

A series of four concentric, semi-circular arcs in shades of green, starting from the left edge and curving towards the right, creating a sense of movement and depth.

OPTIONS TO REVISE REPORTING GUIDELINES FOR ANNEX I AND NON-ANNEX I NATIONAL COMMUNICATIONS

J. Ellis, S. Moarif, G. Briner, B. Buchner and E. Massey
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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 2010 in response to a request from the Climate Change Expert Group on the United Nations Framework Convention on Climate Change (UNFCCC). The Climate Change 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 Climate Change 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 Climate Change Expert Group. Rather, they are Secretariat information papers intended to inform Member countries, as well as the UNFCCC audience. Members of the Climate Change Expert Group are Annex I and OECD countries. The Annex I Parties or countries referred to in this document are those listed in Annex I of the UNFCCC (as amended at the 3rd Conference of the Parties in December 1997): Australia, Austria, Belarus, Belgium, Bulgaria, Canada, Croatia, Czech Republic, Denmark, the European Community, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Liechtenstein, Lithuania, Luxembourg, Monaco, Netherlands, New Zealand, Norway, Poland, Portugal, Romania, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, United Kingdom of Great Britain and Northern Ireland, and United States of America. Israel, Korea, Mexico and Chile, as OECD member countries, are also members of the Climate Change Expert Group. Where this document refers to “countries” or “governments”, it is also intended to include “regional economic organisations”, if appropriate.

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Executive Summary

Under Articles 4 and 12 of the United Nations Framework Convention on Climate Change (FCCC), all Parties are required to prepare “National Communications” (NCs). The Convention requires NCs to include a national inventory of greenhouse gases (GHGs), steps taken or envisaged by the Party to implement the FCCC and other relevant information. Parties subsequently agreed to detailed guidelines on the structure, content and frequency of National Communications, establishing different requirements and guidelines for Annex I (AI) and non-Annex I (NAI) Parties. These guidelines have structured the provision of information needed: to assess compliance with reporting requirements under Article 12 of the FCCC; to facilitate the sharing of information between Parties; and to assess the implementation of actions and progress towards the objectives of the Convention. The reporting guidance for National Communications, as well as the review structures surrounding AI NCs, also aim to enhance transparency and accountability and build trust among Parties and other stakeholders about how well countries are working - together and separately - to address the problem of climate change.

Current guidelines outlining what needs to be included in NCs date from 1999 for Annex I countries and 2002 for non-Annex I countries. The Copenhagen Accord indicates that new reporting guidelines may be needed. Recent negotiation text (UNFCCC, 2010a) also indicates that more frequent national reports (e.g. on a biennial basis) could be needed in future. At present, no country prepares National Communications at this frequency, although Annex I countries do produce annual national inventory reports (NIRs).

It is therefore timely to assess whether current reporting guidelines could be modified to better reflect the needs of the international community. This paper identifies key questions for consideration when developing new guidelines for NCs from Annex I and non-Annex I countries, and suggests changes to the current reporting guidelines in order to produce more relevant, timely, user-friendly, transparent and comprehensive reports. This analysis suggests that there are common elements (such as GHG emissions and GHG mitigation activities) that will need to be reported by both Annex I and non-Annex I Parties, but that there are likely to be differences as to how these common elements are reported. It also provides textual suggestions as to the purpose of each section in a National Communication.

In order to reflect countries’ “common but differentiated responsibilities and respective capabilities”, it is also important that future reporting guidelines continue to provide for flexibility in reporting. Such flexibility could be in terms of:

- when different items are reported (with *e.g.* less frequent reports for least developed countries);
- which items are reported (with *e.g.* emission projections optional for countries without national and/or sectoral GHG commitments, goals or targets); and
- how the information is developed and/or presented (with *e.g.* more complex methods and/or comprehensive information presented on key issues).

While current guidelines outline *what* “shall”, “should” or is “encouraged” to be reported, they generally do not indicate a format for *how* such information is to be presented. This lack of specificity, particularly marked for the sections on national circumstances, projections of climate impacts, mitigation and adaptation measures, means that the information reported in different countries’ NCs can vary widely. This includes variations not only in terms of what is reported (as not all items are mandatory for all countries), but also how it is reported, and where the information is placed in a NC.

If – as is suggested in current negotiation texts – all countries are to produce NCs or other reports on a biennial basis in future, this will represent a significant increase in both information availability and the number of reports: while Annex I countries generally produce NCs on a three to five-year timescale, the gap between NCs for non-Annex I countries can currently stretch to a decade or more. This paper identifies possible changes for new reporting guidelines for NCs from Annex I and non-Annex I countries, both for “updates” that could be produced biennially, and for “full” NCs that could be developed on a longer time-

scale. If all NCs are subject to some form of review or international consultation and analysis, it will be important that the information contained in future NCs is both concise and consistent across reports in terms of both structure and content.

As form generally follows function, agreement on the purpose of both full NCs and biennial reports could help determine the details of what information is included in each. Such agreement may also depend on the purpose and form of other current or planned repositories for climate-related information under the UNFCCC or elsewhere.

Key questions that could help to guide decisions on different points are outlined in Table 1 below.

Table 1: Potential purposes and key questions to guide decisions on content of reporting guidelines

Topic	Potential purpose(s)	Key questions for consideration
NCs (general)	Fulfil reporting obligations under the FCCC and subsequently	<ul style="list-style-type: none"> - Do all NCs need to cover all items in the current guidelines, or should biennial reports focus on mitigation commitments/actions/goals indicated to the international community, and on data or circumstances that change rapidly? - Should the NC be a detailed repository of information on all obligations and commitments under the Convention, or should it include summaries of key points for some or all of these activities? - What level of flexibility regarding elements to be reported should a NC include, for example to reflect national circumstances? - What should be the relation between the “full” NC and the biennial “update” reports? What is the relation between these NCs and other potential future reports under the FCCC (e.g. biennial National Inventory Reports for non-Annex I Parties)
GHG Emissions	Identify emission levels and historical trends, key sources, key drivers	<ul style="list-style-type: none"> - How frequently is GHG information needed from different NAI parties? - What level of emissions detail is needed in NCs (biennial or full)? - How much methodological information should be provided in NCs?
Emissions Projections	Identify future emission trends; impact of measures	<ul style="list-style-type: none"> - How to improve transparency and encourage increased reporting in assessing the impact of measures?
Progress on Mitigation Commitments/ Actions/ Goals	Identify a Party’s overall progress towards its mitigation commitments/actions/goals indicated to the international community, including via offset use	<ul style="list-style-type: none"> - What information is necessary to convey progress towards or status of implementation of mitigation commitments/actions/targets indicated to the international community? - How to avoid double-counting of offsets? - Should NCs include information on current/planned offset use in order to identify efforts made domestically and internationally?
Mitigation Actions	Demonstrate current/planned mitigation measures in key areas, and that the effectiveness of these measures is being monitored and evaluated	<ul style="list-style-type: none"> - How to streamline this (often long) section? - Should discussion of mitigation measures focus on/clearly link to key emission categories? - What level of detail is needed for description of measurement, reporting and verification (MRV) procedures?
	Identify climate targets, goals and policy priorities	<ul style="list-style-type: none"> - Should long-term mitigation strategies/targets/goals (e.g. low-emissions development strategies) be included in the NC? If so, how?

Topic	Potential purpose(s)	Key questions for consideration
Climate Impacts and Vulnerability	Identify key vulnerable areas and adaptation priorities	- What information is necessary to identify most vulnerable areas? Can this be done qualitatively for some countries?
Adaptation Actions and Programmes	Describe adaptation strategies and demonstrate that key adaptation priorities are being addressed	- Should discussion focus on key nationally-relevant priorities, or be requested for all adaptation-relevant areas? - Should countries explicitly report on how adaptation concerns are being integrated into policy development?
Financial Resources, Technology and Capacity Building	Track public flows from Annex II Parties and other Parties that are donors Facilitate transparency and understanding of amounts and types of international financial flows, key priorities for this support and possible gaps	- Should NCs focus on finance pledges, actual flows (committed and/or disbursed) or all of these? - Is “double book-keeping” (<i>i.e.</i> financial accounting by both donors and recipients) needed as a means of cross-verification between donor and partner Parties? - Is information on finance from public and private sources needed (including via the CDM or other mechanism)? If so, are Parties the best source of information on private sources? - - What level of detail is needed in NCs? How could NCs fit within a broader MRV framework for finance and other support?
	Identify support received and any needs in NAI Identify use and effectiveness of support provided	- What level of detail is needed in NCs? How could NCs fit within a broader MRV framework for finance and other support? - Would information be needed or requested on the use of finance?
Research and Systematic Observation	Indicate climate policy and technology- related research activities as well as contributions to Global Climate Observing System (GCOS)	- How much detail is needed in the NC, given that AI Parties produce a separate GCOS report?

To reflect some of the lessons learned from past NC experience, as well as new information requests, this paper suggests a number of changes to the current set of reporting guidelines for National Communications. These are that:

- Reporting guidelines are **revised to improve transparency about mitigation commitments/actions/targets/goals that have been indicated to the international community**, how Parties are meeting them or plan to meet them, and how they are fulfilling other obligations taken under the UNFCCC. This would help to boost the forward-looking aspects of NCs; increase accountability and trust; and enhance the usefulness of NCs to both the national and international community.
- **Reports are produced more frequently (*e.g.* on a biennial basis) and biennial updates to NCs are focused on issues related to mitigation commitments, actions, targets or goals, as well as support provided/received.** This would help to streamline such reports compared to “full” National Communications and would also minimise the increase in reporting burden among Parties. These “updates” would focus on information that can change more regularly, such as finance needs and delivery, GHG emissions, status of mitigation and possibly adaptation targets or goals, as well as any revisions to mitigation targets, goals and/or actions.
- **Standard reporting formats are used to present information as far as is practical, *i.e.* tables of qualitative and quantitative information.** This can help to facilitate report preparation and increase

consistency across different reports, without reducing flexibility on how particular items are estimated. Increased standardisation of reporting could also help facilitate review or international consultations and analysis of these reports.

- **An increased emphasis is placed on reporting of “key” issues**, in relation to both mitigation and adaptation. The concept of “key categories” is already used for emission sources in Annex I National Inventory Reports, and that of “key areas” is used in non-Annex I vulnerability assessments. Expanding this approach to other parts of a country’s National Communication could facilitate identification of priorities and gaps in mitigation and adaptation policy, or financial support, as well as international review and analysis of reports.
- **A flexible reporting framework is provided for non-Annex I countries**, where the content and frequency of national reports is “tiered” according to national circumstances. While all countries would report basic or core information on Convention obligations, how exactly this is done could vary by country (*e.g.* types of indicators reported, number of sectors with projections, etc.). In addition, information provided on how a non-Annex I country is meeting any mitigation goal could be “tiered” according to the type of goal the country has (*e.g.* country-wide, sector-specific, individual actions). The frequency with which national reports are prepared could also vary, with *e.g.* least-developed countries producing them at a lower frequency than other countries.
- **Reporting of routinely-provided information on adaptation measures and policies is formalised**, in line with increasing emphasis on adaptation in climate negotiations. This is particularly important for Annex I countries, where the reporting guidelines are currently weak and do not reflect current reporting practice.
- **Reporting on “support” is increased and its structure improved**, with an emphasis on providing a more comprehensive coverage of party-to-party financial flows (as well as other support) such as financial support provided by developed countries, and financial support received by developing countries.
- In reports from **non-Annex I countries, the provision of information that is already routinely provided is formalised**, *i.e.* methods and approaches for inventory calculations. (This information is already required from Annex I countries in their National Inventory Report).

Several questions will need to be answered collectively before agreement can be reached on how to revise NC guidelines. These concern the purpose and scope of National Communications and their role with respect to other reporting instruments. Also, trade-offs may be needed between NCs that are stand-alone, comprehensive and transparent, and those that are concise, user-friendly and timely. A promising compromise could be to reform the current reporting system to focus biennial communications on issues related to international commitments/actions on mitigation and support; to encourage more quantitative reporting of key issues in a standardised format; and to complement the system of NCs with other information repositories for detailed information.

1. Introduction

In order to meet commitments under Articles 4 and 12 of the UN Framework Convention on Climate Change (FCCC), Parties prepare and submit “National Communications” (NC) on climate-related information according to guidelines agreed by the Conference of the Parties (COP). There are two separate sets of guidelines; one for Annex I (AI) and one for non-Annex I (NAI) Parties. This reporting process fulfils several important functions, including facilitating the sharing of information between Parties, meeting reporting requirements under the FCCC, assessing implementation of actions and assessing progress towards the objectives of the Convention.

The aim of this paper is to outline options for new reporting guidelines for National Communications from Annex I and non-Annex I countries, both for “full” National Communications in their current form, and potential future biennial “updates”. The paper builds on previous analysis (Ellis, Moarif and Briner, 2010) and current negotiation texts to do this. There are several reasons why new guidelines are likely to be needed in the near future. The NC guidelines for Annex I Parties were last revised at COP 5 in 1999 (UNFCCC, 2000a) while the guidelines for non-Annex I Parties were last revised at COP 8 in 2002 (UNFCCC, 2003a). They are now both rather out-dated and may no longer best reflect the current information needs of the climate change community. Further, the Copenhagen Accord outlined that NCs for non-Annex I countries were to be reported biennially, on the basis of guidelines to be developed. The current negotiating text of the Ad Hoc Working Group on Long-term Cooperative Action under the Convention (AWG-LCA) (UNFCCC, 2010a) outlines different suggestions for what items could be included in biennial reports from Annex I and non-Annex I countries (See Text Box 1).

For each section of a NC, this paper highlights different possible purposes (and associated data needs) and identifies possible changes to the current guidelines. It does not consider how National Communications are reviewed, nor changes to guidelines for other types of national reports, such as national GHG inventory reports.

The paper is organised into four main sections. Section 2 provides background information on current submissions of the National Communications by AI and NAI Parties, and outlines how their purpose and timing may change in the future, building on previous Climate Change Expert Group (CCXG) work in this area. Section 3 outlines a possible future reporting framework for NCs. Section 4 examines options for revising reporting guidelines on a section by section basis (national circumstances, inventories, projections etc.). Section 5 concludes, highlighting the paper’s principal suggestions.

2. Background and context

National Communications form a key part of the reporting requirements for Parties to the UNFCCC and its Kyoto Protocol (KP). Article 4.1(b) of the Convention states that all Parties shall “formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases not controlled by the Montreal Protocol, and measures to facilitate adequate adaptation to climate change”. Article 12 outlines the information related to implementation of the Convention that is to be communicated by all parties, forming the basis of National Communications (UNFCCC, 1992).

The existing reporting requirements and timetable for submission of NCs are different for Annex I and non-Annex I Parties. Annex I Parties are required to submit National Communications every three to five years and National Inventory Reports annually. Non-Annex I Parties are required to submit an initial National Communication which includes a national greenhouse gas inventory within three years of becoming a Party to the FCCC, dependent on the availability of financial resources (except for LDCs and SIDS, who may submit National Communications at their discretion). There is no regular reporting timetable for non-Annex I Parties. Figures 1 and 2 summarise the different UNFCCC-related reporting requirements for Parties.

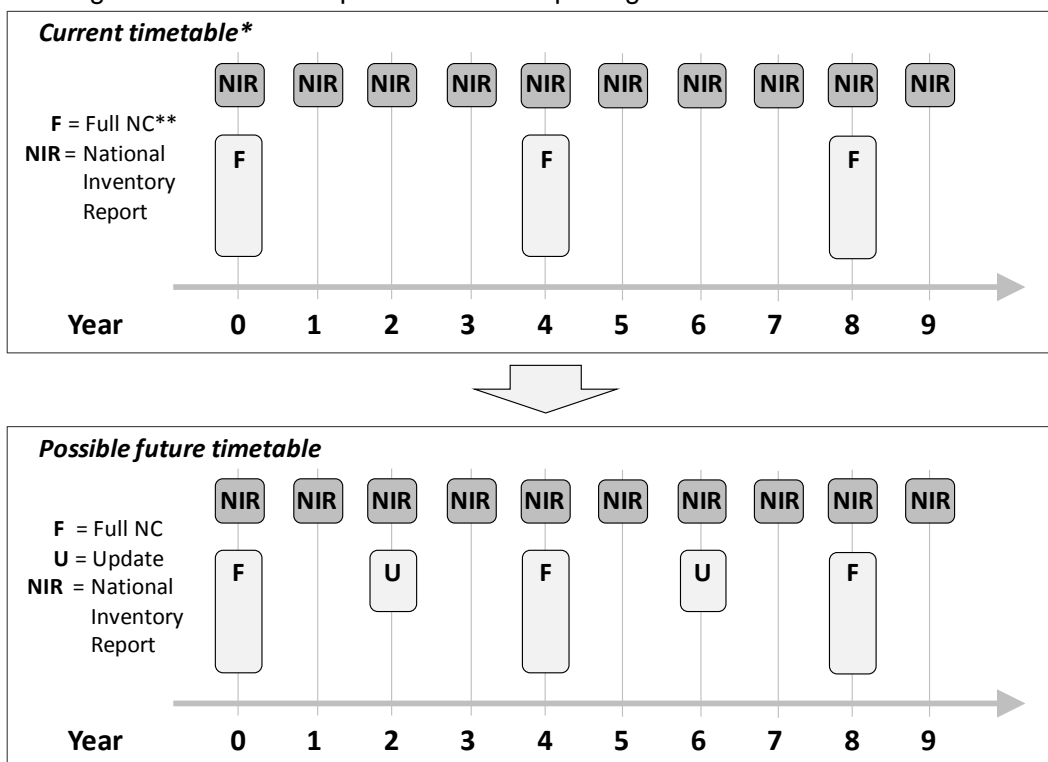
Box 1: Options in AWG-LCA negotiating text for information in National Communications

The Negotiating Text of the Ad Hoc Working Group on Long-Term Cooperative Action (AWG-LCA) prepared for the twelfth session of the AWG-LCA in Tianjin in October 2010 (UNFCCC, 2010a) contains bracketed options for future MRV and International Consultations and Analysis (ICA). For Annex I or developed country Parties it provides for three types of reports: annual national inventory reports, National Communications every 3-5 years and biennial information or progress reports on the implementation of their enhanced mitigation commitments and/or action under the Convention. These biennial reports are to include some or all of the following: GHG inventory; maximum aggregated emissions allowance in CO₂-e for a defined period; progress toward quantified economy-wide emission reduction targets, including policies and measures; implementation status and estimated GHG effects of policies and measures, and methodologies and assumptions made when quantifying effects; domestic accounting of emission units, including acquisition, transfer and retirement of units, and their link with international offsets; provision of financial resources, technology transfer and capacity building; use and transfer of international market mechanisms, emissions trading or other offsets; efforts and actions to reduce impact of response measures, along with methodologies, tools, models and assumptions (Chapter 1, Paragraph 23).

