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REPORTING AND RECORDING POST-2012 GHG MITIGATION COMMITMENTS, ACTIONS AND SUPPORT

Jane Ellis (OECD), Sara Moarif (IEA)
and Joy Aeree Kim (OECD)
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The ideas expressed in this paper are those of the authors and do not necessarily represent views of the OECD, the IEA, or their member countries, or the endorsement of any approach described herein.

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FOREWORD

This document was prepared by the OECD and IEA Secretariats in Autumn 2009 in response to the Annex I Expert Group on the United Nations Framework Convention on Climate Change (UNFCCC). The Annex I Expert Group oversees development of analytical papers for the purpose of providing useful and timely input to the climate change negotiations. These papers may also be useful to national policy-makers and other decision-makers. In a collaborative effort, authors work with the Annex I Expert Group to develop these papers. However, the papers do not necessarily represent the views of the OECD or the IEA, nor are they intended to prejudge the views of countries participating in the Annex I Expert Group. Rather, they are Secretariat information papers intended to inform Member countries, as well as the UNFCCC audience.

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TABLE OF CONTENTS

| | |
|--|----|
| EXECUTIVE SUMMARY AND CONCLUSIONS | 6 |
| 1. INTRODUCTION..... | 9 |
| 1.1 Definitions and terminology | 10 |
| 2. COVERAGE, PURPOSES AND FORM OF A REPORTING/RECORDING MECHANISM | 12 |
| 2.1 Possible forms of a reporting/recording mechanism..... | 12 |
| 2.1.1 National Schedules and registries..... | 13 |
| 2.2 Possible scope and coverage of a reporting/recording mechanism..... | 15 |
| 2.3 Context: where would a reporting/recording mechanism fit in the post-2012 climate framework?18 | |
| 2.4 Timing issues | 22 |
| 3. REPORTING/RECORDING GHG MITIGATION ACTIONS | 23 |
| 3.1 Over-arching issues..... | 23 |
| 3.2 Reporting unilateral actions in developing countries and actions/commitments in developed countries..... | 25 |
| 3.2.1 Reporting unilateral actions in developing countries | 25 |
| 3.2.2 Reporting/recording developed country actions and commitments | 25 |
| 3.3 Reporting supported actions in developing countries | 27 |
| 3.3.1 Information of primary importance | 27 |
| 3.3.2 Other information that may be needed | 29 |
| 3.4 Reporting credited actions in developing countries | 29 |
| 4. REPORTING SUPPORT BY DEVELOPED COUNTRIES..... | 30 |
| 4.1 What to report?..... | 30 |
| 4.1.1 General support information..... | 30 |
| 4.1.2 Contributions through multilateral channels | 31 |
| 4.1.3 Contributions through bilateral channels..... | 31 |
| 4.2 Frequency of reporting..... | 32 |
| 5. INSTITUTIONAL IMPLICATIONS | 34 |
| 5.1 Institutional implications of providing recognition of implemented mitigation actions reported qualitatively | 35 |
| 5.2 Institutional requirements to provide recognition of mitigation actions reported quantitatively | 36 |
| 5.2.1 Mitigation actions that generate emission credits..... | 36 |
| 5.2.2 Mitigation actions that benefit from support | 37 |
| 5.3 Institutional implications of quantifying support..... | 38 |
| 6. LOOKING FORWARD..... | 38 |
| REFERENCES | 40 |
| ANNEX I..... | 42 |
| GLOSSARY..... | 44 |

LIST OF TABLES

| | |
|--|----|
| Table 1: Summary Table: function, definition and tools to report and/or record | 7 |
| Table 2: Possible purposes of a reporting/recording mechanism, and the implications for information coverage | 17 |
| Table 3: Coverage, frequency and timing of current and possible future MRV-related components | 20 |
| Table 4: Possible reporting requirements for mitigation actions and support | 33 |

LIST OF FIGURES

| | |
|---|----|
| Figure 1: Different and overlapping possible functions of National Schedules and registries | 15 |
| Figure 2: Possible coverage of a reporting/recording mechanism | 18 |
| Figure 3: Timing implications of different activities under registries and schedules | 22 |

Executive Summary and Conclusions

The Bali Action Plan (BAP) indicated the importance of “measurable, reportable and verifiable” (MRV) greenhouse gas (GHG) mitigation actions and commitments, as well as support for GHG mitigation actions, in the post-2012 climate framework. Negotiations underway for this framework have highlighted the benefits of, and interest in, expanding current MRV-related provisions, including to develop a more comprehensive and timely picture of countries’ mitigation efforts and support.

Establishing some form of reporting or recording mechanism that could be used to centralise and track information on country mitigation actions, commitments and support could fill this gap. This mechanism could focus on current efforts, or also include information on future or planned efforts. Such a mechanism could take different forms, including a stand-alone electronic registry where actions (and potentially also commitments and support) could be reported *ex post*. Alternatively, information on actions and commitments could be recorded *ex ante* as an integral (and potentially legally-binding) appendix of a post-2012 climate agreement, *e.g.* in the form of “National Schedules”.

This paper explores the possible purposes, coverage and form of such a reporting/recording mechanism; what information it could include in terms of actions, commitments and support; and the institutional implications of different design options. It thus focuses on the measurable and reportable components of MRV, rather than on verification.

There is as yet no consensus on several key issues surrounding a reporting/recording mechanism, such as : the aim of this mechanism (*i.e.* whether to report information, or to record commitments/actions); what information a reporting/recording mechanism would contain; the form of a mechanism – or even what constitutes “nationally appropriate mitigation actions” and “support”.

A reporting/recording mechanism could perform several functions. These include:

- Increasing the transparency of actions underway to mitigate GHG emissions in developed and/or developing countries;
- Enhancing ability to assess global emission trajectories and/or reductions (if information reported/recorded is provided in GHG terms);
- Identifying countries/sectors where further actions could take place, either unilaterally, or contingent on support being provided;
- Providing the necessary information to match proposed actions with support.

Decisions regarding the purpose, coverage and form of a reporting/recording mechanism are not just technical issues – these can influence the legal characteristics of countries’ GHG mitigation actions; how much needs to be negotiated and agreed for a post-2012 framework; determine what information will need to be collected, and when. It can also affect how such information is used. Decisions on the coverage of a reporting/recording mechanism can also increase the effectiveness of GHG mitigation within a country (for example, policy coherence could be furthered by encouraging mitigation actions to be undertaken in the context of a national low-emissions development strategy).

Table 1: Summary Table: function, definition and tools to report and/or record

| Function | Definition | Tool |
|-----------|---|--------------------|
| Reporting | This refers to a post-2012 account of mitigation actions, commitments and/or support. Such reporting would be included in the post-2012 MRV framework, and can refer to actions already undertaken (<i>ex post</i>) as well as planned actions. Reporting of actions, commitments and support could be carried out via a registry of mitigation actions. | Registry |
| Recording | This refers to the act of agreeing to undertake particular actions or commitments in a post-2012 climate framework. These actions or commitments would be recorded at the time of agreeing or signing such a post-2012 agreement, <i>i.e.</i> prior to their implementation and/or 2012. Recording mitigation actions or commitments could be done via National Schedules, and so could therefore be established as a legally-binding part of a post-2012 agreement. Actions registered <i>ex ante</i> , could be modified <i>ex post</i> . | National Schedules |

Several possibilities exist for the purpose, coverage, and form of a reporting/recording mechanism. The coverage could range from narrow, *e.g.* mitigation actions in developing countries that are supported with multilateral finance channelled via the UNFCCC, to much broader, *e.g.* mitigation actions and low-emission development strategies in all developing countries; the support given/received to undertake them; and emission commitments or actions in developed countries. Depending on the coverage of a reporting/recording mechanism, the purposes for which it could be used would also vary. For example, including information on possible GHG mitigation actions (as well as actions already implemented) would facilitate international identification of such opportunities, while including information on (incremental) costs could allow the cost-effectiveness of different mitigation options to be compared.

The form that a reporting/recording mechanism may take could also vary. One option is to establish an electronic registry of GHG mitigation actions (and potentially support), to which countries could add information as and when they deem appropriate. Another option is to set up “National Schedules” that outline individual countries’ planned GHG mitigation actions and/or emission pathways as an integral part of a post-2012 framework. There is significant possible overlap between the functions of a registry and that of National Schedules: both could include information on GHG mitigation actions, on low-emission development strategies (LEDS), and on emission commitments in developed countries. However, there are also functions that, as currently envisaged, only National Schedules or alternatively registries could fulfil. For example, registries could include information such as support needs/provision, whereas schedules could include information on long-term emission pathways. As such, a post-2012 MRV framework could include either National Schedules, or a registry, or both.

Decisions on how countries’ GHG mitigation actions are reported and recorded are important as they can affect the transparency and consistency of information – and therefore also the ease of recognising and/or comparing different countries’ actions (commitments and support). These decisions can also affect which GHG mitigation actions are “eligible” to be recognised in a reporting/recording mechanism (*e.g.* the international community may decide to limit eligibility to actions whose effects can be measured in GHG terms), their legal nature, and the amount of information needed to be negotiated prior to a post-2012 agreement.

Collecting data and estimating the emission impacts of particular mitigation actions can take considerable time and resources, so the effort should be targeted to those who will use the data. The international community therefore needs to think carefully about *why* it needs data and how it will be used, in order to determine *what* data and other information are to be collected. For example, it may make more sense to

focus international M, R and V efforts on quantifying the effects of a country's low-emission development strategy, rather than on the individual mitigation actions making up this strategy. Quantifying effects at a more aggregate level is also likely to reduce risks of double-counting.

Timing issues are also important considerations, as one form of reporting/recording mechanisms (*e.g.* National Schedules) will require some up-front information on the extent of specific post-2012 mitigation actions in developing countries before reaching an agreement on the post-2012 regime. In contrast, other forms of reporting/recording mechanisms could leave open exactly what post-2012 actions developing countries will take until a reporting/recording mechanism becomes operational. Further, there will necessarily be a time lag between deciding what detailed action-level information needs to be reported, and countries being able to do so. This time lag can be significant, and requiring detailed information sooner, *e.g.* on actions to be undertaken - as in the case of schedules - could be a barrier to reaching international agreement in COP15. On the other hand, schedules could give countries more time to build MRV capacity, as they could have a longer lead-time between agreeing to implement an action, and measuring, reporting and verifying its effect.

Establishing a reporting/recording mechanism will have institutional implications, at both the national and international levels. These implications will be larger if mitigation actions can generate carbon credits, as the international community may require more checks and balances for credited actions than for mitigation actions whose implementation do not affect the carbon market. Institutional requirements of a reporting/recording mechanism will also be greater if mitigation actions can be developed at a disaggregated level (*e.g.* project or city). For example, if mitigation actions are established at the national level, in the form of a low-emission development strategy, then any international governance structure for these actions would need to be able to assess one per country. However, if mitigation actions could be developed at a much lower level of disaggregation (*e.g.* project, city, province, sector), then there could be many tens of thousands. This would need a different institutional setup, and may encourage Parties to agree to a MRV framework that focuses on the main items of countries' mitigation actions.

A key to establishing a reporting/recording mechanism may be agreement on a minimum set of data and information (for commitments, support and/or GHG mitigation actions) needed within a reporting/recording mechanism, and what information and/or data would be desirable if available. For example, minimum information on developing country mitigation actions in a particular country and sector could include the title of the action, its implementation status, aim and timeframe, the bodies implementing the mitigation action (and associated MRV) as well as information on whether M, R and V have already been carried out, and the (expected) GHG impacts of the mitigation action.

From an environmental perspective, what matters is that enhanced GHG mitigation occurs: whether each individual component of this is subject to MRV is less important. This is also true from the perspective of increased international recognition for actions in developing countries. However, detailed information on individual mitigation actions may be useful in certain cases; this will likely be required when mitigation actions generate credits for which environmental integrity is critical, and may also be required where countries seek to assess the environmental and/or cost-effectiveness of support.

Looking forward, there is pressure for both developed and developing countries to report or record more comprehensive and timely information on their GHG mitigation actions – as well as on the support provided/received. However, reporting or recording information is not a goal in itself; but a means to an end. The MRV question that the international community faces is whether *ex post* reporting and/or *ex ante* recording would best facilitate the achievement of the environmental end that is desired.

