in case increase cost energy)
• Understanding of BAT relevant to key industries
NAMA ideas :
1) Subsidized energy efficiency technologies
- could be as lower cost technologies
or - could be low cost of capital finance.
2) Methane capture programme linked to industrial user (e.g. cement)
3) Adoption of best practice production systems
Criteria
• cost / cost effectiveness
• Co benefits Disbenefits (e.g. affect on jobs)
• Stakeholder equity - involvement

Group IV


Group 4
Ministry of Environment
Info Needed
· Development Strategies
✓· TNA ↳Transport
✓· Inventory ↳Energy
✓· National Com
· Econs stats
↳GDP
↳per cap income
Identify Sectors
· Transport →biggest emitter
· Energy Sector ↗subsidise
↳Renewables - solar ①
wind ②
↳↓ subsidies
↳w tech to store
· Industrial Sector
↳efficiency
· $ to tech dev on renewables
· ↑ share of elect/hybrid
· Public transport
· Bikes
Criteria
· share of Emissions
· Environmental co-benefit
↳Health ↳Air Quality
· Sustainable Growth
↳Transformative
↳↑ capacity
↳↑ green jobs

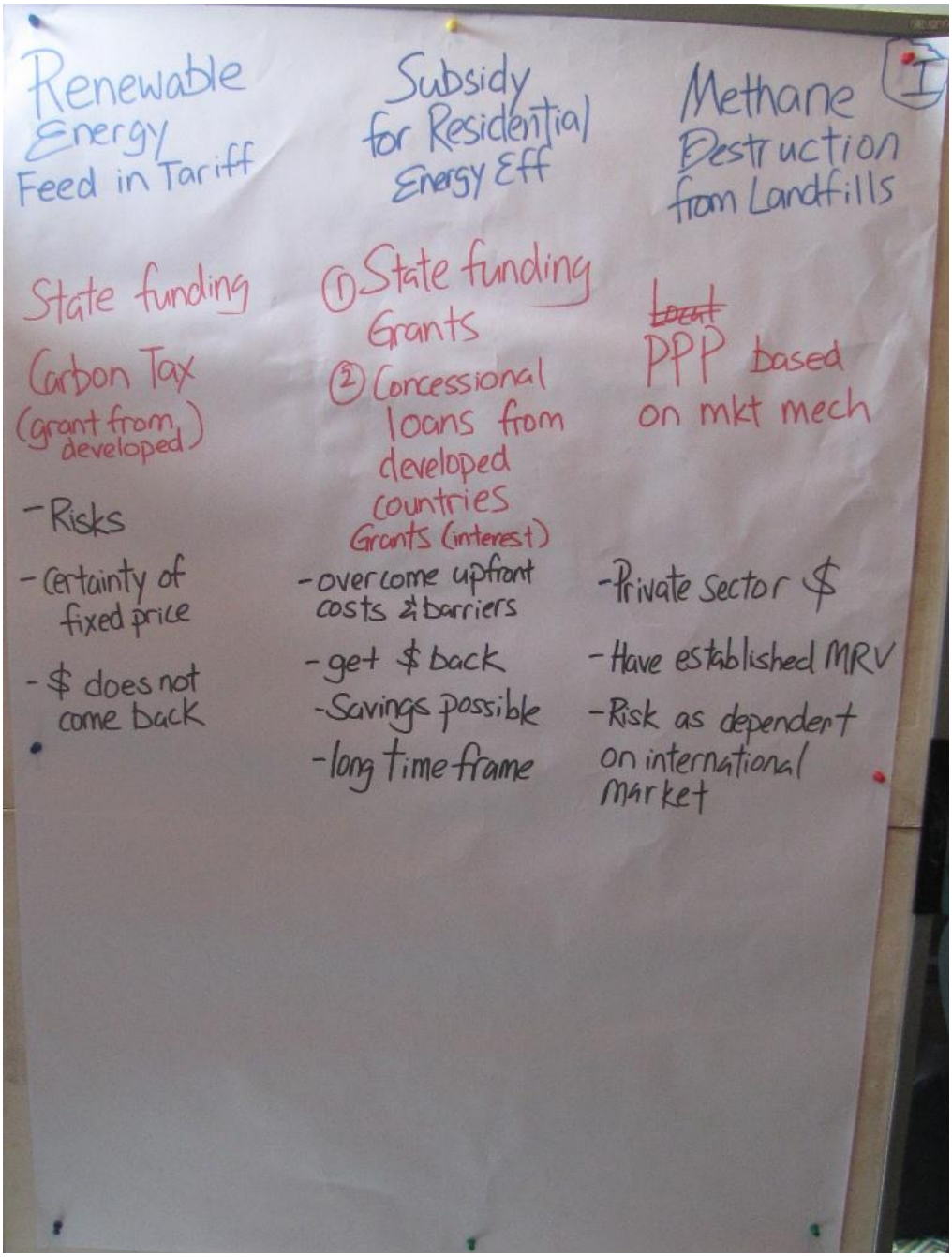
10:30 – 12:00	Group exercise: Identification of financing sources and mechanisms for a NAMA

Format: Discussion in break-out groups

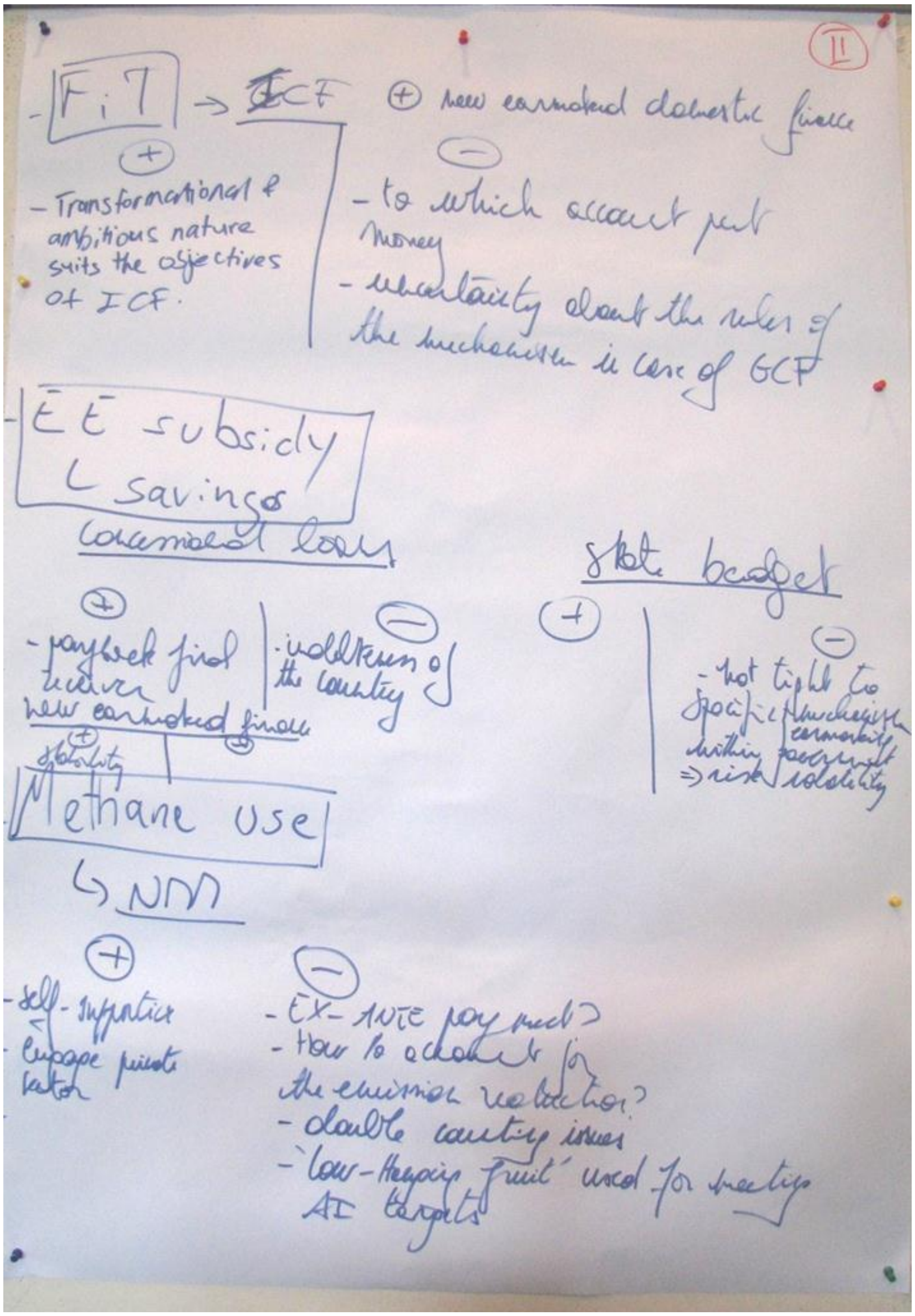
Task: **Select the *most appropriate* financing mechanism for NAMA implementation among the following list and list its *three most relevant advantages and disadvantages***

- State budget (tax revenues)
- New, earmarked domestic finance sources
- Grants by industrialized countries/MDBs
- Concessional loans by industrialized countries/MDBs
- International climate funds (GCF, CIFs etc.)
- New market mechanism (NMM/FVA)
- Combination of the above (specify mix)
- Others (please specify)