The text also contains an option to submit low-emission or zero-emission plans in Parties' next National Communication, followed by updates to these plans in future National Communications (Chapter 1, Paragraph 21). For support provided (financial, technology transfer and capacity building), the text proposes developed country parties report on this annually or biennially, verified through review of NCs (Chapter 3, Paragraph 14; Paragraph 63).

For non-Annex I and developing countries, the text puts forward suggestions for additional elements to be included in National Communications. These include: projections of GHG emissions, with and without actions; low-emission development strategy or plan, providing updates or key elements; impacts from other countries' mitigation response measures; the impact of domestic mitigation actions on other countries (Chapter 1, Paragraph 38). It also suggests that Parties report on support provided and received for capacity building (Chapter 5, Paragraph 7), and on support provided and received for adaptation actions (Chapter 2, Paragraph 12). In addition, the text suggests some information be reported biennially, subject to sufficient provision of support. This includes: GHG inventory along with sufficient information on assumptions and calculations; supplementary information specific to the pledged mitigation action; nature and status of nationally appropriate mitigation actions and their associated GHG impacts, along with methodologies and assumptions for this quantification; "other information needed to understand implementation"; receipt of support, its use, and relation to Low Emission Development Strategies (LEDS), enabling environment, and actions linked to international offsets or emissions trading; description of domestic MRV system, and results of domestic verification of mitigation actions; information on adaptation needs and actions (Chapter 1, Paragraph 39; Paragraph 48).

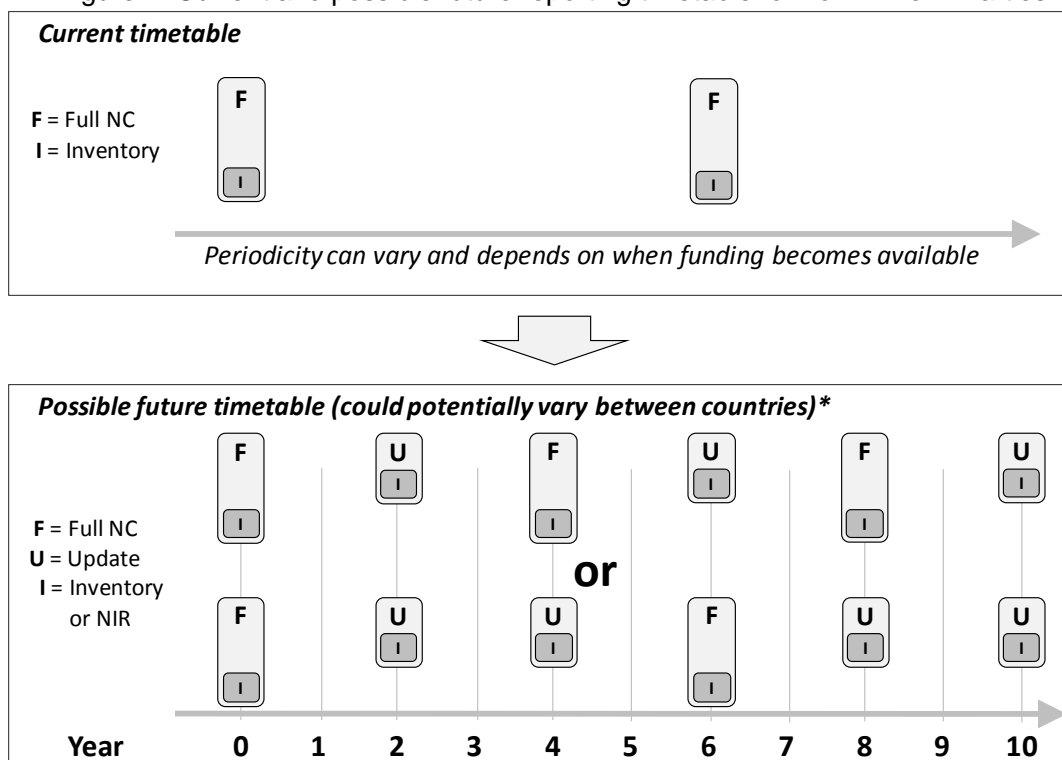
Figure 1: Current and possible future reporting timetable for Annex I Parties



*It is also mandatory for OECD-DAC (Development Assistance Committee) members to provide annual information on financial flows to the DAC.

** Exact timing of full National Communications from Annex I Parties depends on COP decisions.

Figure 2: Current and possible future reporting timetable for non-Annex I Parties



*The timing shown is an illustration, and could vary depending on country circumstances and availability of support.

As of October 2010, 39 Annex I Parties had submitted their fifth National Communication (which was due on 1 January 2010), 138 non-Annex I Parties had submitted their initial National Communication and 29 non-Annex I Parties had submitted their second. One non-Annex I Party – Mexico – had also submitted its third and fourth National Communications. The large majority of Annex I countries meet their regular reporting schedule (Figure 3). Non-Annex I Parties currently have an irregular timetable (Figure 2) with potentially long gaps in between submissions; for example, the average length of time between the submission of first and second National Communications was close to eight years, and ranged from between three to 12 years.

Despite the considerable number of reports submitted, it remains a challenge to assess progress towards the objectives of the Convention due to the presence of significant gaps in the information provided (Ellis and Larsen, 2008). These are caused by:

- The irregular submission timetable for non-Annex I Parties;
- The use of different base years and sources covered in the GHG inventories of different countries;
- A lack of detail on the methodologies used to generate the numbers presented (apart from Annex I NIRs);
- The fact that non-Annex I Parties are not required to provide emissions projections;
- A lack of timely information on mitigation and/or adaptation actions undertaken by all Parties, particularly non-Annex I;
- Insufficient information on the effect of mitigation actions for all Parties (Ellis, Moarif and Briner, 2010).

In addition, National Communications can be several hundred pages long and it can be difficult for reviewers and other users to find certain information reported in different places by different Parties under the existing guidelines.

Previous analysis (*e.g.* Ellis *et al.*, 2009; Ellis, Moarif and Briner, 2010) outlined potential new options for the purpose, timing and structure of national reports, including National Communications (See Text Box 2). In the past the **purpose** of National Communications has generally been centred on demonstrating compliance with reporting requirements under the Convention and sharing information with the international community. However, greater emphasis could be placed on *national* purposes of such reports in the future, such as to be more in-line with and useful for domestic priorities and actions on climate change. Obtaining international agreement on the purpose that National Communications are meant to fill would help facilitate the development of detailed guidance for NCs (possible purposes are discussed in more detail in Ellis, Moarif and Briner 2010).

It is likely that the **timing** of National Communications will change post-2012 for all countries, particularly for non-Annex I Parties. The draft LCA text provides for more frequent submissions from Annex I and non-Annex I Parties (UNFCCC, 2010a; see Text Box 1). The Copenhagen Accord also stipulates that non-Annex I Parties shall submit National Communications every two years, on the basis of guidelines to be adopted by the COP (UNFCCC, 2009a).

Increasing the frequency with which NCs need to be submitted will, by definition, increase the reporting burden on countries, particularly for NAI countries (many of whom currently report infrequently). Appropriate funding levels and timely delivery mechanisms for these more frequent reports will therefore also be required. For example, a report from the GEF (UNFCCC, 2010c) indicates there can be a time lag of five years or more between disbursing funds for NAI NCs and their completion. Focusing biennial NCs on key issues will help to limit the reporting burden – and will also facilitate any review or international consultations on the report.

Revising the guidelines can only improve the quality and usefulness of National Communications if they are subsequently implemented by Parties. In many areas the extent to which Parties have followed the guidelines has improved with each successive round of National Communication submissions. For example, emissions projections to 2020 were submitted by a “limited number” of Annex I Parties in their third National Communications, while 34 out of 39 Annex I Parties submitted this information in their fourth National Communications (UNFCCC, 2003b; UNFCCC, 2007a). However, there remain elements of the existing guidelines that are often not followed by all Parties; for example, Annex I Parties very rarely provide an explanation of how they determine that financial resources reported are “new and additional”, though required to do so by the guidelines. Thus, countries need to consider what revisions are needed to make the guidelines more relevant and useful, and in turn likely to be followed.

3. A possible reporting framework for new National Communications

This section explores issues relating to reporting of information in Annex I and non-Annex I National Communications by first exploring cross-cutting issues, then outlining a possible new structure for future NCs.

3.1 Purpose of changes to current National Communication guidelines

The current guidelines for National Communications outline what information countries need to report. However, with a few exceptions (*e.g.* relating to the quantitative reporting of GHG emissions and projections), the guidelines do not prescribe how such reporting is to take place, nor at what level of detail. This means that different countries’ NCs can vary widely in terms of what is reported and how.

The functions of National Communications may also change over time to reflect changes in national and/or international contexts. For example, some non-Annex II Parties may provide financial and capacity building support. Though current guidelines make no provision for reporting this information, National Communications could allow recognition of countries that do so. Further, although there are currently no requirements to include medium (*e.g.* to 2020) or long-term (*e.g.* to 2050) mitigation goals in Annex I National Communications, several of the most recent National Communications and other national policy documents do so – reflecting country targets or goals, some of which are the result of domestic legislative processes.

National Communications are likely to become more frequent in the future, hence the value of revising guidelines to be clearer about the structure (what goes where) and the minimum desirable information in each section. Reducing overlap between sections of the NC could reduce the length of reports and help them be more reader-friendly. This will also facilitate reviews, which are also likely to become more frequent.

The current guidelines may also be refined or expanded to address current gaps in reporting, such as long-term GHG goals/targets/strategies; key emission sources and drivers; the provision of new and additional financial resources; key areas in which adaptation is likely to be needed, and associated adaptation policies and measures.

While rationalising the structure of NCs could therefore be useful, revising guidelines may also involve changes to the content of these reports. Since the purpose of NCs will determine their content, Table 2 outlines possible purposes and associated data needs.

Box 2: Potential new options for purpose, timing and structure of National Communications*

There are calls to revise the content and increase the frequency of information reported by Parties under the UNFCCC. Reporting requirements currently envisaged include National Communications, as well as other reports, *e.g.* national greenhouse gas inventory reports (for Annex I countries), as well as new types of reports, such as low-emission development plans. There are also plans for a registry to match actions with support.

National reports under the UNFCCC – including National Communications – may serve both national and international stakeholders. Identifying the specific goals of different climate-related reports required under the UNFCCC is a useful first step in developing reporting guidelines that deliver timely, useful and action oriented information.

Primary international functions of National Communications could include:

- Ensuring transparent, accurate and internationally-comparable reports;
- Ensuring that countries – individually and collectively – are meeting their emissions and/or financial obligations under the Convention and Kyoto Protocol, and;
- Facilitating the implementation of these obligations;
- Understanding global GHG emission levels and trends, as well as identifying areas where more could be done, both on adaptation and mitigation;
- Highlighting successes, hence sharing good practice; and
- Facilitating international support for climate actions in developing countries.

Reporting guidelines for future National Communications could be “tiered”. This could allow countries to produce National Communication “updates” on a frequent (*e.g.* biennial) basis – focusing the information in these updates on information of most relevance to the international community. This would:

- Allow for more frequent reporting of items where significant changes routinely occur on an annual or biennial basis (*e.g.* GHG emissions and transfers, financial flows for climate action);
- Enable countries to focus these “updates” on parameters of most relevance to their GHG goals and of most interest to the international community (*e.g.* medium-term goals, progress with meeting targets);
- Provide flexibility for countries to improve the content and frequency of reported information, as their capacities allow. For example, information required in order to assess progress in implementing an absolute, economy-wide emissions reduction target would be different from that required when implementing a collection of pledged mitigation actions.

Some frequently-changing information could also continue to be reported separately, such as Annex I national inventory reports and credit transactions, or detailed information on support needs and support provided.

“Full” National Communications would also continue to be produced less frequently than “updates” and would include information that:

- Does not frequently change (or does not change at all), such as countries’ geophysical national circumstances and policy-making process;
- May change, but not necessarily on a two-year timescale, such as long-term GHG targets, national or sub-national adaptation strategies, or specific mitigation actions;

* This summarises information initially presented in Ellis, Moarif and Briner (2010).

Table 2: Possible purposes of a National Communication

Possible purpose	Associated information needs	Comment
Fulfil reporting obligations under the FCCC	National GHG inventory, steps taken to implement FCCC, and other relevant information	Current NCs are designed to fulfil this purpose
Provide transparency and accountability to the international community about a country's progress towards its goals/targets	Quantified information on goals/targets, <i>i.e.</i> GHG emission levels, support	Focusing biennial reports on information relating to goals and targets could help to lower the reporting burden associated with more frequent NCs
Highlight mid-long term trends and strategies to better understand global GHG trends	Forward-looking strategies, emissions and climate impacts	Both AI and NAI countries are increasingly developing this information, <i>e.g.</i> as part of a low-emissions development strategy
Promote consistency between reports from different countries to increase transparency and improve their usefulness for information sharing	Would require more clarity on what information is reported where, more information on methodologies and assumptions, and potentially agreement on consistent metrics	Ensuring greater consistency between NCs in terms of what exactly is reported can be done by making guidelines more explicit. Providing more information on methodologies and assumptions would help comprehension of how and why reports vary, thereby improving transparency. However, ensuring greater consistency in terms of how items are assessed (<i>e.g.</i> effects of mitigation measures) would require countries to agree up-front on estimation methodologies, and would therefore be a much harder task.
Provide a framework for flexible reporting in order to take different national circumstances into account	Guidelines would request information relevant for different sets of countries and different types of national goals and targets	If such flexibility is allowed, variations in reporting guidelines would be needed for different sets of countries. Developing differentiated guidelines is feasible, and would allow reports to focus on key issues.

3.2 Overview of possible new reporting structure

This paper suggests a slightly revised and reordered general structure for future NCs, outlined in Figures 3 and 4 below. This structure assumes that there would be more frequent quantitative reporting than at present, *e.g.* with NC “updates” on a biennial basis, as well as “full” NCs on *e.g.* a four to six-year timescale. The more frequent reports would focus on an update of key quantitative and qualitative information.

The scope of “full” and “update” NCs could vary depending on the country grouping (*e.g.* AI and NAI) and type of mitigation commitment/action that has been communicated to the international community. A new NC structure could aim to improve accountability, transparency, timeliness and usefulness of the international reports. It would do this in part by:

- Limiting the reporting burden for Parties *e.g.* through tiered reporting and sequencing of updates *vs.* full NC reports;
- Minimising or avoiding overlap, so that relevant issues are presented in one section of the NC only;
- Highlighting areas of key importance to the country, as this would facilitate understanding and review by third parties;
- Ensuring streamlining of NC “updates” that would be produced biennially;

- Increasing the emphasis in “full” NCs on vulnerability assessment and adaptation measures (which are at present combined);
- Improving transparency in methods (*e.g.* for analysing projections and impact of mitigation measures, also in sectoral mapping).

As outlined by Figure 3 and Figure 4, the main categories of current National Communications would change little in future reports. In this scenario, the largest changes could be:

1. For all countries to report streamlined biennial NCs and “full” NCs less frequently (see Text Box 2). This would allow for more frequent reporting by both AI and NAI countries on themes of most interest to the international community (particularly on mitigation and support), while minimising the increase in reporting burden on countries.
2. To add a section on “progress towards mitigation commitments” (for Annex I countries) and “progress towards mitigation goals/actions” (for non-Annex I countries). This is important as a growing number of countries have made specific indications to the international community in this area, and a mechanism is needed to track what these are, as well as progress towards them.
3. For all countries to separate the information presented on projected climate vulnerability and impacts and on adaptation actions and programmes. This could encourage NCs to have a greater emphasis on adaptation policy and actions than at present.
4. To provide for a flexible reporting framework for non-Annex I countries where information presented in NCs, as well as how this information is established, varies according to country circumstances. This would help to focus resources where they are most useful while also reducing the reporting burden on countries.
5. To reorganise where information is reported within a NC to reduce overlap, and to increase the number of suggested tabular reporting formats to promote consistency.