1. Introduction

The Bali Action Plan (BAP) highlighted the importance of “measurable, reportable and verifiable” greenhouse gas mitigation actions and commitments, as well as support for GHG mitigation actions, in the post-2012 climate framework. This language on “measurable, reportable and verifiable” (MRV) was introduced to apply both to developed countries’ commitments and actions (paragraph 1(b)(i) of the BAP), as well as to “nationally appropriate mitigation actions by developing country Parties in the context of sustainable development, supported and enabled by technology, financing and capacity-building” (paragraph 1(b)(ii)). Extending MRV provisions to actions undertaken in developing countries (as well as in developed countries) could have many benefits, including more comprehensive information on global GHG mitigation actions, more information available to assess the effectiveness of such actions, and greater recognition of GHG mitigation actions undertaken in developing countries. Developing a reporting and/or recording framework that collects information on GHG mitigation actions and commitments in a single place, and that is flexible enough to evolve over time, could also help the international community better keep track of global mitigation efforts, and to enhance them as needed.

This paper explores the possible purposes, coverage and form of such a reporting/recording mechanism; what information it could include in terms of actions, commitments and support, and the institutional implications of different design options. It therefore focuses on the “R” and – to a lesser extent – “M” components of MRV: less focus is placed on verification.

At present, information on greenhouse gas mitigation (GHG) actions, and the support for such actions, is reported internationally in countries’ National Communications.¹ This information is patchy, particularly from non-Annex I countries, as current requirements allow for very irregular reports². There is thus growing interest in having a more comprehensive, and timelier, picture of GHG mitigation actions – particularly in developing countries where information is scarcest.

Such a picture could be obtained by establishing a mechanism to record and/or report different countries’ mitigation commitments and actions, including nationally appropriate mitigation actions in developing countries. A reporting or recording mechanism could thus identify enhanced GHG mitigation actions, and also support for these actions, in a measurable, reportable and verifiable (MRV) manner – as per the Bali Action Plan. Suggestions for a “registry” and for “National Schedules”, both of which could perform the function of recording and reporting GHG mitigation actions in developing and developed countries, have been made in UNFCCC negotiations for a post-2012 framework. As indicated in section 2, these proposals are not necessarily competing options but could co-exist in a post-2012 outcome, depending on the overall design of the mechanism, and allocation of possible functions.

Information included in a reporting/recording mechanism could focus on one or more of four issues:

- GHG mitigation actions already underway (unilateral and/or supported);
- Agreed future GHG mitigation actions (unilateral, supported or credited);

¹ As well as including information on GHG mitigation actions, countries’ National Communications also contain information on several other issues, including a country’s adaptation measures; national circumstances; activities in research and systematic observation; education and public awareness; and technology transfer. Non-Annex I countries also need to include a national GHG emissions inventory.

² Ellis and Larsen (2008) provide an overview of existing reporting requirements for GHG mitigation actions.

- Possible GHG mitigation actions (supported or credited);
- Support (current and/or pledged) for such actions.

This paper explores proposals of “National Schedules” and “registries” for recording and reporting GHG mitigation commitments, actions and support in a post-2012 climate framework. It explores how a mechanism for recording and reporting mitigation actions (and potentially also support) could be developed³, and highlights the different possible functions of different designs. Section 2 outlines the possible purposes, coverage and form of a registry. Sections 3 and 4 discuss issues relating to reporting GHG mitigation actions and support, and provide possible guidelines for such reports. Section 5 highlights the institutional requirements associated with recording and reporting different types of information on GHG mitigation actions and support. Section 6 concludes.

1.1 Definitions and terminology

Although the concept of a mechanism for reporting GHG mitigation actions is increasingly popular, it has not yet been agreed. It would therefore be useful to set out some definitions. For this paper, the definitions used are those in text box 1.

³ The issue of matching support provision with support needs is assessed in an accompanying paper (Kim *et al.* 2009).

Text box 1: Definitions and terminology

Mitigation actions: The term “mitigation actions” is used in this paper to encompass GHG mitigation actions in developing and developed countries. These include actions targeting GHG mitigation directly (climate-specific) as well as actions that are climate-relevant, such as policy reforms. Mitigation actions may occur at different scales, *i.e.* project level, sector level, programmatic, national or sub-national level. Mitigation actions can also take various forms such as regulatory or fiscal measures, institutional reforms or R&D support.

Mitigation actions can be classified into three categories⁴.

Unilateral: Actions financed and implemented without any external support (Implemented and/or pledged).

Supported: Those that require (or have benefitted from) assistance, in the form of finance (*e.g.* loans or grants), capacity building and/or technology in order to be implemented (This paper does not make any judgement as to how such support is provided). The term could also refer to mitigation actions that have benefitted from finance (*e.g.* loans or grants), capacity building and/or technology.

Credited: Mitigation actions that are undertaken to generate credits which can then subsequently be sold on the carbon market. While this could also be seen as a form of “support”, it is useful to separate this category of mitigation actions as there are several already-existing requirements relating to how to measure, report and verify emission reductions from market-based mechanisms.

Registry: This term is used to signify the location/format in which information on mitigation actions (and potentially other information, *e.g.* on the nature and level of support provided by developed countries) is kept. It will be this information that is measured, reported and verified in accordance with the Bali Action Plan. (This paper assumes that mitigation actions whose GHG emission reductions are difficult to quantify could still be included in a registry for recognition purposes, but that their emission impacts would be classified in other terms⁵, *e.g.* in installed renewable capacity, hectares of reforested land, or “NE” (not estimated)).

Schedule: The term is used to designate an annex, appendix or supplement to an international agreement, which outlines individual parties’ specific commitments and actions (*e.g.* in terms of GHG emission targets, whether economy-wide or sectoral, or in terms of GHG mitigation actions with quantifiable emissions reductions outcome) under the agreement. Proposals in UNFCCC negotiations suggest schedules could be legally-binding: The precise legal nature of the schedule could depend on how it is referred to in the agreement, how it is created and can be amended. Text box 2 provides an example of schedules as part of the General Agreement on Trade in Services (GATS).

Reporting: This refers to a post-2012 account of mitigation actions, commitments and/or support. Such reporting would be included in the post-2012 MRV framework, and can refer to actions already undertaken (*ex post*) as well as planned actions. Reporting of actions, commitments and support could be

⁴ As indicated subsequently, these categories can overlap in practice, making it difficult to clearly identify a mitigation action as unilateral, supported or credited. Further, as yet there is no agreement on what a “nationally appropriate mitigation action” constitutes for developing countries, with some countries indicating that these are only actions that benefit from international support, and other countries indicating that they include unilateral and credited actions (see Annex for more detail).

⁵ For further discussion and examples see Ellis and Moarif, 2009.

carried out via a registry of mitigation actions.

Recording: This refers to the act of agreeing to undertake particular actions or commitments in a post-2012 climate framework. These actions or commitments would be recorded at the time of agreeing or signing such a post-2012 agreement, *i.e.* prior to their implementation and/or 2012. Recording mitigation actions or commitments could be done via National Schedules, and so could therefore be established as a legally-binding part of a post-2012 agreement. Actions registered *ex ante*, could be modified *ex post*.

Low-emission development strategies (LEDS): Refers to a country-wide strategic plan outlining the shift towards a lower-emission and climate-resilient growth path. Based on the socioeconomic profile and priorities of the country, it could include a long-term strategic vision or pathway, and a short- to medium-term component outlining specific actions to reach the pathway⁶

Mitigation support: Mitigation support is defined as international efforts that would trigger or directly provide financing, capacity building and technology support. It could include public (*e.g.* dedicated funds or ODA) and/or private (*e.g.* carbon market) sources, and could be reported in financial or other terms (*e.g.* credits generated/received, training courses provided etc.). Support can be North-South, *i.e.* with finance flowing from developed to developing countries, or South-South, *i.e.* with finance flowing from one developing country to another.

Matching: Matching is defined as a process of co-ordinating support from developed countries with support needs to implement mitigation actions in developing countries. Once NAMAs and their support needs are identified, and this information is submitted to a reporting/recording mechanism, matching involves assessment of support requests and prioritisation of support, so that support could be disbursed.

2. Coverage, purposes and form of a reporting/recording mechanism

There are several possible purposes, coverage, and forms of a reporting/recording mechanism for GHG mitigation actions. These are outlined below.

2.1 Possible forms of a reporting/recording mechanism

A reporting/recording mechanism for GHG mitigation actions/commitments could take different forms. These could include an electronic registry; “schedules” (or other form of annex or supplement) attached to a legal agreement, and/or other (*e.g.* text document⁷) submissions to a central body. A future climate change agreement could also include provisions for both a registry (to inform on actions/support undertaken, sought or pledged by some Parties), and a National Schedule (to record commitments and actions to be and/or being implemented unilaterally, with previously agreed support or credited through the carbon market). An outcome that requires commitments and actions to be recorded at the time of agreeing

⁶ Adapted from Project Catalyst, 2009.

⁷ This paper examines the first two options in detail. Submitting text documents could be similar to the manner in which National Communications are submitted to the UNFCCC. However, this type of reporting does not facilitate cross-country assessments as information for each country is in a separate document. Further, as reporting is not done in a specific template (and for NCs, is not comprehensive), it does not always contain exactly comparable information. Reporting in this type of manner would therefore have only a limited role in increasing transparency and international recognition of GHG mitigation efforts, and so is not assessed further in this paper.

a post-2012 climate framework would clarify the impact of mitigation efforts on the global GHG pathway, although could also require such information to be agreed up-front.

The form in which post-2012 GHG mitigation actions are reported and recorded can have important ramifications, as it can:

- Affect the **transparency and consistency** of information provided from different countries;
- Help increase the **timeliness and comprehensiveness** of information;
- Affect the **legal character** of obligations; and
- Also affect **the negotiation process itself** (as some forms of reporting and recording GHG mitigation actions could require more information to be agreed up-front than others).

Transparency and consistency of submissions would be facilitated if they were made in the same format, and used the same units. This could be done by requiring submissions to be made electronically in a common reporting format (*e.g.* as per annual GHG inventory submissions under the Kyoto Protocol for Annex I countries). Developing guidance on how to report information (*e.g.* building on current guidance for countries' National Communications) could also help harmonise reports of GHG mitigation actions. The availability of common templates or guidance documents can also facilitate any review/verification process. However, experience to date with Annex I National Inventory Reports, as well as Annex I National Communications, shows that countries do not always apply such guidelines in a consistent manner.

The format in which information is reported can also affect the timeliness and comprehensiveness of submissions. Thus, reports – such as those to any registry – that are more streamlined than National Communications, *e.g.* that cover fewer issues, and/or contain less textual description, and that are reported via a simple reporting format, would be easier to prepare. This could encourage more frequent and timely reporting in a registry, and could also enable updates to “National Schedules”.

As mentioned above, quantifying GHG impacts of mitigation actions can be challenging, particularly for actions whose effects – even if potentially significant – can be indirect and/or long-term, such as R&D expenditure or urban planning. This means that if a reporting/recording mechanism for GHG mitigation actions is established whereby the effects of GHG mitigation actions have to be quantified in GHG (rather than non-GHG) terms, it could skew activities in favour of actions that can be thus quantified, and/or could result in an incomplete listing of actions.

2.1.1 National Schedules and registries

As highlighted above, Parties have proposed different forms by which GHG mitigation actions could be reported and/or recorded. This includes a (*e.g.* electronic) registry. It could also include a “National Schedule” or other form of annex or supplement to a legal agreement. These appendices could form a legally-binding, integral part of this legal agreement, and countries such as Australia, Canada, Japan, New Zealand and the US - have suggested that outlines of GHG mitigation actions are included as an integral part of a legal agreement on the post-2012 climate framework (UNFCCC 2009, 2009b and 2009c), *e.g.* as country-specific “schedules”.

National Schedules

Australia has proposed that the mitigation commitments and actions of all Parties be included in a series of “National Schedules” annexed to the post-2012 treaty outcome⁸. The quantifiable emission reductions outcomes of such commitments and actions would also be included in such schedules. Such quantification could be expressed in a variety of ways, including absolute or intensity targets, economy-wide or sectoral targets, forest emission thresholds, technology standards or other policies.

Text box 2: Use of “National Schedules” under GATS

Under the General Agreement on Trade in Services (GATS), World Trade Organisation (WTO) members use “National Schedules” to lay down their commitments for different sectors (voluntarily or via negotiation). The schedule is an integral part of the agreement.

Schedules include specific commitments to provide market access for the specified services in the manner laid out in the schedule, as well as other information (in the case of the GATS, information on exemptions/most favoured nation trading status). Commitments can be added or improved at any time, but there are restrictions regarding the withdrawal or modification of specific commitments. For example, no commitment withdrawals are allowed until after the agreement has entered into force for three years.

Schedules are drawn up in a standard format, in order to facilitate comparison across different countries. Commitments are laid out per sector (as defined by the GATT Secretariat).

