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Nationally Appropriate Mitigation Actions by Developing Countries: Architecture and Key Issues

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EXECUTIVE SUMMARY

Nationally Appropriate Mitigation Actions, or NAMAs, as called for in the Bali Action Plan (BAP), represent a promising mechanism for delivering, financing and recognizing climate actions by developing countries in a post-2012 international framework. NAMAs respect the principle of "common but differentiated responsibility," allowing developing countries to adopt climate mitigation actions appropriate to their own circumstances and to acquire from developed countries the financing, technology, market participation and other support needed to enable implementation. At the same time, the NAMA framework holds potential to make a substantial contribution to global efforts to reduce greenhouse gas (GHG) emissions. Developing countries are asked to propose NAMAs that will substantially reduce their emissions from business-as-usual (BAU) levels, and the NAMA architecture includes a financing provision that can encourage more aggressive developing-country actions. Further, the NAMA framework should ensure robust monitoring, reporting and verification (MRV) so that all Parties are assured that developing countries will be accountable to deliver promised actions and developed countries to deliver financing.

This paper seeks to expand upon the NAMA concept, providing an assessment of the current understanding of the idea in the international negotiations as well as key issues likely to arise in implementation.

NAMAs: A Definition

NAMAs are actions proposed by developing countries that substantially reduce emissions below BAU levels. Encompassing efforts on building capacity to reduce emissions as well as the emissions-reduction measures themselves, NAMAs may take the form of regulations, standards, programs, policies or financial incentives. NAMAs could cover one or more sectors or portions of sectors, and more than one NAMA could be proposed in a sector.

There are three proposed categories of NAMAs:

1. *Unilateral NAMAs* – autonomous actions taken by developing countries to achieve emissions reductions without outside support or financing.
2. *Supported/Cooperative NAMAs* – developing-country actions undertaken with financial or other support from developed-country Parties, which result in more aggressive emissions reductions.
3. *Credit-Generating NAMAs* – actions that build on supported NAMAs, and by exceeding an agreed-upon crediting baseline, produce offsets for sale in the global carbon market.

The first two types of NAMAs – unilateral and supported NAMAs – represent the developing country's own contribution to meeting international climate-mitigation goals, while credit-generating NAMAs will generate offsets that help lower the cost of compliance for developed countries. And unlike the current framework, in which the Clean Development Mechanism (CDM) offset program delivers the lowest-cost developing-country mitigation actions to developed countries, the NAMA framework allows developing countries to apply these low-cost reductions towards their contribution to the global goal. Credit-generating NAMAs, in contrast, offer market access in return for taking higher-cost emissions-reduction actions. Credit-generating NAMAs are also designed to include a wider set of facilities in a given sector and to seek sector-wide or policy-wide emissions reductions rather than simply rewarding individual "good actors," as occurs now in traditional project-specific CDM.

While the new NAMA framework offers a significant amount of flexibility, careful design is needed to avoid potential pitfalls from the use of multiple NAMAs in the same sector or NAMAs that cut across multiple sectors. For example, crediting rules need to be designed carefully to avoid double counting of emissions reductions. Further, to prevent developed countries from paying twice for the same developing-country reductions through both the existing CDM and supported NAMAs, it will be important to, at a minimum, "wall off" existing CDM projects from the calculation of a country's performance in meeting the goals of its supported NAMAs. Such complexities can be avoided altogether by transitioning explicitly from the existing CDM framework to the NAMA framework. Incentives in the new NAMA architecture need to be designed so that it is clearly advantageous for developing countries to move away from traditional project-specific CDM to the new framework of supported and credit-generating NAMAs.

NAMA Implementation: Making NAMAs Work

Implementation rules will need to work for both developed and developing countries. Accordingly, compromises will be needed to balance the developing-country desire for direct access to financing with developed-country interests in achieving maximum emissions reductions with available funds. One way to balance these different priorities is to establish separate funding windows where funds would be distributed based on different eligibility rules and evaluation criteria. For example, separate windows could be established for capacity-building activities and NAMAs in large industrial sectors. The capacity-building window might support equal access by all developing-country Parties whereas the industrial-sector window might be used to encourage the most aggressive national mitigation actions within a sector, supporting a "race to the top." Other windows could be created to support transformational NAMAs, transportation-sector NAMAs, REDD (Reducing Emissions from Deforestation and Degradation) NAMAs, agriculture-sector NAMAs, and NAMAs in least-developed countries. Each window would likely need to meet basic standards for monitoring, reporting and verification as well as consistency with national climate plans and development strategies. Importantly, while the creation of more financing windows helps ensure access by targeted countries and project types, too much sub-categorization can actually reduce program efficiency and effectiveness.

To receive funding, developing countries would submit their NAMAs for evaluation to a designated body. If a decentralized structure is allowed, it would include an international Multilateral Fund that would be established in the framework of the post-2012 architecture, as well as other multilateral funds and bilateral aid agencies that would finance NAMAs consistent with guiding principles and rules adopted by the Conference of Parties (COP).

Discussions in the United Nations Framework Convention on Climate Change (UNFCCC) negotiations have often suggested that two different decision-making bodies might best govern decisions on matching supported NAMAs with developed-country financing as well as decisions on credit-generating baselines for offset-producing NAMAs. We would argue, however, that if the new architecture is to produce outcomes where developing countries keep low-cost options as their contribution to protection of the atmosphere and offer higher-cost options for offsets, then the incentives must be clearly aligned. While the carbon market is an important – and likely more significant – source of funding for developing-country action than public finance from developed nations, the architecture has to ensure that pressure from the carbon market will not simply trample the idea that low-hanging fruit is confined to supported NAMAs. Therefore, creating a decision-making process that nests together decisions on public finance for NAMAs with decisions on crediting baselines makes great sense. A nested approach seems to be

more manageable under a centralized general governance structure. However, it could also be worked out under a decentralized governance structure.

The NAMA framework relies on robust MRV by developing countries to assess whether finance is being properly and efficiently deployed and agreed actions are taking place, and to understand the effect of policies and actions on emissions reductions. The system would build on biennial forward-looking national communications with increasingly stringent MRV standards applied to supported and credit-generating actions. A public review process, modeled on the World Trade Organization (WTO) process, would be implemented by the Subsidiary Body on Implementation of the UNFCCC. Under the proposed negotiating language, reporting would take into account the "principles of transparency, accuracy, consistency, comparability and completeness."

Similarly, developed countries must measure, report and verify the finance, technology and capacity-building assistance they provide to support NAMA implementation. In particular, reporting must enable evaluation of whether the assistance provided is consistent with commitments.

Financing NAMAs

The decision expected from the Copenhagen COP will explain the procedures for matching supported NAMAs with developed-country financing and provide overall guidance on the financing architecture.

As noted earlier, a centralized decision-making body is expected to approve crediting baselines. However, the decision on which NAMAs should be financed could be carried out by either a centralized body or delegated to operating entities (multilateral, bilateral or national). Use of a centralized body to evaluate both crediting baselines and financing needs has several advantages (especially in situations when developing countries gradually build their programs from unilateral to supported to credit-generating NAMAs in the same sector boundary). In particular, coupling decisions on the crediting baseline and NAMA finance will help avoid the tendency to select credit-generating baselines that are not sufficiently ambitious. Further, a centralized approach (at least through centrally-decided criteria and procedures) would support use of consistent selection criteria for financing NAMAs, reducing fragmentation of the market and making it easier for developing countries to prepare programs that would meet the approval criteria.

A centralized governing body could have four main functions: 1) to decide how funds are allocated among the different financing windows; 2) to approve national Low-Carbon Development Strategies (LCDSs); 3) to make matching decisions for NAMAs seeking support (if a decentralized structure is accepted, not all NAMAs will have to go through a centralized governing body); and 4) to approve crediting baselines. To maximize the efficiency and effectiveness of developed-country financing and to better encourage a "race to the top," the centralized governing body could establish a decision framework that facilitates simultaneous evaluation of NAMA proposals from different countries. In addition, the COP guiding principles would guide NAMA implementation by other multilateral and bilateral assistance agencies.

The centralized governing body would be assisted by technical panels that would provide advice related to each financing window. The technical panels would be responsible for: 1) assessing LCDSs; 2) evaluating proposed NAMAs against the financing criteria; 3) evaluating documentation supporting the sectoral-crediting baseline; 4) evaluating the expected emissions

impacts; 5) evaluating the stringency of the country's proposed efforts; and 6) reviewing progress made ex-post in reaching the crediting baseline.

Readiness Phase: Getting Started ASAP

Given the promise offered by NAMAs, development of the needed architecture need not wait for a binding international agreement. An initial readiness phase can be implemented immediately to build capacity and test out the concept via pilot NAMAs over the next several years. This would achieve a head start on the emissions reductions needed for stabilizing atmospheric concentrations of greenhouse gases.

I. INTRODUCTION

Consensus on the level and type of developing-country action is a vital element to reaching an agreement on the post-2012 climate framework. The Bali Action Plan (BAP) of 2007 recognized the need for serious developing-country participation in order to reach global emissions-reduction goals while respecting the United Nations Framework Convention on Climate Change (UNFCCC) principle of "common but differentiated responsibility." The BAP called for nationally appropriate mitigation actions (NAMAs) by developing countries, supported by financial and technological assistance from Annex I parties when necessary, that would be monitored, reported and verified (MRV). This developed-country support could take the form of financial, technological, or capacity-building assistance and would also be subject to MRV. A central element of the current UNFCCC negotiations is the definition of new policy architecture to implement the NAMA structure.

This paper is designed to begin specifying the key elements of the NAMA framework: definition and scope; financing mechanisms and tools; eligibility and evaluation criteria; institutional arrangements; MRV requirements; and relationships with other building blocks of a future international agreement.

II. DEFINITION AND SCOPE OF NAMAS

Most countries agree that the broadest definition for NAMAs should be used. NAMAs are understood as actions proposed by developing countries that significantly reduce emissions below business-as-usual (BAU) levels. Most countries also agree that NAMAs should be voluntary and country-driven. A broad range of activities, including individual actions or groups of actions, may qualify as NAMAs. Taking the form of regulations, standards, programs, policies or financial incentives, these may include:

1. Capacity-building activities, such as:
   - Identification of mitigation opportunities;
   - Data-gathering activities and development of national data systems;
   - Development of institutions to monitor and enforce domestic emissions-abatement programs;
   - Preparation of NAMAs for implementation;
   - Training in technology operation and maintenance; and
   - Development of sectoral and national Low-Carbon Development Strategies.