A more detailed outline of what would be included in each chapter of the NC is given in Figures 5-8 below, with these discussed further in the following sections of this paper. As outlined in these figures, some categories of information, *e.g.* on GHG emissions, are requested from all countries and in each report. Other categories of information, *e.g.* on national circumstances, are only requested for “full” National Communications. It is important to note that flexibility in how this information is reported is expected, both between AI and NAI countries, as well as within the NAI country group.

Figure 3: Mapping existing guidelines for Annex I Parties onto new suggested structure

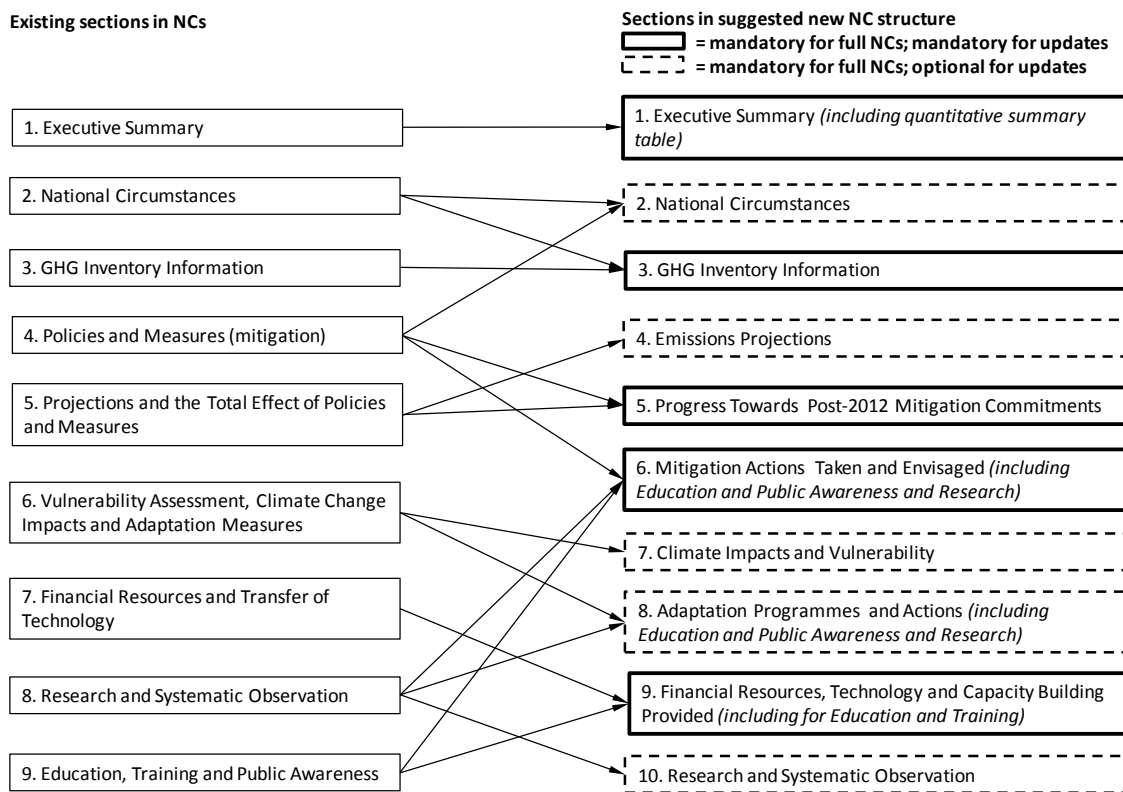
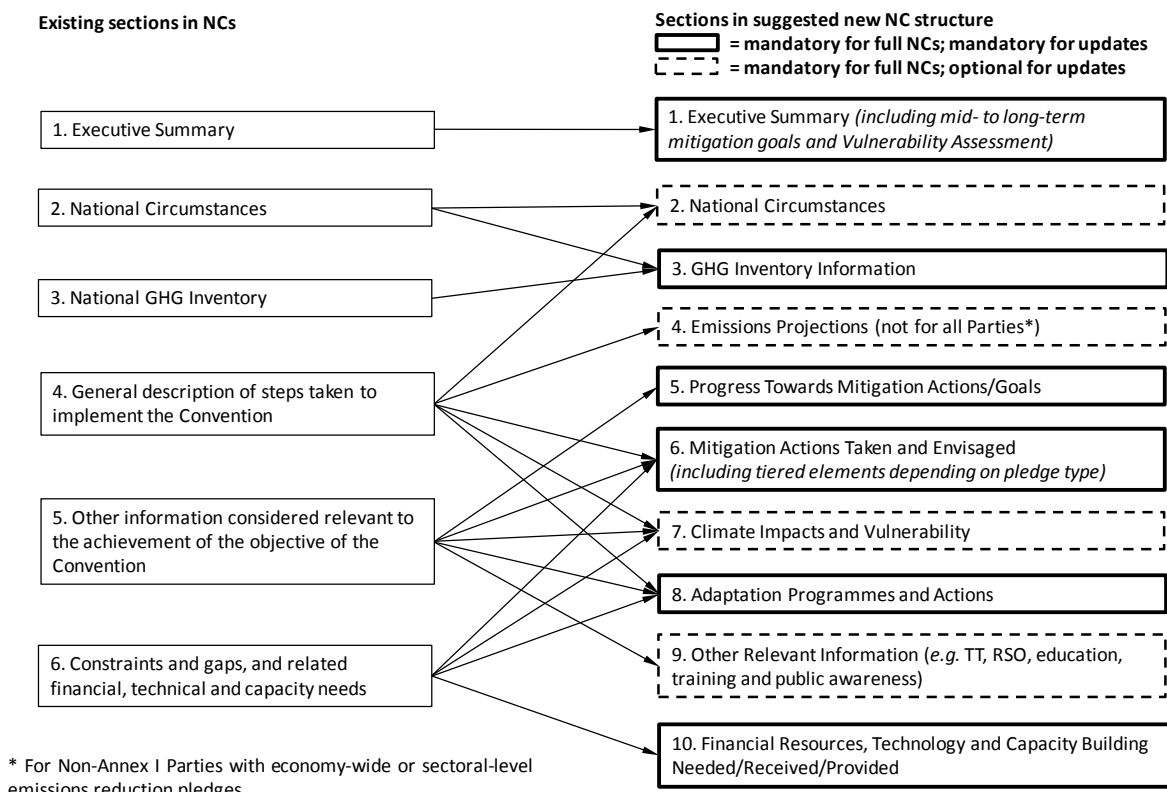


Figure 4: Mapping existing guidelines for non-Annex I Parties onto new suggested structure



* For Non-Annex I Parties with economy-wide or sectoral-level emissions reduction pledges.

Figure 5: Detailed suggested outline for future full Annex I National Communications

Suggested minimum frequency: every 4 years

Executive Summary
<p>National Circumstances</p> <ul style="list-style-type: none"> • Quantitative data table (NEW) • Population, geographic, climate, economic profile • Climate policy-making process, including cross-cutting MRV procedures (PARTLY NEW)
<p>GHG Inventory Information</p> <ul style="list-style-type: none"> • National GHG emissions • Key source categories (NEW) • Description of how National Circumstances affect key categories
<p>Emissions Projections</p> <ul style="list-style-type: none"> • Emissions trajectory (with measures, and with additional measures) • Assessment of aggregate effects • Mapping between inventory and projection “sectors” (NEW)
<p>Progress Towards Post-2012 Mitigation Commitments (NEW)</p> <ul style="list-style-type: none"> • Outline of mitigation commitments (short, medium, long-term emission levels) • Status of implementation of mitigation commitments • Current/recent acquisition, transfer and retirement of units, including offsets (if applicable)
<p>Mitigation Actions Taken and Envisaged</p> <ul style="list-style-type: none"> • Mitigation-specific policy context and processes including MRV procedures • Mitigation policy priorities summary table (NEW) • Description of sector categories • Description of new mitigation actions and/or major changes to mitigation actions since last NC • Summary tables of actions and their effects; new since last NC and those reported in previous NC
<p>Climate Impacts and Vulnerability</p> <ul style="list-style-type: none"> • Projected key impacts and vulnerabilities (PARTLY NEW) • Priorities for adaptation (PARTLY NEW) • Explanation of how these are established (NEW)
<p>Adaptation Programmes and Actions (ENHANCED)</p> <ul style="list-style-type: none"> • Adaptation-specific policy context (e.g. goals and priorities) • Key adaptation policies and measures • Integration of adaptation into relevant policies
<p>Financial Resources, Technology and Capacity Building Provided (for developed countries providing support)</p> <ul style="list-style-type: none"> • Summary information on funding levels, sources, purpose (mitigation/adaptation), recipients (countries/sectors) (PARTLY NEW)
<p>Research and Systematic Observation</p> <ul style="list-style-type: none"> • Background and context • Research • Systematic observation

Figure 6: Detailed suggested outline for future full non-Annex I National Communications

Suggested minimum frequency: every 4-6 years*

Executive Summary
National Circumstances <ul style="list-style-type: none"> Quantitative data table (NEW) Population, geographic, climate, economic profile Climate policy-making process (Including cross-cutting MRV procedures)
GHG Inventory Information <ul style="list-style-type: none"> National GHG emissions ** Key source categories (NEW) Description of how National Circumstances affect key categories
Emissions Projections (<i>not required for all Parties***</i>) (NEW) <ul style="list-style-type: none"> Mapping between inventory and projection “sectors” Tiered elements, including use/transfer of offsets (depending on mitigation action type) <div style="background-color: #e0e0e0; padding: 5px; margin: 5px 0;"> <i>Parties with sectoral quantified emissions goal(s)</i> Relevant sectoral-level projections, units </div> <div style="background-color: #a0a0a0; padding: 5px; margin: 5px 0;"> <i>Parties with a relative quantified economy-wide emissions goal</i> Projections relevant to goal type, e.g. BAU, “with unilateral mitigation actions”, intensity emissions projections, units </div> <div style="background-color: #404040; padding: 5px; margin: 5px 0;"> <i>Parties with an absolute quantified economy-wide emissions goal</i> Relevant projections, e.g. baseline and with measures projections, units </div>
Progress Towards Mitigation Actions/Goals (NEW) <ul style="list-style-type: none"> Outline of mitigation actions/goals (short, medium, long-term), with reference to projections (as appropriate) Status and/or outcome of mitigation actions (for Parties with mitigation actions)
Mitigation Actions Taken and Envisaged <ul style="list-style-type: none"> Mitigation-specific policy context and processes including MRV procedures (PARTLY NEW) Mitigation policy priorities summary table (NEW) Description of sector categories (NEW) Description of mitigation assessment Description of mitigation actions (new and/or significant changes) Summary tables of actions and their effects; since last NC and those included in last NC
Climate Impacts and Vulnerability <ul style="list-style-type: none"> Projected key impacts and vulnerabilities Priorities for adaptation
Adaptation Programmes and Actions <ul style="list-style-type: none"> Adaptation-specific policy context (e.g. goals and priorities) Key adaptation policies and measures Integration of adaptation into relevant policies
Other Relevant Information, e.g. TT activities, RSO, education, training and public awareness (encouraged)
Financial Resources, Technology and Capacity Building Needed/Received/Provided (ENHANCED)

* LDCs and SIDS, due to their limited resources and capacity for reporting, could be invited to follow these timing and content guidelines to the extent that their capacities permit.

** A national inventory report containing additional information on methodologies should be provided by Parties listed in the chapeau of the CA and other non-Annex I Parties with sufficient reporting capacity. Coverage of inventories in key sources may differ between Parties. The scope of a national inventory report for non-Annex I Parties has not yet been determined.

*** For Non-Annex I Parties with economy-wide or sectoral-level emissions goals/actions. Encouraged for other NAI Parties.

Figure 7: Detailed suggested outline for future updates to Annex I National Communications

Suggested minimum frequency: every 2 years in between full NCs

Executive Summary
<p>GHG Inventory Information</p> <ul style="list-style-type: none"> • National GHG emissions • Key source categories • Check to see if national circumstances affect key sources categories
<p><i>Emissions Projections (optional)</i></p> <ul style="list-style-type: none"> • <i>Update to emissions trajectory</i> • <i>Assessment of aggregate effects</i>
<p>Progress Towards Post-2012 Mitigation Commitments (NEW)</p> <ul style="list-style-type: none"> • Summary of what mitigation commitments are (coverage, timeline etc), how they are to be met, and progress towards meeting them • Acquisition, transfer and retirement of units, including offsets (if applicable)
<p>Mitigation Actions Taken and Envisaged</p> <ul style="list-style-type: none"> • Summary table and brief description of key new actions since last NC and their effects • Summary table and brief description of major changes and status of previous actions
<p><i>Progress With Implementing Adaptation Programmes and Actions (optional) (NEW)</i></p> <ul style="list-style-type: none"> • <i>Key new adaptation policies and measures</i> • <i>Integration of adaptation into relevant policies</i>
<p>Financial Resources, Technology and Capacity Building Provided (for developed countries providing support)</p> <ul style="list-style-type: none"> • Summary information on provision of funding, funding sources, purpose (mitigation/adaptation), recipients (countries/sectors) (PARTLY NEW)

Figure 8: Detailed suggested outline for future updates to non-Annex I National Communications

*Suggested minimum frequency: every 2 years in between full NCs**

Executive Summary
GHG Inventory Information <ul style="list-style-type: none"> • National GHG emissions ** • Key source categories
<i>Emissions Projections (optional***) (NEW)</i>
Progress Towards Mitigation Actions/Goals (NEW) <ul style="list-style-type: none"> • Summary of what mitigation actions/goals are (coverage, timeline etc), how they are to be met (including offsets if applicable), with reference to projections (as appropriate)
Mitigation Actions Taken and Envisaged <ul style="list-style-type: none"> • Summary table and brief description of key new actions since last NC and their effects • Summary table and brief description of major changes and status of previous actions
Key New Adaptation Programmes and Actions (NEW)
Financial Resources, Technology and Capacity Building Needed/Received/Provided <ul style="list-style-type: none"> • Summary tables (PARTLY NEW)

*LDCs and SIDS, due to their limited resources and capacity for reporting, could be invited to follow these timing and content guidelines to the extent that their capacities permit.

** A national inventory report containing additional information on methodologies should be provided by Parties listed in the chapeau of the CA and other non-Annex I Parties with sufficient reporting capacity. Coverage of inventories in key sources may differ between Parties. The scope of a national inventory report for non-Annex I Parties has not yet been determined.

*** For Non-Annex I Parties with economy-wide or sectoral-level emissions goals/actions. Encouraged for other NAI Parties.

4. Options for new reporting guidelines

This section highlights options for future chapter-by-chapter reporting in National Communications, focussing on sections that are common to both Annex I and non-Annex I countries.

4.1 Executive Summary of NCs

At present, most Executive Summaries focus on a qualitative description of the subsequent report. Including a quantitative table summarising key indicators or data would help promote consistency between different reports, and could also help streamline textual descriptions in the reports themselves. Such information could usefully be included in both full NCs, as well as updates (Ellis, Moarif and Briner, 2010) and would help facilitate review. As international review of NCs for Annex I countries and international consultations and analysis for non-Annex I countries could be expected to focus on mitigation and finance-related actions reported by a country (reflecting progress towards achievement of national targets/goals), the quantitative information table could also focus on these issues.

4.2 National Circumstances

National circumstances are key to understanding a country's actions and priorities on climate change, and so provide important context to the international reader of a NC.

4.2.1 Purposes and data/information needs

At present, the purpose of the national circumstances section of a National Communication is not defined. Building on Simeonova (2001), a possible purpose could be to provide a description of national circumstances relevant to greenhouse gas emissions and removals and adaptation activities. This would provide the context for climate-related emissions, projections and measures and facilitate understanding of policy choices. Table 3 further elaborates the potential purpose and data needs of the national circumstances section.

Table 3: Potential purposes and data needs for the national circumstances section of National Communication (All countries)

Potential purpose	Data needed
Provide background information and national context to help explain trends shown in emissions inventory and projections	Information on population size, growth and rural/urban distribution Information on aspects of climate related to energy use, such as demand, or land-use and forestry, such as deforestation rates Information on levels of economic activity
Provide national context for the mitigation actions and programmes section and the adaptation actions and programmes section	Explanation of the policy-making process, roles and responsibilities of different levels of government for mitigation and adaptation policies (including monitoring and evaluation procedures); cross-cutting policy objectives and priorities
Provide background information and national context for the vulnerability assessment	Information on population size, growth and rural/urban distribution Information on country geography and climate Information on national economy
Outline the particular domestic barriers within a country that affect its ability to take more effective action to address climate change	Qualitative description of domestic barriers Brief description of policy-making process if relevant

4.2.2 Possible changes to guidelines

Taking into account the information currently being reported by Parties and the purposes and data needs described above, Table 2 outlines possible changes to the guidelines for the national circumstances section.