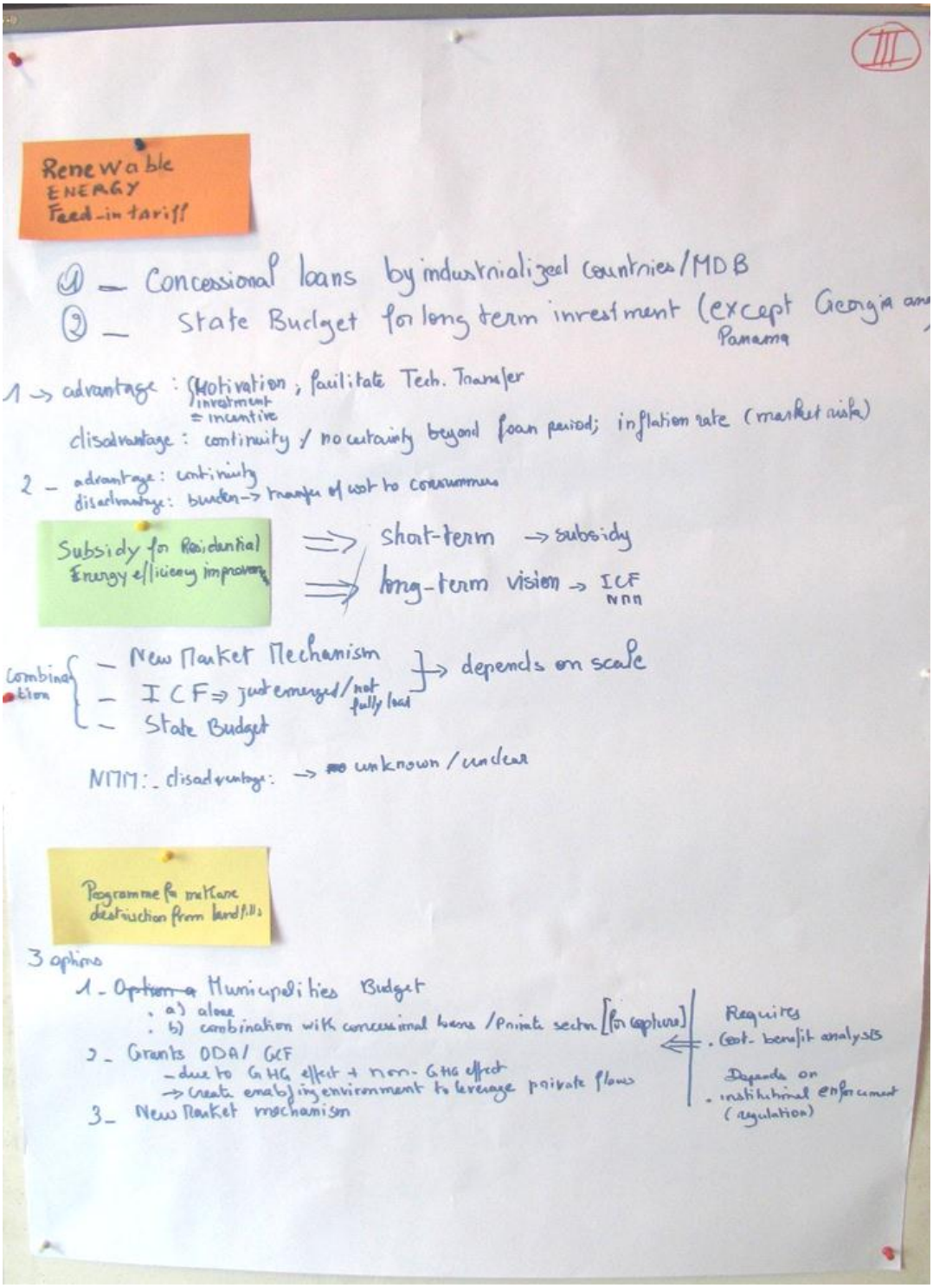
Group I


Renewable Energy Feed in Tariff
Subsidy for Residential Energy Eff
Methane Destruction from Landfills
I
State funding
Carbon Tax (grant from developed)
- Risks
- Certainty of fixed price
- $ does not come back
① State funding Grants
② Concessional loans from developed countries
Grants (interest)
- overcome upfront costs & barriers
- get $ back
- Savings possible
- long time frame
~~Local~~
PPP based on mkt mech
- Private Sector $
- Have established MRV
- Risk as dependent on international market

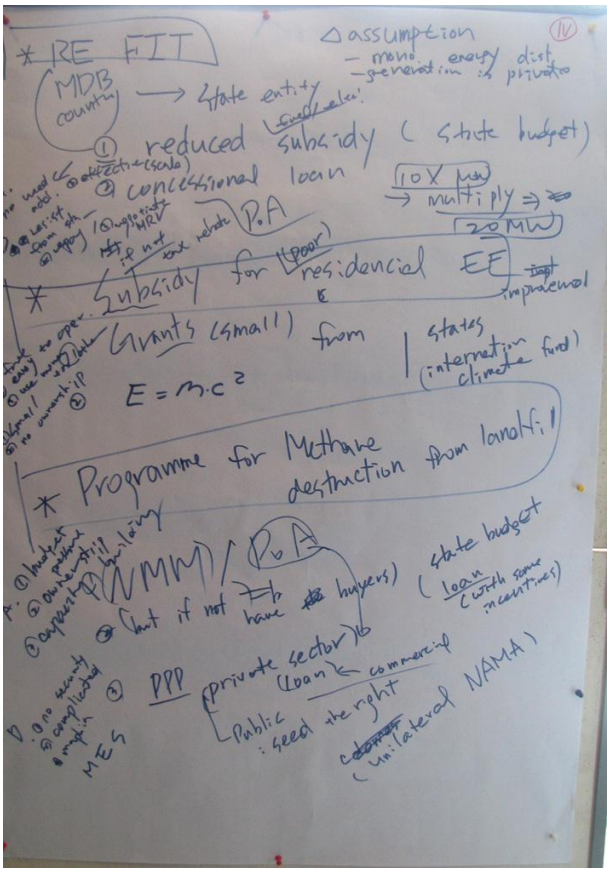
Group II


II
FiT
new earmarked domestic finance
- Transformational & ambitious nature suits the objectives of ICF.
- to which account put money
- uncertainty about the rules of the mechanism in case of GCF
EE subsidy
savings
concessional loans
state budget
Methane use
NM
- self-supporting
- Engage private sector
- EX-ANTE
- How to account for the emission reduction?
- double counting issues
- 'low-hanging fruit' used for meeting AI targets

Group III


III
Renewable
ENERGY
Feed-in tariff
① – Concessional loans by industrialized countries/MDB
② – State Budget for long term investment (except Georgia and Panama
1 → advantage: (motivation, investment = incentive), facilitate Tech. Transfer
disadvantage: continuity / no certainty beyond loan period; inflation rate (market risks)
2 – advantage: continuity
disadvantage: burden → transfer of cost to consummers
Subsidy for Residential Energy efficiency improvem
⇒ short-term → subsidy
⇒ long-term vision → ICF NAMA
Combination
– New Market Mechanism
– ICF ⇒ just emerged/not fully tool
– State Budget
→ depends on scale
NAMA: – disadvantage: → unknown / unclear
Programme for methane destruction from landfills
3 options
1 – Option a Municipalities Budget
. a) alone
. b) combination with concessional loans / Private sector [for capture]
2 – Grants ODA/ GCF
– due to GHG effect + non-GHG effect
→ create enabling environment to leverage private flows
3 – New Market mechanism
Requires
. cost-benefit analysis
Depends on
. institutional enforcement (regulation)

Group IV



Assumption

- Mono energy dist.
- Generation is private

* RE FIT

MDB counting → state entity

(1) reduced subsidy (state budget)

(2) concessional loan

(3) supporting MRV (PoA)

Advantages

(1) no need add.

(2) effective (scale)

Disadvantages

(1) resist from state

(2) repay

* Subsidy for (poor) residential EE improvement

(1) Grants (small) from states or International Climate Fund

(2) $E = m.c^2$

Advantages

(1) time

(2) easy to operate

(3) use money

Disadvantages

(1) small

(2) no ownership

* Programme for methane destruction from landfill

(1) NMM /(PoA)

(2) but if not have buyers, state budget (loan with some incentives)