2. Emissions-reduction and sink-enhancement NAMAs, such as:
   - Emissions-intensity standards and targets;
   - Demonstration and deployment of low-carbon technologies ;
   - Energy-efficiency and energy-pricing programs;
   - Sectoral or national cap-and-trade programs;
   - Carbon taxes, tax credits, and other market-based measures;
   - National programs that reduce emissions from deforestation and degradation (REDD); and
   - Sector-wide policies and programs with specific carbon-reduction goals.

3. Transformational NAMAs, such as:
    - Research and development of low-carbon technologies; and
    - Development and implementation of economy-wide and sectoral strategies to transform energy-use and development patterns and policies in both the short and long term.

Defining NAMAs across a broad array of categories will ensure that activities such as capacity-building and technology research and development are supported, rather than restricting the focus to NAMAs that generate immediate or short-term emissions reductions. An inclusive vision of NAMAs, combined with clear guidelines for NAMA development and implementation, should allow developing countries flexibility to tailor and receive support for actions that are appropriate for their national circumstances. In fact, many activities that could qualify as NAMAs are already underway in some developing countries in the form of national policies and climate-change action plans.

NAMAs should include actions that:

- Achieve significant emissions reductions, enhancement of sinks, and substantial deviations in GHG emissions from BAU projections;
- Develop policy, regulatory or institutional frameworks to enable GHG reductions and enhancement of sinks;
- Create an infrastructure (e.g., institutions, rules) and methodologies for data collection and reporting to facilitate MRV of mitigation actions;
- Construct sectoral and national visions and strategies for long-term transitions to low-carbon economies; and
- Demonstrate new technologies or test new approaches.

NAMAs do not include:

- Individual GHG-mitigation projects;
- Scientific research; or
- Sectoral strategies that do not demonstrate deviation from BAU emissions.

The international discussion centers around three categories of NAMAs:

1. *Unilateral NAMAs* – autonomous actions taken by developing countries to achieve emissions reductions without outside support or financing.
2. *Supported/Cooperative NAMAs* – developing-country actions undertaken with financial or other support from developed-country Parties, which result in more aggressive emissions reductions.
3. *Credit-generating NAMAs* – actions that build on supported NAMAs and exceed an agreed-upon crediting baseline, producing offsets for sale in the global carbon market.

While the first two categories, unilateral and supported NAMAs, receive almost unanimous support in the negotiations, credit-generating NAMAs are still contested by some developing countries.

Unilateral NAMAs

Unilateral NAMAs would be directed toward win-win actions that the developing country would undertake without financial assistance, taking steps to overcome barriers that may have kept this from happening already. Unilateral NAMAs would likely involve actions that are cost-effective or relatively low in cost and actions that a country intends to pursue for reasons other

than reductions in greenhouse gas (GHG) emissions (e.g., health benefits, energy security). These could include actions such as national efforts to boost energy efficiency, as this is an option that can save resources. Not all developing countries may be in a position to propose unilateral NAMAs due to very limited capacities, but they could still make contributions to GHG mitigation if capacity-building assistance were provided to them by developed countries. The existing climate treaties currently do not provide a forum or official process to record such voluntary unilateral actions by developing countries.

Supported/Cooperative NAMAs

Supported NAMAs would be directed toward lower-cost mitigation actions and would be eligible for up-front public financing from developed nations up to the incremental costs of the action. By financing only the incremental costs (or a portion thereof) of these actions, developed countries can minimize the adverse impacts on the competitiveness of their industries. These reductions are a joint contribution to the protection of the atmosphere. They do not offset developed-country reduction requirements and instead reflect developing-country efforts to aid in the global goal of reducing carbon emissions and stabilizing carbon concentrations in the atmosphere. Developed-country assistance will serve as an incentive for developing countries to establish performance goals more aggressive than those proposed under unilateral NAMAs. The assistance can take the form of building capacity, overcoming financing barriers, reducing the costs of implementing policies (e.g., feed-in tariffs), and developing advanced technologies that are not cost-effective today. In the latter case, assistance could bring down the cost of advanced technologies. Supported NAMAs could also include actions with a longer term focus like transportation policies that promote smart growth and public transportation or development of building standards and efficiency standards for materials, products and processes.

Credit-Generating NAMAs

Credit-generating NAMAs (or sectoral crediting) are actions that reduce emissions below a predetermined and negotiated sector-wide or policy-wide baseline. Exceeding that baseline will produce offsets that developing countries can sell to developed countries to reduce the cost of their compliance. These would be directed toward higher-cost actions, and should build on the level of reductions to be achieved through adoption of unilateral actions and supported NAMAs. Countries can also propose credit-generating sectoral baselines in the absence of supported NAMAs provided the baselines are sufficiently ambitious. Market-based mechanisms integrated into the NAMA framework will encourage further mitigation actions in developing countries by offering access to the carbon market and potentially larger financial flows; promote cost-effective global mitigation; and allow flexibility to parties in meeting their commitments.

Sector-wide mitigation programs would be one type of credit-generating NAMA. Under these programs, developing countries set baselines or reference levels in absolute emissions or emission intensity terms in one or more sectors.

NAMAs Concept

Unilateral and supported NAMAs are designed to produce emissions reductions by developing countries – these countries' contribution to the protection of the atmosphere. Depending on the growth pattern of the developing country, these actions (e.g., policies, programs) may produce net reductions in emissions or they may reduce the amount of growth in emissions that would otherwise occur in these countries. Either way, they contribute toward the global effort to reduce carbon emissions to levels that can restrain increases in global temperatures. These policies do not produce offsets for developed countries to assist them in meeting their commitments to reduce domestic emissions.

Conceptually, the goal of unilateral and supported NAMAs is to target emissions reductions that produce net economic benefits or are low in cost, the so-called "low-hanging fruit." Under the Kyoto Protocol, the Clean Development Mechanism (CDM) was designed to capture these low-cost emissions reductions as offsets that reduced the cost of compliance for developed countries and firms within those countries by providing a lower-cost alternative to domestic reductions in developed countries. While it is not explicitly stated in the Bali Action Plan, the new COP decision or treaty agreement to come out of the Copenhagen process will seek to build an architecture that focuses offsets on relatively more expensive emissions-reduction opportunities through the credit-generating set of NAMAs that includes sectoral crediting.

This alteration in the collective thinking within the negotiations reflects a shift in the approach taken by developing countries and in particular the emerging economies. Developing countries have taken a variety of far-reaching unilateral efforts to reduce their emissions in recent years. They have explicitly endorsed the global goal of curbing carbon-dioxide concentrations in the atmosphere and thereby containing the potential increase in global average temperatures and associated adverse effects of climate change. This commitment translates into a new developing-country focus on how future emissions-reduction responsibilities can equitably be distributed between developing and developed nations. It leads directly to the acknowledgement that selling the "low-hanging fruit" to developed nations is a poor economic strategy since developing countries recognize they will be carrying a significant share of the future emissions-reduction burden. Hence, the new thinking is that supported NAMAs should be targeted at lower-cost options, longer-term policies and technological development, and that credit-generating NAMAs should be focused on options further up the supply curve of emissions reductions.

NAMAs Framework

A single NAMA could cover one full economic sector, a component of a sector, activities that cut across several sectors, or a comprehensive program covering all emissions from multiple sectors. For example, a cap-and-trade program could be a single NAMA, whether it is limited to a particular sector or includes many economic sectors. Developing countries could also propose unilateral, supported and credit-generating NAMAs in the same sector.

If a package encompassing all three categories of NAMAs is developed upfront, it could spell out what actions are going to be taken unilaterally; what results and emissions reductions from BAU levels will be achieved; what actions could be implemented with technology, finance or capacity-building assistance; and what additional emissions reductions are expected with these supplemental actions. A crediting baseline proposing emissions levels (or activity levels if the goal is increased technology penetration) beyond the level to be achieved by unilateral and supported actions could be proposed at the same time. Developing countries could also choose to implement unilateral and supported actions in sequence before setting a crediting baseline. In this case, when supported NAMAs are proposed, background information would specify what has already been achieved by unilateral actions. When credit-generating NAMAs are proposed, the baseline or reference level would take into account the actions and reductions implemented through unilateral and supported actions.

Multiple NAMAs in the Same Sector

The possibility of multiple NAMAs in the same sector is an important issue for both supported and sector-crediting NAMAs. In the case of supported NAMAs, several scenarios are possible. Developing countries could propose several NAMAs in the same sector as a package and

estimate the cumulative GHG effect of implementing the package. Alternatively, developing countries could gradually build up a mitigation program in a sector and propose NAMAs one at a time. In this case, developing countries would need to demonstrate what emissions reductions were achieved by each proposed NAMA. MRV in this scenario will be complicated. For example, several NAMAs in the electricity sector could include energy-efficiency standards, renewable-energy requirements and policies, and promotion of nuclear energy to substitute for coal-fired plants. Each of these NAMAs will reduce the carbon per kWh and the aggregate emissions below BAU of the sector.

It could be difficult to assess the extent of emissions reductions achieved by each NAMA since they would all act in unison to reduce the amount of coal-fired generation (or other relatively high-emitting generation) in either new or existing facilities. To develop a meaningful MRV, a developing country would need to have several indicators: 1) the penetration of technologies (e.g., how many wind plants or nuclear facilities were built and dispatched, how many electric motors were replaced or retrofitted), and 2) the emissions performance in both intensity and absolute terms. If all these NAMAs are packaged together, MRV could involve a more simplified assessment of the overall emissions of the sector and its deviation from BAU estimates. For sector-crediting NAMAs, a sector-wide performance assessment would be needed since the reductions from individual NAMAs would be difficult to separate out.