Table 4: Suggested changes to the national circumstances section of National Communications

Which Parties?	Suggestion	Justification
AI and NAI	Include a table of quantitative indicators at the front of the national circumstances section	Including a quantitative table of key indicators or data would help promote consistency between different reports, could also help streamline textual descriptions in the reports themselves and would help facilitate review. This would include key cross-sectoral quantitative indicators that are of widespread relevance. The list of indicators could either be prescribed (<i>e.g.</i> population, rate of population growth, total land area, GDP, GDP per capita, rate of GDP growth, etc.) or left to each country to select the indicators which to them are most relevant.
AI	Shift the focus of the national circumstances section to information related to both mitigation and adaptation activities (not just mitigation)	At present the national circumstances section for Annex I Parties tends to focus on information relevant to mitigation policies, rather than adaptation policies. Non-Annex I Parties already tend to focus on both.
AI and NAI	Include data on rapidly-changing national circumstances in biennial updates	Information on national circumstances that is likely to change on a biennial basis (<i>e.g.</i> GDP data) may need to be reported in biennial updates to National Communications, though perhaps not in a dedicated national circumstances section.
AI and NAI	Move sector-specific information on drivers of emissions from national circumstances to GHG inventory section	Presenting information about historic emissions trends and their drivers could help facilitate understanding if presented together.
AI and NAI	Clarify that information on sector-specific policies should be reported in the sections on mitigation and adaptation actions	Could reduce overlap as many Parties are currently reporting information on sector-specific policies in both the national circumstances and the policies and measures section (UNFCCC, 2007b).
NAI	Include a recommended sub-section on government profile and policy-making	The section could contain information on government type and structure, policy-making and legislative process, committees and line ministries responsible for mitigation and adaptation policies, roles and responsibilities of different levels of government and other relevant information. Already recommended for AI.
AI and NAI	Include quantitative and qualitative geographic, climate, population and economic profiles	This information would provide important context for understanding: emission trends and drivers, climate impacts and vulnerabilities, assumptions made in projections, policy priorities and choices.

There are different ways in which information pertaining to national circumstances could be woven into National Communications. One option is to locate national circumstances information at the front of the report, which has the advantage of avoiding duplication if the information is relevant to more than of the subsequent sections. A second option is to split up this information and include it in subsequent sections as required. The current guidelines lack precision in this area and it is often the case that some information relating to national circumstances is reported in both the front of the report and in subsequent sections.

The guidelines could be changed to make the information presented in this section more consistent across different countries' reports, *e.g.* either by providing more detailed guidelines for the content, including a template for a table of quantitative information and sub-headings for topics for which qualitative information is required, or by clarifying the purpose of each sub-section in the guidelines, while leaving

some flexibility for Parties to decide which quantitative and qualitative information are most suited to serving this purpose.

Previous analysis (Ellis, Moarif and Briner, 2010) suggested that a stand-alone national circumstances section could be included in “full” National Communications, but excluded from shorter biennial updates. In this case, the government structure, population profile, geographic profile, climate profile and economic profile would be reported less frequently than some other sections of the report. For information elements that are likely to change significantly on a biennial basis (a potential example is GDP data), provisions should be made to include these in National Communication “updates”.

4.3 GHG inventory information and key drivers

Both Annex I and non-Annex I countries are currently required to report information on their national GHG emissions in their NC. However, there are large differences in reporting of GHG inventory data and methods between Annex I and non-Annex I countries at present. This is largely explained by differentiated international reporting requirements, which are less onerous for non-Annex I countries.

4.3.1 Purposes and data/information needs

The current reporting guidelines do not outline the purpose of this section in the National Communication, although the purpose defines what information is usefully included. A possible purpose could be: “The primary objective of the inventories section of the National Communication is to outline trends in domestic GHG emissions since 1990 or other base year, to highlight key drivers for these trends, and to indicate the reliability of the information presented.” Such a purpose would build on current guidelines and reporting experience, to allow for a clearer identification of countries’ emissions as well as key emission sources. Different possible purposes of the inventory section of a National Communication are outlined in Table 5 below.

A limited increase in reporting of GHG information in the National Communication compared to the current situation would help to considerably increase the transparency of the report, and in particular would help readers’ understanding of *what* a country’s key emission sources are, which can in turn help explain *why* national mitigation actions focus on certain areas. For Annex I countries using the 2006 IPCC guidelines, this increased reporting in National Communications (*e.g.* on methods used, key categories, sub-sector emissions) would not represent extra work, as the sector-specific information would already be calculated and reported as part of the National Inventory Report. However, if such reporting requirements were also requested for non-Annex I countries, the additional information asked for would represent an increase in international reporting requirements – as non-Annex I countries do not currently need to provide this level of detail in their GHG inventory. It would, however, provide useful context, both to national and international policy-makers.

Table 5: Possible purposes and content of inventory section of National Communication guidelines

Which Parties?	Potential purpose	Associated information needs	Comment
AI and NAI	To identify domestic emission levels (with and without land-use)	For a given year, total domestic GHG emissions, emissions/removals associated with land-use	For AI countries this information (for the basket of 6 GHGs) is already required annually and provided in countries' CRF (although in the categories provided in the 1996 IPCC guidelines). For NAI, information is currently patchy. No information is currently required on the "new gases" included in the 2006 IPCC guidelines.
AI; NAI to the extent possible	To identify historical emission trends (with and without land-use)	Information as above for several years	This information is needed to assess progress to date towards national targets/goals, as well as areas where policy action is necessary.
AI and NAI	To highlight key emission sources	Emissions and trends from key categories (at an appropriate level of disaggregation)	For AI, information already provided in NIR, and often but not always summarised/explained in NC. Data patchy for NAI.
AI and NAI	To identify the key drivers for these sources	Underlying information on national circumstances, <i>e.g.</i> industrial structure, drivers for land-use change	This information is needed to understand the country's emission profile and focus of mitigation actions.
AI and NAI	To provide confidence in the data reported	Information on national inventory system and mechanism to track offset transfer/acquisition	Required of all AI KP Parties as part of their National Inventory Report, and often summarised (including by non-KP AI Parties) in their NC. Not required, but often reported, for NAI.

Box 3: IPCC guidelines and sectoral mapping issues

There are three sections of an Annex I National Communication for which information is categorised by sector: GHG inventory information, policies and measures (PAMs) and emissions projections. To facilitate understanding and comparability it would be helpful to maintain consistency and clarify the relation between the sector definitions used for these three sections of the report.

For Annex I Parties, the guidelines for inventories stipulate that “the allocation of different source/sink categories should follow the split of the *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories* and the *IPCC Good Practice Guidance for Land Use, Land-Use Change and Forestry*” (UNFCCC, 2006). The 1996 IPCC guidelines split emissions into seven sectors: energy, industrial processes, solvent and other product use, agriculture, land use change and forestry, waste and other. In the PAMs section of National Communications, “to the extent appropriate, the following sectors should be considered: energy, transport, industry, agriculture, forestry and waste management” (UNFCCC, 2000a). In the projections section, “projections shall be presented on a sectoral basis, to the extent possible, using the same sectoral categories used in the policies and measures section” (UNFCCC, 2000a).

While some Annex I Parties used the sectors provided in the guidelines for the PAMs sections of their NC5 (such as Switzerland), others used their own country-specific classification system. For example, Finland included space heating and machinery as sectors, while Japan included a commercial sector and a residential sector. Consequently, the sectors used for the PAMs sections are often different to the IPCC source/sink categories used for inventories. Most Annex I Parties report projections according to IPCC inventory reporting categories, rather than those used for their policies and measures.

While internal consistency regarding use of such categories is generally to be encouraged, there may be a limit to the extent to which sectoral categories can be harmonised across the different sections of National Communications. For the purpose of policy development and implementation, sectors tend to be classified along segments of economic activity. The IPCC guidelines were established to provide a complete picture of countries’ anthropogenic GHG emissions, ensuring that all emission sources are accounted for and that these are not double-counted. They are therefore a useful tool in identifying domestic emission sources and trends.

However, IPCC inventories are not suited to all types of quantitative analysis that may be needed post-2012. In particular, they cannot identify the mitigation effects of particular policies – or group of policies – on a sector, although they can track trends in emission levels from different source categories. Further, IPCC source categories do not always allow for emissions trends from economic sectors to be identified. This is because the sectors used for the purpose of categorising PAMs may be end-use categories of final consumption that include indirect emissions, such as emissions from commercial or residential sectors, that are spread across more than one sector of the IPCC guideline categories.

Regarding **national inventory systems**, information on how an inventory is developed is currently required for Annex I Kyoto Protocol Parties as part of their National Inventory Report. This information is key for Kyoto Protocol Parties in the run-up to 2012, as qualitative information that highlights the process for collecting data, selecting emission factors and methods, QA/QC etc. builds confidence in the quantitative information presented. For non-Annex I countries, reporting information on methods in the inventory submitted as part of their NCs is not required. Such information will also be important to build confidence in the progress of all countries with post-2012 nationwide GHG commitments or goals, such as those provided by countries in Appendix I or II of the Copenhagen Accord. All Annex I countries apart from Turkey have developed nationwide mitigation commitments or targets, and some non-Annex I countries have also developed nationwide or sector-wide mitigation goals. For Parties with nationwide GHG emission goals or targets post-2012, it would also be useful to include in National Communications, where relevant, certain information on the process of tracking credit transactions, the website of the national registry, and who the contact point for further information is.

Information on **key emitting categories**¹ is very useful in helping readers (both national and international) to more easily identify the important emission sources within a country, and potentially also what actions

¹ The IPCC (2006) defines a key category as one that significantly affects a country’s emission level, trend or uncertainty assessment.

countries are taking in these areas (for example if such a categorisation was also continued in other sections of the national communication such as policies and measures). Because key categories vary by country, reporting guidelines could include an outline of the type of information to be provided, but would not be able to prescribe exactly which emission sources should be reported. Such a reporting format would allow for both transparency in reporting, and flexibility. At present, National Communications are not required to include a list of “key categories”.

Annex I countries already identify their “key categories” as part of their National Inventory Report, so including this information in their NC would not require any additional work. Some Annex I countries (*e.g.* Luxembourg, Japan, Poland) have already included a summary of this information as part of their 5th National Communication. For the purposes of a National Communication, information could be limited to those categories that affect a country’s emission level or historical emission trend, rather than also the uncertainty assessment. Identifying key categories in the inventories section of a NC can help readers to understand the focus of the mitigation measures that are described further on in the NC, as well as projected future emissions.

Information on **how national circumstances affect key categories** can be important not only in determining what a country’s key emission categories are, but also in the level of variation within these categories over time. For example, Portugal’s emissions can vary significantly depending on precipitation levels, as this affects the availability of their hydro electricity-generating resources and thus emissions from the electricity sector (Agencia Portuguesa do Ambiente, 2010a; 2010b). At present, such discussions are included in the NC sections on inventories, national circumstances and policies and measures.

4.3.2 Possible changes to guidelines

In order to ensure completeness of reporting, revised guidelines for GHG inventory reporting will need to be expanded in terms of both which gases and sources are included. A process for revising guidelines for inventory reporting for Annex I countries is already underway: the current CRF tables (for use by Annex I countries) are set to be revised by 2011, with an aim to agree these at SBSTA34 (UNFCCC, 2010b), and voluntary use of these tables by Annex I countries to start in 2012.

This paper therefore suggests that besides reporting on GHG emission levels (currently a summary for AI and full inventory for NAI), the inventory section of future National Communications include the information summarised in Table 6 below.

4.4 Emissions Projections (and total effect of policies and measures)

Emission projections highlight the expected future GHG pathway of countries and sectors. Comparing information from scenarios with and without implemented and/or planned mitigation policies, measures, actions and programmes can help identify their expected results, and highlight where they may need to be strengthened in the future.

4.4.1 Purposes and data/information needs

Both Annex I and some non-Annex I countries have developed country-wide GHG mitigation commitments or goals for 2020². In order to track movement towards such targets or goals, it will be important for these countries to provide emission projections (as well as information on use of offsets in the “Progress with mitigation commitments, actions and/or goals” chapter) in future National Communications.

As projections are not currently a required part of non-Annex I National Communications, there is no text in the current guidelines on what such a purpose could be. For Annex I, the primary purpose of the projections part of National Communications is “to give an indication of future trends in GHG emissions and removals, given current national circumstances and implemented and adopted policies and measures, and to give an indication of the path of emissions and removals without such policies and measures”.

² The status and legal nature of these commitments/targets/goals varies by country.

Table 6: Suggestions for changes to the inventory section of NCs

Which Parties?	Suggestion	Justification
AI and NAI	Add new GHG and sources, consistent with 2006 IPCC guidelines	This is needed in order for inventories to better reflect the current situation. Flexibility can be provided, as at present, for NAI countries to focus on key sources/gases.
AI and NAI	Highlight key emission source categories and drivers	This would help facilitate international understanding (and therefore review/consultations) of reports. Key sources are already identified by AI in their Natl. Inventory Reports, and information on drivers is also present (often in several places in a NC).
AI and NAI	Add information on (or references to) methods used in inventory calculation	This will help to provide confidence in data reported. Reporting on methods is already required for AI in their NIR, and could be referenced in NCs. It is also often reported for NAI (although not mandatory).
AI and NAI	Add information on national systems to establish and report GHG emissions	This information (currently reported in Annex I National Inventory Reports, and which could be summarised in NCs) is needed to establish confidence in numbers reported by all countries, particularly non-Annex I Parties, who do not currently report on these as part of their inventories.
AI and NAI	Description of how national circumstances affect key categories	Some of this information is currently reported in the national circumstances section. It would be useful to regroup information specific to “key categories” in one place.
NAI	Provide guidance on which years to be reported	(Such guidance already exists for AI). As NCs become more frequently produced by NAI, it would be helpful if they reported information for the same years, <i>e.g.</i> 2005 and then “even” years from 2008.

This purpose may need to be revised for subsequent National Communications in order to:

- **Identify countries’ GHG emission pathways for the medium and long term.** Countries’ GHG targets or goals for post-2012 have to date often been expressed as a target for a specific year such as 2020 or 2050 (rather than group of years, as under the Kyoto Protocol). If information on target emission levels for a period of years is not provided elsewhere in the international climate framework (*e.g.* a Protocol or other legal instrument that lays out a multi-year emissions pathway for Annex I countries), countries will need to indicate, for example in the Progress with Mitigation Commitments, Actions and/or Goals section of their National Communication, if they also have a target or proposed emission pathway for interim years/time periods. Information on GHG emission pathways (rather than end points) is needed to assess progress towards a shared vision of limiting temperature rises to below an agreed level.
- **Encourage more widespread reporting of emission projections in NAI NCs.** This would reflect the fact that some NAI countries have developed projections-based mitigation goals, for example minus x% GHG emissions compared to business-as-usual or minus y% CO₂/GDP compared to a particular year. It would also reflect the fact that some NAI countries are already developing and reporting emission projections. Reporting on emission projections by NAI countries is currently most often included in the mitigation actions section of NCs. With these issues in mind, Table 7 below outlines some possible purposes of the projections section of National Communications.

Table 7: Possible purposes of the projections section of National Communications

Which countries?	Possible purpose	Associated information needs	Comment
AI; NAI with national or sectoral goals or that have developed projections	Identify how historic national emission trends are expected to evolve in future, including a reference scenario and scenario that includes implementation of measures	Medium [and long-] term GHG emissions pathway; GHG target and associated emissions pathway	For AI countries, this reflects current information provisions, so should be feasible to continue in future. For several NAI countries with national-level GHG goals, this information is also available. In some cases projections may only cover one or a few sectors and these can be reported, particularly if the country has a sector-level goal. Providing this information will help countries to assess their progress towards their GHG goals/targets.
AI; NAI with national or sectoral goals	Identify how successful mitigation efforts have been to date	Baseline and “with measures” scenarios, methods for estimating impact of measures	The majority of Annex I countries’ NC have not provided a “without measures” scenario in their most recent NC, as this would date from 1990. However, many provide a “with additional measures” scenario in order to assess the difference to their “with measures” scenario. None of this information is currently required for NAI.
AI; NAI with national or sectoral goals	Identify whether mitigation efforts could be further enhanced	Estimates of mitigation potential and/or costs	Would be difficult to do in a transparent and comparable manner across countries. Further, this issue is likely to be politically sensitive.

A possible “purpose” of the projections section of future National Communications could therefore be “to give an indication of mid and long-term domestic GHG emissions and removals, and an assessment of the aggregate effects of mitigation-related measures”.

4.4.2 Possible changes to guidelines

The annotated outline for fifth National Communications (UNFCCC, 2009b) for Annex I countries indicates that the projections section should be reported in four parts: projections, assessment of aggregate effects, information on complementarity and methodology used to calculate the emission projections presented. The information on complementarity is not required for non-Kyoto Parties.