(3) PPP: private sector (commercial loan) / public

Advantages

(1) budget pressure

(2) ownership

(3) capacity building

Disadvantages

(1) no security

(2) complicated

(3) mafia

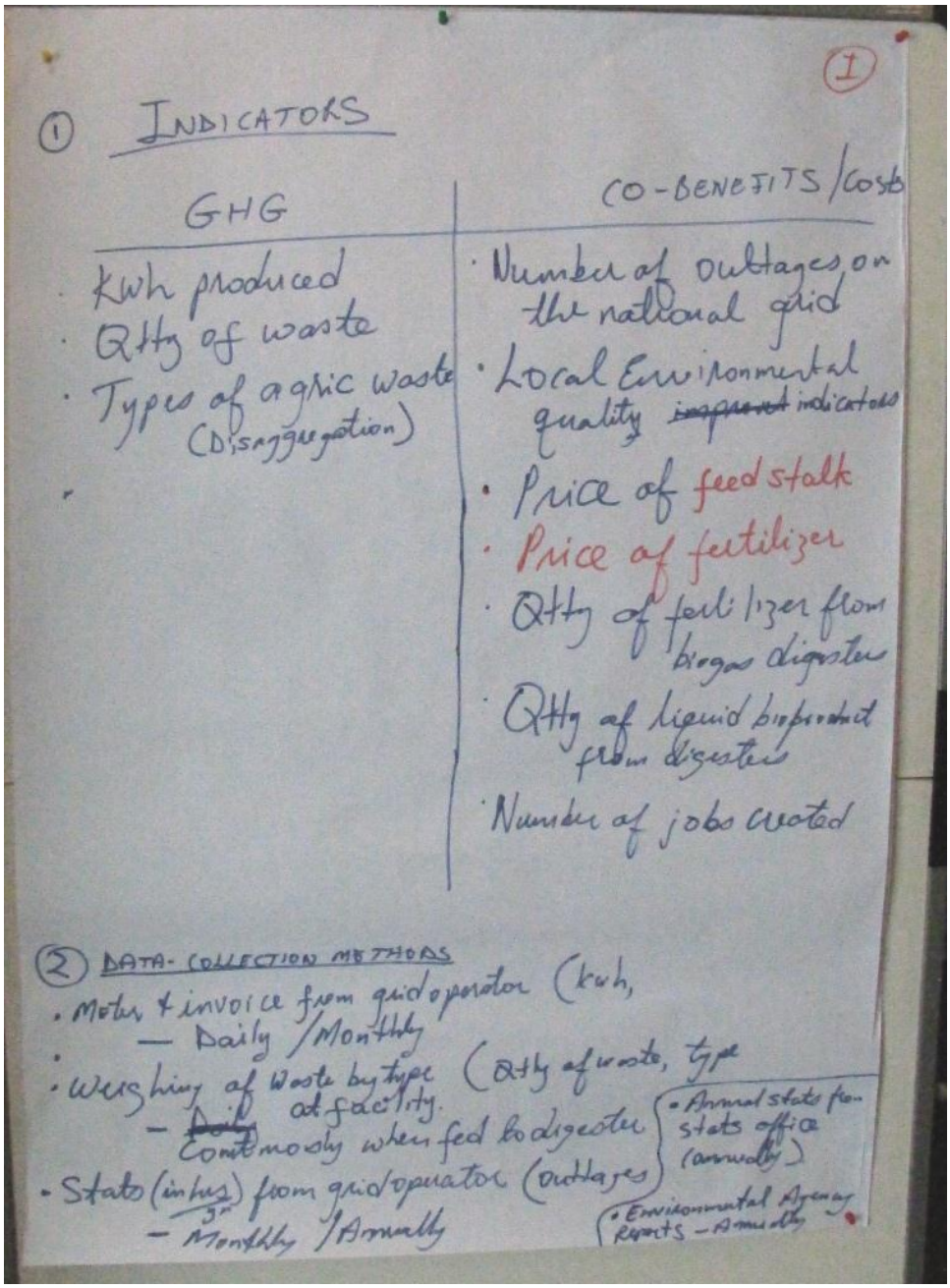
11:00 – 12:30	Group exercise: Deciding on MRV approach for a NAMA

Format: Discussion in break-out groups

Task:

1. **Define the most important indicators to be monitored as part of the MRV system. The indicators should address GHG reductions as well as co-benefits, negative impacts and transformational change (if applicable)**
2. **Describe very briefly the following aspects for each indicator:**
   - Data collection method
   - Data source
   - Data collection frequency
3. **Who are the main actors involved in the monitoring and what are their roles and responsibilities?**
4. **Describe one possible approach for verification of the monitored & reported information: Who carries out the verification and what should they do?**

Group 1 (part I)



(1)

① INDICATORS

GHG	CO-BENEFITS / Costs
· Kwh produced	· Number of outtages on the national grid
· Qtty of waste	· Local Environmental quality ~~improvement~~ indicators
· Types of agric waste (Disaggregation)	· Price of feed stalk
	· Price of fertilizer
	· Qtty of fertilizer from biogas digester
	· Qtty of liquid bioproduct from digester
	· Number of jobs created

② DATA-COLLECTION METHODS

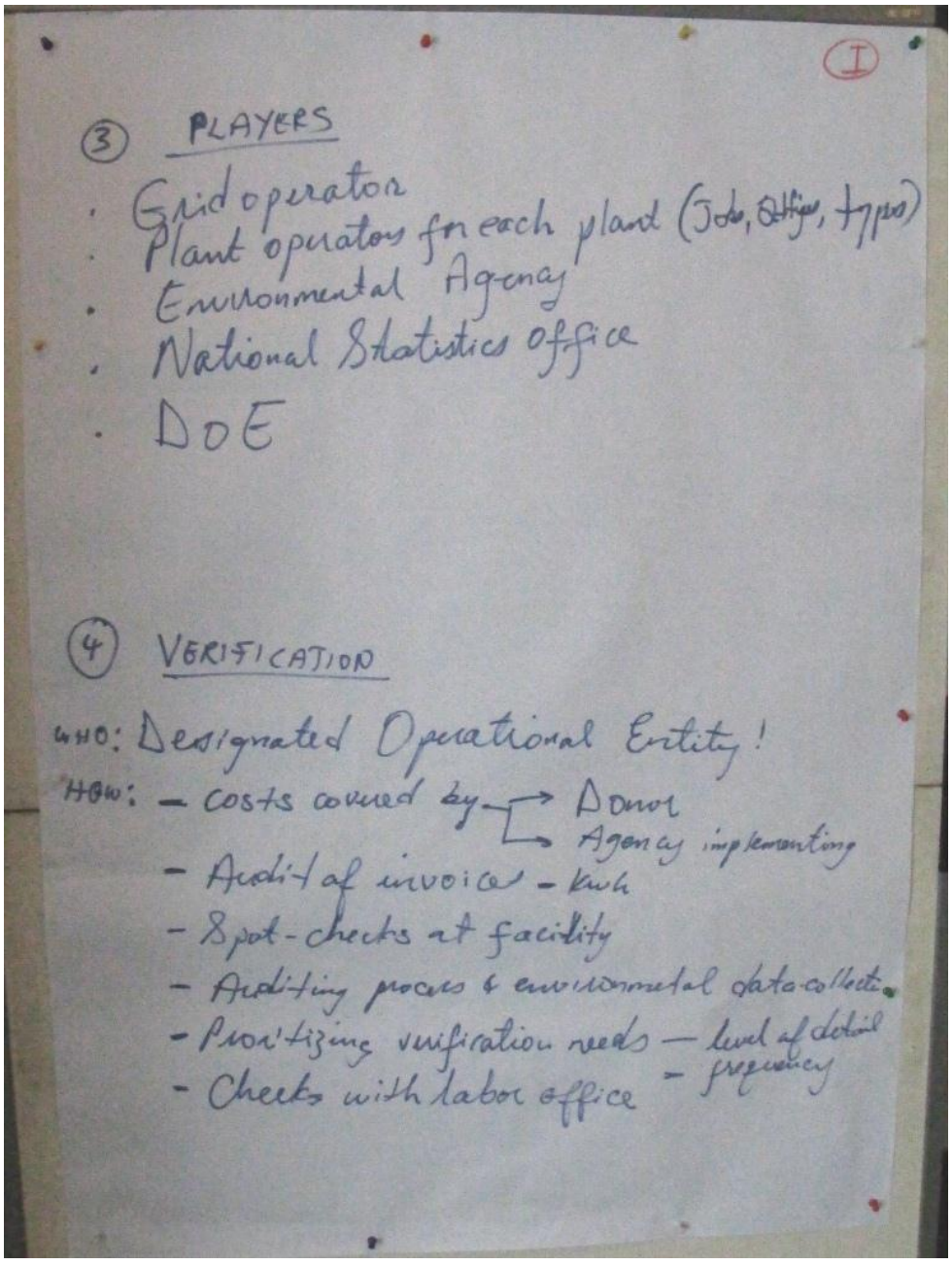
· Meter + invoice from grid operator (kwh, — Daily / Monthly

· Weighing of waste by type (Qtty of waste, type at facility.
— ~~Daily~~ Continuously when fed to digester

· Stats (in hrs) from grid operator (outtages
— Monthly / Annually

- Annual stats from stats office (annually)
- Environmental Agency reports - Annually