More complicated cases occur when the boundaries of NAMAs and sectoral programs do not coincide. For instance, suppose the power sector includes multiple technology NAMAs, including goals for renewables and carbon capture and storage (CCS) from coal plants. Each of these NAMAs may have a cooperative component that contributes to achieving a certain penetration level (e.g., percent of industry output for which the technology is used). The two technologies could come into conflict when it comes to earning international credits. For instance, suppose a crediting baseline for the renewables NAMA is set at a 30% penetration level for 2030. That is, in 2030, unilateral and cooperative NAMAs are required to achieve a 30% share of power output; credits are earned only to the extent that renewables exceed that share. Suppose also that the CCS crediting baseline in 2030 is capture and storage of at least 30% of the CO2 emitted from the country's coal plants. If unilateral and cooperative NAMAs achieve both these penetration rates, new projects could earn credits with either technology. However, if an additional coal plant with CCS is built, the share of renewables would fall, perhaps below 30%. As a result, the new coal plant might earn credits for CCS, but the renewables subsector would lose credits because of a decline in its output share (and would also show an impaired performance of the supported NAMA that aimed at achieving the 30% penetration goal of renewables). Thus, setting clear boundaries of credited actions will be very important.

Competition between technologies is not a bad outcome from the point of view of the country's economy as a whole. The possibility of earning credits using the cheapest possible abatement projects is only one factor in that competition, however. Other factors may be more important, such as the availability of favorable locations for renewables and technological advances in the case of CCS. However, the crediting of subsector NAMAs could in itself generate winners and losers within an industry. The simplest alternative is to prohibit sub-sectoral or individual NAMAs from earning credits in favor of sector-wide crediting against a sector-wide baseline.

NAMAs that Cross Parts of Several Sectors

Another alternative is a NAMA that cuts across parts of several economic sectors. For instance, an energy-efficiency program or technology improvement could involve several industries, but

represent only part of the emissions of each of them. An example is a goal to replace outdated electric motors with newer, more energy-efficient alternatives. Could this type of NAMA have unilateral, cooperative-finance, and market-crediting components? If the program is implemented through public support from the international community, MRV procedures would likely require recording the number of motors replaced in all participating sectors. However, if crediting is allowed at the NAMA level and at the sectoral level for one of the sectors in the program, it would be difficult to attribute emissions reductions to the right baselines. To avoid double counting, a system should be put in place that discontinues smaller-scale crediting in a sector when crediting begins for the sector as a whole. For instance, if a manufacturing sector was participating in the motor-crediting NAMA, it would be removed from that crediting program if it began a sector-crediting program. The crediting baseline for the other sectors participating in the motor-replacement NAMA would then need to be recalculated.

An MRV strategy has to be a part of the upfront decision-making for supported NAMAs and credit generation. MRV could record the penetration ratio of the most efficient motors economy-wide; it could record changes in electricity demand compared to BAU projections; or it could establish a default emissions-per-kWh rate to generate an emissions estimate. This process would become more complicated with industrial energy-efficiency and process-improvement measures.

NAMAs and the Clean Development Mechanism.

There are two fundamental differences between supported NAMAs and projects under the Clean Development Mechanism (CDM). First, supported NAMAs will produce GHG-emissions reductions that are developing-country contributions to the global effort to control climate change. Unlike CDM projects, these emissions reductions do not substitute for emissions reductions in developed nations; they are not offsets. Second, in most cases support for NAMAs will begin after developing countries achieve a certain level of emissions reductions from BAU with their own resources – so-called unilateral actions. Under the CDM, companies in developed countries pay for all emissions reductions beyond the project baseline, which is frequently only slightly better than business as usual. With supported NAMAs, the effort extends to a wider set of facilities, not simply the "good actors," as in traditional CDM. Financing is likely awarded to the more effective programs and policies and pays up to – but not in excess of – the incremental costs of the policy or action. In general, it is expected that the marginal abatement cost (MAC) of traditional CDM projects is lower than the MAC of reductions achieved through supported NAMAs.

The new NAMAs architecture is likely to collide with the existing system of project-specific activities under the CDM. Individual CDM projects undertaken in a policy area where new supported NAMAs are to be implemented create the potential for developed countries in effect to pay twice for the same emissions-reduction efforts – once through the individual CDM project and again through the up-front financial assistance provided by developed nations to help achieve the broader NAMA policy. A key challenge for the design of the new NAMA architecture is to create the right set of incentives to make it attractive for developing countries and firms within those countries to move away from CDM projects and toward supported and credit-generating NAMAs.

If project-specific CDM continues to be allowed broadly or in specific policy areas after 2012, it will likely be more attractive in economic terms to firms in developing countries and to international investors than up-front financing for supported NAMAs or sectoral crediting will be. Receiving payments for certified emissions reductions (CERs) based on the global carbon-

market price likely offers more certainty and greater funding and immediacy of economic return than up-front financing of some portion of the incremental costs of a proposed NAMA, which may go to a host government rather than to the private sector. Project-based CDM is also likely to be more attractive economically than sectoral or NAMA crediting because of its simplicity. As noted earlier, developing-country governments are increasingly interested in ensuring that "low-hanging fruit" no longer be captured by developed countries through the CDM. In addition, supported NAMAs and credit-generating NAMAs will produce financing and CERs respectively that go to developing-country governments. Such governments may choose to pass on all or a portion of that finance to firms. This financing/revenue could be sufficient incentive for those governments to resist the political pressure for continued project-based CDM from firms within those countries and from international investors.

At first glance, the solution to the potential problem of governments paying twice via individual CDM projects and then in support of NAMAs seems straightforward: simply "wall off" individual CDM projects from the calculation of compliance with the supported NAMA. For example, suppose a developing country proposes to implement a new renewable portfolio standard under which 10% of all electricity generation in the country shall come from renewables by 2020. Also suppose that there are currently two approved CDM projects involving windfarms in that developing country. These two windfarms could be separated out from the proposed NAMA, barred from receiving any up-front assistance, and not counted toward compliance with the 10% goal.

This, however, begs the question of how to handle future renewables projects in that country in terms of CDM eligibility. Again, the simple solution is to declare that no individual CDM projects can be proposed in a policy area covered by a NAMA policy, but this will create political pressure in developing countries to not propose NAMAs in sectors where a number of CDM project opportunities are developing.[1] As noted earlier, however, if up-front public finance is substantial, governments will likely withstand such pressure. Alternatively, the Copenhagen agreement could explicitly end project-based CDM in key sectors for selected countries, but it is difficult to see such an approach receiving consensus support in the negotiations. A more likely alternative path to achieving this outcome would be for major potential offset-consuming countries, like the EU and the US, to adopt rules in their own trading systems barring the purchase of project-based CERs in key sectors post-2012. Rules could also specify groups of countries that could continue participating in the CDM and others (those with large emissions-reduction potential and relatively greater wealth) that should move to the supported NAMA/ sectoral-crediting framework.

Supported NAMAs and new CDM projects could also theoretically coexist in the same sector if sectoral crediting has not been proposed. To account for NAMA actions, the baseline for the existing CDM project in the same sector would have to be adjusted taking into account planned policies and programs in this sector. In other words, implementation of NAMA activity would be considered as part of the BAU baseline for the existing CDM projects in this sector. For example, assume that a proposed new CDM project in the power sector aims at improving a specific plant's efficiency by 30%. Assume at the same time that the government is proposing an energy-efficiency program for the whole power sector that would improve energy efficiency of average plant performance in the sector by 20%. In this case, the baseline for the CDM project

[1] We have already seen this dynamic in the early years of the CDM where proposing new policies in a developing country made the baseline more stringent and discouraged such policy actions. The CDM Executive Board finessed this problem through a permissive policy on baselines, but the problem will be more acute here in that a key goal for many countries in the Copenhagen discussions is to encourage policies that reduce emissions in developing countries as their contribution to protection of the atmosphere and not as offsets.

would have to be set at a 20% efficiency improvement starting from the year when the NAMA program is launched. So while in previous years this CDM project could earn credits for the full 30% efficiency improvement, now it could only receive credits for the 10% extra improvement above the 20% baseline.

If a credit-generating sectoral NAMA is subsequently proposed, CDM projects in this sector should discontinue from that point on since emissions reductions generated by new power-plant efficiency efforts will be counted toward the sectoral NAMA target. What if sub-sector NAMA crediting is proposed in the sector while CDM activities take place in another sub-sector? For example, a sub-sectoral crediting NAMA could be proposed to increase power sector efficiency by 20%. At the same time, there are CDM projects that replace conventional-fuel electricity generation with renewable energy. Can these renewable-energy CDM projects continue alongside a NAMA crediting program on plant combustion efficiency? Since both programs reduce carbon emissions, accounting adjustments would have to be made for how much GHG emissions are replaced by renewable energy. Assuming that energy will be produced more efficiently as a result of the NAMA program, renewable-energy CDM projects would replace fewer GHG emissions since less fuel would be used to produce the same volume of electricity.

Credit-generating NAMAs will generate CERs/offsets for developed countries just as today's project-based and programmatic CDM efforts do. However, they will differ in that sector-wide NAMAs will likely be more comprehensive, have more stringent baselines and be larger scale. To receive credits from NAMAs, developing countries would need to set ambitious sector-wide crediting baselines (significant deviation from BAU levels). Thus, the marginal abatement cost of credit-generating NAMAs will be higher than that of CDM projects. The crediting baselines, on the other hand, would be set for a sector, a sub-sector or a combination of sectors. Thus, the scale of emissions reductions will be bigger than under individual CDM projects, and transaction costs should be smaller per ton of reduction. Sector crediting would offer additional benefits to developing countries such as the possibility of linking to trading schemes in other countries, further private-sector incentives, and greater flexibility in the use of revenues from large-scale sector crediting.

Some critics have raised questions about the ability of sector crediting to create sufficient incentives for private investors because of concerns that one company's potential return from emissions-reduction activities may be dependent on the performance of its competitors in the same sector. A companion paper (Whitesell, W (2009) lays out a policy design that developing countries could utilize to overcome this potential problem.