This paper suggests that the projections section of future National Communications include five sections – the three below along with those on complementarity and methodology:

- **Quantified projections** for a country’s total expected “with additional measures”³ emissions trajectory. For AI countries, the period for projections could be extended to 2030, and sector-specific projections for domestic emissions and removals could also be included, as could historical data from 1990. This reflects the current guidelines and timing (the current guidelines, finalised in 1999, indicated that projections were to be made until 2020). Provision of a “without measures” reference scenario continues to be useful, particularly in countries that have only recently established mitigation targets or goals. The time from which such a scenario is calculated could

³ The current guidelines indicate that a “with measures” scenario includes mitigation measures that are already in place, and a “with additional measures” scenario includes planned mitigation measures.

vary by country, to take national circumstances into account. For some countries a “with measures” projection may now be a more appropriate reference scenario, but the time from which implemented measures are included should be made clear.

- **An assessment of aggregate effects** of mitigation-related policies and measures. This section would be similar to that currently included in AI National Communications. Clarifications would be needed on which measures/mitigation actions are included in which scenario.
- **“Mapping” sectors between inventories, measures, and projections.** This would be a new sub-section of the National Communication. For most countries, the “sectors” for which emissions are currently reported in the GHG inventory section of a National Communication are different from the “sectors” presented in the projections and policies and measures section. This means that it can be difficult to “map” information from the inventories part of the report to the sections on projections and policies and measures⁴.

Table 8: Suggestions for changes to the projections section of National Communications

Which Parties?	Suggestion	Justification
AI, and those NAI with absolute nationwide goals	Provide quantified projections, associated methodological information and mapping between inventories, measures and projections in NCs	Helps to identify progress towards target/goal
NAI with national GHG goals relative to a baseline	Provide a without measures/reference projection and associated methodology	Needed in order to identify progress towards a quantified goal; several NAI countries with a relative goal (<i>e.g.</i> Indonesia and Brazil) have already developed such baselines
AI, and NAI with sectoral emission goals	Provide sector-wide projections for all sectors (AI) or those sectors covered by such goals (NAI)	Needed in order to identify progress towards a goal
AI	Extend the time period for analysis by requiring Annex I countries to develop projections for N+20 (<i>i.e.</i> to 2030)	Corresponds to timeframe of projections in current AI guidelines (agreed in 1999 requiring projections to 2020)

4.5 Progress with mitigation commitments, actions, targets and/or goals

At present, NCs do not explicitly track a country’s progress towards its national and/or international mitigation commitments, targets or goals. Annex I NCs contain the majority of the information needed to do so, *i.e.* GHG inventories and projections, as well as information on national and regional mitigation programmes and measures. However, Annex I countries’ National Communications are not required to include information on offset use – even though offsets are commonly used. Further, many non-Annex I countries have mitigation-related goals (some of which explicitly mention use of the Clean Development Mechanism, CDM). For Annex I countries (who have mitigation commitments), and for non-Annex I countries who have mitigation goals, it would be useful to have a section in NCs where a country’s target/goal is described, as well as progress towards such a target/goal. This section could at a minimum define the form, status and timeline of a country’s specific target/goal (*e.g.* legally-binding commitment to reduce total GHG emissions by A% by year B compared to year C; voluntary goal to increase energy efficiency in a given sector by Y% in year Z compared to year S).

⁴ NB Some countries do provide “mapping” as part of their discussions within individual chapters; see Text box 2.

4.5.1 Purpose and data/information needs

Many countries, both developed and developing, have indicated that they have, or are developing, post-2012 mitigation commitments, actions, targets or goals, and submitted relevant information to the UNFCCC Secretariat in early 2010. The status of these post-2012 commitments, targets or goals varies by country. For example, some countries and regions (*e.g.* the EU) have domestically legislated economy-wide GHG targets, whereas others (*e.g.* the US) have unilateral quantified GHG limitation or reduction pledges. Not all such targets or goals are economy-wide. For example, certain countries (*e.g.* Morocco) have pledged a series of specific mitigation actions; some countries indicate sector-specific actions or goals (*e.g.* China). Further, not all such post-2012 mitigation action is unilateral: some countries (*e.g.* South Africa) have indicated a certain economy-wide level of mitigation that is contingent on receiving support from the international community, and others (*e.g.* Gabon) indicate that they may explicitly make use of the CDM.

Although these initial indications of post-2012 mitigation commitments or actions are collated by the UNFCCC Secretariat, there is no agreed mechanism whereby countries can report on any further developments, *e.g.* updated information on mitigation commitments, actions, goals/targets and/or moves towards such goals/targets. It might therefore be useful for future National Communications to include a section that contains such information.

Given the various goals and targets of a wide range of countries (Annex I and non-Annex I, Kyoto Parties and not) for the post-2012 period, the purpose of this section of a NC would be:

- To clearly identify countries' mitigation commitments/goals/targets;
- To provide information relevant to determining how a country is progressing towards meeting its commitment, goal or target, or referring to specific areas of the National Communication where such information is provided;
- To distinguish between countries' domestic mitigation actions/emission pathways and use of offsets, in order to avoid double-counting.

Mitigation-related commitments from Annex I countries focus on absolute, country-wide GHG emission limits. Information needed to assess progress towards such targets is therefore relatively consistent for this group of countries. In contrast, mitigation-related actions, goals or targets from non-Annex I countries vary widely in terms of their geographical coverage (nationwide, sectoral, project-level), timescale *e.g.* for implementation of actions (from 2011 to 2020) or for GHG reductions (2020, 2030 or 2050), and how they are expressed (*e.g.* in terms of deviation from business-as-usual emissions, emissions intensity, implementing particular projects). While information on any post-2012 NAI mitigation actions, goals or targets could be reported in this section of the NC, information needed to identify moves towards them by non-Annex I countries could therefore vary considerably, and could logically belong in different parts of a National Communication. For example, a non-Annex I country indicating to the international community that it will undertake specific mitigation actions could appropriately report progress towards such actions in the section on mitigation actions. In contrast, to assess moves towards a goal of emission levels at x% below business-as-usual, information would be needed on business as usual projections and future projections (including the use of offsets), which could be included in a future projections section of NAI NCs.

Table 9: Possible purposes and content of the section on progress with mitigation commitments, actions, targets or goals in National Communications

Which Parties?	Potential purpose	Associated information needs	Comment
AI and NAI	Identify mitigation-related commitment/goal and progress towards meeting it	Information on form, timescale, coverage, and status of implementation / results to date	This is not currently required to be included in NCs, however in practice this information is likely to be included in the projections and/or mitigation actions section of NCs.
AI; those NAI with sectoral/national goals or using CDM	To identify current use of offsets	Net transfers/acquisitions of offsets and other units	For Annex B countries, information is available from their registry. UNFCCC is the CDM registry administrator.
AI and NAI	Identify if gaps are expected between the commitment/goal and domestic/international actions, and if so, how to fill these gaps	Will vary, <i>e.g.</i> countries with national or sectoral emission commitments or goals would need information on the targeted emissions pathway, historical and future domestic emissions, current plans for offset use	Ideally, this section would be non-politicised, and simply represent the country's own assessment of where it stands in relation to meeting its goals.

4.5.2 Possible guidelines

This paper suggests adding a section on “progress with mitigation commitments” for Annex I countries and “progress with mitigation actions/goals” for non-Annex I countries . Doing so would enable readers to quickly identify what a country’s mitigation-related commitments, goals or actions are. It would be useful to include this information in biennial reports (*e.g.* NC “updates”) as well as in “full” NCs. This section would comprise information on:

- **What a country’s mitigation commitments or goals/actions consist of**, *i.e.* timeframe, details on the level of GHG commitments/goals in the medium and long-term and any rules governing how they are to be met (*e.g.* rules on offset use, land-use etc).
- **Where possible, the emissions level** that is associated with such commitments, goals or actions;
- Information on the **net transfers or acquisitions of credits, as well as any “gap”**. Information on offset use, in conjunction with its emissions goal and domestic emissions inventory, is needed to identify a country’s progress towards its emissions commitment or goal, and therefore to highlight if it expects a “performance gap”⁵.
- **The system in place** (*e.g.* registry) that is used to track offset use. All countries with quantitative nationwide targets would need to monitor both domestic emissions and transfers/acquisitions of offsets. Kyoto Protocol Parties already monitor and report his information. Both AI and NAI countries are likely to continue to use/transfer offsets (“Kyoto” units and other) post-2012. It will

⁵ If such a gap is expected, this section of the report could also usefully indicate where information is presented on how the country plans to fill such a gap, or where the country has reported on the resources it may require to do so.

therefore be important for all countries currently using and planning to use/transfer offsets to report on this. This would increase transparency regarding how a country expects to meet its GHG target and avoid double-counting of offsets.

Table 10: Suggestions for information to be included in the NC section on progress with mitigation commitments for Annex I countries

Suggestion	Justification
Information on the type, status, coverage, timeline of GHG emissions commitment	There is at present no requirement to submit information internationally on post-2012 mitigation commitments, targets, goals or actions (although several Annex I countries have included information on emission commitments in their 5 th NC).
Add information on transfers, acquisitions, retirement of units	This would help facilitate understanding of a country's progress towards its national GHG commitment.
Add information on AAU (or other unit) associated with the type of commitment	This, in conjunction with information on domestic emissions and offset use, will help to identify progress towards an emissions target.

The content of this “progress” section for non-Annex I countries could be different, focusing solely on whether the country has a post-2012 emissions-related goal, and if so, what this consists of and its current level of implementation. This paper suggests that, reflecting the variety of forms of mitigation goals and actions anticipated by NAI, information on identifying moves towards such pledges be included elsewhere in the NC, *e.g.* in the section on mitigation actions or projections.

Table 11: Suggestions for information to be included in the NC section on mitigation actions/goals for non-Annex I countries

Suggestion	Justification	Cross-reference
Information on the type, status, coverage, timeline of GHG emissions actions/goals	Some of this information has already been submitted to the UNFCCC (although not necessarily within a NC) by several countries, and there is at present no requirement to submit further information internationally on updates to or the evolution of goals and actions	While this information could also be in the mitigation actions section of the NC, details on rules governing coverage of the action/goal (<i>e.g.</i> sectors) and how it is to be met could be better provided here, notably rules determining offset use
Information on how the action/goal is to be met; progress to date with meeting the goal/objectives; and information on offset use	This would help facilitate understanding of a country's progress towards its national GHG target or mitigation actions, and avoid double-counting of offsets	Projections section for countries with sectoral or economy-wide GHG reduction or limitation targets (absolute, relative or intensity-based) Mitigation actions section and potentially specific rows of the summary table Information on CDM or other offset use to be added in mitigation action summary table where appropriate for actions

4.6 Mitigation Actions⁶

The policies and measures section of NCs contains information essential to assessing whether a country is making efforts to comply with its commitment in the Convention to “formulate, implement, publish and regularly update” national and regional mitigation measures, as well as any subsequent national or international commitments, actions or goals. This section also outlines how a country is currently implementing its commitments related to mitigation measures, and how it is planning to continue doing so in the future. Information on mitigation actions is particularly useful from an information-sharing perspective, demonstrating the kind of actions a country can successfully take to reduce GHG emissions given a particular set of national circumstances and policy goals.

4.6.1 Purposes and data/information needs

The principal aim of the chapter on mitigation actions in a NC is to provide information allowing the COP to determine that a party is formulating, implementing, publishing and updating climate change mitigation measures, that these measures are leading (or will lead) to GHG emission reductions or limitations, and are having or will have an impact on GHG emission trends. Such information is important to demonstrate that where Parties’ emissions have increased or are projected to increase, actions have been taken or are planned to reduce them – or limit their growth to the extent possible in the case of non-Annex I countries. For Annex I countries it is also important to demonstrate that where emissions are projected to decrease, this is in part a result of mitigation efforts undertaken.

While the purpose of the section is not specified in the guidelines for either Annex I or non-Annex I countries, this could be: “The primary objective of the mitigation-related policies and measures section of the national communication is to provide information on actions taken to fulfil commitments under Articles 4.1 (b), 4.2 (a) and (b) and 4.2 (e)(ii) of the UNFCCC and any subsequent goals or targets for reducing or limiting anthropogenic GHG emissions.” Table 12 outlines more specific purposes and associated information needs of the mitigation actions section. While there are several common elements in terms of the information needed by both Annex I and non-Annex I countries, there will likely be differences as to how the information is reported and the degree of obligation to do so.

4.6.2 Possible changes to guidelines

Potential changes to this section of NCs are presented in Table 13 below, taking into account information currently requested, the various purposes of this section, and the priorities of the international community that have changed since the NC guidelines were first developed (Ellis, Moarif and Briner, 2010). It may appear as though many elements have been added for non-Annex I Parties. In practice, many non-Annex I countries already report on these elements in their National Communications, though in different ways and formats as they are provided with little guidance. Thus, most of the “additions” proposed here would merely formalise existing practice. As such, several suggested changes also apply to all countries. However, as indicated above, elements applying to both Annex I and non-Annex I parties will likely still include differences in the guidelines relating to how information is reported and which elements “shall”, “should” or “are encouraged” to be reported.

⁶ The term “actions” is used here to reflect language in current UNFCCC negotiating texts. It is a generic term encompassing policies, measures, programmes and nationally appropriate mitigation actions.

Table 12: Potential purposes and information needs for the mitigation actions section of National Communications

Which Parties?	Potential purpose	Information needed
AI and NAI	Inform on a country's climate-related policy priorities, and climate-related targets and goals	Overarching policy aims that will affect or be affected by GHG mitigation actions; Kyoto Protocol commitments; national mid- to long-term emission reduction or limitation strategies and programmes (e.g. economic development priorities, poverty reduction strategies).
AI and NAI	Inform on the policies, measures, programmes and actions undertaken or planned that will reduce anthropogenic GHG emissions	Specific information on the policies and measures, with clarity on the scope of actions reported and sector classification used; Clear implementation status, updated in subsequent NCs; information on monitoring and evaluation provisions.
AI; NAI according to capacity	Indicate that policies and measures are being implemented and are reducing, sequestering or avoiding GHG emissions – or will do so – as intended	Effect of policy or of several policies (<i>ex-ante</i> and <i>ex-post</i> when available, with clear distinction between the two), referencing methods to assess impacts ⁷ . NAI Parties could also include outcome or impact in non-GHG terms. Other countries may wish to use this option for measures that are difficult to quantify in GHG terms.
AI; NAI according to capacity	Demonstrate that policies and measures are addressing key emission sources and drivers, and are modifying or will modify longer-term trends in anthropogenic GHG emissions	The key sources and drivers primarily being targeted or affected by a given policy or measures; clear indication of which policies and measures are included in which projections scenarios (baseline and additional measures) ⁸ .
NAI	Improved transparency	Information on domestic MRV provisions (AI countries are requested to provide this information, and generally do).
NAI countries with internationally indicated NAMAs	Demonstrate progress with mitigation actions indicated to the international community, including indication of offset use	Information on actions/goals, including scope, sector, clear implementation status, monitoring and evaluation provisions, effect of policy; plus indication of whether CDM will be used and to what extent if known.

⁷ Increased guidance on methods to assess impacts of mitigation actions would be useful, but complex to develop. Any such effort may therefore best be done separately to work on NC guidelines themselves. At present, the guidelines refer to existing methods in footnotes.

⁸ It is the "Projections and total effect of policies and measures" section that provides an indication of the total impact of mitigation actions on emissions. The reductions expected or associated with individual or groups of measures cannot be "added up" and therefore the summary table does not provide such information.

Table 13: Suggestions for changes to mitigation actions section of National Communications

Which Parties?	Suggestion	Justification
AI and NAI	Include information on mitigation-relevant policy aims and mitigation-related targets and strategies in a tabular format.	Some of this information may also be included in the National Circumstances section, but policy information, including on monitoring and evaluation, specific to mitigation actions should be included here, as currently for AI. Providing information on major strategies and priorities in table format with reference to associated actions will make the link between the two clearer.
AI and NAI	Include information on mitigation-related RD&D and education, training and public awareness activities	Avoids duplication of reporting; information currently often reported in sections on policies as measures, as well as in RSO; education, training and public awareness
AI and NAI	Provide more specific guidance as to sector classifications and request that countries provide a brief explanation of their sector definition	Countries tend to disaggregate the suggested sector categories in different manners; it is often unclear what is included in the different classifications and how these may relate to sectors used in projections and inventories This could require more work for the reporting country, in order to co-ordinate understanding of sectors and be able to clarify distinctions between them
AI and NAI	Reduce the amount of textual description and include more of this information in the summary table	The information provided in text and in the summary table can overlap, whereas it is easier to search for and find information in the table. Information in text can be moved to the summary table, and can focus on information not easily reported in the table, on key new policies and/or on major changes since previous NC. Any policy process information should be kept for the front of the chapter. However, if information is not provided succinctly in the table, this could become unwieldy and difficult to read and assess
AI and NAI	Indicate the key emissions sources targeted by a policy or measure	Will link this section to those on inventories and projections, providing a better understanding of how actions taken are guided by data on sources and drivers
AI and NAI	Clearly distinguish between policies and measures implemented or planned since the last NC, and those still in place that were reported in the last NC	Provides more continuity between NCs, making it easier to update and track changes in information previously reported. Easier to find information that has changed since previous report.
AI	Provide clear guidance on whether and how Parties shall provide information on policies and practices that may have a negative impact on GHG emissions, and what this impact might be	Reporting on this is currently far from systematic; if it is decided that this information is important, clear guidance on reporting it, including a summary table, should be provided Systematically including this will not only mean providing more guidance, but would increase the reporting country's workload
NAI	Clearly separate sub-section on mitigation assessment (including any projections) with those on policies and measures; report on mitigation assessment by sector	Currently, some national communications have information on assessments, projections and lists of actions for different sectors, without it being clear if the actions are part of the assessment or being undertaken. This paper suggests that countries with projections report these in a separate "projections" section, for example those that have quantified economy-wide or sectoral GHG reduction or limitation goals.