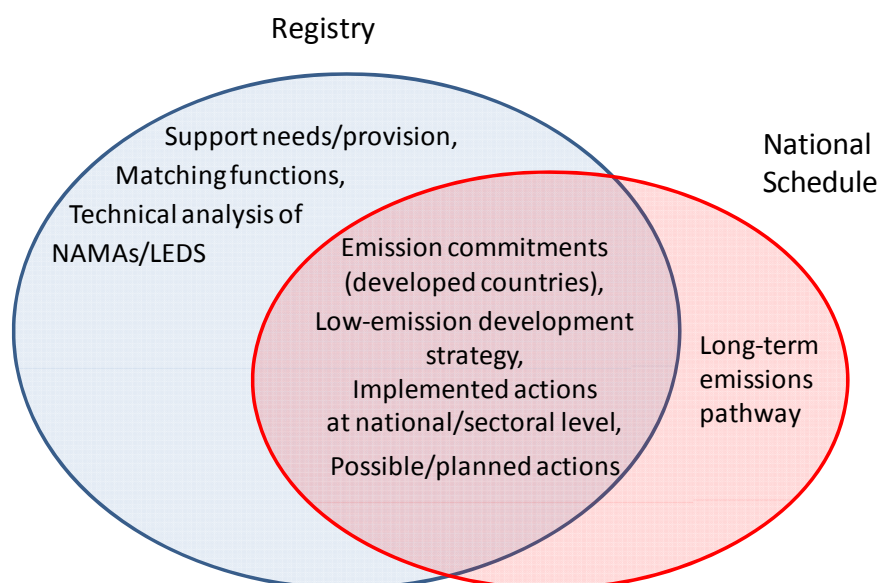
Source: WTO (undated)

Linkages between schedules and registries

There is a possibility that “National Schedules” could co-exist with registries in the overarching post-2012 legal architecture. For example, current and future GHG actions that a country will implement during the commitment period could be recorded in schedules. Possible GHG actions that a developing country could implement with external support could be recorded in a registry of GHG mitigation actions (Peak, 2009). The functions of “National Schedules” and registries could overlap, but would not necessarily be the same (Figure 1). For example, both National Schedules and a registry could include information on agreed national-level emission commitments for developed countries, agreed national or sectoral emission mitigation actions in developed and developing countries, and low-emission development strategies. A registry could also include information on actions implemented at a more disaggregated (local) level, information on possible future actions (contingent on provision of support), information on support needs/provision and support received, and/or a mechanism to match actions and support.

⁸ At the Bangkok UNFCCC negotiations in September/October 2009, several developing countries indicated that they opposed the idea of National Schedules (ENB, 2009b). For example, India indicated that a common framework for mitigation action for all Parties conflicted with the UNFCCC and Bali Action Plan because it would erase the distinction between developed and developing Parties.

Figure 1: Different and overlapping possible functions of National Schedules and registries



Source: Authors

Depending on the desired aims and scope of reporting/recording GHG mitigation actions (and potentially also commitments, and support) a post-2012 agreement could include provisions for either National Schedules, or an electronic registry, or both.

2.2 Possible scope and coverage of a reporting/recording mechanism

An international registry of GHG mitigation actions could be established with different purposes⁹. These are reflected in country submissions to the AWG-LCA revised negotiation text (UNFCCC, 2009d), and focus on identifying, quantifying and/or otherwise assessing:

- **GHG mitigation actions already underway.** This could include actions in developing countries as well as actions and commitments in developed countries. A registry could focus on single actions, or a broader picture, *e.g.* GHG mitigation actions as part of a wider low-GHG development strategy (or emissions commitment). Such reporting could be in GHG or other terms.
- **Future GHG mitigation actions.** This could include actions and commitments to be implemented during the relevant commitment period unilaterally, with previously agreed support, or credited through the carbon market.
- **Possible GHG mitigation actions, *i.e.*** those that could be undertaken if support is provided.

⁹ Fransen (2009) outlines the accountability and facilitative roles MRV systems could play. Accountability relates to the trust parties have in each other to carry out their obligations. The facilitative role refers to the less tangible benefits of improved measurement and reporting. This could include improved co-ordination, planning, information provision and thus evaluation of mitigation actions, both between and within countries. In the perspective of reaching an agreement in Copenhagen MRV's facilitative role may be less important than its accountability role, though she highlights the former could be instrumental to the implementation of any agreement.

- **Support for GHG mitigation actions.** This could include support provided directly by donors and by the carbon market, as well as other support received (*e.g.* by the implementing country government). It could also include information on support provided/needed/received and/or a mechanism to match support needs to provision of such support.

Thus, a reporting/recording mechanism could focus on one or several different parts of the “life cycle” of mitigation actions – from planned to implemented.

If information on GHG mitigation actions already underway were included in a reporting/recording mechanism, as well as actions and commitments to be implemented, it would increase international recognition of actions undertaken to date as well as planned actions – particularly in developing countries. If this information was presented in a quantitative and harmonised manner (*e.g.* in terms of t-CO₂-eq reduction), then it would allow comparison of different countries’ contributions to the global GHG mitigation effort. This could also provide an opportunity for countries to learn from others’ successes, and/or to identify gaps/promising areas for GHG mitigation. If information on possible GHG mitigation actions was also included in a reporting/recording mechanism, this could highlight what actions could be implemented with support – either direct, or via the carbon market. This information could help highlight countries and/or sectors willing to take further action in GHG mitigation, but requiring support to do so. If the expected impacts of these actions (*e.g.* t GHG avoided or reduced) were also reported, this would also help any comparisons of countries’ planned actions, as well as provide an indication of the effectiveness of support.

A reporting/recording mechanism could also include information on support provided and/or received for mitigation actions. Reporting this information centrally could fulfil different functions. For example, including information on the total support provided by donor countries would increase the transparency and accountability of these countries regarding any commitments specific to financial or other support. Including information on individual support flows from donor to recipient (on both the donor and recipient side), or from the carbon market, would increase transparency on where support is flowing to, and would allow both donors and recipients to “map” support. If reporting support focused on support needs for possible mitigation actions in developing countries, it could help prioritise and/or raise support for such actions¹⁰. If reporting support included that already given to implemented mitigation actions, it could be used to assess the effectiveness of this support (*e.g.* in USD/t GHG, if the effects of the mitigation actions were reported in GHG terms). These different functions are summarised in Table 2 below.

A reporting/recording mechanism could be designed to fulfil one or more of these purposes. Which purpose(s) a mechanism needs to fulfil are decided on affects what information is collected and reported by individual entities, and should be kept in mind when discussing implications for the coverage of such a mechanism as well as its form.

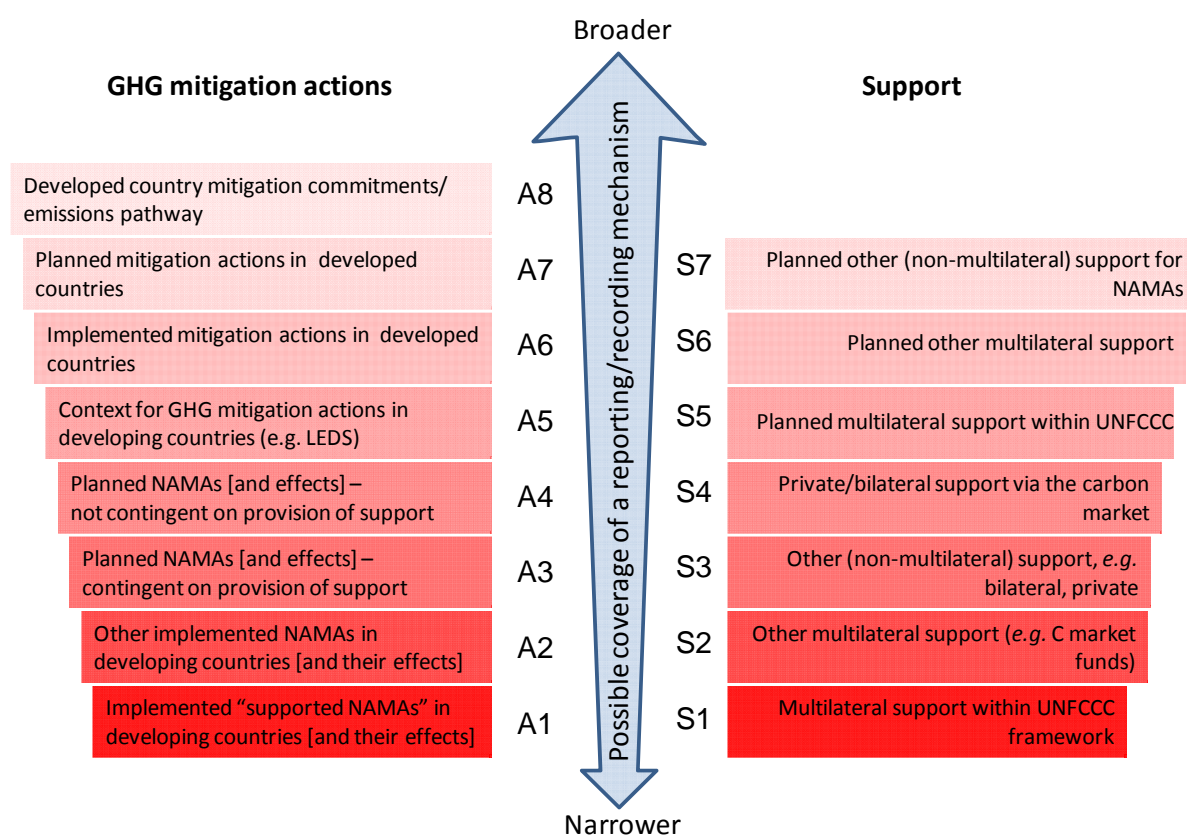
Different types of information that could be included in a reporting/recording mechanism are illustrated in Figure 2. This range of information represents current proposals reflected in the revised AWG-LCA negotiation text (UNFCCC, 2009d as well as “non-papers” from more recent negotiations, see AWG-LCA 2009 and 2009b); Party positions differ regarding the information to be reported in a register-type instrument, from all country mitigation actions to only developing country actions, or again only developing country actions for which support is sought and/or provided. With respect to registries, Parties also appear to diverge on whether they should also include information on support, or whether this should continue to be reported in National Communications (See Annex).

¹⁰ The issue of how to channel support for mitigation actions is assessed in an accompanying paper (Kim *et al.*, 2009).

Table 2: Possible scopes of a reporting/recording mechanism, and their implications for information coverage

| Focus of mechanism | Possible purpose of mechanism | Implications for coverage | Types of actions covered |
|---|--|---|---|
| 1. GHG mitigation actions already underway. | Identifying GHG mitigation actions underway in developed and/or developing countries, [and the context in which these occur] | Implemented mitigation actions (qualitative description), [and associated low-emission development strategy, emissions commitment and/or emissions pathway] | Unilateral mitigation actions (implemented) Supported and credited (implemented) |
| | Quantifying the effects (GHG impacts) of these actions | Description, estimate or measurement of quantified impacts | |
| 2. Planned/pledged GHG mitigation actions | Identifying pledged mitigation actions to be implemented in the relevant commitment period | Mitigation actions (qualitative description), [and associated low-emission development strategy, emissions commitment and/or emissions pathway] | Unilateral Supported and credited |
| 3. Possible GHG mitigation actions | Identifying pledged mitigation actions (in developing countries) that could be undertaken with provision of support | Qualitative description of mitigation actions | Supported and credited (pledged) |
| | Identifying mitigation actions (in developing countries) that could be undertaken unilaterally | Qualitative description of proposed mitigation actions | Unilateral (planned) |
| | Quantifying the effects of these mitigation actions | Quantitative description of estimated impact of planned or pledged mitigation actions | |
| | Quantifying the needs of mitigation actions needing support | Quantitative description of support needs for possible or pledged mitigation actions | |
| 4. Support for mitigation actions | Reporting support given by developed countries, and received by developing countries (including via the carbon market) | Quantitative description | Supported and credited mitigation actions, (pledged and implemented) |
| | Facilitating finance of possible future mitigation actions | Planned or proposed mitigation actions (quantitative description) and requested, planned or proposed support | |
| | Assessing effectiveness of support (for implemented mitigation actions) | Quantitative assessment of NAMA impacts and support provided | |

Figure 2: Possible coverage of a reporting/recording mechanism



Source: Authors

2.3 Context: where would a reporting/recording mechanism fit in the post-2012 climate framework?

The post-2012 framework for measurement, reporting and verification could encompass several items, including a reporting/recording mechanism for mitigation actions commitments and support¹¹. By October 2009, there was no consensus on the aims, purpose and coverage of a reporting/recording mechanism, and therefore also on where such a mechanism would fit in a post-2012 agreement. Without agreeing on the purpose etc. of a reporting/recording mechanism, it is extremely difficult to agree on text for a post-2012 agreement that establishes such a mechanism, and on the processes and institutions needed to supervise it.¹²

¹¹ National GHG inventories may continue to be reported separately and/or within National Communications. Background information relevant to countries' actions on climate change (such as national circumstances, information on adaptation and vulnerability, research and systematic observation) are likely to continue being reported in all countries' National Communications rather than in a registry, as these items are often relevant to more than one mitigation action and related support.