The NAMA framework offers a more sustainable and long-term strategy for curbing global GHG emissions than project-based CDM. The NAMA framework should also be designed to facilitate comprehensive and sustainable GHG-abatement strategies and associated financing strategies economy wide, as discussed later. This framework would offer incentives for developing countries to address carbon emissions in a variety of sectors – including transportation, agriculture and REDD – that are either not eligible under the current CDM or have not had much investment under the CDM policy framework.

Capacity building should be offered to developing countries to assist them in transitioning to the NAMA framework. In addition, technology and know-how transfer should be more prominent in the NAMA framework than it has been under the CDM. This factor would be an important incentive for developing countries to transition to the NAMA architecture.

Programmatic CDM is closer to the NAMA concept in its scale (since it covers a program of activities rather than individual projects). However, it is still fundamentally different from the NAMA philosophy that seeks to create explicit developing-country contributions to global GHG mitigation. In theory, the NAMA framework should shift the programmatic CDM baseline from BAU to a much more ambitious level. However, lessons learned in the programmatic CDM process, especially those related to setting boundaries and applying methodologies for GHG-reduction estimates from programmatic activities, would be useful in designing the NAMA framework. Programmatic CDM could also be reformed to harmonize with the NAMA concept. Institutional and operational rules and procedures designed for programmatic CDM could be reviewed with the goal of adjusting them to the NAMA framework. The CDM Executive Board at its 32nd and 33rd meetings adopted procedures regarding the registration of a program of activities and issuance of CERs for a program of activities. The Board has also approved the CDM Programme of Activities Design Document form (PoA-DD), CDM Programme Activity Design Document form (PoA-CPA-DD), Small-Scale CDM Programme of Activities Design Document form (SSC-PoA-DD) and Small-Scale CDM Programme Activity Design Document form (PoA-CPA-SSC-DD), making procedures operational. So far, only one program of activities CDM has been registered. Nonetheless, it is conceivable that the current CDM structure could be reformed to allow the CDM to play the role of regulator of credit-generating NAMAs. As we discuss later in this paper, however, negotiators seem to be in agreement that decisions on sector-wide crediting baselines need to be made through a process that has a higher level of involvement by the COP and by sectoral experts.

III. NAMA FINANCING

Creating a new financing mechanism for a post-2012 agreement is a big challenge for climate negotiators. On one hand, the anticipated scale of financing (tens of billions of dollars per year) calls for the utilization of existing financing entities that already have experience managing funds and established structures and procedures. On the other hand, we are at the critical point of transforming the developing-developed world relationship that is necessary to address the problem of climate change. This transformation requires the rethinking of established principles, rules and practices of directing financial resources from developed to developing countries.

Developing countries are making significant political headway in demanding greater voice and influence in the overall governance of climate finance institutions. They are also seeking to gain "direct access" to funds, requesting direct responsibility for the programming of resources at the country level.

Previous experience with environmental, climate and development financing demonstrates that donor countries would like to have control over expenditures. One reason, among others, is the desire to maximize the effectiveness of spending in achieving set goals. However, the same experience shows that the assistance is more effective when the host-country government has ownership of the project. Governments that are closely engaged in a project at all stages of its development and implementation are more likely to have vested interests in its success, replication (if any) and continued implementation after international support and involvement fade out. Direct access to funding allows close engagement of the host government in a funded activity. It enables national and sub-national developing-country institutions to take direct responsibility by entering into grant and loan agreements with the fund without having to rely upon implementing agencies.

A new financing mechanism will have to balance the new conditions of direct access requested by developing countries and the old traditions of donor governments' control of funds and responsibilities for legitimacy and accountability. It will also have to balance a common desire for "institutional economy" that strives to use existing financing institutions in the current or reformed form with proposals for creating a new approach and structure to give an impetus to climate-change mitigation and adaptation financing.

How Will NAMAs Be Chosen For Financing? Direct Access vs. A Race to the Top

Many developing countries want support for NAMAs to be through direct access, similar to the Adaptation Fund – where priorities are decided domestically by developing countries and money is allocated to countries by the Adaptation Fund Board according to COP-decided distribution principles. These countries see reliability and predictability of the financial and technical support for NAMAs as a critical incentive for developing countries to be willing to prepare such actions. Other countries (principally potential donors) argue for cost-effectiveness and the size of potential GHG-emissions reductions as the key criteria for choosing among NAMA proposals for developed-country support. They prefer a system where competition between proposed NAMAs creates a "race to the top" designed to maximize the global environmental benefit. The fear of many Parties is that the new NAMA architecture will simply mirror the experience with the CDM where a small number of large developing countries completely dominate the market, leading to small or nonexistent investments in most small- and medium-sized countries. One approach to resolve this difference in philosophy would be to create a hybrid approach that incorporates both the direct access and the competitive approaches within the new NAMA architecture by creating several different financing windows with different eligibility and evaluation criteria suited to the nature of the types of activities or policy actions covered in the window. NAMA windows with different evaluation criteria could be a way to bridge the gap between differing expectations from developed and developing countries.

Windows have been proposed by several Parties covering a range of activities from capacity building to reductions in deforestation to transportation strategies to large-scale emissions-reducing NAMAs in large industrial sectors. Separate windows for these four distinct activities would ensure that they do not compete with each other. For example, NAMAs in the transportation sector would not have to be evaluated based on the same criteria as NAMAs in big industrial sectors. Instead of a sole focus on cost-effectiveness, transportation NAMAs could also be evaluated in terms of their long-term and transformational impact. Each window would have its own priorities, would be evaluated based on agreed criteria for this window, and could draw on experts in the relevant field to assist in assessment of the proposed NAMAs.

Another way of looking at different types of NAMAs and their prioritization for financing would be through an analogy with an investment portfolio approach: a windows approach could allow both short-term, low-yield, highly certain investments as well as uncertain but possibly high-yield long-term investments to be supported. The high-level decision-making body would allocate financing so that investments are made in a mix of different programs with different rates of return and different time horizons.

The issue of how to allocate funding between such windows is key. The high-level decision-making body would clearly have the lead in this area. It will be important that the process not be overly rigid or prescriptive. Guidance from the COP on distribution principles for these decisions would be important early on. Allocation decisions could be made on an annual or bi-annual basis and be responsive to the number, quality and size of funding requests for NAMAs

submitted to each window each year. Flexibility will be essential and the locking-in of rigid annual funding levels should be avoided. The overall allocation process could be similar to deciding on an investment portfolio where a balanced variety of opportunities with different time horizons and probabilities of success can be selected.

Windows and NAMA Evaluation Criteria

The following windows can be envisioned:

- NAMAs (e.g., policies, sectoral programs, technologies) from big industrial sectors and the energy sector (including demand side);
- Capacity-building activities;
- Transformational NAMAs;
- NAMAs in the transportation sector;
- REDD NAMAs;
- Agriculture-sector NAMAs;
- NAMAs in other sectors; and
- Least-Developed Country (LDC) NAMAs.

As noted earlier, criteria for decisions in each of these windows could differ with a competitive approach emphasizing cost-effectiveness governing large-scale NAMAs in industrial and energy sectors while capacity-building, transportation and LDC windows might follow a more qualitative and direct-access approach. Criteria such as quality of MRV strategy; conformity with long-term, Low-Carbon Development Strategies and national climate plans; and domestic capacity to implement the NAMAs might be applied to most windows. Assistance could be provided in the form of incremental financing for innovative technology deployment, the creation of new entities to overcome financing barriers, and assistance to reduce the cost of policies such as feed-in tariffs.

Supported NAMAs and Credit-Generating NAMAs: A Nested Approach

The international architecture for the post-2012 period is uncertain at present. It is unclear how much of the institutional structure of the Kyoto Protocol will be continued after 2012. It is also unknown whether new institutions will be created to match NAMAs with financing or to issue credits for NAMAs and sectoral programs.

Discussions in the UNFCCC negotiations have often suggested that two different decision-making bodies might best govern decisions on matching supported NAMAs with developed-country financing and decisions on credit-generating baselines for NAMAs that produce offsets. The prevailing wisdom has argued that the skills and functions necessary for evaluating and matching financing with NAMAs are different than what is required for setting sector-wide or programmatic baselines for offset crediting.

We would argue, however, that if the new architecture is to produce outcomes where developing countries keep low-cost options as their contribution to protecting the atmosphere and offer higher-cost options for offsets, then incentives must be clearly aligned. While the carbon market is an important and likely more significant source of funding for developing-country action than public finance from developed nations will be, the architecture has to ensure that pressure from the carbon market will not simply trample the idea that low-hanging fruit is confined to supported NAMAs. Therefore, creating a decision-making process that nests together decisions on public finance for NAMAs with decisions on crediting baselines makes great sense. A nested approach seems to be more manageable under a centralized general

governance structure. However, it could also be worked out under a decentralized governance structure. Some details are discussed below.

Developing countries can propose a set of NAMAs in a given sector as part of an LCDS for that sector, and have the financing decisions carried out in a holistic, integrated fashion by whatever entities are given these responsibilities by the COP. In this way, developing countries likely will know the extent of public finance for their new policies and can be encouraged to propose more ambitious crediting baselines. This will make it easier for all Parties to resist the natural economic pressure to set crediting baselines at less stringent levels, which produce less public funding but more private financing for the developing countries and more offsets at lower cost for the developed-country entities. This has been one of the great challenges for the CDM. In addition, the fact that many developing countries will be proposing supported NAMAs simultaneously can also produce a "race to the top" where public financing flows to the most effective NAMAs in contrast to the CDM's incentive for a "race to the bottom." The risk of perverse incentives could also be reduced if a nested approach is devised so that some portions of the public-sector money are loans that can be repaid with the money generated through the carbon market.

Developing countries could choose to implement unilateral and supported actions in sequence and not choose to propose any credit-generating actions. Credit-generating proposals could also be proposed later after supported NAMAs have had a chance to work. When and if credit generating NAMAs are proposed, the baseline or reference level would take into account the actions and reductions implemented with the support of public money. In effect, crediting could become another window of support drawing directly on the carbon market while supported NAMAs would go to the public-finance window relevant to that activity (e.g., REDD, transportation, electricity and industrial policies, etc.).