Which Parties?	Suggestion	Justification
NAI	For countries that have indicated to the international community that they will undertake specific mitigation actions, clearly indicate these in the summary table	Explicitly and clearly presents the country's progress with meeting the actions it has indicated that it will implement; can more easily be pulled out for biennial updates An additional column is to be used for these actions, indicating to what extent CDM or other offsets will be used for their implementation
NAI	Indicate national MRV procedures	This would help improve transparency, and increase confidence in the information provided

The descriptive portion of the chapter on mitigation actions could thus be more focused, and address policies and measures adopted, planned or implemented since the last National Communication. A Party may also report on major changes to previously reported policies which will have an impact on their estimated mitigation effects (*e.g.* policy is scaled-down, expanded, terminated, timeframe modified). Countries could include additional information in this section, such as on how policies and measures interact with one another, non-GHG benefits, costs, and domestic or international public funding allocated, budgeted or disbursed for a given policy, measure or programme.

In line with the suggestions made above, in future NCs the summary table on mitigation policies, measures and actions could be expanded to incorporate elements often found in the textual description. This would help to create a more standardised reporting format for mitigation-related policies, measures and actions.

4.7 Projections of climate impacts and vulnerability

This paper suggests that future National Communications make a clear distinction between reporting on vulnerability assessments/climate impacts and reporting on adaptation measures. The respective sections could be entitled, "Climate impacts and vulnerability" and "Adaptation programmes and actions". This separation would reflect the fact that many countries have developed institutional and scientific structures dealing with the assessment of climate vulnerabilities and impacts as well as dedicated policies and programmes for adaptation to climate change.

Such a change in the National Communication guidelines would enable countries to better highlight their ongoing activities. Moreover, this change in guidelines would also reflect how many countries – both Annex I and non-Annex I – are currently structuring their National Communications (*e.g.* the Fifth NCs of Australia, Austria, Italy, Japan, United States, and the Second NCs of Ivory Coast, Costa Rica and Egypt). Thus, while separating reporting on climate impacts and vulnerability from reporting on adaptation would represent a significant change to the guidelines (particularly for Annex I countries), it would not represent a significant change in reporting practice.

4.7.1 Purposes and data/information needs

Neither the AI nor NAI guidelines explicitly state the purpose of reporting on climate impacts and vulnerability. However, reporting such information will aid countries in fulfilling Article 4.1(b) of the FCCC.⁹ This paper suggests that a possible purpose could be "to provide information on the scope of countries' key vulnerabilities to the impacts of climate change, in order to define priorities for adaptation". This scope could include areas – both natural/biophysical and socioeconomic systems – that are vulnerable to the impacts of climate change. This issue of identifying key vulnerable areas is already present in guidelines for non-Annex I NCs.

⁹ Article 4.1 (b) of the FCCC states that, "All Parties shall: Formulate, implement...programmes containing measures to facilitate adaptation to climate change."

Vulnerability assessments and the understanding of climate impacts on biophysical, ecological and socio-economic systems are the entry way to understanding and prioritising appropriate adaptation actions (IPCC, 2007). Detailed assessments of climate impacts and vulnerability can require scientific research, adequate funding and co-operation across government agencies and government levels (and to some degree on international co-operation).

The impacts of climate change will have consequences on the natural world which in turn can affect a variety of domestic and international socio-economic sectors. The current reporting requirements for Annex I countries state that a country must detail “the expected impacts of climate change” (UNFCCC, 2000a) but do not ask the country to describe what those impacts will be on. Further, the guidelines for Annex I countries – in contrast to those for non-Annex I – do not ask for a description of key vulnerable areas. Table 14 below outlines what the potential purposes of reporting projections of climate impacts and vulnerability could be.

Table 14: Possible purposes and information needs for the climate impacts and vulnerability section of National Communications

Which Parties?	Potential purpose	Data needed
AI (already requested from NAI)	Highlight the climate impacts on and vulnerabilities of key vulnerable areas	This will provide a rationale and narrative for the description of impacted socio-economic sectors. The data needed would depend on how such an assessment is done (which could be left for countries to choose).
AI and NAI	Identify key adaptation priorities	Relative ranking developed on model-based or other assessment techniques

4.7.2 Possible changes to guidelines

This paper proposes that the section on climate impacts and vulnerability focuses on key areas of a country’s vulnerability to climate change (Table 15). This reflects the guidelines for non-Annex I countries, and will help to focus reports, while allowing countries flexibility to report on issues that are most important and relevant to them.

Countries’ future NCs could also rate the vulnerability of each area along the lines of high, medium and low vulnerability. Creating such a rating (which can be qualitative or quantitative) can help countries to identify their priority sectors most in need of adaptive actions. It may also reveal that despite a sector’s high vulnerability, there are already existing measures to help mitigate climate impacts. For example, elderly and disabled persons are more vulnerable to heat stress, nevertheless many urban authorities have pre-existing measures to handle this problem that were created outside the realm of climate policy.

4.8 Adaptation Actions and Programmes

As mentioned above, this paper proposes to divide the current reporting guidelines on vulnerability, impacts and adaptation actions into two distinct but complementary sections. Doing so would help to highlight the growing activity in the creation of adaptation programmes and actions in both Annex I and non-Annex I countries, and could therefore help inform other countries’ learning-by-doing. It would also reflect the fact that many countries do report on adaptation programmes and actions, despite limited requirements to do so. Future reporting requirements should allow countries to showcase their progress while at the same time providing helpful information to those whose current adaptation programmes are not as advanced. The following suggestions are designed to increase the transparency and uniformity of reporting.

Table 15: Suggestions for possible changes to the guidelines for reporting on climate impacts and vulnerability

Which Parties?	Suggestion	Justification
AI and NAI	Include qualitative and quantitative information on the potential impacts of climate change on key areas.	The guidelines could provide flexibility in allowing different countries to use different methods/approaches to assess key vulnerabilities, and to report on them in different ways.
AI; NAI according to capacity	Include summary information on key vulnerabilities of key areas, <i>e.g.</i> based upon impact assessments.	Information identifying key vulnerable areas is important, and will also help in review/consultations of a National Communication. However, such key areas can be identified in different ways, and the guidelines could reflect this.
AI and NAI	To rate the level of vulnerability (high, medium, low) of the selected sectors. Rating information can be included in an “Action-impact” table in the “Adaptation Actions and Programmes” section.	Rating the level of vulnerability (which is already requested for non-Annex I countries) can help to ensure that resources and attention in adopting adaptation actions are directed in an efficient manner to the most vulnerable sectors. Use of an “Action-impact” table for the rating may also reveal that some of the most vulnerable areas have (or not) appropriate adaptation measures in place or conversely that less vulnerable sectors are receiving too much attention ¹⁰ .

4.8.1 Purposes and data/information needs

The express purpose of this part of National Communications is not currently identified, either for Annex I or non-Annex I. However, since the most recent set of guidelines, understanding on adaptation has deepened and reporting of adaptation programmes and actions has improved. Thus, having this information in a separate section of a NC could act as a platform for countries to showcase their adaptation programmes and measures.

A possible purpose of the adaptation section of NCs could be “to provide information on national and regional adaptation programmes, highlight whether adaptation priorities are being addressed, and identify how adaptation concerns are being integrated into policy development”. Others are highlighted in Table 16.

Table 16: Possible purposes of the adaptation section of National Communications (All countries)

Potential purpose	Data or information needed
Describe national and regional adaptation plans and strategies and co-operation in developing them	Overview of planned and implemented strategies, programmes and actions that support or facilitate adaptation, including those that offer adaptation co-benefits.
Describe legal/policy framework for adaptation	Overview of current or proposed institutional and legal framework.
Highlight whether adaptation priorities are being addressed	Information on whether key adaptation priorities are being addressed, and if so, how
Identify how adaptation concerns are being integrated into policy development	Examples of how identifying and addressing adaptation priorities has been incorporated into policies

4.8.2 Possible changes to guidelines

In order to adequately fulfil the potential purposes highlighted above, the following suggestions are proposed for changes to the reporting guidelines:

¹⁰ A country’s adaptation actions will need to be aligned with other energy, environmental and developmental policy priorities; these may also explain which sectors are receiving more or less attention.

- Reporting on the **existing or proposed institutional and legal framework for adaptation activities**. This would include providing information on which national ministries and agencies have been given a clear mandate to undertake climate change adaptation activities. It would also include providing information on any national laws whose purpose it is to facilitate climate change adaptation activities as well as information on national and sub-national adaptation plans and strategies.
- Description of existing and/or future **programmes, policies and measures** that undertake adaptation activities aggregated along nationally relevant socio-economic sectors likely to be impacted by climate change. Information should also include pre-existing programmes, policies and measures that offer co-benefits to support adaptation. This information could be presented in textual and tabular format.

Table 17: Suggested changes to adaptation actions and programmes section of National Communications

Which Parties?	Suggestion	Justification
AI ; NAI according to capacity	Include descriptive text on the existing or proposed institutional and legal framework for adaptation. Including a description of who is responsible for implementing any adaptation strategies and/or plans.	Many AI National Communications already provide this information, which allows readers to become acquainted with the goals, purposes and expectations of governments towards instituting and implementing adaptation actions.
AI ; NAI according to capacity	Include a description of existing and/or planned strategies, programmes etc. for adaptation. The information should be presented in similar areas to those for which vulnerability to climate impacts was assessed.	Many AI National Communications have already adopted this format which provides a good overview of how countries are implementing actions to address impacts and vulnerabilities to key socio-economic sectors. Some NAI also identify existing and possible strategies for adaptation in areas identified as vulnerable.
AI ; NAI according to capacity	Provide detailed information on the objective, scale, timeline, type of instrument etc., used to address adaptation.	Providing this information will facilitate consistency of reporting.

In the years since the first cycle of National Communications, many countries have established institutional and legal frameworks that deal exclusively with adaptation to climate change (see *e.g.* UK's 5th NC). Because, however, climate change adaptation involves a variety of socio-economic sectors, it is sometimes unclear which ministries, agencies and institutions have competence over which domains. General reporting (in brief text format) on the institutional and legal frameworks could enhance the clarity of the roles and responsibilities of all relevant parties at the local, regional and national level.

In line with the suggestions above, information on adaptation actions could be presented in a table which would include: (1) a description of the area that the measure is targeted towards (*e.g.* socio-economic sector or biophysical/ecological systems); (2) the main objectives of the measure; (3) the type of policy instrument employed (where applicable); (4) the implementing scale of the measure, and; (5) where feasible, the estimated budget of the measure.

4.9 Mitigation and Adaptation Support: Financial Resources, Technology and Capacity Building

There is growing interest in the provision of more timely, complete, comparable and reliable information on financial, technology and capacity building support for climate change activities (referred to here as “support”) by all Parties. National Communications are currently the primary means by which information on support provided and support needed is reported. The guidelines for Annex I NCs specify that “Annex II Parties shall provide details of measures taken to give effect to their commitments under Article 4.3, 4.4, and 4.5” of the Convention (UNFCCC, 2000a). Non-Annex I Parties are encouraged to report on specific support needs. This is consistent with one of the stated objectives of non-Annex I National Communications, “to serve as policy guidance to the operating entity of the financial mechanism for the timely provision of financial support needed by developing country Parties” (UNFCCC, 2003a).

Current reporting requirements in this area correspond to countries’ obligations under the UNFCCC and its Kyoto Protocol. Developed countries have agreed to support developing countries to design and implement actions to reduce GHG emissions and to adapt to climate change. In particular, as is required under the Convention, once the priority actions have been agreed, Annex II Parties¹¹ are to provide developing

¹¹ All OECD members of the Annex I list, except those that were economies in transition (EIT) in 1992. Annex I Parties include the industrialised countries that were members of the OECD in 1992, plus countries with economies in

countries with financial resources to cover the “agreed full costs” of reporting requirements and the “incremental costs” of undertaking emissions mitigation activities and climate change adaptation activities.¹² Annex II countries also have to help build capacity to support climate action and promote the development and transfer of environmentally friendly technologies to Economies In Transition (EIT) Parties and developing countries.

The MRV framework established under the Convention does not deliver transparent, comparable and comprehensive information across countries in the area of “support” (Ellis *et al.*, 2010; Corfee-Morlot *et al.*, 2009; Tirpak *et al.*, 2010; Fransen, 2009). Given that efforts are ongoing to streamline and improve the MRV framework related to the support of technology transfer and capacity building (UNFCCC 2007c, 2008, 2009c, 2009d), the focus of this section is on finance.

Monitoring and reporting of financial support is patchy and no common process for data collection and verification exists. Though Annex I countries consistently fill out summary tables provided in the guidelines, there is a lack of clarity on what the numbers refer to and whether all financial flows reported are specific to climate change. Further, there is also no reporting on amounts of funding actually received by non-Annex I Parties. In addition, non-Annex I Parties do not consistently report on support needs, and the time lag between NCs can make the information that is reported rapidly obsolete. This section examines how NCs can be amended to facilitate reporting on data and information on support that Parties are increasingly requesting. In this context, major questions are: How to best measure, report and verify (MRV) relevant support? What information, if any, to include on the effectiveness of such support in reaching stated goals?

4.9.1 Purposes and data/information needs

It is important to assess up-front what functions might be served by a more comprehensive framework for the MRV of support. This will determine the data and information needs, how these may be reported in NCs and elsewhere in the UNFCCC framework, and helps to minimise overlap with other reports. In turn, data and information needs may require additional time and resources, and could influence the frequency with which information could be reported. Finally, as emphasised in earlier work (Ellis *et al.*, 2009), the form in which information is reported should be in line with the needs of the users of that information, *i.e.* national and international stakeholders, and minimise the reporting burden on countries.¹³

Perhaps more than in other sections of the National Communication, revising guidelines for reporting on support will require significant consideration of the purposes of such information. While countries are increasingly interested in developing a MRV framework for support that addresses both provision and receipt, use, effectiveness and better directing funds where needed (UNFCCC, 2010a), it may not necessarily follow that all such information is usefully included in a National Communication; some of it may be reported elsewhere under the UNFCCC.

The overall goal of a revised MRV framework for climate support should be to increase the transparency, accountability and eventually the effectiveness of support. In particular, improving the reporting of financial support through NCs could:

- Help the international community to assess that countries – individually and collectively – meet their financial and other support objectives;

transition (the EIT Parties), including the Russian Federation, the Baltic States, and several central and eastern European States. Turkey was initially included in Annex II, but removed at COP 7 (decision 26/CP.7).

¹² See Article 4.3 of the Convention and Article 11 of the Kyoto Protocol; there is also a discussion of this in Corfee-Morlot *et al.* 2009 pointing to the lack of formal definition of these terms which makes it difficult to know what and how to monitor such support.

¹³ For example, international bodies such as the UNFCCC may be more interested in synthesis information related to the financing needs and finance flows provided, while national stakeholders may be more interested in highlighting the processes, priorities and specific sources of financial contributions and whether these are “new and additional”.

- Facilitate the implementation of the “support” objectives by identifying where progress could be strengthened, and highlighting best practices and success stories;
- Enhance transparency and accountability of the provision or use of international financial support;
- Provide a clearer overview of support flows, trends, sources and purposes;
- Help countries align their support needs with sources of support and vice versa;
- Build trust among developed and developing countries.

Based on these overarching goals or functions, Table 18 provides an overview of the potential purposes of enhanced reporting on provision of support, along with suggestions for associated data and information that could be reported through an improved NC.

Table 18: Possible purpose of the financial resources, technology and capacity building section of National Communication guidelines

Which Parties?	Possible purpose	Associated information needs	Justification
AII and other donors	Identify the main purposes of support provided	Reporting of climate-related funds, with an explanation of how this determination has been made Quantitative data from donors of support by country, sector, technology and purpose, covering both mitigation and adaptation as well as reporting Textual description of the Party's financing and other support strategy and priorities, including relevant information on institutional structures, channels and processes related to the provision of support	At present, it is unclear what level of funds are being provided through various channels, and what specific areas the funds are targeting. Clarifying strategic priorities of donors (geographic, sector, etc.) for climate aid would improve the understanding of how and where donors wish to support climate activities, facilitating alignment with partner country needs.
Non-AI and other recipients	Identify main support needs	Report on where support is needed, for what activities, in what form (finance, technology, etc.) and within which time frames	While NAI Parties are encouraged to report this information, and some do so at a project level, this is not done consistently and no template or suggested format for doing so is provided.
AI and NAI	Identify the total level of public support provided and received over or within a given timeframe (and private support, to the extent possible)	Total amounts of multilateral and bilateral finance flows between Parties. Development of a standard reporting template that includes more detailed reporting on key financial support, focusing on public sources but also possibly an indication of how public financing is leveraging private finance. Quantitative data from recipients of support by country, sector, technology and purpose, covering both mitigation and adaptation.	Use of standardised reporting format could help to establish more comparable and complete data. More information on private flows will require collaboration with relevant institutions rather than coming directly from Parties. Gathering and reporting aggregate information from recipients would be new in a NC, but would help improve the completeness of information on support flows and complement information already reported by NAI on support needs. Reporting by both AI and NAI would allow for "double book-keeping" and so allow for cross-checks.
Non-financial support			
AI and NAI	Identify capacity building and technology-related support	Quantitative information on number of capacity building activities, new technologies introduced etc.	How to best capture the nature of capacity building and technology transfer and the process through which it occurs? How to measure in-kind support, transfer of advice, expertise?