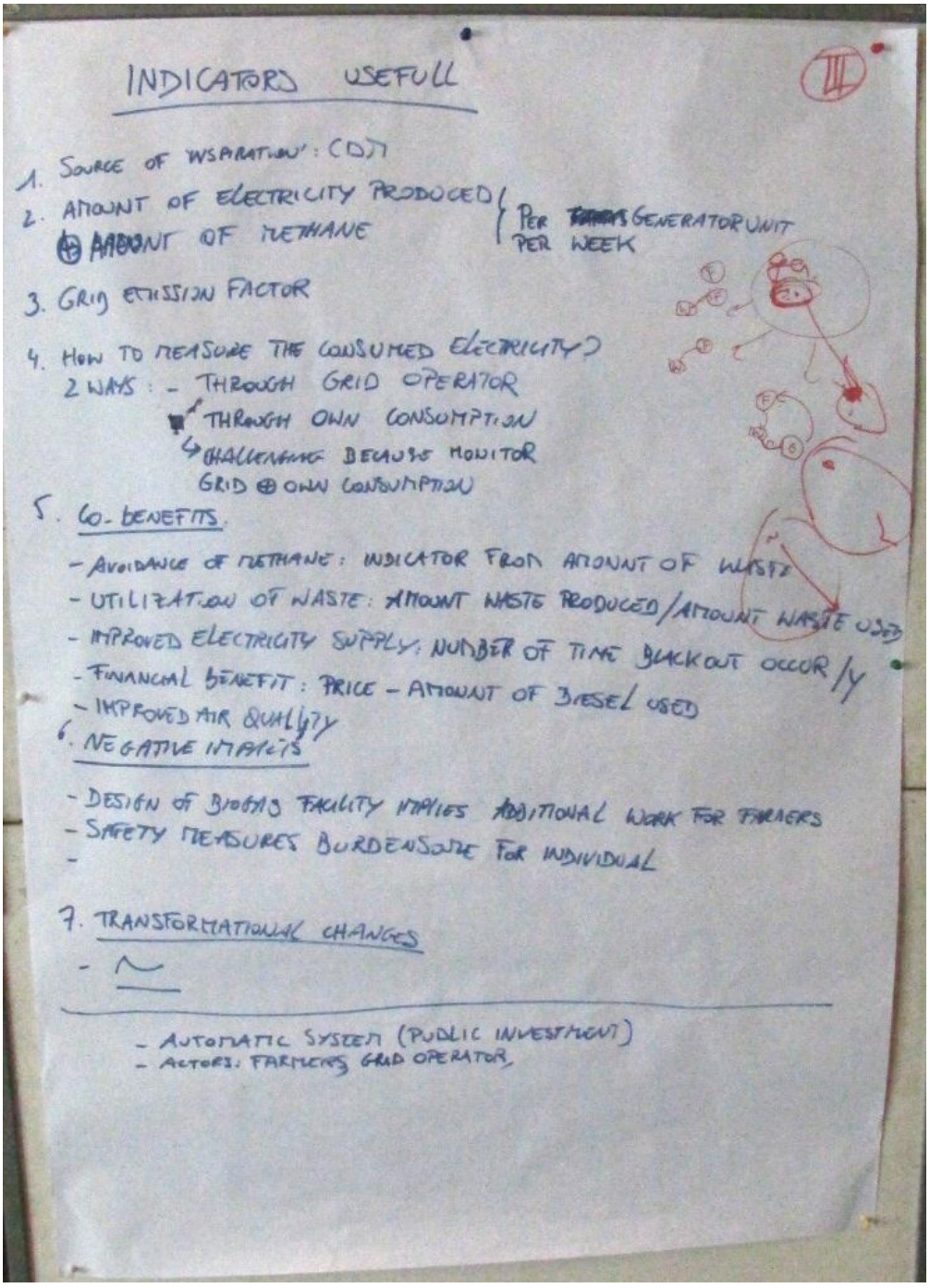
Group I (part II)



Group II


II
GHG ↓
- net metering (injected electricity)
- onsite " (own use)
- data loggers
- default values from official sources (EF)
- NAMA database by agency
quantity electricity generated (MWh)
electricity use (MWh)
self use
injected to grid
nº plants (NAMA database)
CO-BENEFITS / ⊖IMPACTS
- surveys to private sector
- grid operator
nº jobs created → survey
available electrification/access
nº outages (hr/yr)
grid operator
↓ air pollution (↓ burning waste) → survey
renewable share in electricity mix → state ministry &
MAIN ACTORS
(i) NAMA implementing agency - data collection, analysis, database
BANKS
OPERATING AGENTS (private sector) - generate & provide info to (i)
GRID OPERATOR
VERIFICATION
• spot checks (sampling)
• 3rd party (Financed by int rate of loan)
• plausibility checks of collected data by implementing agency

Group III


INDICATORS USEFULL
III
1. SOURCE OF WSPIRATION: CDM
2. AMOUNT OF ELECTRICITY PRODUCED / PER GENERATOR UNIT PER WEEK
AMOUNT OF METHANE
3. GRID EMISSION FACTOR
4. HOW TO MEASURE THE CONSUMED ELECTRICITY?
2 WAYS: - THROUGH GRID OPERATOR
- THROUGH OWN CONSUMPTION
CHALLENGING BECAUSE MONITOR GRID + OWN CONSUMPTION
5. CO-BENEFITS
- AVOIDANCE OF METHANE: INDICATOR FROM AMOUNT OF WASTE
- UTILIZATION OF WASTE: AMOUNT WASTE PRODUCED / AMOUNT WASTE USED
- IMPROVED ELECTRICITY SUPPLY: NUMBER OF TIME BLACKOUT OCCUR / Y
- FINANCIAL BENEFIT: PRICE - AMOUNT OF DIESEL USED
- IMPROVED AIR QUALITY
6. NEGATIVE IMPACTS
- DESIGN OF BIOGAS FACILITY IMPLIES ADDITIONAL WORK FOR FARMERS
- SAFETY MEASURES BURDENSOME FOR INDIVIDUAL
-
7. TRANSFORMATIONAL CHANGES
-
- AUTOMATIC SYSTEM (PUBLIC INVESTMENT)
- ACTORS: FARMERS, GRID OPERATOR,

16:00 – 17:00	Group exercise: Stakeholder consultation on deciding on an MRV approach for a NAMA

Format: Discussion in break-out groups and role play

Task: **Prepare and attend the stakeholder meeting related to the MRV system.**

Develop a position on how the MRV system should look like regarding:

- Which indicators should be used
- How these indicators should be monitored, reported and verified

Role Play

Group 1: NGO

Group 2: Donor

Group 3: Ministry of Environment

Group 4: Operators of plant

Group I

What is NB to the NGO perspective??

- Co-benefit

(a) Sustainable development e.g. jobs, living conditions, nature conservation

- Accurate, transparent quantification of emission reductions

(a1) Jobs, long-term sustainability of the project

(i) Number of jobs for the local community

(ii) Number of jobs lost

(iii) Training + relevant + long-term capacity building

(a2) Living conditions

(i) Number of houses benefiting

(ii) Power outages

(iii) Farmer income

(a3) Nature conservation

(i) Water quality

(b) Long-term sustainability of the project

(i) Power purchase permit/agreement??