NAMA Submission and Evaluation

To receive funding, developing countries would submit their NAMAs for evaluation to a designated body. If a decentralized structure is allowed, it would include a Multilateral Fund created to finance NAMAs, other multilateral funds and bilateral aid agencies that would finance NAMAs consistent with guiding principles and rules adopted by the COP (the governance structure is discussed later in the paper). The decentralized structure could only be used for financing supported NAMAs. Credit-generating NAMAs will have to be evaluated by a central decision-making body that would approve the crediting baseline and issue credits. International credits would be issued, and individual developed-country Parties could decide whether to allow such credits in their respective domestic emissions-trading systems, much as the EU ETS has done regarding CERs during the first commitment period under the Kyoto Protocol.

It has also been proposed by Parties that developing countries should elaborate sectoral and national low-carbon development strategies to ensure consistency and coherence of individual mitigation actions. It seems logical to assume that if a country has an LCDS that has been submitted to and approved by the financing mechanism, it would have grater flexibility in submitting individual NAMAs for support to various participating financing agencies. However, if a country does not yet have a comprehensive strategy, it would need to submit its NAMAs to a centralized governing body for evaluation and financing.

A technical panel or panels could be established to provide expert advice to the decision-making/governing body on both supported NAMAs and credit-generating NAMAs. If NAMAs are submitted to bilateral aid agencies, these agencies could also rely on this advice. A technical panel could be structured by sector specialization, for example energy-sector expertise provided

by specialized agencies like the International Energy Agency, agriculture-sector expertise provided by the Food and Agriculture Organization and so on.

Developing countries could be required to submit the following information in support of their NAMAs:

- Sector or sectors that will be affected by this NAMA;
- An indication of whether it is a follow-up or a complement to a unilateral action financed and implemented by the host country itself;
- Financing needs including technology needs and barriers to technology deployment and diffusion, whose removal needs support;
- What types of support in terms of finance, capacity building and technology it considers most appropriate to enable the implementation of the NAMA;
- Intention to apply for a crediting baseline in the future in the same sector or a group of sectors that a proposed supported NAMA covers;
- Specific emissions-reduction outcomes of the NAMA projected for several time horizons, (e.g. 2020, 2030 and 2050) and the basis for the estimates;
- Description of policies and measures that are proposed, including institutional and regulatory changes;
- Responsible government agency;
- Emissions or deforestation baseline;
- Technology-penetration goals;
- MRV plan;
- Full- or incremental-cost estimates;
- Sustainable development impacts and consistency with national priorities; and
- LCDS for sectors in which NAMAs are proposed or a national LCDS.

Credit-generating NAMAs would require additional information such as a description of the sector with a definition of boundaries; a description and specification of targets (e.g., intensity, technology penetration, absolute or other); and justification of the proposed crediting baseline.

If requested, developing countries would be assisted in designing NAMAs or bringing them to the quality that will secure funding. A phased procedure needs to be built into the NAMA evaluation and financing process to provide for assistance to developing countries at various stages of NAMA proposal and implementation.

Developing countries will be reluctant to expend the effort and cost of preparing NAMA proposals if there is little likelihood of receiving funding. They will also tend to propose short-term immediate actions if there is no confidence that longer-term, multi-year efforts can receive financing. To address these concerns, the governance of NAMA financing should be designed to allow for several stages of NAMA registration and evaluation. Developing countries that take their commitments seriously, fully engage in NAMA partnerships with developed countries, and follow through with implementation of earlier programs, policies and projects that received assistance from developed countries would be better positioned to receive continued support.

Registry

Parties to the UNFCCC propose to create a mechanism to register NAMAs and facilitate their financing. Currently there are several distinct proposals on the table for NAMA recording, including registries (for developing-countries actions), schedules (that would inscribe developing-country actions and developed-country commitments), appendices (that would include developed countries' national GHG targets and developing countries' intentions to

reduce GHG emissions) and national communications (UNFCCC, 2009). While there is still no agreement as to what mechanism will be used, there seems to be a need for a mechanism or mechanism with the following components:

- A place to record developing-country actions, Annex 1 targets and Annex 1 finance packages;
- A place where the overall scope of aggregate action by all countries can be seen;
- A place to record matched NAMAs and finance;
- A place to record actions that are subject to at least monitoring and reporting, and possibly verification; and
- An evolutionary document where countries can revise their NAMAs, targets and financial commitments on a regular basis.

There are many registry questions that have yet to be resolved. There is still no agreement among Parties on whether the same tool could register developed- and developing-country actions or two separate mechanisms would be needed. It is also unclear whether the same tool would be used to register unilateral NAMAs and other categories of NAMAs that use public or market financing for implementation. No agreement has been reached on whether the proposed mechanism would be used to match NAMAs with support (by registering indicative NAMAs) or would only register NAMAs under implementation. These issues are beyond the scope of this paper. However, it is clear that the NAMA framework would need to include a mechanism for registering unilateral NAMAs and NAMAs receiving support in order to have a possibility to assess at a glance the size of expected GHG reductions and actions by developing countries and to recognize unilateral actions by developing countries. A parallel registration of assistance (measured in monetary units) provided by developed countries to developing countries for implementation of NAMAs would also be needed.

A registration mechanism may also include records of proposed NAMAs with likely GHG-reduction ranges inscribed in Low-Carbon Development Strategies. An upfront recording of what countries intend to do would allow assessment of a collective path towards scientifically-defined global goals of GHG emissions.

Governance of NAMA Financing

The following structure could be envisioned to govern the NAMA framework:

- COP decisions;
- Governing body under the COP;
- Financial institutions (new Multilateral Climate Fund and other participating existing multilateral (World Bank, Global Environment Facility, Adaptation Fund) and bilateral-assistance programs);
- Secretariat for the governing body; and
- Technical panel(s) and/or roster of sectoral experts to support the governing body and the multilateral climate fund.

COP: The COP would establish the NAMA financing architecture and would provide overall guidance for its functioning. The COP could adopt general rules and guiding principles for funding allocation and criteria, to be used for matching NAMAs with support as well as guidance for evaluating proposed crediting baselines.

Governing Body of the Financing mechanism (Governing Body): This governing body would be the governing body of both the NAMA financing mechanism and a new Multilateral Fund created specially for NAMA financing. It would have the following four functions: 1) to

decide on how funds are allocated among the different financing windows; 2) to approve sectoral and national Low-Carbon Development Strategies; 3) to make matching decisions for NAMAs seeking support through the new Multilateral Fund; and 4) to approve crediting baselines.

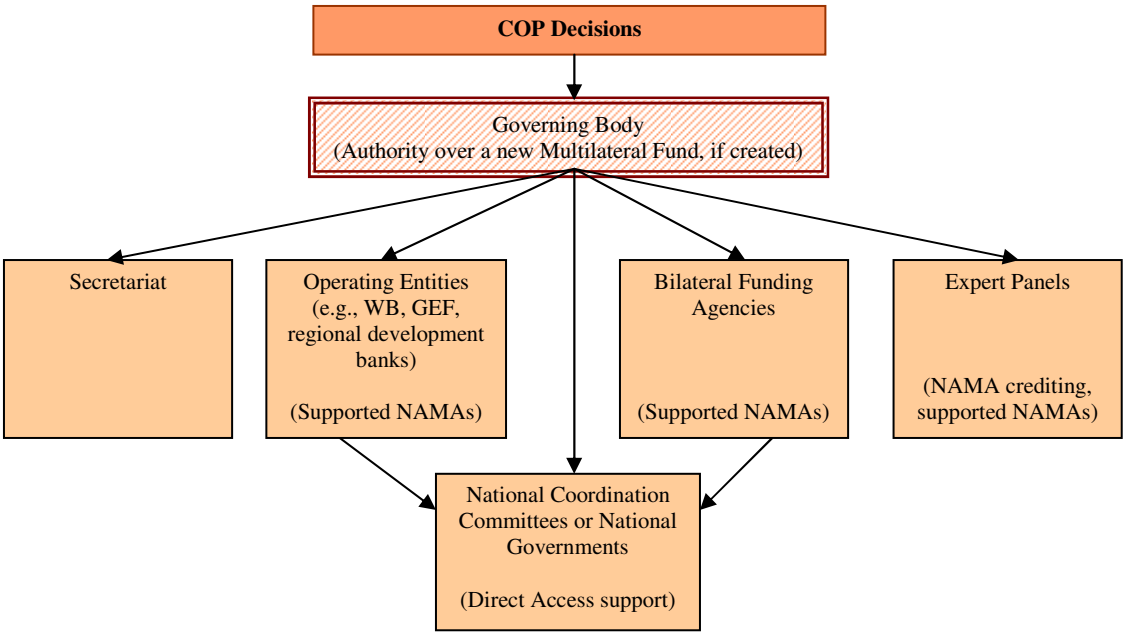
Financial Institutions: Matching the proposed actions with support could be performed by one central body or could also be delegated to the existing multilateral and bilateral aid agencies. It is even conceivable that a decentralized structure emerges in which large developed countries and regions set somewhat different criteria for the NAMAs and sector programs they will finance. This would have the unfortunate consequence of fragmenting the programs and markets. It would also increase the difficulty for developing countries to prepare programs that would meet differing approval and financing criteria.

More likely, the new architecture will include a mixture of centralized and decentralized components. If a decentralized approach to financing NAMAs is accepted, criteria for NAMA financing may be developed in a centralized way, with implementation carried out through a variety of decentralized mechanisms and institutions. Centrally-decided rules and criteria would provide guidance for bilateral financing of NAMAs and would also be used by a Multilateral Climate Fund specially created to finance NAMAs.

Secretariat for the Governing Body: This body would keep records of all decisions on baselines, all NAMAs receiving support, international financial resources (multilateral and bilateral) that are directed to NAMA implementation, and possibly other functions. At the end of the NAMA funding cycle, developing countries would report back to a centralized reporting body or registry of implemented NAMAs. Developed countries that engage in bilateral financing of NAMAs would also report to the central record keeping/registry body (secretariat).

Technical Panel(s): These panels would provide assistance for NAMA development to developing countries. Such panels could also assist the governing body in evaluating supported NAMAs as well as crediting baselines. Given the broad range of sectors that would deliver NAMAs, it may be more efficient to keep a roster of sectoral experts and call upon the relevant group when technical assistance is needed for developing or evaluating NAMAs in a particular sector.