Parties will need to decide what data and information on support is desirable, and at what level of detail this will be required. Questions to guide these decisions include:

- **Where is the financial support coming from?** Parties need to agree on what sources will be included when reporting this information. Generally, Parties will have better quantitative information on public finance flows rather than private ones. However, they are asked to report on activities to incentivise private sector support, given the importance of this source. Parties could be requested to report available information for private finance as well, or at a minimum to estimate a leveraging ratio in qualitative terms¹⁴. Non-Annex II Parties including donors from the South could be allowed to voluntarily report the support they provide; several non-Annex II Parties have pledged financial support in the past, and some (*e.g.* Czech Republic) include this in their National Communication.
- **Where is the financial support going?** Parties need to agree on what constitutes a recipient; whether this means other Parties only, or also includes regions and international entities. Parties typically have good information about the final recipients of their finance flows, and including several types of recipients, international and regional, could provide a more comprehensive picture.
- **What general type of financial support is considered?** Parties need to decide whether to report financial pledges, only flows (either committed or actually disbursed), or both. Given changes in national budgets and the need to for precision, reporting on actually disbursed funds is recommended.
- **Across which timeframe should financial support be tracked?** Financial support could be tracked over a common time period, or in annual terms. Annual (not multi-year) reporting would better improve transparency and accountability. In line with the previous point, there is a trade-off between reporting a disbursement ratio of support committed over several years, and reporting what has actually been disbursed, as the latter is known only after another year.
- **Financial support in what terms?** In order to ensure that a country's various financial contributions can be compared with each other as well as across countries, public financial support that is ODA should be reported in annual grant equivalent amounts, as well as total amount in local currency as well as USD (both in terms of current values and constant currency).¹⁵ This will facilitate cross-checking of information. More work will be required to determine harmonised definitions for non-ODA public support and private support, however for the purpose of comprehensiveness, it will be important to also include these categories when reporting financial support.
- **Principal purposes of financial support.** In its current form, the NC guidelines provide no information on whether and how to explicitly identify climate-specific support for mitigation and/or adaptation within ODA and non-ODA public support flows. NAI countries are requested to provide information on support received for preparing their National Communication. Reporting could be improved by identifying support with the principle goal of mitigation versus adaptation, and a third category of unspecified support for general financial climate-related contribution (*e.g.* reporting) or a combination of mitigation-relevant and adaptation-relevant support (where climate change is a significant but not principle aim).¹⁶
- **Financial support through which channel?** Current reporting guidelines require Parties to report both bilateral and multilateral support. However it may be difficult to identify the principal purposes of support, whether for adaption, mitigation or both, in particular for multilateral financial

¹⁴ To reflect to what extent public finance is leveraging private finance to support climate change actions.

¹⁵ The grant element reflects the financial terms of a commitment and measures the concessional nature of a loan. Multiplying the face value of a loan with its grant element provides the grant equivalent of that loan. For more information on the OECD DAC methodology related to the 'grant element' see http://www.oecd.org/document/32/0,3343,en_2649_33721_42632800_1_1_1_1,00.html#Grant_Element

¹⁶ This is consistent with the DAC system – see OECD (2010)

support.¹⁷ Parties should still aim to distinguish the principle purposes of the support to the extent possible. This would also enable an overview that aggregates bilateral climate-specific and multilateral climate-specific support, to provide an indication of each Party's overall financial contribution and avoid potential double-counting.¹⁸ Close collaboration with multilateral development banks (MDBs), of which several are currently actively improving the consistency of their monitoring systems, would help improve the accuracy of information on multilateral support, allowing for cross-checks. In addition distinguishing bilateral financial contributions that are official development assistance (ODA) from non-ODA ones would allow cross-checking with the OECD Development Assistance Committee's Creditor Reporting System's (DAC-CRS) climate change marker data series.¹⁹

- **Financial support achieving what?** Parties could be asked to report on expected or real outcomes of support, and priority areas of climate-related support as per the Convention, such as technology acquisition or development, or development of indigenous capacity.

Should Parties agree on the need for a broader MRV framework, National Communications may be used to summarise key information that can perhaps best be reported in more detail in a parallel and more focused exercise, as is currently the case for GHG inventories for Annex I countries. National Communications could provide an overview of support, focussing on the financing strategies of Parties, the main support flows (provision and receipt), and possibly the mitigation and adaptation policies and measures they enable.

4.9.2 Possible changes to guidelines

Possible changes to the support section of a NC are made in the spirit of the principles of transparency, comparability, accuracy and effectiveness.²⁰ Given the difficulty in tracking financial flows, due to the variety of bilateral, multilateral and private channels, Parties can be expected to provide accurate information only on the channels of public finance for which they are directly responsible. The information they provide will therefore need to be supplemented from other sources, which may be gathered through collaboration with other institutions collecting and publishing data on relevant flows, for example on investment flows from the private sector (Corfee-Morlot *et al.*, 2009). A revision of the guidelines need thus to be done in light of realism, taking into account complementary information sources.²¹ Increased co-ordination within and between governments and various institutions currently managing systems that track relevant financial flows will be needed to strengthen the overall MRV system for support.²² Such co-ordination should also seek to involve private players and improve the understanding of private sector flows of climate support.

¹⁷ For example, a Party that gives money to the GEF usually is not able to pre-determine the focus to which the GEF allocates these funds.

¹⁸ For example, GEF-funded projects and activities may be mainstreamed into the UNDP programme. By specifying that multilateral support through the GEF is focused on climate-specific contributions, more light can be shed on how multilateral funding and related climate-specific support, such as through the UNDP, interact. However, more work on how exactly this could be ensured is needed.

¹⁹ The DAC is made up of 24 members (23 countries and the EC). It is the key forum in which bilateral donors work together to co-ordinate development co-operation and to increase the effectiveness of their efforts to support sustainable development.

²⁰ These principles are in line with those adopted to guide the UNFCCC national inventories. For a discussion of these principles in the context of a revised MRV system for financial information see Tirpak *et al.* (2010). Dual accountability is discussed in Corfee-Morlot *et al.*, 2009 and also in more recent work from SEI/Transparency International (forthcoming).

²¹ For an excellent discussion of the available data sources related to financial support see Corfee-Morlot *et al.* (2009).

²² Such as the OECD DAC, UN organisations and MDBs. Active research centres include ODI with its website <http://www.climatefundsupupdate.org/fast-start-finance> and the Center for Environmental Studies at Brown University with its website <http://aiddata.org/home/index>.

This paper suggests a two- or three-step process for developing a comprehensive MRV framework for financial support, in which revising information reported in NCs can play an important role. First, revised NCs could lay the basis, constituting a place where the main, aggregate information can be reported, reviewed and/or otherwise analysed. Second, in parallel, a tracking system is needed to work with Parties through the UNFCCC to provide more detailed information on both donor and recipient activity. Finally, there is a need for a broader effort to look across the climate finance spectrum, based on a platform in which all the main sources of information and data are brought together in a more useful manner to enhance transparency, drawing on both UNFCCC and other key sources of relevant data and information.

Countries could significantly improve the information on support in NCs by adopting more standardised reporting formats, involving both quantitative metrics (including monetary figures) and qualitative information (for example on needs and institutional processes). This includes agreeing on a common reporting process across parties to initiate a system of dual accountability and transparency across donors and recipients. This could be done through a combination of improved tabular reporting and textual reporting; an overview of possible changes is highlighted in Table 19 below.

4.10 Research and Systematic Observation

This section outlines potential purposes and changes to how Research and Systematic Observation activities are reported in NCs, highlighting the purposes of this information and how it may be presented differently so as to avoid overlaps with other sections of the NC and other stand-alone reports.

4.10.1 Purposes and data/information needs

All countries report on research and systematic observation activities as part of their commitments under Article 4.1 (g) of the Convention, requiring the promotion of and co-operation in climate-related research and systematic observation activities. The Convention's Article 5 further specifies the types of activities Parties "shall" support. This section of the National Communication is where Parties report on whether they are fulfilling these obligations. As is seen in Table 20 below, more specific obligations have also been outlined for Annex-I Parties by the Global Climate Observing System (GCOS) implementation plan, which they most often refer to in this section of the NC. Non-Annex I Parties may report according to GCOS guidelines on a voluntary basis.

4.10.2 Possible changes to guidelines

The length of stand-alone GCOS reports generally varies from ten to over forty pages.²³ Countries have not reported any major issues with the revised guidelines for these reports, which are quite precise and often refer to specific points of the GCOS Implementation Plan.

Given the very wide variety between non-Annex I countries in terms of their level of activity in research and systematic observation, guidelines could seek to offer a more consistent structure to this section, though it will likely still strongly vary between countries. Parties with significant activity in this area could usefully use GCOS and Annex I country guidelines to structure this section.

²³ See for example the GCOS updates submitted by 25 Parties in 2008 (including two non-Annex I Parties) at http://unfccc.int/methods_and_science/research_and_systematic_observation/items/4499.php

Table 19: Suggestions for changes to the support section of National Communications

Which Parties?	Suggestion	Justification
AII and other donors	A new sub-section comprising a brief description of the Party's financing and other support strategy and priorities	Would increase understanding of what sectors, activities, countries and institutions are targeted by a given donor, as well as any constraints it faces. It would also include relevant information on institutional structures and processes.
AII and other donors	Streamline common reporting tables for support provided, incorporating data and information highlighted in the previous section	<p>Given the complexities of the subject, this section of NCs will not be comprehensive; this paper suggests focusing on more consistent reporting of elements considered most important – focusing in particular on international public financial support.</p> <p>One table on aggregate climate-specific financial support flows (annual, actually transferred funds, public flows - ODA/grant equivalent and non-ODA); a second specifically on bilateral flows, and a third on multilateral.</p> <p>Should increase comprehensiveness, readability and avoid double-counting of support when support is provided through more than one channel and for more than one purpose.</p>
NAI primarily, other recipients of support	Provide a standardised reporting table for support received, mirroring information reported in support tables	<p>This is also information that helps determine whether AII and other developed country parties are meeting their goals and commitments regarding provision of support; it could also link to actions and activities reported elsewhere in the NC if relevant.</p> <p>Could require more resources for reporting for NAI countries if this information is not systematically gathered for other purposes; could result in less textual description and more table-based information.</p>
NAI	Provide a standardised reporting format to report gaps, constraints and support needs	Focus information, currently spread out throughout NAI NCs. If more detail is provided elsewhere in the NC (as it is currently), a table here could at a minimum summarise this information in a more useable format.

Table 20: Potential purposes and information needs of reporting on Research and Systematic Observation

Which Parties?	Potential purpose	Data and information needed
AI and NAI	Indicating what domestic and co-operative climate-related research activities are being undertaken, and key results, in different areas, <i>i.e.</i> mitigation (potentially including impact of response options), adaptation and systematic observation	Summary of actions taken in climate-related research and/or results of research. This information could be separated by research aims as well, <i>i.e.</i> mitigation, adaptation and systematic observation
AI and NAI	Indicating in what manner countries are participating in and contributing to regional and global climate research networks and observing systems	Information on stations and platforms, including numbers and variable type, operating in the context of and contributing to such networks
AI and NAI	Better information on where, nationally and internationally, more systematic observation is needed to guide future activities; Information on specific research needs to guide provision of support and future activities	Identifying gaps and constraints for certain research and systematic observation activities; highlighting needs for specific R and SO activities
AI	Demonstrating that systematic observation activities for contributing essential climate variable (ECV) ²⁴ observations to the international community are being undertaken	Listing stations or platforms currently operating by variable type (atmospheric, oceanic and terrestrial) and also indicating what products or variables are subject to satellite observations
AI	Demonstrating that the country is undertaking systematic observation activities in accordance with GCOS climate monitoring principles and fulfilling the actions decided in the GCOS implementation plan	Indicating how many stations are expected to comply with the principles and in what timeframe; providing summary of activities taken in line with implementation plan actions

²⁴ GCOS has defined 44 ECVs in terms of atmospheric measurements (*e.g.* air temperature, composition), oceanic measurements (*e.g.* sea-level, sea-surface temperature) and terrestrial (*e.g.* snow cover, albedo).

Table 21: Suggested changes to Research and Systematic Observation section of National Communications

Which Parties?	Suggestion	Justification
AI and NAI	Report on the results of vulnerability, mitigation-related and adaptation-related research activities in the mitigation and adaptation sections of the NC; and report capacity building activities in the financial, technology and capacity support section of the NC	<p>Avoids duplication of reporting; links research to policy actions, priorities, targets and strategic plans, leading to a better understanding of needs and gaps addressed by research; would help in having all support (financial, technology and capacity building) information in one section.</p> <p>This would leave the RSO section to comprise information on basic research and systematic observation, and would necessitate more guidance on which types of activities to report in the RSO section and the adaption and mitigation actions and programmes sections.</p>
AI	Provide more guidance as to how information could be summarised and presented in the RSO section of the National Communication	Information on systematic observation is currently reported elsewhere in a detailed manner according to specific guidelines; this information could be summarised in the NC. The RSO section could still include information on research not included in other sections of the NC.
AI (but potentially NAI with significant systematic observation activities)	Report on systematic observation activities exclusively through their GCOS report	<p>In practice, GCOS report is a stand-alone document which already contains this information; it may not be useful to also include it in a NC though it is meant to be submitted alongside it.</p> <p>The RSO section in the NC could be removed; GCOS report would provide information on systematic observation, while information on research could be divided between vulnerability, adaptation and mitigation sections, as well as in the section on financial, technology and capacity building support.</p>

Conclusions

This paper has outlined options for new reporting guidelines for National Communications (NCs) from Annex I and non-Annex I countries, both for “full” National Communications and biennial “updates”. Current guidelines for NCs outline what information Annex I (AI) and non-Annex I (NAI) countries need to submit to the UNFCCC Secretariat, in order to fulfil their reporting obligations under Articles 4 and 12 of the UN Convention on Climate Change and, for Annex I Parties, under the Kyoto Protocol. These reports also facilitate the sharing of information between Parties, and can be used to assess the implementation of actions and progress towards the Convention’s objectives.

Current reporting guidelines are relatively old, dating from 1999 and 2002 for Annex I and non-Annex I countries respectively. They differ in terms of both content and reporting timetable. This has led to significant gaps in the current climate reporting framework. These gaps are particularly marked for non-Annex I countries in terms of GHG emissions and trends, mitigation and adaptation actions. There are also gaps in terms of the effect of mitigation actions and support provided and received for climate-related activities, including for technology transfer and capacity building (see Ellis, Moarif and Briner (2010) for a more detailed discussion).

International climate-related reporting is not limited to National Communications, and can also include other reports or information under the UNFCCC and its Kyoto Protocol (*e.g.* Annex I National Inventory Reports, Annex B reports on supplementary information). The number of climate-relevant information repositories is likely to further increase in future, *e.g.* with the development of a registry on mitigation actions in developing countries that are seeking support. This means that the international community may also need to identify the role and function of National Communications in the overall climate reporting framework.

Revising the current UNFCCC guidelines on National Communications could enable the international community to:

- better reflect their current priorities by enhancing the type of data and other information requested;
- facilitate the timely provision of relevant information by identifying which parameters need to be reported more frequently (*e.g.* in biennial NC “updates”), and which can be reported less frequently (*e.g.* in full National Communications);
- improve the completeness of information provided by expanding regular reporting to a wide variety of countries, through use of a reporting system focusing on core elements with flexibility in the details of how these are reported;
- enhance flexibility to align reporting with variations in country circumstances, capabilities, priorities and goals, allowing all countries to begin reporting core information and to improve reporting over time;
- increase the transparency and accuracy of reports, and therefore international confidence in the information that they contain;
- streamline reports to increase their usefulness to the national and international community, to ensure that information presented is comparable and to facilitate subsequent review/international consultations and analysis.

This paper provides detailed analysis of options and suggestions for the content of “full” and biennial “update” National Communications for AI and NAI countries. Its main suggestions are that:

- **National Communications are produced more frequently (*e.g.* on a biennial basis) while their focus of is streamlined and enhanced** compared to current National Communications. Thus, as outlined in Ellis, Moarif and Briner (2010), biennial NC updates could focus on issues related to mitigation commitments, actions or targets indicated to the international community, as well as

support provided/received. Streamlining NCs will help make them more accessible and useful to readers, as well as minimise the increase in reporting burden. Full NCs, also streamlined, that include a wider range of information would continue to be developed *e.g.* every 4 to 6 years.