¹² It has even proved difficult to agree on where such issues are discussed in the UNFCCC negotiations. In the Bangkok 2009 climate talks, the issues of registries and schedules were discussed in two different groups under the LCA framework.

Neither reporting nor recording mitigation actions (and potentially also support and commitments) are an end in themselves, but rather a means to an end. However, this end is different depending on whether the focus of a mechanism is on:

- *ex ante* recording of possible/planned actions – which could be legally binding and, if it includes information on emission pathways for major emitting countries, could allow for an up-front assessment of the likelihood of current global mitigation actions to limit GHG concentrations and/or temperature increases to a particular level, or on
- *ex post* reporting, where reports focus on actions already implemented, support already delivered/received etc. This type of reporting would allow for a more comprehensive and timely picture of GHG mitigation actions, commitments and support.

Alternatively, a mechanism could wish to include both *ex ante* recording and *ex post* reporting, as these are not necessarily mutually exclusive. Different possible components of a post-2012 MRV system are outlined in Table 3, below. These include components that are part of the current system of monitoring, reporting and review under the UNFCCC and Kyoto Protocol (such as national GHG inventories and National Communications). It could also include new components, such as National Schedules, registries and/or low-emission development strategies that could be used to report and/or record current and/or future actions (as well as commitments and support).

Table 3: Coverage, frequency and timing of current and possible future MRV-related components

| Item | Current or possible coverage | Frequency and timing | Focus of reporting/recording |
|---|---|--|---|
| Current components that could also be taken forward post-2012 | | | |
| National Communications | Wide (e.g. actions, commitments, support, adaptation, national circumstances). Also contains inventories for NAI countries | AI: every 3-5 years NAI: sporadic – several most recent national communications are 8-10y old. | <i>Ex post</i> * (could also include some <i>ex ante</i> information) |
| GHG inventories | AI: 6 gas NAI: CO ₂ , CH ₄ , N ₂ O at a minimum | AI: Annual NAI: included in National Communications | <i>Ex post</i> |
| National registries and the international transaction log (ITL) | Annex B countries have established these registries (for themselves, and entities authorised to trade units) to enable accounting for assigned amounts under the Kyoto Protocol. Transactions proposed by national registries are verified by the ITL. | Publicly available summary information is available for individual years: transactions between registries can occur when initiated by Parties. | <i>Ex post</i> |
| CDM registry | This electronic database includes information on the issuance, holding and acquisition of CERs by CDM project participants | Updated on a continuous basis. | <i>Ex post</i> |
| Possible future components | | | |
| National Schedules | Developed: Commitments and actions Developing: Actions (current and planned) | All countries: initial information to be included as part of a post-2012 agreement (subsequent enhancement possible at a later date) | <i>Ex ante</i> |
| Registry | Could vary from supported actions in developing countries to actions, support in all countries as well as developed country commitments (see section 2.2) | To be determined. Information could be submitted to the registry from either the date of its inception, or from 2012 (or a mixture, depending on COP decisions). | <i>Ex post</i> ** (could also include some <i>ex ante</i> information) |
| Low-emission development strategy | As yet undefined, but could represent <i>i.e.</i> a country's long-term mitigation goal and the "mitigation actions" it plans to take to reach this. As such, it could form part of a country's National Communication (or other climate/development plan), and could be included in a country's National Schedule. | To be determined (could be either one-off or periodic). | <i>Ex ante</i> |

* While planned actions can be reported in NCs, their focus to date is on actions already implemented

** In order to achieve international recognition for actions undertaken, the focus of a registry would need to be *ex post*. However, it could also include planned actions and actions for which support would be necessary in order for them to be implemented.

Whether all of these different components are needed in a post-2012 framework, and if so, how they could fit together, is currently under discussion. Although registries and National Schedules could have different coverage (and be reported with a different frequency) than current levels of reporting on mitigation actions, both could build on existing reporting mechanisms such as National Communications, as well as interact with these in a variety of ways. A reporting/recording mechanism for mitigation actions could thus be seen within a wider context of reporting on actions taken under the Convention, where existing and new elements serving similar purposes can support and reinforce each other.

Currently, National Communications (NCs) are used to *i.e.* report on GHG mitigation actions and (for Annex II countries) on support provided to non-Annex I countries. There is therefore some potential overlap between information that is currently included in National Communications (produced every 3-5 years for Annex I countries, but much less regularly for non-Annex I countries) and information that could be included in a registry (but presumably reported on a more regular basis) or in a National Schedule. However, the information reported in registries or National Schedules would not necessarily be the same as that currently reported in National Communications¹³, nor reported with the same frequency.

Thus, if the coverage and timing of National Communications is similar pre and post-2012, they would serve different purposes to either registries or schedules, and so could usefully co-exist alongside a new, more regular reporting/recording mechanism such as registries and/or schedules. Alternatively, NCs could be significantly revised and in effect become a new reporting or recording mechanism. These (or *e.g.* the parts of NCs that cover mitigation actions and projections) could be submitted more frequently and include more or different information. This would allow for continued collection and reporting of other information included in current NCs, although at less frequent intervals than information on mitigation actions, commitments and support.

Guidelines for National Communications could also be revised so as to include information on strategic, medium and long-term planning covering a country's mitigation (and potentially also adaptation) plans and growth strategies. In such a case, a NC would encompass information on a country's low-emission development strategy (LEDS), which some parties have suggested be prepared by all countries, and even be a prerequisite for countries seeking support for implementation of mitigation actions

In contrast, a LEDS could be a stand-alone document. Information included in a LEDS could be more or less comprehensive depending on the country, its economy and mitigation potentials, but could comprise a strategic long or medium-term goal or emissions pathway, and potentially also detailed information on mitigation actions, or on more disaggregated mitigation goals or commitments (either economy or sector wide). As such, a LEDS could include much or all of the information needed for an *ex ante* recording mechanism. Alternatively a LEDS could act as the basis for actions that are reported, or submitted to a mechanism to match support and actions¹⁴.

There are also potential links between LEDS and emission inventories (as well as between emission inventories and National Communications). For example, an emissions inventory – at least for key source categories – is likely to be needed in order to establish a LEDS.

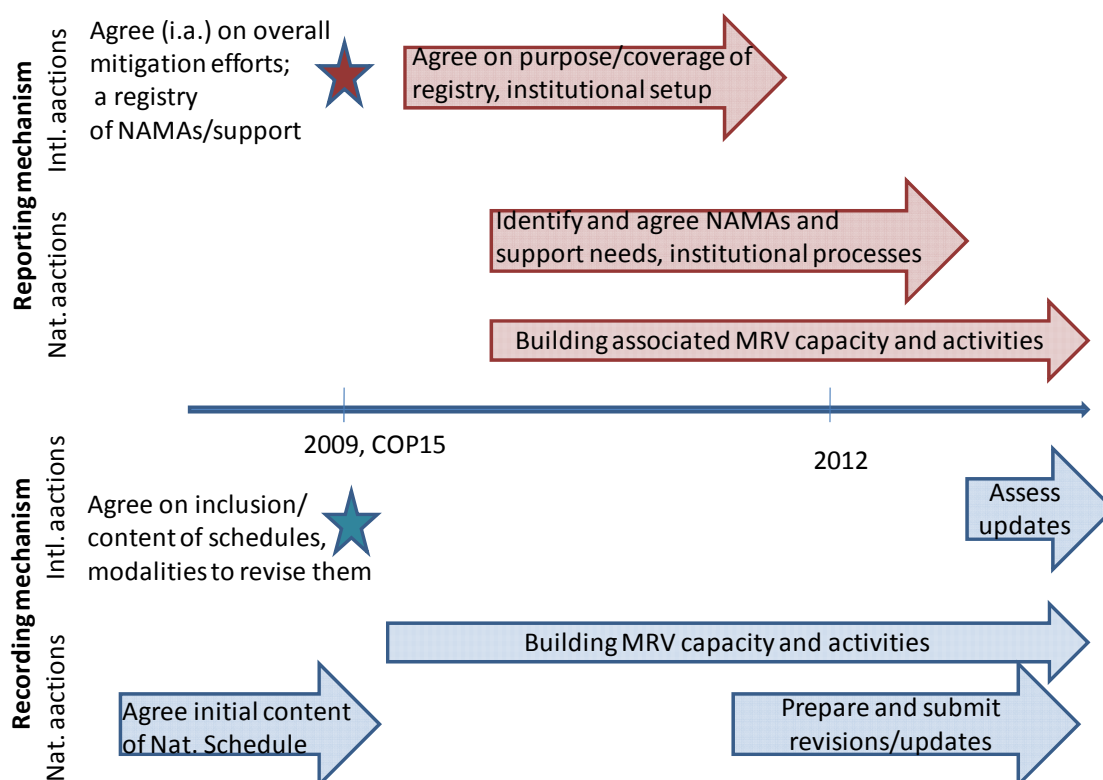
¹³ National Communications also include information on issues not specific to mitigation actions, such as adaptation, vulnerability, national circumstances, research and systematic observation etc. Further, not all mitigation actions (nor even all mitigation actions that have significant impacts) are required to be reported in National Communications.

¹⁴ For countries not able to immediately produce a LEDS, being able to report or record individual mitigation actions and/or commitments in an appropriate mechanism could be a facilitative transitional arrangement.

2.4 Timing issues

The timing of several key steps in designing national responses to climate change, as well as international reporting and/or recording of such responses, is influenced by the different possible forms that a reporting/recording mechanism could have. This is illustrated in Figure 3.

Figure 3: Timing implications of different activities under registries and schedules



Source: Authors

In particular, Figure 3 highlights that using National Schedules to record post-2012 actions (or commitments) would mean that at least some of this information would need to be negotiated and agreed by Parties prior to reaching an agreement.¹⁵ Indeed, this was explicitly recognised at the Bangkok UNFCCC negotiations in September/October 2009 (AWG-LCA 2009b), which includes text that “National Schedules will be negotiated in parallel to the Agreement”. In contrast, using a registry to report post-2012 actions would not require up-front agreement on country actions as part of negotiations on the registry itself – although this information could be required elsewhere (*e.g.* under “shared vision”).

The advantage of agreeing on mitigation actions (and/or the extent of such actions) sooner rather than later is that it could give countries a longer time between planning actions to be implemented and establishing the conditions (including associated MRV requirements) for their implementation. A longer time-lag between identifying possible mitigation actions that could be implemented, and the period in which these actions are to be implemented would also allow countries a longer time to secure any funding required.

¹⁵ Australia’s presentation on National Schedules at the August 2009 workshop on post-2012 legal architecture indicates that National Schedules would be discretionary for least developed countries (Peak, 2009). Article 4(7) of GoA 2009.

However, the disadvantage would be that although several developing countries have already identified such actions – for example as part of recently-established national climate change plans, development plans, and/or low-carbon development strategy – several others have not, and do not have much time to do so before COP15.

Figure 3 also highlights that both forms of a reporting/recording mechanism would allow for flexibility in the identification of actions (as well as commitments and support) to be reported or recorded. For example, although some information would be required up-front for National Schedules, the proposals also allow for modifications of National Schedules over time (GoA, 2009). This could allow some or all developing countries to include initial information on GHG mitigation actions in any National Schedule agreed as part of a post-2012 agreement, and later extend the range of these GHG mitigation actions over time, particularly once support was secured. Allowing for flexibility in when countries would need to include information on their GHG mitigation actions (and potentially their GHG impacts) is important, as it would be very challenging for some developing countries to list all agreed actions and/or to quantify their effects prior to establishing a post-2012 agreement, *i.e.* at COP15.

The timing of needing to decide the institutional structure associated with reporting or recording actions could also differ, depending on whether this was done via registries or via schedules. For example, decisions on the institutional governance of registries would not necessarily be needed at the same time as deciding to establish a registry. In contrast, as the current proposals for “National Schedules” also include options for their amendment, decisions on how such amendments could occur and who could approve it may also be needed in a post-2012 agreement.