National NAMA Coordination Committees in developing countries: At the national level, coordination committees could also be created to facilitate NAMA development, implementation and MRV. They could also be in charge of coordinating development of national LCDSs. These committees would submit information to the UNFCCC. In a decentralized structure it would be crucial to hold each of the involved institutions accountable for their decisions.



Governing Body

The relationship between Parties and financial institutions would be mediated through a governing body and its administrative and management staff (secretariat). The governing body could be authorized to set the overall priorities for a financing mechanism and a new multilateral financial institution. This governing body will act under the authority and guidance of the COP.

The governing body under the COP could perform the following functions:

- Supervise the financial facilitative mechanism, under the authority and guidance of the COP/Meeting of Parties (MOP), and be fully accountable to the COP/MOP;
- Report on its activities at each session of the COP/MOP;
- Allocate public funding to windows;
- Oversee performance of all financing windows;
- Approve sectoral and national LCDSs;
- Match NAMAs with finance through a new Multilateral Fund;
- Approve crediting baselines for individual NAMAs, per sector and per country;
- Report to the COP on the progress being made by countries in reaching their sectoral baselines; and
- Report to the COP on the magnitude of offsets being generated.

The governing body will have to include equal representation of developed- and developing-country Parties. In addition, the body authorized to approve baselines should include substantial representation from countries that are vulnerable to climate change as those countries would have an interest in establishing ambitious baselines.

The design and establishment of the Adaptation Fund by the Parties to the Kyoto Protocol represent the most recent and creative attempt to bring climate finance more directly under the Parties' control. The Adaptation Fund Board (AFB) has 16 Members – the majority of which are from developing countries. However, as a new and independent financial institution, the Adaptation Fund faces new difficulties. The power of a financial mechanism is closely linked to its legal personality and its institutional capacity to perform the functions necessary to raise, manage and allocate funds (Ballesteros, A et al. 2009). Efforts by developing countries to

create a functioning fund independent of the Global Environment Facility (GEF) and of its Implementing Agencies (in particular the World Bank) ran into the challenge that without "international legal personality" the AFB is unable, on its own, to enter into the contracts necessary to hire staff, to convert certified emissions reductions into cash, and to enter into grant or loan agreements with the recipient-country institutions. This last function is particularly important if the AFB is to provide "direct access" of national entities to its funds. The Adaptation Fund will have to use memorandums of understanding with the GEF Council and the World Bank to receive support from these institutions, on an interim basis, with monetizing CERs, and for the financial management of the trust fund. If a new Multilateral Fund with the "direct access" financing principles is established to finance NAMA implementation in the post-2012 regime, it is likely to run into similar difficulties.

Secretariat

The financing mechanism secretariat can play a crucial role in mediating relationships between donors, host countries and the financing mechanism. In a decentralized structure, the secretariat would serve the governing body, the new Multilateral Climate Fund, and multiple, networked multilateral and bilateral aid agencies. The secretariat can play a key coordinating role and perform liaison functions between policies and implementation, as well as between resources and recipients (Ballesteros, A et al. 2009).

The secretariat could be charged to perform the following functions:

- Assist the governing board with developing annual activity reports to be reported at each session of the COP/MOP;
- Collect information on performance of all financing windows;
- Report to the COP/MOP on the GHG-emissions reductions achieved and financial resources disbursed on an annual basis;
- Develop and maintain NAMA and financial support/resource registries;
- Make any commissioned technical reports available to the public;
- Evaluate the scale of potential offsets; and
- Report to the COP on the magnitude of offsets being generated.

Technical Panels

Non-state participants (technical and scientific experts, civil society, and the private sector) are fundamental to not only balance dominant political and international economic agendas, but also to emphasize the principles of fairness and effectiveness within the various climate finance funds. Among existing financial mechanisms, the Multilateral Fund for the Implementation of the Montreal Protocol stands out for its inclusion of technical experts, civil society, and the private sector (Ballesteros, A et al. 2009).

The fund's Technical and Economic Advisory Panel (TEAP), which reviews replenishment requests as part of its overall function of providing independent scientific advice to the MOP, has a large degree of independence. It also includes private-sector representatives, which allows it access to information about brand new technological developments.

The technical panel under the post-2012 climate financing mechanism would need to be established to conduct assessments of proposed NAMAs from a technical point of view; to assist developing countries in raising proposed NAMAs to the quality that would secure their financing; to assist countries with developing their LCDSs; to evaluate background information, methodologies and assumptions that support crediting baselines; as well as other purposes.

If a structure of multiple financing windows is adopted, there may be a need for specialized technical panels. Each window could have its own technical panel that would have particular expertise in sectors targeted by this window. For example, the REDD window could be assisted by a technical panel hosted in the Food and Agriculture Organization (FAO) or composed of experts from the FAO and other institutions with expertise in forestry. The International Energy Agency (IEA) and its experts could similarly be called upon to provide assistance with NAMAs in the energy sector. Other windows would follow a similar pattern for these technical panels.

The technical panel(s) and/or roster of sectoral experts could:

- Provide technical information related to low-carbon technologies;
- Evaluate NAMAs against established criteria in each window;
- Provide reports on NAMA evaluation to a decision-making body through the secretariat;
- Evaluate all supporting documents on NAMAs provided by Parties;
- Evaluate the eligibility requirements of various funding mechanisms to make sure that they follow centrally-agreed criteria for NAMA financing;
- Evaluate all supporting documents that justify the stringency of proposed sectoral crediting baselines;
- Evaluate the cumulative GHG-emissions impacts of proposed NAMAs in a particular sector by country;
- Make a technical evaluation of the overall stringency of a country's efforts; and
- Assess progress being made by a country in reaching its crediting baseline.

National NAMA Coordination Committees

To exercise "direct access" to climate funding, developing countries would need to have domestic "implementing agencies." Some Parties propose the creation of National NAMA Coordination Committees to coordinate NAMA development, submission for funding and implementation. At the end of the NAMA funding cycle, National NAMA Coordination Committees would submit information on the implemented NAMAs and funding received to the Financing Mechanism Governing Body.

National NAMA Coordination Committees could perform several crucial functions in the NAMA process:

- Coordinate development of national Low-Carbon Development Strategies;
- Request assistance from a technical panel of the NAMA financing mechanism for LCDS and individual NAMA development;
- Submit NAMAs for financing; and
- Request international certification, and once certified, conduct NAMA monitoring, reporting or verification.

NAMA financing should be done in the context of a country's national priorities and programs in order for these actions to be sustainable. Only national governments would be in a position to define ultimate "appropriateness" of proposed actions. To make sure that national interests are taken into account and priorities are interpreted correctly, national governments would need to work with funding institutions through their National NAMA Coordination Committees. National NAMA Coordination Committees would identify financing institutions (if bilateral aid agencies and various multilateral funds participate in the financing mechanism along with a specially created Multilateral Climate Fund) and coordinate the NAMA submission process. They could also be in charge of developing plans for sustainable financing of proposed NAMAs that secure sustainability beyond the period of help through international assistance. National Coordination Committees could also coordinate the process of establishing crediting baselines and

integrating information on public financing for NAMA implementation into decisions on the stringency of proposed baselines.

Some developing countries may lack capacity to create National NAMA Coordination Committees. They could either request capacity-building assistance from the financing mechanism for establishing such committees or designate a national agency (or agencies) to be authorized to submit NAMAs to the international financing mechanism. Countries that do not have capabilities to establish National NAMA Coordination Committees will most likely submit their NAMAs to a Multilateral Fund (through the central decision-making body and its secretariat), or an existing multilateral lender, rather than shop around for bilateral donors.

The experience of a very limited presence of Designated Operational Entities (DOEs) under the CDM in developing countries illustrates a need for targeted MRV capacity building in developing countries, so that national agencies in these countries - national Coordination Committees - could perform MRV functions for NAMAs. Designated Operational Entities were created under the CDM to validate and subsequently request registration of proposed CDM projects, to verify emission reduction of registered CDM projects, certify these projects as appropriate and request the CDM Board to issue Certified Emission Reductions accordingly. Only 6 Non Annex I Parties distributed in Asia and Pacific and Latin America and Carribean Region host DOEs while most DOEs are located in 24 Annex I countries.

IV. MONITORING, REPORTING AND VERIFICATION OF NAMAS

A transparent and coherent national and international system for monitoring, reporting and verifying national GHG-mitigation actions, GHG emissions and international GHG transactions is imperative for the post-2012 international agreement on climate change.

National Annual GHG Inventories

A “national annual GHG inventory” is a necessary part of an MRV system. National inventories summarize countries’ anthropogenic GHG emissions and removals in a given year. The UNFCCC requires the submission of inventories by all Parties, with different rules for Annex I and non-Annex I Parties. The Kyoto Protocol introduced additional requirements for Annex I Parties in order to evaluate their compliance with emissions-reduction targets.

Annex I Parties are required to prepare annual inventories in accordance with the IPCC guidelines and good practice guidance. They are also required to report inventory information according to a standardized format, including a National Inventory Report (NIR) and a Common Reporting Format (CRF). The NIR provides qualitative information regarding institutional arrangements, processes, methodologies and other topics that serve to place inventory data in context and enhance transparency and comparability of reported information. The CRF provides a standardized structure for reporting quantitative inventory data. Annex I inventories are subject to an expert review process.

Non-Annex I Parties are also required to prepare national GHG inventories. In contrast to Annex I inventories, which are submitted as stand-alone documents, non-Annex I Parties’ inventories are submitted as part of their national communications. These are not required on a frequent or uniform basis. Non-Annex I countries are expected to prepare an initial inventory (and national communication) using 1990 or 1994 data and a second national communication

using 2000 data. The deadlines for completing these communications depend on when each country receives funding to support its communication. For non-Annex I Parties, the use of IPCC methodologies is optional – although in practice countries usually use them – and only three of the six gases covered by the Kyoto Protocol are required. No specific reporting format is prescribed, although one is recommended, and inventories are not subject to an expert review process.