- Reporting guidelines are revised to **improve transparency about mitigation commitments/actions/targets that countries have indicated to the international community**, how these commitments, goals and actions are being met, and how countries are fulfilling other obligations taken under the UNFCCC and subsequently. By boosting the forward-looking aspects of a NC, this will help to increase accountability and trust and enhance the usefulness of NCs to both the national and international community.
- **Standard reporting formats are used for more of the information in NCs.** Increasing the standardisation in terms of *what* is reported and how will help to facilitate report preparation (and review/consultations), increase consistency across different reports, but can also maintain flexibility on *how* countries estimate the items reported.
- **A flexible reporting framework is established for non-Annex I countries**, where the information in (and possibly timing of) national reports is “tiered” according to national circumstances. This would reflect current practice where some non-Annex I countries provide more comprehensive, as well as more frequent, National Communications. It would be useful to develop this concept of “tiered” reporting further, as it could also help countries to focus resources where they are most useful.
- **An increased emphasis is placed on reporting of “key” issues.** This could include identification of key emission categories, measures aimed at addressing these sources, key vulnerable areas and adaptation measures aimed at attenuating climate-related impacts and key priorities in terms of financial support provided or received. The concept of “key categories” is already included in Annex I National Inventory Reports, and that of “key areas” in non-Annex I vulnerability assessments. Expanding this approach to other areas of the National Communication, such as mitigation measures and financial support, could facilitate identification of priorities, gaps and potentials in both mitigation and adaptation by national policy makers, as well as international review and analysis of reports.
- **Information routinely provided on adaptation measures and policies is formalised**, to reflect the increasing emphasis on these issues in the negotiations. This is particularly important for Annex I countries, where the reporting guidelines are currently weak.
- **Reporting on “support” is increased and its structure improved**, both in terms of consistency of reports on support provided by developed countries, and in terms of support received by developing countries. This is important as the MRV framework established under the Convention does not deliver transparent, comparable and comprehensive information across countries in this area. While details on such support flows would be useful in assessing the volume and direction of support, providing all this information in NCs could make them very unwieldy and is not practical as Parties only have access to some of the relevant information. Consideration could therefore be given to complementary or supplemental reporting, or to alternative repositories for such information, while reporting summaries in NCs.
- In reports from **non-Annex I countries, the provision of information that is already routinely provided is formalised**, *i.e.* inventory calculations. (This information is already required for Annex I countries in their National Inventory Report).

Table 22 summarises the main detailed recommendations for each section of a NC.

Table 22: Specific suggested changes to National Communication sections

Section	Suggestion	Which countries?
Progress towards mitigation commitments/ actions/goals	Add this section to identify what countries' medium and long-term mitigation commitments, targets or goals are	AI and NAI
	Add information on how progress is being made towards these targets/pledges/goals, including current and projected offset use (where appropriate)	AI, as well as those NAI with national/sector-wide goals
Inventory	Link to key emission categories	AI and NAI
	Improve transparency on methods used	NAI (already a requirement for AI)
Projections	Extend the timeframe to N+20, <i>i.e.</i> 2030 for 2010 reports	AI
	Include reference and "with measures" projections for the timeframe over which a mitigation goal is set, <i>e.g.</i> to 2020	Those NAI with national/sectoral pledges for a given year, <i>e.g.</i> 2020
Mitigation actions	Increase understanding of forward-looking strategies and actions by linking to key sources and pledges	AI and NAI
	Focus on measures that address key emission categories	
	Provide information on domestic MRV procedures	NAI only (AI NCs are reviewed internationally)
Adaptation actions	Include a separate chapter on adaptation actions and strategies in full National Communications	AI and NAI
Climate impacts and vulnerability	Include as a separate chapter	AI and NAI
	Identify key adaptation priorities	
Finance	Extend reporting on support received and needed, primarily through tables	NAI (and AI where relevant)
	Greater use of standard summary tables for reporting on support provided	AI (and NAI where relevant)

The proposals suggested above are designed to revise National Communications to improve their usefulness as a tool to support accountability and transparency, and to help to build trust among Parties. They would help both national and international audiences understand countries' climate-related status and priorities, their current and future activities, and how these fit with any national or international climate-related pledges or targets. These proposals are aimed at ensuring National Communications continue to provide an understanding of whether the objective and specific obligations of the Convention and related agreements are being met.

Several questions will need to be answered collectively before agreement can be reached on how to revise NC guidelines. These involve the purpose and scope of National Communications and their role with respect to other reporting instruments, for example, biennial National Inventory Reports for non-Annex I Parties.

The international community is increasingly requesting more and better information from countries on their actions taken to implement the Convention, as well as on elements that will improve understanding of future GHG emission trends, climate support flows and adaptation needs. However, including information relevant to the implementation of all Convention obligations and other climate-related targets/goals in National Communications will mean an increased reporting burden on countries, as well as potentially unwieldy documents. Revising the current National Communication guidelines to provide for standardised formats to report key information and to focus biennial reports on specific issues (*e.g.* mitigation commitments and goals; support) could be a promising path forward and lead to more concise reports. A reformed National Communication system that is more streamlined yet more comprehensive on topics of greater interest to the international community could then be complemented by other repositories for more detailed information, such as on GHG inventories and on support provided and received. Developing a modular system of reporting climate-related information could help to produce NCs that balance the need for reports that are concise, user-friendly and timely, with those that are stand-alone, comprehensive and transparent.

Glossary

AFOLU	Agriculture, Forestry and Other Land Use
AI	Countries listed in Annex I of the UNFCCC
AWG-LCA	Ad Hoc Working Group on Long-term Cooperative Action under the Convention
BAP	Bali Action Plan
BAU	Business As Usual
CCXG	OECD/IEA Climate Change Expert Group
CDM	Clean Development Mechanism
COP	Conference of the Parties
CRF	Common Reporting Format
DAC	Development Assistance Committee (of the OECD)
ECV	Essential Climate Variable
EIT	Economies In Transition
GCOS	Global Climate Observing System
GDP	Gross Domestic Product
GEF	Global Environment Facility
GHG	Greenhouse Gas
IPCC	Intergovernmental Panel on Climate Change
KP	Kyoto Protocol
LDC	Least Developed Country
LEDs	Low-Emission Development Strategy
LULUCF	Land Use, Land Use Change and Forestry
M&E	Monitoring and Evaluation
MRV	Measurable, Reportable and Verifiable
NAI	Countries that are not listed in Annex I of the UNFCCC
NAMA	Nationally Appropriate Mitigation Action
NAPA	National Adaptation Programme of Action
NC	National Communication
NEEDS	National Economic, Environment and Development Study
NIR	National Inventory Report
ODA	Official Development Assistance
PAMs	Policies and Measures
QA/QC	Quality Assurance/Quality Control
QELRO	Quantified Emission Limitation and Reduction Objective
RD&D	Research, Development and Deployment
RSO	Research and Systematic Observation

SBSTA	Subsidiary Body for Scientific and Technological Advice
SIDS	Small Island Developing States
TNA	Technology Needs Assessment
TPES	Total Primary Energy Supply
TT	Technology Transfer
UNFCCC	United Nations' Framework Convention on Climate Change

References

- Agencia Portuguesa do Ambiente (2010a), *Portugal's Fifth National Communication to the UNFCCC*, http://unfccc.int/resource/docs/natc/prt_nc5_resubmission_2.pdf
- Agencia Portuguesa do Ambiente (2010a), *Portugal CRF*, http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/prt-2010-crf-25may.zip.
- Berkhout, F. (2005), Rationales for adaptation in EU climate change policies, *Climate Policy*, 5:377-391.
- Clapp, Christa, Katia Karousakis, Barbara Buchner and Jean Chateau (2009), *National and Sectoral GHG Mitigation Potential: A Comparison Across Models*, <http://www.oecd.org/dataoecd/42/33/44050733.pdf>
- Corfee-Morlot, J., B. Guay and K.M. Larsen (2009), *Financing for Climate Change Mitigation: Towards a Framework for Measurement, Reporting and Verification*, OECD/IEA Information Paper, <http://www.oecd.org/dataoecd/0/60/44019962.pdf>
- Ellis, J., S. Moarif and J. A. Kim (2009), *Reporting and Recording Post-2012 GHG Mitigation Commitments, Actions and Support*, OECD/IEA Information Paper, <http://www.oecd.org/dataoecd/48/63/43975705.pdf>.
- Ellis, J., S. Moarif and G. Briner (2010), *Core Elements of National Reports*, OECD/IEA Information Paper, <http://www.oecd.org/dataoecd/28/32/45409866.pdf>.
- Ellis, J and K. Larsen (2008), *Measurement, Reporting and Verification of Mitigation Actions and Commitments*, OECD/IEA Information Paper, <http://www.oecd.org/dataoecd/53/57/41762333.pdf>
- Fransen, T. (2009), *Enhancing Today's MRV Framework to Meet Tomorrow's Needs: The Role of National Communications and Inventories*. WRI Working Paper. Washington, DC: World Resources Institute. Available online at <http://www.wri.org>.
- Gallopin, G. (2006), Linkages between vulnerability, resilience and adaptive capacity, *Global Environmental Change*, 16, 293-303.
- GEF (2002), *Operational guidelines for expedited funding for the preparation of national adaptation programs of action by least developed countries*, http://unfccc.int/files/cooperation_and_support/capacity_building/application/pdf/gefsecnapaguideeng.pdf.
- IEA (2007), *Tracking Industrial Energy Efficiency and CO₂ Emissions*, Paris.
- IEA (2009), *Energy Technology Transitions for Industry - Strategies for the Next Industrial Revolution*, Paris, <http://www.iea.org/w/bookshop/add.aspx?id=354>.
- IPCC (1996), *Revised 1996 IPCC Guidelines for National Greenhouse Gas Inventories*, <http://www.ipcc-nggip.iges.or.jp/public/gl/invs1.html>.
- IPCC (2001), *Climate Change Impacts, Adaptation and Vulnerability*, Cambridge University Press, Cambridge.
- IPCC (2006), *2006 IPCC Guidelines for National Greenhouse Gas Inventories*, <http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html>.
- IPCC (2007), *Climate Change Impacts, Adaptation and Vulnerability*, Cambridge University Press, Cambridge.

- Klein, R.J.T., Tol, R.S.J. (1997), *Adaptation to Climate Change: Options and Technologies*, FCCC/TP/1997/3, UNFCCC Secretariat, Bonn, Germany.
- Massey, E. (2007), *Assessing adaptation. A framework*, Institute for Environmental Studies (E07-08), VU University, Amsterdam.
- Massey, E., & Bergsma E. (2008), *Assessing adaptation in 29 European Countries*, Institute for Environmental Studies (R-09-012), VU University, Amsterdam.
- Massey, E. (2009), *Adaptation policy and procedure in Central & Eastern Europe*, Institute for Environmental Studies (E07-08), VU University, Amsterdam.
- MOEF (Ministry of Environment and Forest) (2005), *Bangladesh National Adaptation Programme of Action (NAPA)*, <http://unfccc.int/resource/docs/napa/ban01.pdf>.
- Project Catalyst (2010), *Making Fast Start Finance Work*, Briefing Paper. http://www.europeanclimate.org/documents/Project_Catalyst_Fast_Start_Finance-Full%20Report.pdf
- Secretaría de Medio Ambiente y Recursos Naturales and INE (SEMARNAT) (2009), *México – cuarta comunicación nacional ante la convención marco de la naciones unidas sobre el cambio climático*, <http://unfccc.int/resource/docs/natc/mexnc4s.pdf>.
- Simeonova, K. (2001), *National circumstances and education, training and public awareness*, presentation at UNFCCC workshop on the preparation of National Communications from Annex I Parties, 28 February-2 March 2001, Bonn, Germany, http://unfccc.int/meetings/workshops/other_meetings/items/1149.php.
- Stern, N. (2006), *The Economics of Climate Change*, Cambridge: Cambridge University Press.
- Swart, R., Biesbroek, R., Binnerup, S., Carter, T., Cowan, C., Henrichs, T., Loquen, S., Mela, H., Morecroft, M., Reese, M. and Rey D. (2009), *Europe Adapts to Climate Change: Comparing National Adaptation Strategies*, PEER Report No 1., Partnership for European Environmental Research, Helsinki.
- Tirpak, D., A. Ronquillo-Ballesteros, K. Stasio, H. McGray (2010), *Guidelines for Reporting Information on Climate Finance*, WRI Working Paper, World Resources Institute, Washington DC, <http://www.wri.org>.
- UNEP (1999), *Handbook on Data Reporting under the Kyoto Protocol*, http://ozone.unep.org/Data_Reporting/Data_Reporting_Tools/data-reporting-handbook.e.pdf.
- UNFCCC (1992), *United Nations Framework Convention on Climate Change*, UNFCCC, Bonn, <http://unfccc.int/resource/docs/convkp/conveng.pdf>.
- UNFCCC (1998), *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, <http://unfccc.int/resource/docs/convkp/kpeng.pdf>.
- UNFCCC (1999), *First compilation and synthesis of initial communications from Parties not included in Annex I to the Convention*, FCCC/SBI/1999/11, <http://unfccc.int/resource/docs/1999/sbi/11.pdf>.
- UNFCCC (2000a), *Guidelines for the Preparation of National Communications by Parties Included in Annex I to the Convention*, FCCC/CP/1999/7, COP 5, Bonn, <http://unfccc.int/resource/docs/cop5/07.pdf>.
- UNFCCC (2000b), *Second compilation and synthesis of initial communications from Parties not included in Annex I to the Convention*, FCCC/SBI/2000/15, <http://unfccc.int/resource/docs/2000/sbi/15.pdf>.
- UNFCCC (2001), *Third compilation and synthesis of initial communications from Parties not included in Annex I to the Convention*, FCCC/SBI/2001/14, <http://unfccc.int/resource/docs/2001/sbi/14.pdf>.

UNFCCC (2002), *Fourth compilation and synthesis of initial communications from Parties not included in Annex I to the Convention*, FCCC/SBI/2002/16, <http://unfccc.int/resource/docs/2002/sbi/16.pdf>.

UNFCCC (2003a), *Guidelines for the Preparation of National Communications by Parties not Included in Annex I to the Convention*, FCCC/CP/2002/7/Add. 2, COP 8, Bonn, <http://unfccc.int/resource/docs/cop8/07a02.pdf#page=2>.

UNFCCC (2003b), *Compilation and synthesis of third national communications: Executive summary*, FCCC/SBI/2003/7.

UNFCCC (2004), *Report on the workshop on the preparation of fourth national communications from Parties included in Annex I to the Convention*, FCCC/SBI/2004/INF.14, <http://unfccc.int/resource/docs/2004/sbi/inf14.pdf>.

UNFCCC (2005), *Sixth compilation and synthesis of initial national communications from Parties not included in Annex I to the Convention: Executive Summary*, <http://unfccc.int/resource/docs/2005/sbi/eng/18.pdf>.

UNFCCC (2007a), *Compilation and synthesis of fourth national communications. Executive summary. Note by the secretariat.*, FCCC/SBI/2007/INF.6, <http://unfccc.int/resource/docs/2007/sbi/eng/inf06.pdf>.

UNFCCC (2007b), *Compilation and synthesis of fourth national communications. Note by the secretariat. Addendum. Policies, measures, past and projected future greenhouse gas emission trends of Parties included in Annex I to the Convention*, FCCC/SBI/2007/INF.6/Add.1, <http://unfccc.int/resource/docs/2007/sbi/eng/inf06a01.pdf>.

UNFCCC (2009a), *Copenhagen Accord*, http://unfccc.int/files/meetings/cop_15/application/pdf/cop15_cph_auv.pdf.

UNFCCC (2009b), *Annotated Outline for Fifth National Communications of Annex I Parties under the UNFCCC, including Reporting Elements under the Kyoto Protocol*, UNFCCC Side Event on the Preparation of Fifth National Communications of Annex I Parties, 5 June 2009, Bonn, http://unfccc.int/files/national_reports/annex_i_natcom/application/pdf/nc5outline.pdf.

UNFCCC (2010a), *Negotiating text*, 13 August 2010, FCCC/AWGLCA/2010/14, <http://unfccc.int/resource/docs/2010/awglca12/eng/14.pdf>.

UNFCCC (2010b), *Report on the workshop on issues relating to the revision of the UNFCCC Annex I reporting guidelines*, FCCC/SBSTA/2010/INF.5, <http://unfccc.int/resource/docs/2010/sbsta/eng/inf05.pdf>.

UNFCCC (2010c), *Information on financial support provided by the Global Environment Facility for the preparation of national communications from Parties not included in Annex I to the Convention*, FCCC/SBI/2010/INF.3

UNFCCC (no date), *In-Depth Review Reports*, http://unfccc.int/national_reports/annex_i_natcom/idr_reports/items/2711.php.

UNFCCC (no date), *Fifth National Communications*, http://unfccc.int/national_reports/annex_i_natcom/submitted_natcom/items/4903.php.

VROM (Ministry for Housing, Spatial Planning and the Environment) (2010), *Fifth Netherlands' National Communication under the United Nations Framework Convention on Climate Change*, http://unfccc.int/resource/docs/natc/nld_nc5.pdf.