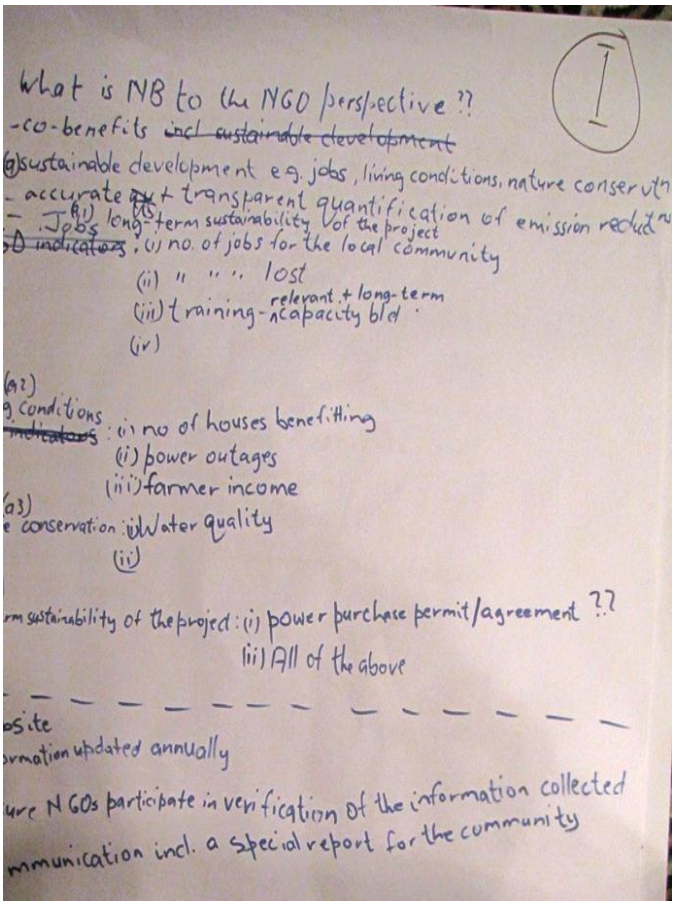
(ii) All of the above

(i) Website

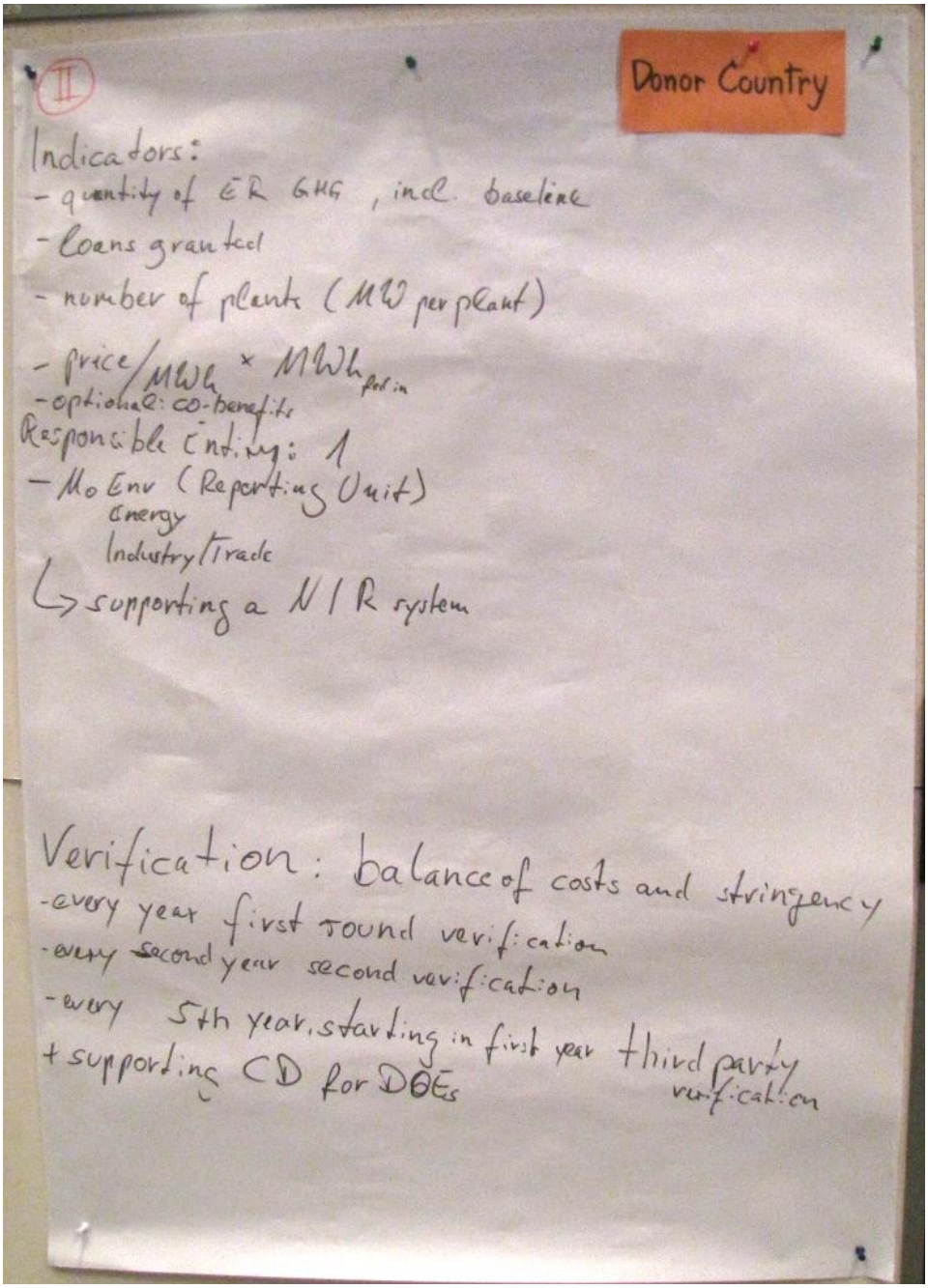
(ii) Information updated annually

(iii) Ensure NGOs participate in verification of the information collected

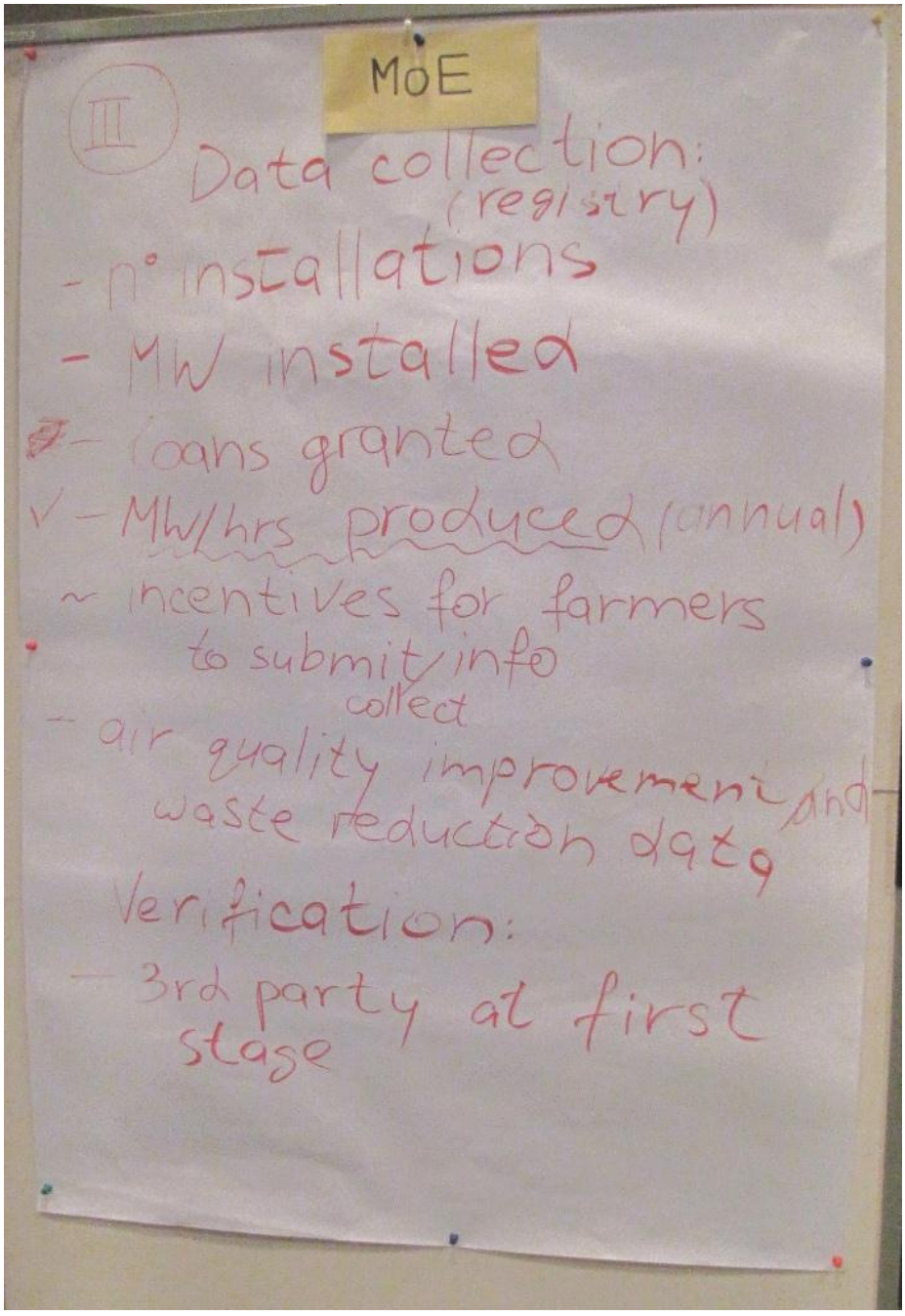
(iv) Communication incl. a special report for the community



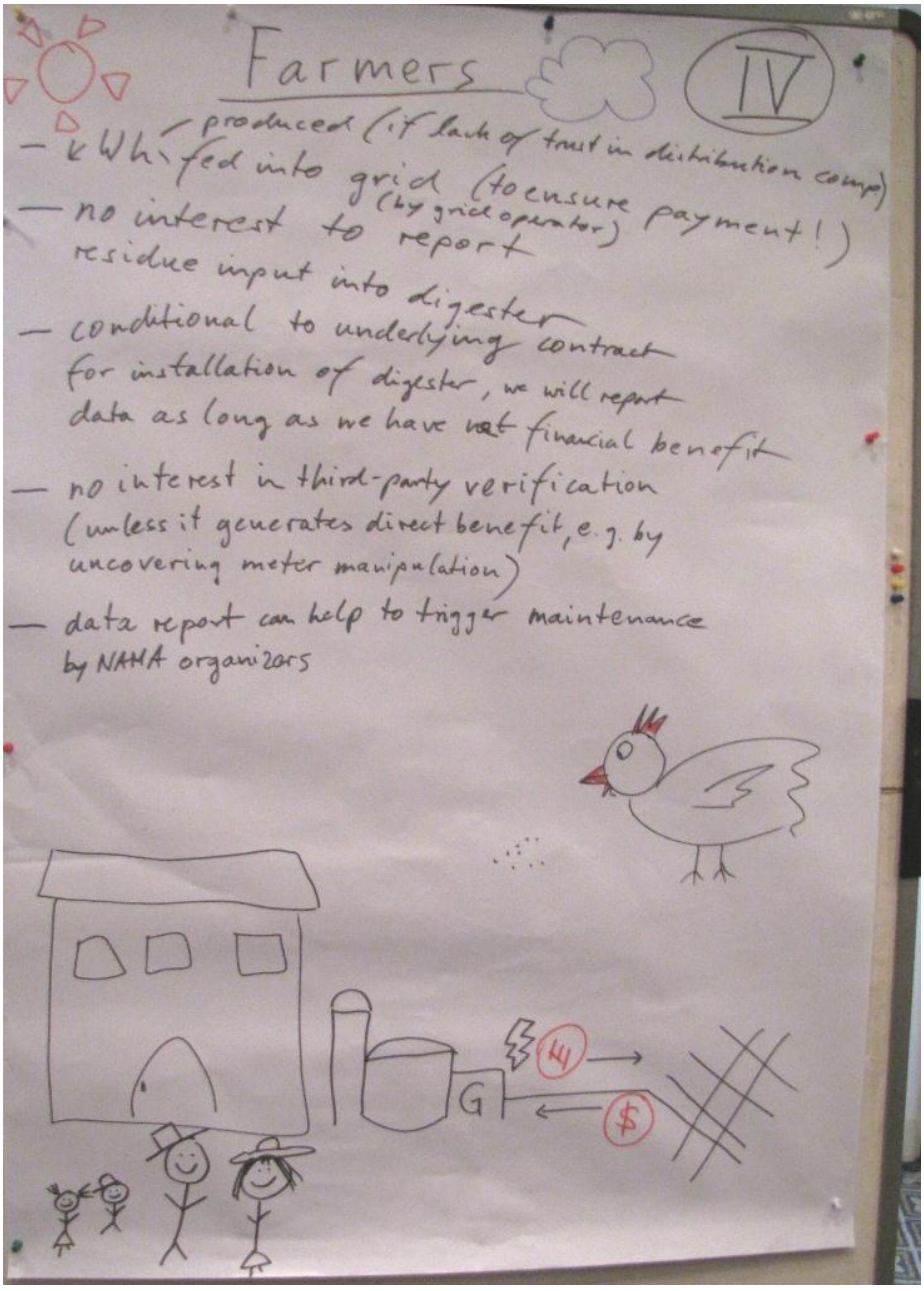
Group II


II
Donor Country
Indicators:
- quantity of ER GHG, incl. baseline
- loans granted
- number of plants (MW per plant)
- price/MWh × MWh
- optional: co-benefits
Responsible Entity: 1
- Mo Env (Reporting Unit)
Energy
Industry/Trade
↳ supporting a M/R system
Verification: balance of costs and stringency
- every year first round verification
- every second year second verification
- every 5th year, starting in first year third party verification
+ supporting CD for DOEs