3. Reporting/recording GHG mitigation actions

Section 1 of this paper outlined *why* there is interest in reporting/recording GHG mitigation actions and support. Section 2 explored *which* actions and support could be reported and recorded. This section explores *what* aspects of GHG actions and support could be reported and recorded, and how this could vary depending on whether actions are unilateral, supported or credited.

3.1 Over-arching issues

Some issues may need to be addressed irrespective of the form and coverage of a reporting/recording mechanism. These include:

- What the scope(s) of GHG mitigation actions included in a reporting/recording mechanism should be (*e.g.* national, sectoral, state/province, city);
- Who can register GHG mitigation actions (and how to ensure that there is no double-counting of benefits, or double-provision of support when dealing with different entities, overlapping policies, or with geographical location);
- How/whether to include information on GHG mitigation actions whose effects are difficult to quantify (in general, or in GHG terms); and
- How to report and/or record mitigation actions that are not simply “unilateral”, “supported” or “credited”, but a mixture.

Decisions on the scope(s) of GHG mitigation actions that can be reported or recorded will have several important policy, resource and institutional ramifications. These include: policy coherence (requiring that all mitigation actions operate within a framework such as a low-emission development strategy can help to

improve policy coherence within the country); the ease with which a baseline and/or emission reduction estimates can be determined (*e.g.* GHG emission estimation methodology availability and data needed to estimate such a baseline is different at the national, sectoral, sub-sectoral levels); and the ease with which the effectiveness of support could be determined (if support is directed towards individual sectors or mitigation actions, effectiveness could only be determined if GHG impacts are also assessed at the same level). These decisions also have institutional impacts – for example, if mitigation actions from local to national level can be included in a reporting/recording mechanism, some national or international institution will need to check that there is no double-counting. The institutional requirements associated with a registry (and/or National Schedules) will also vary depending on whether they include planned and possible future actions – and matching support with such actions (see section 5).

From the environmental perspective, what matters is that enhanced GHG mitigation occurs: whether each individual component of this is subject to MRV is less important. This is also true from the perspective of increased international recognition for actions in developing countries. However, MRV of more disaggregated mitigation actions (*e.g.* at sub-national, sub-sectoral or even programme-based levels) will be important if they generate carbon credits. Disaggregated data would also be needed if donors want to assess the effectiveness of support to particular mitigation actions.

Who can register GHG mitigation actions will also need to be decided. This could have institutional implications at the national level, as decisions will be needed on *e.g.* is allowed to update information in an electronic registry, whether information on mitigation actions has to be supervised by and/or channelled to a national focal point. These are discussed in section 5.

How, or whether, to include information on GHG mitigation actions whose effects are difficult to quantify is subject to debate¹⁶, and will depend on the focus and purpose of the reporting/recording mechanism as outlined in Section 2. On the one hand, limiting a record or report of actions to those that are quantifiable would allow for a consistent and transparent reporting template – which, if electronic, would facilitate searches and comparisons across countries. However, as some potentially significant GHG mitigation actions are difficult to quantify, it would lead to an incomplete list of actions. Further, it would impede the recognition of actions that are difficult to quantify in terms of GHG emission reductions, both those already underway as well as those that could be implemented with support. Such actions could be included in a reporting/recording mechanism using non-GHG metrics – but given the range of potential mitigation actions and associated metrics, this would reduce transparency and consistency. It could nevertheless facilitate implementation of actions and thus move towards greater accountability of Convention obligations.

Nationally appropriate mitigation actions in developing countries are sometimes referred to as unilateral/autonomous, supported, or undertaken in order to generate carbon credits. In practice, some mitigation actions may comprise more than one component, and a recording/reporting mechanism for mitigation actions would need to take this into account. For example, it may be difficult to distinguish the mitigation effect attributed to domestic versus international support in a given mitigation action. In the case of mitigation actions that combine domestic measures and carbon credits, an official crediting process and international recognition allows for reductions from credits to be reported and recognised as such¹⁷. Other

¹⁶ Some parties have specifically indicated that actions be reported in terms of emission reductions, avoided emissions, or the measurement and verification of national emissions (For example, the EU, New Zealand, South Africa, and Mexico).

¹⁷ This is illustrated by wind energy in China. The Chinese Renewable Energy Law came into force in 2006. This law was developed for several reasons, including “to ... improve the energy structure, diversify energy supplies, safeguard energy security, protect the environment...” (PRC, 2005). While this law allows for a higher price to be paid for grid-connected renewable electricity, the tendering process used results in a price is still too low to be attractive to developers (GWEC, 2008). The vast majority of wind projects developed in China since enactment of

mitigation actions can combine both unilateral and supported actions, making the attribution of mitigation effects difficult. An example is a seven-year GEF project which led to the creation of a demand-side management programme within Thailand's Electricity Generating Authority (EGAT). This was financed primarily domestically through a special tariff on electricity rates, designed and implemented in large part by EGAT staff. The programme also benefitted from grants from GEF, the government of Australia – as well as loans from the Overseas Economic Co-operation Fund of Japan. The programme led to significant energy savings and associated CO₂ emission reductions, and also led to longer-term market transformation as well as associated policy measures, such as the introduction of mandatory energy performance standards (Mulholland and Singh, 2000; World Bank/GEF, 2006). This illustrates that it may not necessarily be straightforward – even for mitigation actions whose GHG impacts can be quantified – to allocate such impacts to “unilateral”, “supported” or “credited” actions. A registry or schedule would therefore need to allow for the fact that a particular mitigation action could be in more than one category.

3.2 Reporting unilateral actions in developing countries and actions/commitments in developed countries

3.2.1 Reporting unilateral actions in developing countries

Some countries (*e.g.* South Korea) have suggested that unilateral GHG mitigation actions in developing countries could be reported in a registry, as well as supported actions. Doing so would allow for a more comprehensive¹⁸ picture of these countries' GHG mitigation actions than developing a registry (or other reporting/recording mechanism) focusing only on supported actions. If a reporting or recording mechanism was something that was regularly updated, expanding the coverage to unilateral actions would also allow for a timelier picture of developing country action than that given by developing countries' National Communications – unless these are submitted at a much more regular pace in the post-2012 framework than at present.

However, measuring, reporting and verifying mitigation actions entails costs. Increased requirements related to reporting of unilateral actions would therefore be more likely to be accepted and implemented by developing countries if reporting requirements for unilateral mitigation actions focused on basic information that would be easy and simple to collect, and/or on information that was collected anyway – or alternatively if reporting costs were also supported. If reporting costs were not supported, and more limited information was reported for unilateral actions, it would mean that a different level of detail was reported for different types of mitigation actions. This could include what is subject to M, R and V; how it is carried out; result of M, R and V activities; impact/outcome of a mitigation action; funding and/or costs.

Allowing flexibility in MRV provisions for unilateral, supported or credited mitigation actions would mean that information provided is not necessarily consistent or comparable within a country or between different countries. This is because any methodologies used to calculate GHG impacts of unilateral actions would not necessarily be provided and/or follow international guidelines or approved methodologies. Possible basic and more detailed information that could be reported for unilateral actions is outlined in Table 4.

3.2.2 Reporting/recording developed country actions and commitments

For Annex I countries, reporting requirements on individual policies and measures have thus far been less stringent than those for national emissions inventories (and transfers/acquisitions of credits). This is

this law have therefore also been developed as CDM projects. Thus, individual wind energy projects in China are encouraged both by the (unilateral) renewable energy law, and by a market-based crediting mechanism.

¹⁸ Unless reporting all actions that mitigate GHG emissions becomes obligatory for developing countries, the picture is unlikely to be fully comprehensive.

because Annex I country commitments under the Kyoto Protocol are based on national emission levels, and, under the current climate regime, Annex I countries submit annual GHG inventories (as well as information on transfers/acquisitions). Guidelines for Annex I National Communications do request – but not require - relatively detailed information on selected policies and measures, including a quantification of their impact on GHG emissions (UNFCCC, 1999).

Any post-2012 requirement for developed countries to report national GHG mitigation actions could therefore build on information already collected and reported as part of their National Communications (Table 3). However, the GHG impacts of mitigation measures is not always quantified in National Communications¹⁹. In addition, the guidelines allow parties to use any models or approaches they choose to estimate baseline emissions and GHG impacts of policies and measures, as long as these are accompanied by an explanation. This leads to a variety of models, methodologies and assumptions being used by different Parties, and even different approaches used by a single Party for different sectors or different types of projections, thus making an assessment of and comparison between countries challenging.

New information not currently included in National Communications that could be reported in *e.g.* a National Schedule could also include an expected long-term national emissions reduction pathway, such as to 2050. In addition, reporting of MRV provisions would also be new compared to what is currently required. New reporting guidelines could also encourage more consistent methods and approaches to both projecting emissions and estimating impacts of mitigation actions (such as how to treat indirect emissions and guidelines for baseline economic projections). Projections currently not required by the National Communication guidelines (“without measures” and/or “with additional measures”) could also be reported; these are often recommended by expert review teams when one or both is not included by a Party, as they facilitate estimating the effects of mitigation actions on GHG emissions²⁰.

Many developed countries do have in place policy monitoring and evaluation procedures, often as part of general public accountability systems²¹. For example, the impact of GHG mitigation measures is generally estimated by sector at a national level (although not necessarily attributed to individual mitigation actions). In their National Communications, Annex I countries must also, at a minimum, report projected emissions encompassing currently implemented and adopted policies and measures. The proposal for all countries to have National Schedules would in effect make binding certain provisions that are currently only encouraged or recommended for Annex I National Communications (UNFCCC, 2009c). In particular, the proposal for National Schedules could make implementing actions and commitments agreed to in these schedules legally binding, though only commitments would automatically be subject to a compliance regime. Actions included in a National Schedule would also need to be quantifiable. Providing a baseline or reference case for measuring the commitment or action, estimating emissions reduction outcomes could also be legally binding under a National Schedule – though not necessarily subject to a compliance regime.

¹⁹ “Quantitative estimates of the mitigation effects of policies and measures are rarely reported in the NC4. Even when they are reported, estimates are not necessarily consistent among Parties, in terms of categorization, baseline assumptions, modelling procedures and methodological approaches to account for policy synergies and interactions.” (UNFCCC, 2007). As outlined in Ellis and Larsen 2008, if the focus of post-2012 emission commitments for developed countries is at the national level, and if these are supported by annual national emissions inventories, it does not matter if the effects of individual mitigation actions are not estimated.

²⁰ Developing one or both of these projections was recommended in the reviews of 4th National Communications of Lichtenstein, Finland, New Zealand, Denmark, Belgium, Switzerland, Sweden, and the UK.

²¹ For example, in the United States several policy directives require programmes within the Department of Energy to undertake evaluations to improve efficiency and effectiveness. In France, the national energy and environment agency (ADEME) undertakes monitoring and evaluation work for its own programmes as well as various ministries. More examples can be found in IEA, 2008. See also discussion of this issue in Ellis and Moarif (2009).

More regular and comprehensive reporting of GHG mitigation measures by developed countries could therefore build on existing reporting provisions for Annex I Parties. These could be enhanced within National Communications, and/or reported separately in a recording/reporting mechanism. In either case, additional reporting elements to consider could be: information on MRV provisions; more consistent ways of projecting emissions and estimating the impacts of policies and measures; more widespread estimation and verification of the impact of mitigation actions; elaborating a national emissions pathway; and strengthening the legal nature of actions and commitments reported, some of which could be subject to a compliance regime.

3.3 Reporting supported actions in developing countries

This section outlines the information that could be included in a reporting/recording mechanism for implemented actions that are supported, or whose possible future implementation is contingent on support²². As outlined in Section 2, reporting actions that are supported, or that need support to be implemented, could help assess the effectiveness of support, as well as facilitating the international identification of mitigation actions. It could thus also facilitate the matching or mitigation actions with support for these actions, regardless of how such “matching” might occur.

In order to enhance consistency and ease of implementation, a reporting/recording mechanism could be prescriptive in its template, *i.e.*, regarding what elements are to be reported. Specifically how elements are reported, however, could be left flexible.

The type of information on supported mitigation actions that is reported in a reporting/recording mechanism might include major categories such as information enabling a third party to identify a particular mitigation action, what its expected outcome is, which type of MRV provisions apply, and the support provided and received. These categories could further be broken down into a few sub-categories, as required by the type of mitigation action and national circumstances. For each category, information is broken down into that of primary importance (which would be agreed upon in a first phase, *e.g.* by Copenhagen) and secondary information (which may be more detailed and/or may be needed only later, *i.e.* could be clarified after Copenhagen). This information is summarised in Table 4. More details on individual elements to be reported are provided below.