While national inventories have a fundamental role in assessing the aggregated impact of a country's actions over time, they have two major limitations with regard to MRV of individual NAMAs. First, many of the proposed types of NAMAs are framed at a sub-national level, whereas inventories address national-level emissions. Second, absolute GHG emissions may not be the most appropriate metric by which to assess the implementation of NAMAs, which might be framed in terms of GHG intensity or technology-penetration goals. Therefore, to measure, report, and verify NAMAs, a supplement to the national inventory process is required (Fransen, T., 2009).

The purposes of the inventory in the NAMA framework would be: 1) to provide context to the proposed NAMAs, and 2) to enhance the COP's understanding of developing-country emissions trends. Countries would provide annual or bi-annual (depending on the international agreement) inventories covering, at a minimum, the sector(s) and gas(es) affected by supported NAMAs, and all sectors and gases as capacities permit. These inventories would not be subject to international verification, but might undergo periodic facilitative reviews in the interest of enhancing developing-country inventory capacity. Countries with very low emissions and limited capacity, such as the least-developed countries, might be exempt from the inventory requirement (Fransen, T., 2009).

Additional components of the comprehensive NAMA MRV makeup could be a system whereby every developing country reports transparently in accordance with consistent international standards on their mitigation and sink-enhancement actions, how many offsets they are producing, the nature of those offsets, and the degree of deviation from the BAU.

National Communications

The existing "national communication system" offers a non-inventory element of reporting on NAMAs. Both Annex I and non-Annex I countries are to report on mitigation activities in these documents. Annex I countries must report a standardized set of information on each policy or measure, including its objective, the sector(s) and gas(es) it affects, its type (economic, fiscal, etc.), the status of its implementation, and the implementing entity. They are asked, but not required, to quantify the expected impact of each policy or measure, although there are no standardized methodologies for doing so. They are also asked to project future emissions scenarios both with and without the policies and measures. Countries implement these guidelines in different ways.

Non-Annex I countries are asked to report in a general manner on programs containing mitigation measures, and countries have responded to this request very differently. Non-Annex I national communications lack standardized measurement and reporting guidelines, and are not subject to verification or review. Therefore, the existing national communication process would need to be revised or replaced with an alternative supplement to national inventories to enable the measurement, reporting and verification of developing-country NAMAs (Fransen, T., 2009).

The reformed national communications tool could be used by developing countries to report their on-going and already implemented unilateral, supported and credit-generating NAMAs – an ex-post component that is currently the core of the national communications mitigation section. In addition, countries could be required to indicate their proposed actions (unilateral, supported and credit-generating) and their impacts on sectoral and national GHG emissions. This ex-ante feature would be a new element of national communications. Along with the proposed actions, countries could be required to indicate what MRV procedures they intend to use. In fact, the same ex-ante requirement could be introduced for the national communication requirements of developed countries. National communications review process would be used to conduct assessments of both sections of national communications: ex-post (as it is currently done) and ex-ante – of what countries intend to do. The Subsidiary Body on Implementation (SBI) could be in charge of delivering an official "resume" of countries' past actions and their correspondence to earlier proposed baselines, deviation trajectories (for developing countries) and tracking compliance (for developed countries). It could also provide an opinion of countries' proposed actions and their consistency with their LCDSs (for developing countries) and with internationally agreed MRV and offsetting rules (for both developing and developed countries).

In the ex-post section of national communications, developing countries could also report on the support that they have received from bi-lateral and multilateral NAMA financing agencies for their NAMA implementation.

MRV of Unilateral, Supported and Credit-Generating Actions by Developing Countries

To facilitate accountability and provide for confidence in the NAMA financing system, standardized rules will have to be applied to the ways developing countries will measure and report: 1) actions supported by developed countries (and any unilateral actions that precede these supported actions); 2) progress towards meeting crediting baselines; 3) emissions reductions sold on the international market; and 4) the way developed countries measure and report their support for developing countries. The agreed guidance will also be needed on verification procedures, such as what types of institutions would be able to perform verification, how international accreditation of verifying agencies will be conducted and by whom, and which actions will be subject to more stringent verification procedures by international bodies.

There is still substantial debate over whether unilateral actions by developing countries should be measured, reported and verified in same manner as supported and credit-generating NAMAs. Many developing-country Parties do not object to reporting their actions and associated emission reductions, but they favor measurement according to their internal rules and methodologies and oppose international verification. The concerns of developing countries with protecting their sovereignty and the voluntary nature of unilateral actions are understandable. In addition, if there is an agreement on regular (annual or bi-annual) reporting of GHG inventories, developing countries' unilateral actions will be reflected in the countries' emission trajectories and how these trajectories resemble the projections that incorporate unilateral actions.

However, it is also important to recognize that, in practice, unilateral actions will have to be measured, reported and verified in the same manner as supported actions if both take place in the same sector. In order to distinguish emission reductions achieved with the assistance from developed countries from autonomous actions in the same sector, unilateral actions will have to go through similar MRV procedures as supported NAMAs.

If unilateral actions take place in sectors where no supported NAMAs are proposed, they would still have to be measured and reported according to standardized guidelines in order to provide for coherence and comparability of actions of various developing countries. They could be verified at the national level, according to international guidelines.

MRV requirements for supported NAMAs would have to ensure: 1) that the mitigation support is being properly and efficiently deployed, and 2) that the expected results (which may not always involve GHG reductions or removals) are being realized. Credit-generating NAMAs may be subject to more stringent MRV requirements. In addition, meeting MRV requirements could be a precondition for participation in the international carbon market, as it is now the case with Joint Implementation (JI), the CDM and ETS international credit transactions.

Verification and Review

Verification seems to be a more contentious issue than monitoring and reporting. However, verification is the tool that assures confidence in the system and thus has to be accepted by all Parties. National verification according to internationally-agreed rules could be a compromise solution. All NAMAs should be verified at least at the national level. Supported and credit-generating NAMAs would probably be required to be verified internationally as well. The methodologies for the national verification process should be open to international auditing. National NAMA Coordination Committees that may be established to guide the NAMA process domestically could play an important role in the verification process.

A periodic review of country programs and goals could also support countries to respond to new developments. A review process could be a type of verification that is more constructive and encourages dialogue among the Parties.

A public review process, modeled on the World Trade Organization (WTO) process, would be implemented by the SBI of the UNFCCC. Following the WTO model, the governing body could be in charge of reviews. The reviews would therefore be essentially peer-group assessments, although much of the factual leg-work would be done by the NAMA financing mechanism secretariat.

The objectives of the review process would be:

- To increase the transparency and understanding of countries' policies and actions, through regular monitoring;
- To improve the quality of public and intergovernmental debate on the issues; and
- To enable a multilateral assessment of the effects of policies and actions on the global GHG emissions.

All Parties (developed and developing) would be subject to review under the review mechanism. Several Parties with the largest shares of global GHG emissions could be reviewed every two years, the next X (16 countries in the WTO system) could be reviewed every four years, and others be reviewed every six years. A longer period may be fixed for LDCs. Under the WTO, some flexibility in the review of the largest members was introduced, which could be considered also for a climate treaty. Flexibility of up to six months was introduced into the review cycles, and it was agreed that every second review of each of the first four trading entities should be an "interim" review.

Reviews could be conducted by the governing body on the basis of a policy statement by the Party under review and a report prepared by the secretariat (or its review division). In preparing its report, the secretariat would seek the cooperation of the Party, but would have the sole responsibility for the facts presented and views expressed. The report would follow an agreed structure. In practice the reviews could facilitate an enhanced understanding of a country's policies and circumstances, and provide feedback to the reviewed country on its performance in the system.

Developed-country Parties would be required to measure and report on the assistance that they provide for the implementation of NAMAs. They could be required to submit the following information:

- Allocation and transfer of finance for implementation of NAMAs in units of an agreed common currency;
- Technology transfer, including development, deployment, application and diffusion (including description of technologies, units of technology provided or financed, etc.); and
- Support for capacity building according to indicators (including financial support in units of an agreed common currency, know-how, institutions supported, number of people trained, and other applicable units).

Developed countries should also submit their regular annual ODA (official development assistance) numbers (total and by supported country) to demonstrate that NAMA assistance is done in addition to regular ODA.

V. LOW-CARBON DEVELOPMENT STRATEGIES

The process by which developing countries would officially announce their NAMAs has not yet been determined. However, it has been proposed that each developing country put forward a climate plan or Low-Carbon Development Strategy that would identify mitigation opportunities and outline in general terms types of NAMAs that it intends to implement. LCDSs would be a useful tool to: 1) ensure coherence of individual national NAMAs, 2) help plan and implement a broad range of mitigation activities, and 3) detail a pathway to a low-carbon future that each country elects to follow. This sort of comprehensive strategy would also be helpful in reviewing and evaluating individual NAMAs and developing long-term financing and technical-assistance plans for NAMA implementation. A long-term vision would ensure that funds are used efficiently and would create a framework that makes NAMA evaluation simpler (as countries would not need to explain the context of each NAMA). There is considerable potential for NAMAs to link with developing countries' development plans through the formulation of these LCDSs – keeping in mind, however, that if financing for developing-country actions is uncertain, it will be substantially more difficult for governments to incorporate NAMAs into national development plans.

LCDSs could incorporate broad types of NAMAs within a given country. For example, a country could envision REDD activities, energy-efficiency measures, transportation-sector policies and technology deployment as part of its LCDS. These strategies should not simply be a mitigation-modeling exercise, but rather should attempt an economy-wide paradigm shift in which opportunity is emphasized. National priorities for sustainable development should be given extra weight when cost-effectiveness is analyzed; some actions could be more expensive than others but fit better with national sustainable-development and security priorities. Collectively, these activities could facilitate stronger mitigation efforts by developing countries and their private sectors beyond those actions that are funded through multilateral financial assistance.

Ideally, Low-Carbon Development Strategies would include national BAU emissions projections and emissions trajectories that could be achieved with the implementation of various types of NAMAs. This would be an indication of intentions conditional on many factors, including available international financial and technological support, but also national and international macroeconomic conditions (e.g., oil prices, changes in gross domestic product, population growth, political factors and natural disasters).