Group III


MoE
II
Data collection:
(registry)
- n° installations
- MW installed
- loans granted
- MW/hrs produced (annual)
- incentives for farmers
to submit/info
collect
- air quality improvement and
waste reduction data
Verification:
- 3rd party at first
stage

Group IV


Farmers
IV
- kWh produced (if lack of trust in distribution comp)
fed into grid (to ensure payment!)
(by grid operator)
- no interest to report
residue input into digester
- conditional to underlying contract
for installation of digester, we will report
data as long as we have net financial benefit
- no interest in third-party verification
(unless it generates direct benefit, e.g. by
uncovering meter manipulation)
- data report can help to trigger maintenance
by NAMA organizers
G
kWh
$

15:00 – 16:00	Group discussion: Fixing the loopholes

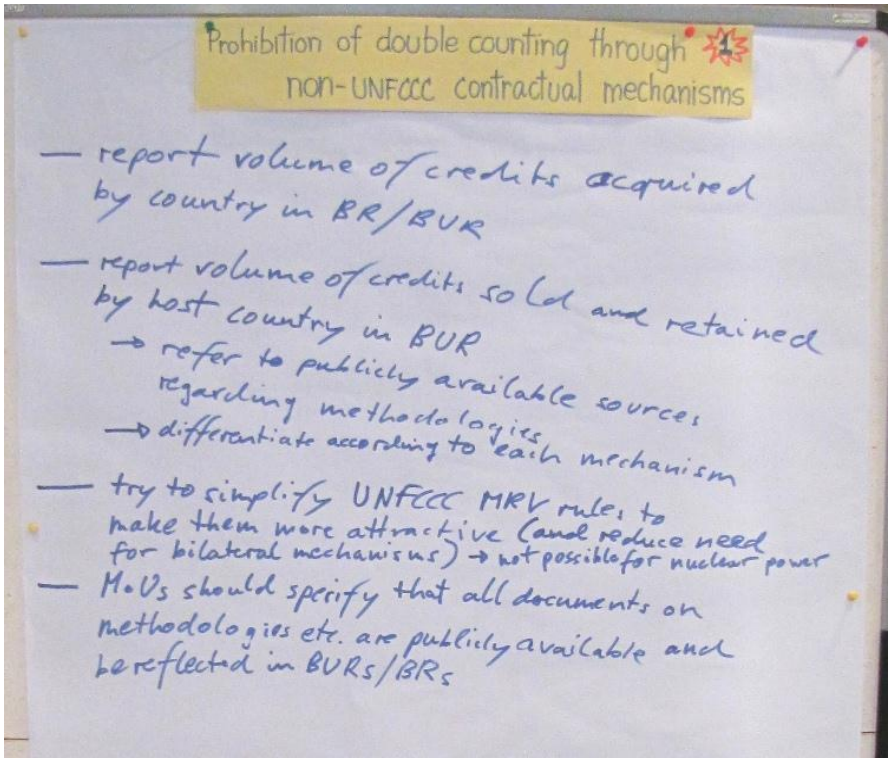
Format: World Café

Task: **What are the technical and political fixes to double counting in the context of the existing pre-2020 regime?**

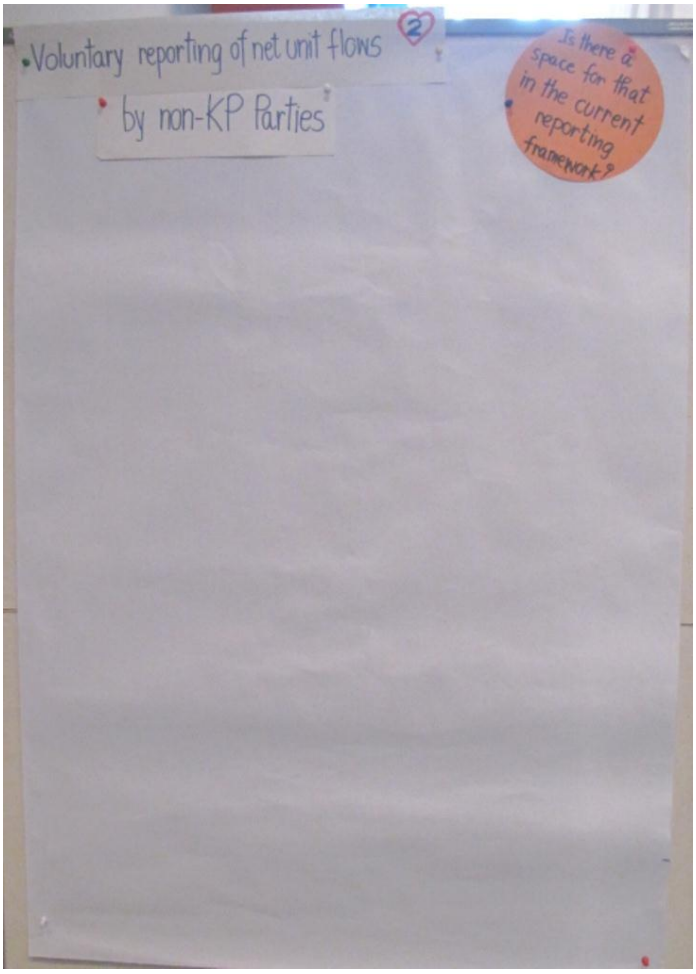
Options to discuss and explore:

- Prohibition of double counting through non-UNFCCC contractual mechanisms
- Voluntary reporting of net unit flows by non-KP Parties. Is there a space for that in the current reporting framework? (e.g. the BUR guidelines – Paragraph 12 (e) Annex 3, decision 2/CP.17)
- Is there a role for the ICA, and the "facilitative share of views", and at the same time the IAR and the "multilateral assessment"?
- Convention Joint Implementation Activities
- Is there a possibility of "offsetting" the mitigation gap created by double counting post-2020? How will responsibility be allocated amongst parties?

Group I



Group II

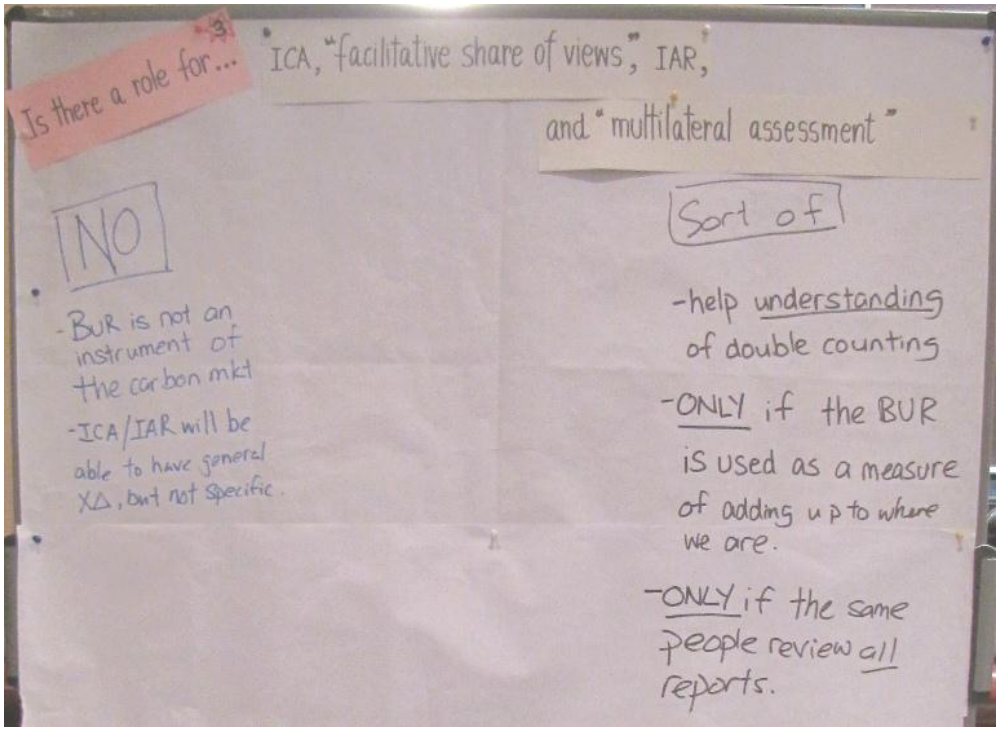


There is a provision of BUR guidelines: to the extent possible, parties will report on the use of market mechanisms.