3.3.1 Information of primary importance

Information on the individual mitigation action

Primary information on mitigation actions would cover much of what is currently suggested to be included in reporting mitigation actions in National Communications, such as the action’s sector, implementation status²³, implementing body, aim and timeframe. More specifically, this could cover the type(s) of mitigation action (*e.g.* price-based measure), its stated aim (*e.g.* capturing X amount of methane from Y amount of landfills, planting Z hectares of forest, etc.) and timeframe (implementation date, planned end date). Information on the mitigation action’s sector or sub-sector could also be useful, and will vary whether the action is, for example, a standard for building codes, a new law regulating deforestation activities, a programme subsidising the installation of equipment to recover methane from agricultural activities, etc.

²² Some countries may not be able to undertake such mitigation actions for economic or other reasons.

²³ As defined for National Communications in FCCC/CP/1999/7: *Implemented policies and measures* are those for which one or more of the following applies: (a) national legislation is in force; (b) one or more voluntary agreements have been established; (c) financial resources have been allocated; (d) human resources have been mobilised. *Adopted policies and measures* are those for which an official government decision has been made and there is a clear commitment to proceed with implementation. *Planned policies and measures* are options under discussion and having a realistic chance of being adopted and implemented in future.

Estimated impact/reduction and/or outcome

Expected emissions reductions from a particular mitigation action could be calculated based on national or sectoral GHG emission data and BAU projections (if available). Ideally, the impact of a mitigation action would be provided in GHG terms for a particular time period, against a baseline or reference case. If the mitigation action is difficult to quantify in GHG terms, the estimated impact using a non-GHG metric can be indicated²⁴, along with a clear timeframe for the expected outcomes. Once implementation of the mitigation action has begun, the outcomes in terms of actual GHG emissions and/or reductions, or other appropriate metric, should be indicated. The timeframe of the expected and/or actual outcomes reported in GHG or other terms should also be clear. Whether the impact of the mitigation action is estimated or measured will depend on the action's type and implementation level.

MRV provisions

Whether or not reported in GHG terms, "nationally appropriate mitigation actions" (however these are subsequently defined) will need some form of measurement, reporting and verification. Thus, basic information will need to be included in a reporting/recording mechanism on what will be subject to MRV, as well as at what level M, R and V will take place (*i.e.* national or international).

What should be measured, reported and verified will largely depend on the mitigation action itself, so it might be unwieldy to include all this information in a registry (although references to this information, for example methodologies used,²⁵ further sources of information, etc. may be needed). Where a mitigation action is not easily quantifiable in GHG terms, provisions could focus on reporting information and metrics that can measure and verify the *implementation* of the action, based on agreed upon criteria, or those defined as part of mitigation action planning and development.

Support requested and received

A developing country requesting support to implement a mitigation action could specify this in either a reporting or recording mechanism. A reporting mechanism such as a registry could also allow countries to indicate what kind of support is requested (for example, specific technologies, technical assistance) as well as the amount of support requested (for example the action's incremental cost).

For mitigation actions that have received support, reported information could cover *e.g.* the type of support received, from which country/fund, and the timeframe. The level of support received could also be indicated, in absolute terms (*e.g.* USD), as well as according to indicators either developed specifically as part of the reporting/recording mechanism, or by other bodies; for example, measuring technology transfer in units established according to indicators being developed under SBI and SBSTA, or capacity building indicators (as proposed by Brazil and China, WRI, 2009). Emission reductions associated with this support could also be reported²⁶.

As indicated in Table 4, reporting of support received alongside support provided could allow for a cross-checking of this information. This would facilitate assessing compliance with any specific support obligations, as well the support's effectiveness.

²⁴ See Ellis and Moarif (2009) for examples.

²⁵ Methodologies to measure, report and verify GHG emission reductions from mitigation actions may need to specify what data is to be monitored/collected/reported, and how often; how a baseline is established; how emission reductions (or other metrics, if not in GHG terms) are calculated; how reports are made; how verification is carried out.

²⁶ This may not always be possible to quantify, but would help any assessment of the cost-efficiency of support – particularly if methods to quantify the effects of measures were consistent across different countries.

3.3.2 *Other information that may be needed*

Other information on supported actions in developing countries, if available and reported, could also be useful. This could include information which could help in any prioritisation assessment of mitigation actions to be funded (*e.g.* background information on a country's economic and GHG context, such as population, GDP per capita, GHG emissions (total and per capita), and primary GHG emitting sectors). A brief textual description of the mitigation action could also be of interest, particularly for a potential mitigation action seeking support.

Regarding the estimation of GHG or non-GHG impacts, the methodology/definitions used for the estimation could be outlined, or references provided as applicable. This is currently requested for Annex I National Communications, if a country includes a quantitative estimate of the impacts, individual or collective, of mitigation actions. Such information could move towards better harmonisation of estimation and projection methods.

To facilitate M, R and V, information on the mitigation action's baseline assumptions would be useful. More detailed information on MRV provisions could be provided where feasible, describing how this will occur, and providing reference to detailed reports and calculation methodologies²⁷. Regarding support, a developing country could also report on the action's total and incremental costs, specify the co-financing or in-kind support it is providing, as well as provide a more detailed description of the supported mitigation action.

Other information could also be reported by a country, such as a mitigation action's co-benefits in terms of sustainable development. More information could be provided for credited mitigation actions, indicating for example whether an action is also a CDM project.

3.4 Reporting credited actions in developing countries

The Clean Development Mechanism (CDM) will continue operating post-2012, and other crediting mechanisms may also be established for this time period. Some countries (*e.g.* Indonesia, Korea, Saudi Arabia - see Annex 1 and UNFCCC 2009-2009c) have suggested that "nationally appropriate mitigation actions" in developing countries could include projects and programmes implemented under the CDM, and/or that other types of mitigation actions (such as any "no-lose" targets) could generate emission credits. Other countries (*e.g.* AOSIS) disagree that mitigation actions in developing countries should generate carbon credits.

If it were agreed that certain mitigation actions in developing countries could indeed generate carbon credits, some or all of the activities undertaken in order to generate credits could therefore also need to be reported in any reporting/recording mechanism.

It is important to ensure the credibility of carbon credits - particularly if these are used to offset emissions elsewhere. In order to do this, the M, R and V provisions of credited mitigation actions may need to be more stringent than those of non-credited actions, *e.g.* by requiring that credited actions undertake M, R and V according to agreed international guidance, and/or that there is independent verification of the results. This could lead to reporting requirements – including in a reporting/recording mechanism of GHG mitigation actions – for credited actions that are significantly more detailed than for other types of mitigation actions (see Table 4). For example, reporting for credited mitigation actions would need to include detailed information on what is subject to M, R and V, how this is carried out, and how emission

²⁷ Depending on the manner in which support is disbursed, some of these provisions, particularly regarding verification, may be agreed upon bilaterally, or according to internationally specified guidelines depending on the type of NAMA.

credits are calculated from these results. Not all of this information need be included directly in the registry, however, if references to other publicly-available documents (*e.g.* to CDM methodologies or programmes) are included.

4. Reporting support by developed countries

In the current GHG reporting system under the Kyoto Protocol, Annex II countries²⁸ are required to provide financial support, and Annex I countries are required to report on the support provided²⁹. This section highlights possible post-2012 reporting requirements within a reporting/recording mechanism, or National Communications, for support provided and/or received.

Parties remain divided on whether or not support should be reported in any mechanism to report/record mitigation actions (see Annex). Further, countries are not in agreement as to what constitutes support. Some argue (*e.g.* G77 and China, India, Malaysia (WRI, 2009)) that contributions outside of the Convention should not be considered fulfilment of Annex I obligations to provide MRV financing.

Reporting support in *e.g.* a registry could serve multiple purposes (as outlined in section 2). In addition, it could broaden the scope of support being reported by allowing South-South support to be reported on a voluntary basis. This section explores what information could be included in a registry for support.

4.1 What to report?

In order to complement countries' National Communications, a registry for support could cover additional components. These could include general support information and contributions through bilateral channels, as well as more details of support given through multilateral channels.

4.1.1 General support information

General support information might need to be included in a registry of support. This could include different forms, channels, timeframes, sources and recipients of support.

Support could be provided in two forms: 1) direct financial contributions from both public and private sources³⁰; and 2) indirect financial contributions through quantifiable (*e.g.* the number of technologies provided through a support activity or the number of capacity-building activities carried out) and non-quantifiable technology transfer (public-private partnerships on technology R&D), and capacity-building (joint study or training courses) by both the public and private sectors. In the case of direct financial contributions, the forms of such financial contributions (*e.g.* concessional loans, loans aid, grants, guarantees etc.) could be reported.

Indirect financial contributions (*e.g.* capacity building and technology transfer by the public sector) are sometimes included in donor countries' budget for financial support. In such cases, information concerning

²⁸ These are Australia, Austria, Belgium, Canada, Denmark, EC, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK and USA.

²⁹ Some Annex I countries that are not members of Annex II also provide support, even though this is not a requirement.

³⁰ Tracking financial flows of private source in general is difficult. For instance, while the UNEP-Risø regularly gathers information on CDM projects and the total volume of CERs produced, there is no systematic monitoring or reporting system. In the case of Foreign Direct Investment (FDI) flows, it is difficult to distinguish investments for mitigation-relevant activities that have positive GHG benefits (*i.e.* reduce emissions) from those that have negative GHG effects (*i.e.* increase emissions) (Corfee-Morlot *et al.*, 2009).

indirect financial contributions could also be reported in a reporting/recording mechanism, such as a registry.³¹

The source of support for mitigation actions could be either public or private. Depending on the source, either donor governments or the country of origin should be reported. Support could be provided via multilateral or bilateral channels. Information that could be reported in a registry may differ depending on the channel of support.

4.1.2 Contributions through multilateral channels

While the current guidelines for Annex I NC (see UNFCCC, 1999) requires Annex II Parties to report financial contributions to the GEF and all other multilateral institutions, many Parties reported financial contributions from other multilateral institutions without specifying which ones these were. Only a handful of Parties have reported the share of their contributions to multilateral institutions that are attributed to climate change related projects and programmes (UNFCCC, 2007).

In order to address such reporting gaps, countries could be asked to report this information in a reporting/recording mechanism.³² Countries could also be asked to report data on other multilateral programmes and existing as well as newly created funds, including GEF trust funds. In reporting this information, countries who provide finance would need to specify all multilateral institutions, programmes and funds and the share of contributions to multilateral institutions attributed to climate change related projects and programmes.³³ More specific areas for which multilateral financial contributions were provided, namely, activities concerning technology transfer or capacity building could also be indicated.

4.1.3 Contributions through bilateral channels

Currently, Annex II Parties report bilateral contributions that target mitigation support (including capacity building) through their NCs. Annex II countries are also required to provide information on bilateral technology transfer and distinguish between public and private sector activities (UNFCCC, 1999).

Information on bilateral contributions reported in the NC, however, is often inconsistent and incomplete. Parties report information with a varying level of disaggregation and detail: Some Parties provide information on financial contributions to technology transfer and capacity building, while others report financial contributions that are not strictly climate change-related. Furthermore, it is difficult to harmonise reporting and quantitative metrics for certain policies and programmes, such as those meant to incentivise private sector engagement and measures for capacity building, due to their cross-cutting nature (Corfee-Morlot *et al.*, 2009).

Reporting on bilateral contributions includes information on financial contributions and the areas of activities concerning technology transfer and capacity building through all bilateral channels, including

³¹ For instance, the UK, in its fourth National Communication, reported that the Department for Environment, Food and Rural Affairs (DEFRA) and the Department of Trade and Industry (DTI) provided funding of GBP 3 million and GBP 0.5 million respectively for a new initiative on near zero-emissions coal with carbon capture and storage project in China (DEFRA, 2006). Japan also reported in its fourth National Communication that JPY 5,857 billion was committed in the fiscal year of 2001 for a wind power project in the Philippines (Government of Japan, 2006).

³² However, whether or not this information can be reported will depend on the multilateral institution and how it accounts for its expenditure to its donors.

³³ At present, it is difficult to identify where Annex II contribution has been spent in GEF focal area since GEF does not report specific information on contributions from Annex II Parties to the COP (Corfee-Morlot *et al.*, 2009). In order to increase transparency, GEF could in theory report on information on donor country as well as recipient country for each funded project – although this would increase the reporting burden.

development assistance programmes. In the case of bilateral financial contributions, the areas of activities for which such financial contributions were provided (*e.g.* technology transfer or capacity building) need to be provided.

In order to monitor bilateral contributions that are climate change-specific, reporting should distinguish between funding that is specifically targeted to climate change and that which is relevant to climate change mitigation, to the extent possible. This could be possible in future as since June 2008, the 22 DAC member countries have agreed to report their climate change-specific bilateral ODA by using “Rio markers”³⁴.

For bilateral technology transfer and capacity building-related activities, the following information could be included in a registry of support (in addition to information on the mitigation action itself, as outlined in Table 4):

- Financial transfers;
- Quantitative and/or measurable but non-monetary information (*e.g.* the number of technologies provided/received through a support activity, the number of capacity building activities carried out, and where this support has been directed);
- Qualitative information (*e.g.* description of the nature of support activities such as joint study, working group, expert meetings, training courses, workshops information exchange/data collection support, partnerships and projects);
- Types of mitigation and sector where technology transfer occurred and/or any conditions attached; or for which capacity building activities are carried out;
- Organisation disbursing/receiving support.
- Other information may also be useful, such as:
- Measures aimed at providing incentives to engage the private sector in projects and programmes relating to the transfer of technologies;
- Implementing agencies.

4.2 Frequency of reporting

Regular reporting of support in a reporting/recording mechanism, *e.g.* annual or bi-annual could fill the gap of infrequent reporting through National Communications. More regular reporting could also increase transparency by reporting more precise support-related information.

³⁴ The Rio markers allow for the identification of activities that target the objectives of the three Rio Conventions: Climate Change, Biodiversity, Desertification. They enable donors to specify if a particular aid stream is not targeted to a particular area (“0”), if it is a significant objective (“1”), or a principal objective (“2”) (OECD, 2004).

Table 4: Possible reporting requirements for mitigation actions and support

| | Primary information | Other information that may be needed |
|--|---|--|
| Mitigation actions – implemented and planned (whether unilateral, supported or credited) * NB Items specifically to be reported for mitigation actions not yet implemented shown (<i>in brackets</i>) | <ul style="list-style-type: none"> - Country, sector - Implementing body/entity - Name/title of GHG mitigation action - Stated aim and timeframe - Status (implemented, <i>adopted, planned, contingent on support</i>) - Entities responsible for M, R, V - Basic information on what is subject to M, R, V - Whether M, R, V has been or will be carried out (and results, or reference to where results can be found) - (<i>Expected</i>) GHG or other impact | <ul style="list-style-type: none"> - Mitigation action role within national strategy (<i>e.g.</i> low-emission development strategy) - Description of mitigation action - Background (GDP/capita, GHG emissions etc.) - Reference to detailed M, R, V reports and calculation methods - Mitigation action total and/or incremental cost - Other information as required (<i>e.g.</i> SD benefits, if action is also a CDM project) |
| Support received for implemented mitigation actions | <ul style="list-style-type: none"> - Type and amount of support (reported by mitigation action, to allow for cross-checking donor/recipient) - Source of support, and whether multilateral/bilateral etc. | <ul style="list-style-type: none"> - Total cost of mitigation action - Detailed description of support activity |
| Support needs (if applicable) for possible future mitigation actions conditional on support provision | <ul style="list-style-type: none"> - Support needs (amount and type), <i>e.g.</i> incremental cost | <ul style="list-style-type: none"> - Co-financing or in-kind support provided |
| Support provided | <ul style="list-style-type: none"> - Total provision of climate-specific support - If possible, mitigation action-specific bilateral support provided (to allow for cross-checking donor/recipient)* - Form of support (F, TT, CB) - Channel of support (multilateral, bilateral) - Disbursing organisation (for multilateral support) - Form of financial contributions (<i>e.g.</i> loans, grants) - Recipient of support (country, sector) | <ul style="list-style-type: none"> - Climate-relevant support provided |

* Unless multinational funds were also required to report similar information, it would not be possible to report mitigation action-specific details for support from multilateral funds.

5. Institutional implications

Institutions and procedures for M, R and V of mitigation actions (and potentially also support) will need to be strengthened in a post-2012 climate regime to enable more consistent, comprehensive and timely information provision. Indeed, establishing a registry and/or National Schedule will have institutional implications at the national and international level.

There are already relevant institutions, processes and guidance on which this can build. Current practices within the UNFCCC framework allow for some qualitative recognition of mitigation actions in developing countries, quantitative recognition of emission reductions from CDM projects and programmes, and qualitative and some quantitative recognition of developed country mitigation actions and support. This is done in different ways, and by different institutions, including the UNFCCC Secretariat (who develop the compilation and synthesis reports of National Communications), international Expert Review Teams (who review Annex I National Communications) and the CDM Executive Board (who supervise the running of the CDM and approve individual projects, with help from accredited entities, the UNFCCC Secretariat and expert panels)³⁵.

The extent and timing of institutional requirements and/or changes needed to implement a reporting/recording mechanism will depend on its coverage and purpose³⁶. This affects:

- What information would need to be collected and reported by individual entities (at the national level);
- The role/functions of any international institutions involved in mitigation action verification and/or matching actions with funding; and
- The role/functions of national institutions and entities involved in M, R, and/or V of particular mitigation actions.

The purpose of a reporting/recording mechanism therefore influences the institutions and resources needed in order to report the required information. For example, if the purpose of a reporting/recording mechanism was to provide a comprehensive list of GHG mitigation actions and/or to identify gaps in mitigation actions it would entail developing a potentially lengthy report. Developing such a report could require significant intra-government co-operation, particularly if the report were to include actions at the sub-national level, *i.e.* city and state/province. Alternatively, if the purpose of a reporting/recording mechanism is to quantify the GHG impacts of particular mitigation actions (implemented or planned), it may require aggregating performance data from several entities as well as developing performance baselines. This would have institutional implications at the national as well as entity level. Similarly, information on the level and type of support required would be needed if a registry were to provide a “matching” function.

The institutional implications associated with reporting or recording implemented or planned mitigation actions, and support, could be both at the national and international level. For example, national monitoring

³⁵ At present, National Communications are submitted to the UNFCCC Secretariat, who prepares compilation and synthesis reports, both for AI and NAI countries. The report for NAI countries provides some qualitative recognition of Mitigation actions (*i.e.* that many countries are taking GHG mitigation actions), within the general text, with text boxes providing more specific information, *e.g.* on a measure undertaken by a specific country (UNFCCC, 2005). The report also summarises gaps, problems, as well as capacity-building needs reported by countries in their NC. However, the qualitative recognition provided is quite general in nature.

³⁶ While institutional implications of a reporting or recording mechanism for supported and credited mitigation actions could include verification provisions, this is not dealt with further here.

and reporting activities may need to be expanded or strengthened, or national procedures developed to determine who can *e.g.* report information to a registry. International oversight, *e.g.* via a dedicated body that reports to the COP or COP/MOP, is likely to be needed for mitigation actions that generate emissions credits or that benefits from support from multilateral funds under the UNFCCC framework. International oversight could also be needed to approve and/or register modification to countries' National Schedules.

This section outlines possible institutional/governance structures to identify mitigation actions (in a qualitative manner), to quantify the effects of GHG mitigation actions, or to match support with actions, and outlines how this builds on current reporting experience. The section focuses on international institutional implications.

5.1 Institutional implications of providing recognition of implemented mitigation actions reported qualitatively

National and international requirements associated with reporting mitigation actions will be simplest if the actions are reported for the purpose of gaining international recognition (*i.e.* if the impacts of these actions are not quantified and if there is limited international screening for what is eligible to be included in a reporting/recording mechanism). This is because such recognition is qualitative, and does not generate either financial benefits, or GHG offsets – both of which are likely to require a higher standard of MRV.

Minimum institutional requirements for qualitative recognition of mitigation actions could be³⁷:

- National agreement on a mitigation action “focal point” to collect and submit information to a registry, or to a body supervising National Schedules;
- An international institution (*e.g.* UNFCCC, or other body) to which this information can be submitted.

The national mitigation action “focal point” would collect information on mitigation actions (and potentially also support requests) from within the country. If the form of a registry of mitigation actions is electronic, it could be the national focal point which could be enabled to add information to an international registry of mitigation actions. This institution would not need to be new, but could be *e.g.* part of a country's Environment Ministry, or its CDM Designated National Authority.

The form of an international “focal point” depends on the form of the reporting/recording mechanism. For example, a registry in the form of an electronic spreadsheet/database could need an institution to maintain it. This could be a relatively simple task (*e.g.* of maintaining a database to which others could add information, or where a central body such as the UNFCCC could add information reported to it by Parties³⁸) if information submitted by national focal points did not need further checks or verification. A centralised body could also be needed to approve and/or report any changes to countries' National Schedules³⁹.

³⁷ There will also be institutional requirements at the national level needed to monitor, collate and report data. These requirements may differ depending on the sector(s) where the mitigation action is implemented, as well as on the scale of the mitigation actions. However, this issue is beyond the scope of this paper.

³⁸ Although a simple task, it could be extremely time-consuming if information on disaggregated mitigation actions (*e.g.* at local level) were included.

³⁹ The institutional requirements associated with approving changes are likely to be higher than that associated with just reporting any changes submitted.

5.2 Institutional requirements to provide recognition of mitigation actions reported quantitatively

At present, quantitative recognition of Annex I countries' GHG mitigation efforts is focused on national emission levels. The current framework also includes a review of Annex I Parties' submissions on historical and projected effects of their PAMs. However, this review focuses on what has been reported rather than on verifying the assumptions or methodologies associated with how the impacts of these mitigation actions have been assessed. As highlighted in previous work (Ellis and Moarif, 2009), a post-2012 regime that places increased emphasis on quantifying the effects of individual mitigation actions would also require increased resources and guidance. This could include guidance on methodologies or approaches to help countries quantify the impacts of mitigation actions⁴⁰ as well as on the institutions and institutional procedures needed.

These institutions and procedures may need to vary depending on whether the mitigation action is unilateral, supported or credited. From an environmental perspective it is important that estimates of the impact of credited mitigation actions are relatively accurate (if these generate credits that can be used to offset emissions elsewhere). In contrast, if estimates of the GHG impacts of particular mitigation actions (*e.g.* unilateral ones) are used solely for the purposes of gaining international recognition for actions, there will be no environmental effect of over or under-estimating impacts⁴¹. In order to increase the cost-efficiency of support or to assess the effectiveness of support already provided, it is also important to have a relatively accurate picture of the effects of mitigation actions (GHG and otherwise).

Thus, in order to reduce the risks of negative environmental or economic consequences of mis-estimating the GHG benefits of mitigation actions, increased levels of checks and balances are likely to be needed for certain types of mitigation actions. This is likely to translate to higher institutional requirements for mitigation actions that generate carbon credits, as well as for actions that are seeking support, or where the donors want to assess effectiveness of support.

5.2.1 *Mitigation actions that generate emission credits*

If mitigation actions can generate emissions credits, the processes developed to quantify and verify the level of credits could build on those developed for the CDM, and so could allow for international/independent institutions or processes to:

- Report to the COP or COP/MOP on the implementation of credited mitigation actions, and any general issues arising with their implementation;
- Approve the methodology used to calculate the emission baseline (or to directly assess emission reductions);⁴²
- Record mitigation action performance (as monitored and reported by participants);

⁴⁰ However, because of the wide range of possible mitigation actions, as well as the wide range of scale (local to national) at which they could be undertaken, and the wide range of national circumstances, developing comprehensive guidance would be challenging. Nevertheless, developing some guidance/tools – even if partial – could help to make different estimates more consistent.

⁴¹ Measuring and reporting the effect of mitigation actions – including unilateral actions – can also be useful for national policy purposes, *e.g.* in terms of developing capacity and ensuring national measures are effective.

⁴² This may or not be needed, depending on the type of crediting mechanism used. For example, CDM methodologies need to be approved by the CDM Executive Board. However, new post-2012 crediting mechanisms may use a different way of estimating credit volumes (*e.g.* using benchmarks, or “no lose” baselines).

- Validate the action and to independently verify that its performance is as stated;
- Approve credits generated by the mitigation action⁴³.

In order to ensure that institutions supervising any crediting of mitigation actions are not subject to the same level of delays as those sometimes found in the CDM, it will be important to estimate up-front how many mitigation actions an institution would be expected to assess in a given time period. This is because the number of mitigation actions could vary widely depending on if they are defined within a national-level programme such as a low-emission development strategy (where up to 150⁴⁴ could be produced by developing countries) or if they can be defined as a project- or city-level action (where tens of thousands could be developed). Thus, institutions and processes that could effectively process mitigation actions designed at the national level may be over-stretched if these are defined as a smaller-scale activity. The institution(s) can then be designed to take the expected workflow into account.