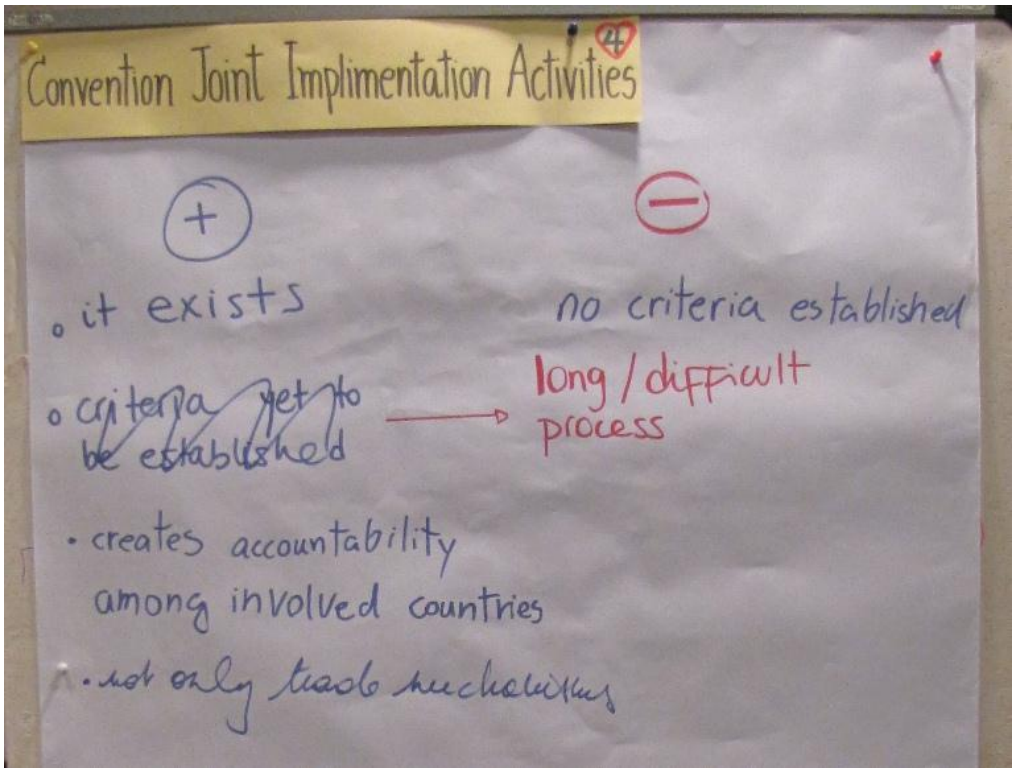
There are 3 things that need to be taken into account:

- Who are the non-KP parties? The intention was for developing countries
- Do the existing reporting guidelines allow us to report these net unit flows. The answer is “NO”
- The voluntary reporting does not stop countries in being more transparent

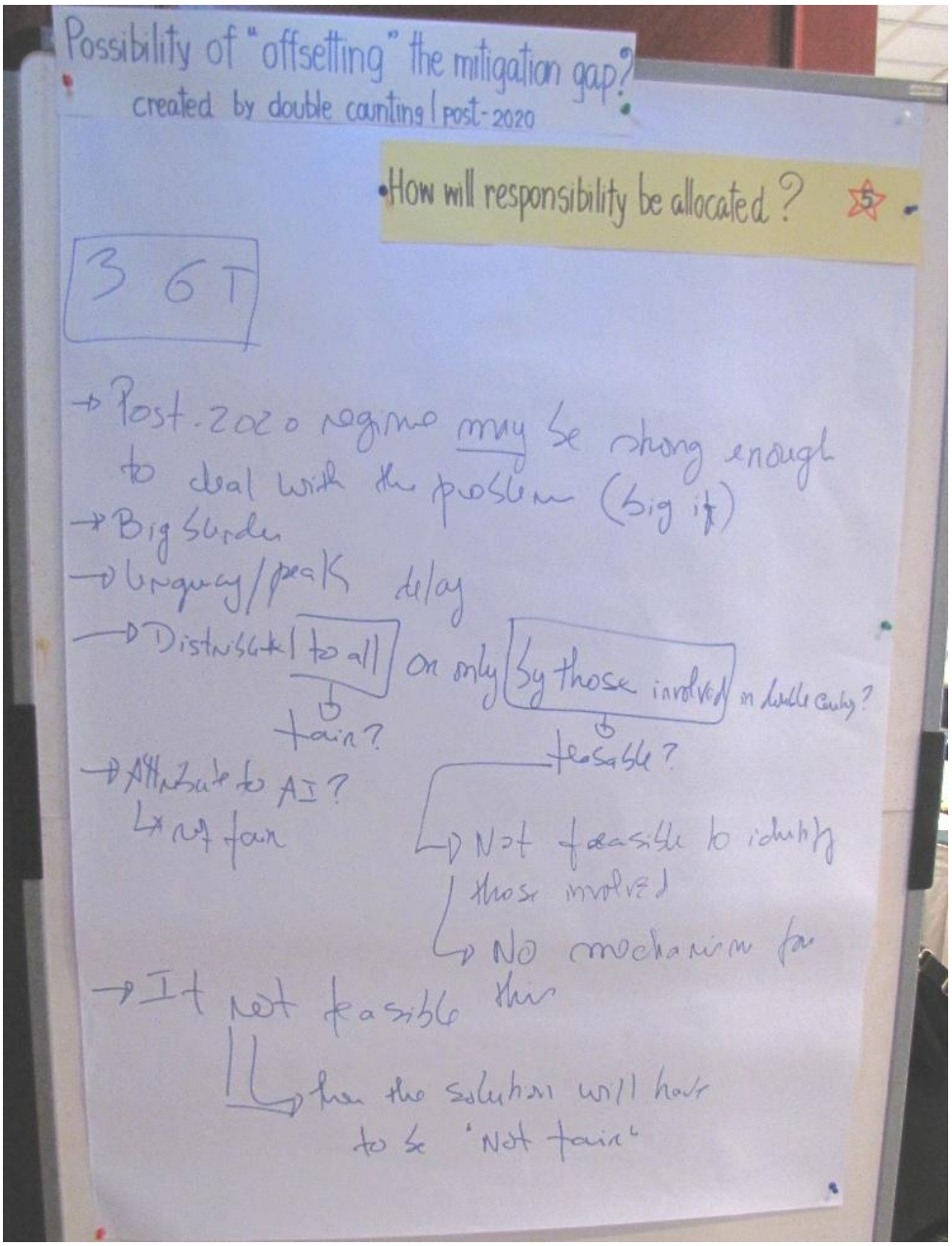
Group III


3
Is there a role for...
ICA, "facilitative share of views", IAR,
and "multilateral assessment"
NO
- BUR is not an instrument of the carbon mkt
- ICA/IAR will be able to have general XΔ, but not specific.
Sort of
-help understanding of double counting
-ONLY if the BUR is used as a measure of adding up to where we are.
-ONLY if the same people review all reports.

Group IV


Convention Joint Implementation Activities
+
−
it exists
criteria yet to be established
no criteria established
long / difficult process
creates accountability among involved countries
not only trade mechanism

Group V


Possibility of "offsetting" the mitigation gap?
created by double counting / post-2020
•How will responsibility be allocated?
3 6 T
→ Post-2020 regime may be strong enough to deal with the problem (big if)
→ Big burden
→ Urgency/peak delay
→ Distribute to all or only by those involved in double county?
fair?
feasible?
→ Attribute to AI?
↳ not fair
↳ Not feasible to identify those involved
↳ No mechanism for this
→ If not feasible
↳ then the solution will have to be 'Not fair'

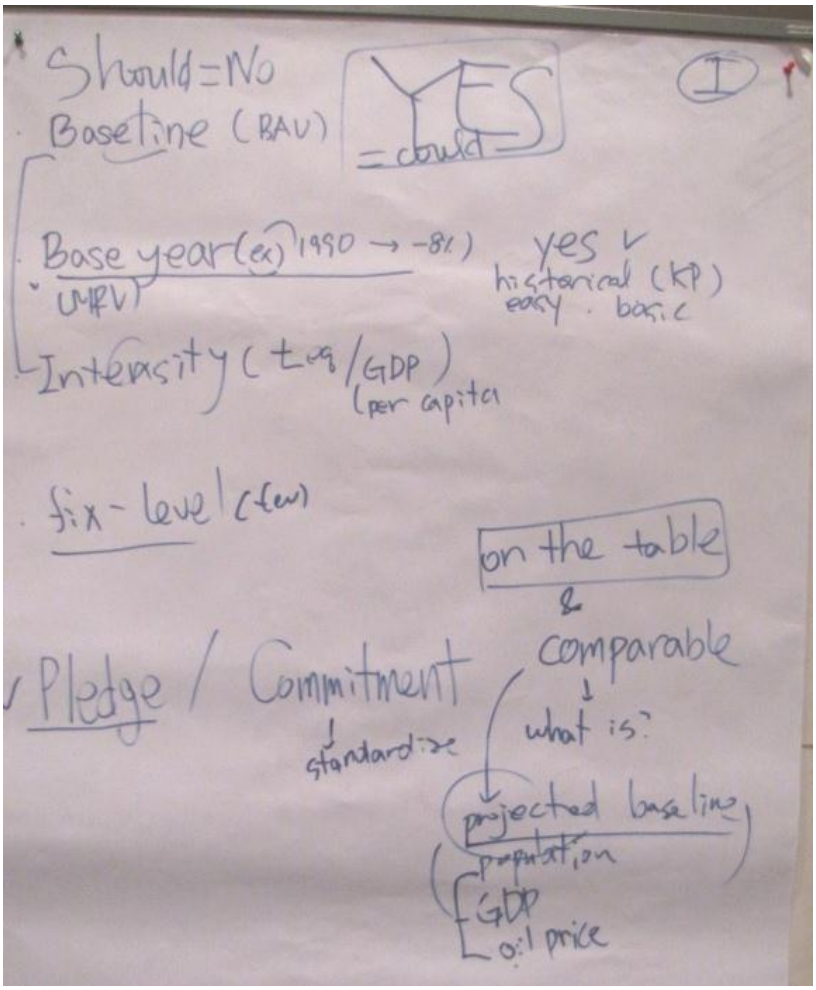
16:00 – 17:00	Group discussion: Linking different accounting standards to different types of pledges