5.2.2 Mitigation actions that benefit from support

Any registry for mitigation actions that is developed for the post-2012 framework may also include information on support provided for these actions, and support needed/pledged for further actions. Institutional requirements for mitigation actions benefiting from support (particularly for support via multilateral funds under a UNFCCC process) could include ones to:

- Report to *e.g.* the COP or COP/MOP on the implementation of supported mitigation actions, and any general issues arising with their implementation;
- Assess quality/consistency of proposals for support, and/or approve support needs;
- Match support provisions with support needs;⁴⁵
- Verify that any commitments in terms of support (*e.g.* reporting on receipt/donation, level of provision of support) have been met;
- Record mitigation action performance (as monitored and verified by implementing entities).

At present, reporting of support focuses on support provided (see section below) – and to a lesser extent on support needs in non-Annex I countries for possible future mitigation (and adaptation) activities - rather than on support received⁴⁶. Further strengthening of information on support provided and received would therefore be needed in a post-2012 framework. In particular, a mechanism to match support provisions with support needs (and potentially also to assess the need for support) will not be possible without more information on support needs for GHG mitigation activities.

⁴³ Some institutions could fulfil more than one task.

⁴⁴ This number could be lower if certain groups of countries, *e.g.* LDCs, did not need to produce such documents.

⁴⁵ Kim *et al.*, (2009 forthcoming) includes an exploration of how mitigation actions needing support could be matched with sources of support.

⁴⁶ Guidelines for non-Annex I National Communications “encourage” countries to report on how capacity-building activities are being implemented (UNFCCC, 1999). Information on specific capacity-building needs is also requested. However, the guidelines do not request information on the extent of support received for such activities.

5.3 Institutional implications of quantifying support

Information on provision of support for GHG-relevant activities is already being collected in different fora and for different purposes. However, this information would need to be expanded in order to provide a more timely picture of support, to enable more comprehensive tracking of where support is directed, and to enable any “matching” of support and possible future GHG mitigation actions.

For example, as outlined above, Annex I countries’ National Communications (produced periodically) already need to include information on finance, technology transfer and capacity building, *i.e.* financial contributions to the GEF, to particularly vulnerable developing country Parties, to multilateral institutions and programmes, and to bilateral and regional mitigation actions by sector. Information on technology transfer is also to be provided by Annex II Parties, and this needs to distinguish between public and private sector activities. However, this information is limited because: 1) it is infrequent (as the time gap between National Communications in Annex I Parties is often up to five years); 2) it is often non-quantified (as quantification of support in terms of technology transfer and capacity building is often difficult); and 3) it is not always specific to climate change as only a handful of countries reported the share of contributions through multilateral channels attributed to climate change activities and programmes (Corfee-Morlot *et al.*, 2009). Also, Convention articles 4.3, 4.4 and 4.5 do not frame commitments for support in specific terms, leading to lack of agreement on which financing qualifies and should be reported (*e.g.* it is unclear what “new and additional” financing refers to); something National Communication reporting guidelines do not clarify (Fransen, 2009).

Reporting support will necessarily have financial and institutional implications, particularly given that some of the existing reporting systems (in both developed and developing countries) may need to be changed to provide accurate monitoring of support. Care should be given therefore in order to avoid potential duplication with the NC and to minimise any additional administrative burden to Parties concerned.

Information on how much ODA is provided, and where it goes (by country and sector) is also collected on an annual basis by OECD-DAC. This includes information from the 22 DAC country donors⁴⁷, the EC, and other international organisations (UN, World Bank, regional development banks) (OECD, 2009). However, this information is not complete, as information from non-DAC countries are produced on a voluntary basis. Further, not all of the 22 DAC countries use the “climate marker”, which further disaggregates funding by indicating which ODA is climate-relevant or climate-specific. Other relevant information is also available, such as information on contributions to multinational organisations, such as the World Bank’s Climate Investment Funds. Detailed project-specific information on how much support has been provided is also available for some projects, *e.g.* GEF-funded projects.

Thus, several institutions and processes already exist that collect information relevant to identifying the support provided for developing country GHG mitigation activities. However, changes would be needed (both at the level of donor countries, and on the part of existing institutions that collect data) in order to track bilateral climate-related funding in a more consistent and comprehensive manner.

6. Looking forward

If a reporting/recording mechanism of GHG mitigation actions (and potentially also GHG commitments and support) is included in the post-2012 climate framework, it is likely to form only part of a country’s reporting requirements post-2012. Other requirements related to post-2012 provisions on “measurable,

⁴⁷ DAC donor countries are: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, UK and USA. The EC is also a DAC donor.

reportable and verifiable” emission mitigation actions, commitments and support could include GHG inventories, low-emission development strategies, as well as National Communications and other documents such as Technology Needs Assessments.

As part of an overall MRV system, there are some issues that a reporting/recording mechanism by itself cannot address. For example, such a mechanism cannot identify if the world is on track to meet particular GHG emission and/or concentration levels if it contains information on actions, and potentially also on emission reductions, but not on emission levels.

Increasing the importance of *ex ante* recording of mitigation actions in a post-2012 climate regime, *e.g.* via National Schedules, would represent a significant shift from the current framework, which focuses on defining *ex ante* QELRO commitments and *ex post* reporting. There could be significant advantages of such a change, including increased transparency and recognition of different countries’ mitigation efforts and potentially also an increased ability of the international community to react in a timely manner if current actions were assessed as not being sufficient. However, it could also raise challenges both of a technical nature (*e.g.* relating to *ex ante* identification of possible actions and quantification of associated estimated emission benefits) as well as of a political nature *e.g.* developing country resistance to providing regular information on non-supported actions, particularly if this leads to an expectation within the international community to implement such actions.

For reporting, there are provisions in the current reporting framework on mitigation actions which can be built upon in a post-2012 MRV framework focusing on mitigation actions. These include reporting requirements such as National Communications, the MRV framework and institutions of the CDM, and the development of “climate markers” to identify climate-specific and climate-relevant development assistance. However, further guidance would be needed, both on substance (*e.g.* developing methodologies to quantify the GHG impacts of particular mitigation actions) and on process (*e.g.* how to approve/report/record mitigation actions).

In a post-2012 agreement, developed countries may need to expand reporting to strengthen information in two areas: on GHG actions, and also on support provided, where the latter includes financing and other support for capacity building and technology development and/or transfer. The frequency and detail of reports may also need to be increased, particularly regarding how much support (and of what type) is provided. This may, in turn, require increased co-ordination, within governments and the various divisions and agencies dealing with provision of support, as well as between governments, multilateral development banks and other international institutions (such as the OECD-DAC) involved in the provision and/or monitoring of support. Increased reporting on support received for climate-specific and climate-relevant support by developing countries would be a useful step forward in improving the effectiveness of support.

Developing countries are also likely to need to provide more information than at present. This could include a more comprehensive and timely picture of GHG mitigation actions (implemented and planned, as well as those contingent on provision of support), as well as information on support received. Information may also be needed on the expected/actual GHG impacts of mitigation actions.

Currently, the internationally-agreed guidance on quantifying the effects of GHG mitigation actions focuses on projects or programmes undertaken via the CDM. Extending such guidance to methodologies, approaches and/or tools to quantify the effects of GHG mitigation actions – while not straightforward – would facilitate countries’ MRV-related efforts, and could thus help in developing a more comprehensive and timely system for measuring, reporting and verifying enhanced action on GHG mitigation in the post-2012 climate framework.

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Annex I

Range of country views regarding reporting of GHG mitigation actions and support⁴⁸

Whose actions are reported?

- All Parties (actions and commitments): Australia, Canada, Indonesia, USA, New Zealand, Tuvalu
- Only non-Annex I Parties: Brazil, Korea, Lichtenstein, South Africa, Environmental Integrity Group, EU, Norway

What to report/record?

- Unilateral, supported and credited actions: Australia, New Zealand, USA, Japan, South Korea, Tuvalu
- Unilateral and potentially supported actions: Bangladesh, South Korea, South Africa, Singapore, Chile, Colombia, Costa Rica, El Salvador, Honduras, Nicaragua, Panama, EU, Indonesia, Singapore, Qatar, Russia
- Supported actions only: African Group, Brazil, China, India, Norway, Pakistan
- Credited actions as well: Indonesia (no-lose target), Saudi Arabia, Singapore (CDM), South Africa

Actions recorded/reported how?

- Voluntarily: AOSIS, Bangladesh, China, India, Indonesia, Norway, South Africa (if unilateral), South Korea, Environmental Integrity Group,
- Required: Australia (discretionary for LDCs), Canada, EU, New Zealand (for major economies), South Africa (if supported), USA

Reported/recorded where?

- Registry: AOSIS, African Group (supported), Bangladesh, Brazil, Canada, EU (registry and register), India, South Korea, Norway, Qatar, Singapore, South Africa (register, for supported and unilateral), Tuvalu
- National Communications: African Group (unilateral), New Zealand, Singapore, South Africa (for unilateral actions)
- National Schedule/Appendix: Australia, New Zealand (being considered), EU (expressed interest), USA (except LDCs)

Support is reported

- In registry: AOSIS, Brazil, India, South Korea, South Africa (updated yearly)

⁴⁸ Updated October 2009.

- In National Communications: African Group, Australia (with revisions), South Africa (and in a registry), USA (enhanced National Communication)

Verification of mitigation actions

- Of unilateral mitigation actions: African Group (by national entity), AOSIS (“independent review”), Ecuador (for “major emitting developing countries”), Australia (“general review”), EU (international review by UNFCCC), Indonesia (internationally, by new body under COP), Japan, Korea (based on internationally agreed guidelines, undertaken voluntarily), New Zealand, Singapore (conducted nationally according to internationally agreed standards), South Africa (by national entities according to international guidelines – measure whether the action takes place), USA (MRV for all parties)
- Of supported mitigation actions: African Group (internationally through UNFCCC), AOSIS (international verification), Argentina (internationally by new body), Australia (in-depth, higher standard of verification), Bangladesh (internationally under new body), Brazil (internationally by UNFCCC), China (by national entities under UNFCCC guidance), EU (international review by UNFCCC), Indonesia (internationally, by new body under COP), India (internationally, by new body), Japan (international review by COP), Korea (internationally agreed criteria, verification procedures agreed upon between countries), Norway, Saudi Arabia (internationally by new body under COP), Singapore (conducted internationally), South Africa (internationally, under Convention), Tuvalu (of credited actions and internationally supported REDD actions), USA

MRV of Support

- Together with MRV of mitigation actions: Argentina, Brazil (though MRV different for AI and NAI), EU, Korea, New Zealand, Norway, Saudi Arabia, USA
- Independently: China (technological flows), Columbia, Costa Rica, El Salvador, Honduras, Nicaragua, Panama, Cuba, Ecuador, India (technology-related activities), Madagascar, South Africa

Estimated effects of mitigation actions to be reported: AOSIS (should result in deviation from BAU), Australia, Brazil, Ecuador (for “major emitting developing countries”), EU, Korea, Mexico, New Zealand, Norway, South Africa (plus assumptions underpinning proposed action), USA (though developing countries not bound by outcome)

Estimate and report support needs: Brazil, China, Costa Rica, El Salvador, Honduras, Nicaragua, Panama, EU, India, Korea, Mexico, Saudi Arabia, South Africa

Low-GHG emission development strategies / long-term planning: AOSIS, Argentina, Australia, Bangladesh (“national strategy on climate change”), Canada, Costa Rica, El Salvador, Honduras, Nicaragua, Panama (“national climate action plans”), EU, Guyana, Indonesia, Japan (“National Action Plans”), Micronesia, New Zealand (“national planning”), Norway, South Korea, USA

Sources: WRI, 2009; ENB (2009a, 2009b), Chung (2009), personal communication

Glossary

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| AI | Annex I countries to the UNFCCC |
| Annex II | Annex II countries to the UNFCCC |
| AWG-LCA | Ad-hoc Working Group on Long-term Cooperative Action under the Convention |
| BAP | Bali Action Plan |
| CDM | Clean Development Mechanism |
| COP | Conference of the Parties |
| EB | Executive Board (of the CDM) |
| GATS | General Agreement on Trade in Services |
| GEF | Global Environment Facility |
| GHG | Greenhouse gas |
| ITL | International Transaction Log |
| KP | Kyoto Protocol |
| LEDS | Low-emission development strategy |
| MRV | Measurable, reportable and verifiable (as laid out in the BAP) |
| NAMA | Nationally appropriate mitigation actions |
| NAI | Countries that are not listed in Annex I to the UNFCCC (<i>i.e.</i> developing countries) |
| NC | National Communications |
| ODA | Overseas Development Assistance |
| OECD-DAC | The Development Assistance Committee of the Organisation for Economic Co-operation and Development |
| PAM | Policies and Measures |
| UNFCCC | United Nations' Framework Convention on Climate Change |