Format: World Café

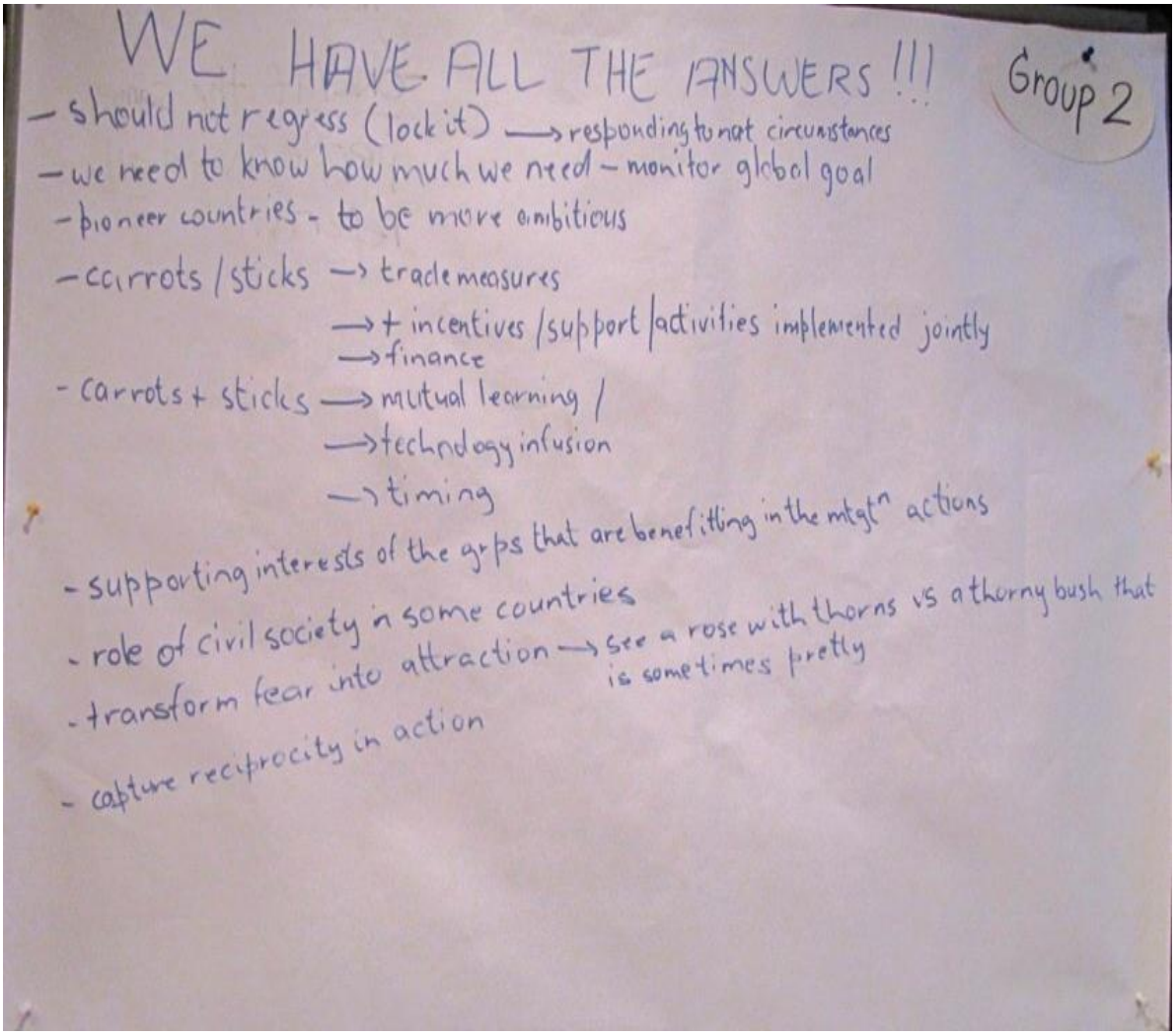
Task: **Answer the following questions**

- Should all pledge types (base year, baseline, intensity, and fixed level) be on the table for the post-2015 commitments?
- What processes can be adopted to ratchet up ambition of pledges over time?
- If a national, economy-wide pledge is not taken (e.g. a NAMA or sectoral goal), how can it be adopted over time? How can NAMAs and sectoral goals be designed with the most ambition?

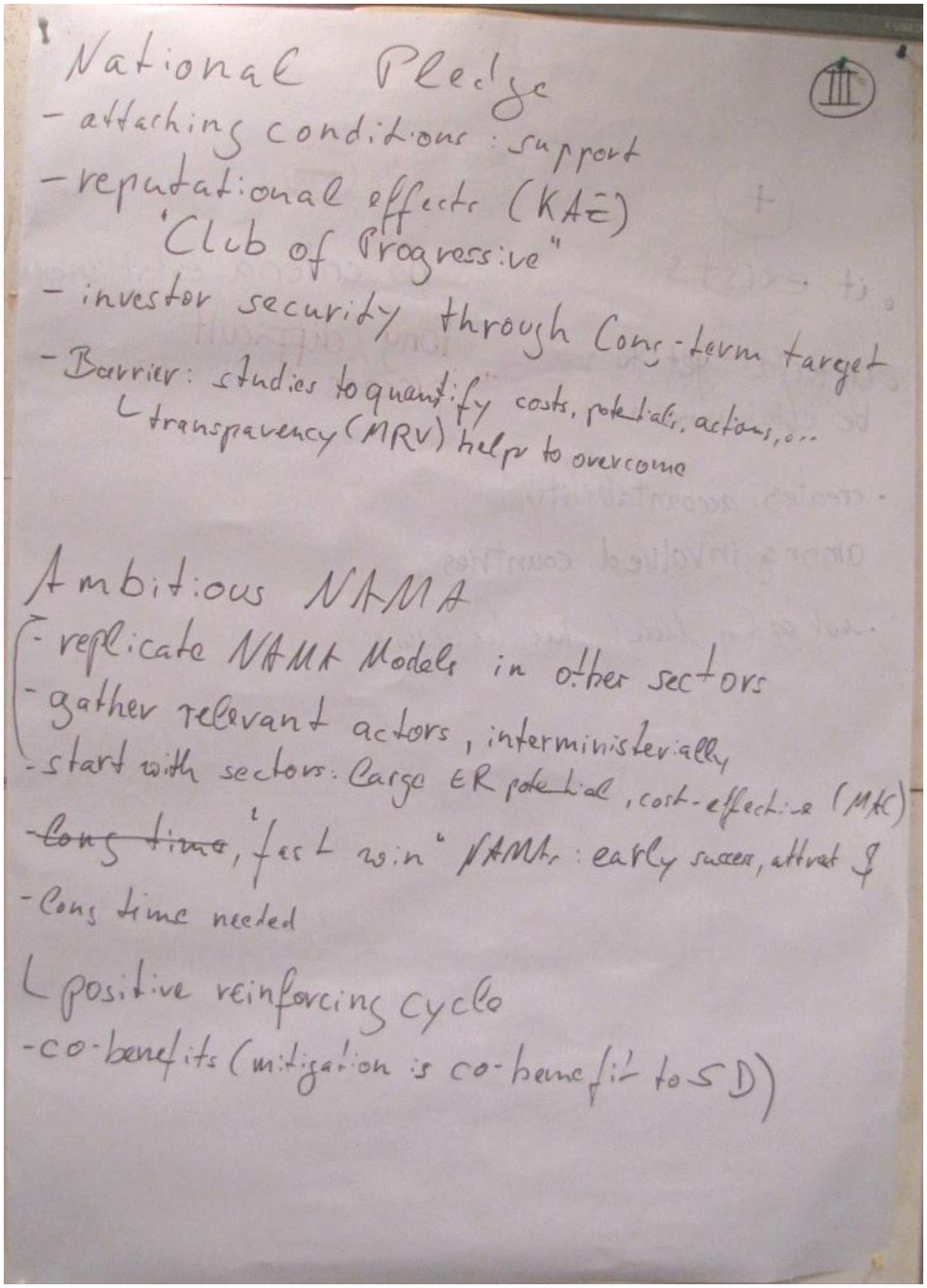
Group I



Group II


WE HAVE ALL THE ANSWERS !!!
Group 2
- should not regress (lock it) → responding to nat circumstances
- we need to know how much we need – monitor global goal
- pioneer countries - to be more ambitious
- carrots / sticks → trade measures
→ + incentives / support / activities implemented jointly
→ finance
- carrots + sticks → mutual learning /
→ technology infusion
→ timing
- supporting interests of the grps that are benefiting in the mtgt° actions
- role of civil society in some countries
- transform fear into attraction → see a rose with thorns vs a thorny bush that is sometimes pretty
- capture reciprocity in action

Group III


National Pledge
- attaching conditions : support
- reputational effects (KAE)
"Club of Progressive"
- investor security through Long-term target
- Barrier: studies to quantify costs, potentials, actions, ...
└ transparency (MRV) help to overcome
Ambitious NAMA
- replicate NAMA Models in other sectors
- gather relevant actors, interministerially
- start with sectors: Large ER potential, cost-effective (MAC)
- ~~Long time~~, "fast win" NAMAs: early success, attract $
- Long time needed
└ positive reinforcing cycle
- co-benefits (mitigation is co-benefit to SD)