Some developing countries have expressed concern that LCDSs will require a great deal of additional work and present an unfair burden. However, the level of effort required to develop LCDSs would depend on specific requirements for these strategies – to which Parties will agree. Developing countries generally welcome assistance from developed countries in elaborating these plans, and many countries argue that policy choices would not have to be made in these strategies, but rather merely identified. LCDSs could combine sustainable-development and climate-change strategies that already exist in many developing countries, to be supplemented by a package of proposed NAMAs. Regardless, the main purpose of LCDSs would be to provide a comprehensive outlook on policies, measures, strategies and actions in each country that facilitate a shift to low-carbon development. They could be organized by sector where appropriate but also include cross-sectoral policies and goals. National GHG inventories will be an important factual information component in tracking the progress toward low-carbon development.

Requirements for comprehensive strategies and plans are not new to the post-2012 proposals. For example, under the World Bank's Clean Technology Fund (CTF), eligible countries are required to work with the World Bank and respective regional development banks to develop a clean-technology investment plan, as a basis for accessing CTF financing for programs that meet the requisite criteria. The plan identifies the major sources of GHG emissions in the country and major opportunities for mitigation and justifies proposed priorities for which CTF support is sought.

The Forest Carbon Partnership Facility (FCPF) is another example. In order to participate in the FCPF, countries have to develop Readiness Project Idea Notes (R-PINs) explaining their approach to REDD. Under the Montreal Protocol Multilateral Fund, eligible countries work with implementing agencies (the World Bank, the UN Development Program, the UN Environment Program, and the UN Industrial Development Organization) to develop country programs and set voluntary interim goals. Country programs typically contain prospective regulatory frameworks and legislation that would eliminate ozone-depleting substances, systems for monitoring progress in implementation, and the estimated incremental costs of action.

Several important lessons could be extracted from these previous experiences with comprehensive strategies as a component of a financing mechanism:

- More emphasis is needed on government, private-sector and civil-society stakeholders' engagement in the process of strategy development.
- Strategy should be viewed as a living document.
- More emphasis is needed on issues of institutional capacity and governance in the sectors where actions are proposed.
- Strategies should first be drafted by the host government with limited (if any) involvement of international organizations and consultants. International expertise could be involved at a subsequent stage of the strategy refinement and improvement. This would allow for higher commitment of the host government to the objectives set by the strategy.

- Readiness support should be an essential component of strategy development and implementation.
- Institutional strengthening activities should be integrated into the scope of the strategy. Country coordination, information, training, and other forms of capacity-building support would be necessary to achieve the strategy objectives.

LCDSs should not be a prerequisite for receiving assistance for NAMAs. In early stages of the NAMA framework implementation, it is conceivable that some NAMAs could be developed earlier than national comprehensive LCDSs. Thus, early-stage NAMAs would be submitted, evaluated and granted assistance without requiring consistency with a national long-term LCDS.

However, comprehensive *sectoral* LCDSs may be necessary. Some sectors, such as forestry and transport, would require sectoral strategies in order to demonstrate coherence of proposed NAMAs and address sub-national leakage concerns. In addition, an international NAMA support system may be designed to encourage the development of LCDSs by offering assistance to developing countries for producing them and also allowing greater flexibility to developing countries that have these strategies in applying for support for NAMA implementation (giving them a choice of shopping around rather than submitting NAMAs to the centralized body).

The LCDS would undergo review by a technical panel, which would assess the national inventory, emission projection, estimated NAMAs mitigation potential, and adequacy of the proposed implementation metric from a technical perspective. Following review and approval by the technical panel, the Low-Carbon Development Strategy would become official.

VI. READINESS PHASE AND FAST START

Despite the delay in reaching an international agreement on the post-2012 commitments and architecture, the process of building partnerships and engaging developing countries in a more comprehensive manner into a global effort on GHG mitigation could start now with a readiness phase. The readiness phase could start in 2010 and last for 3 to 4 years until the new architecture is launched. The readiness phase should be an integral part of fast-start financing. Thus, the fast-start financing would have three key objectives:

1. To support priority adaptation actions in the most vulnerable countries;
2. To build capacity in developing countries to participate in the NAMA framework; and
3. To support pilot NAMAs in REDD and priority industrial sectors.

The UNFCCC estimated that the readiness phase will require about US$10 billion over three years starting in 2010. The EU has estimated the annual need for fast-start financing for adaptation, mitigation, research and capacity building in developing countries between 2010 and 2012 to be between 5 and 7 billion Euros (or US$7.5-10.5 billion).

The readiness support would focus on building capacity and tools for participation in the NAMA framework and should help countries to:

- Prepare comprehensive Low-Carbon Development Strategies;
- Examine LCDSs for countries that already have national climate-change plans;
- Prepare sector-wide LCDSs for selected sectors;
- Establish national MRV system for emissions and reductions following internationally agreed requirements;
- Establish and test methodologies for GHG accounting and projections;

- Set BAU and reference scenarios for selected sectoral emissions;
- Scope out national strategies for participation in the global carbon market;
- Build on the on-going readiness activities for REDD and start implementing REDD policies;
- Launch NAMA pilots;
- Develop financial institutional and regulatory capacity to be able to absorb large-scale assistance under the NAMA framework; and
- Develop National NAMA Coordination Committees and build their capacity.

For the readiness phase to be promptly launched the following conditions are needed:

- COP decision;
- Clear reference that this is a transitional phase, not post-2012 structure (need to avoid any prejudgment on what NAMAs would be);
- Defined priority areas (capacity building, REDD, adaptation, data systems, LCDS);
- Engagement of existing multilateral and bilateral institutions: WB, GEF, AF, bilateral aid agencies; New institutions will require time and international decisions to be built.
- Defined guiding principles so that readiness activities could be distinguished from regular ODA capacity building projects; and
- Requirement for SBI to develop a lessons learned report mid term and at the end of the readiness/fast-start phase to inform future decision-making.

Capacity building would likely be a first step for many countries in the process of proposing and implementing NAMAs. Capacity building will be the main element of the Readiness Phase. The initiation and successful implementation of NAMAs and the efficient use of financial assistance from developed countries will require the following elements that could be addressed in the readiness phase:

- Strong data-collection systems;
- Institutions for monitoring implementation of actions and emissions reductions;
- Financial institutions capable of handling the influx of climate finance and the generation of carbon credits (if a country decides to participate in a credit-generating NAMA category in the future); and
- Increased technology research and development.

REDD offers an example of how a readiness phase could be designed and implemented as well as some insights of this phase's importance. REDD readiness actions are already underway through two international programs funded by a number of governments and private entities. These are the UN-REDD Programme and the Readiness Mechanism of the World Bank's FCPF. Readiness work through these two programs is geared at building both the technical and institutional capacity for countries to participate in REDD. This includes helping government institutions to: 1) develop national REDD strategies as part of low-carbon growth and poverty alleviation; 2) identify drivers of deforestation; 3) establish emissions-reference scenarios; 4) develop data-collection systems to accurately measure, report and verify emissions and sinks; and 5) work with indigenous groups, forest communities and other forest stakeholders to ensure parallel goals of forest protection and equitable and sustainable use of the resources are achieved. Currently, a total of nine countries have access to funding through UN-REDD, and an additional five have been granted observer status. A total of 37 nations participate in the FCPF, a number of which also participate in UN-REDD. Although far below what is estimated to be needed in the short term, total contributions to the UN-REDD fund are just over US$54 million and the FCPF Readiness Mechanism fund now tops US$185 million.

These programs provide opportunities for developing countries to access funding now to begin the early work to implement REDD. By targeting countries with forests at high risk of deforestation in the short-term, immediate action can be taken to arrest the drivers of deforestation, without waiting for an international framework for REDD to kick in. Equally important, participation in these programs has an added benefit by legitimizing the REDD efforts in these countries which can attract financing from other donors to conduct additional REDD pilot activities. For example, the FCPF and UN REDD work to coordinate their respective efforts and also leverage additional funding for REDD actions by partnering with other entities including the Global Environment Facility's Tropical Forest Account, the Government of Norway's International Climate and Forests Initiative, Australia's International Forest Carbon Initiative, and the Collaborative Partnership on Tropical Forests. Finally, countries where initial groundwork on REDD has already commenced build confidence in the programs for supplemental and private sector investment down the road. There is no question that readiness efforts in these countries over the next few years will position them well ahead of the game once an international NAMA framework is agreed to and launched, and that they will be first in line to participate in cooperative and crediting NAMAs for REDD.

Current readiness actions in the REDD sector clearly demonstrate both the critical need for – and the benefits to be yielded from – investment in equivalent readiness actions over the next 3 to 4 years to prepare other sectors, such as cement, electricity, iron and steel, transportation, and others to participate meaningfully in a future NAMA framework.

ANNEX I: EXAMPLES OF NAMA WINDOWS

Section III above proposed several windows for financing NAMAs with distinct characteristics in order to encourage mitigation actions in all carbon-intensive sectors and through various implementation time scales (from short-term mitigation actions to long-term transformational policies). The paper proposes the following windows: NAMAs in big industrial sectors and the energy sector (including demand side); capacity-building activities; transformational NAMAs; NAMAs in the transportation sector; REDD NAMAs; agriculture-sector NAMAs; NAMAs in other sectors; and LDC NAMAs. This section discusses three of these proposed windows.

Capacity-Building NAMA Window

Upfront capacity building will be critical to the success of the NAMA architecture. A fast start on this, like that which has occurred with REDD through the Forest Carbon Partnership Program, will be key as well. Capacity-building support could include activities in all of the key sectors or groups of sectors (cross-sectoral activities). Capacity building would probably be funded at a full cost. Criteria for making capacity-building funding available to countries could include:

- Host-country government commitment to follow through on the proposed activities in a consistent and sustainable manner (which can be reflected in assigning governmental institutions to be charged with this activity, having a regulation or law that makes this activity consistent with national priorities, etc.);
- Consistency with national laws and regulations;
- Consistency with national strategies and plans; and
- Recognized methodologies (if data collection and data system building is involved).

While capacity building is proposed as a separate window, it is clear that many NAMAs in many sectors could have a capacity-building component. It seems logical to suggest that capacity-building activities proposed for specific actions in specific sectors are integrated in the relevant NAMA windows, and cross-sectoral more general capacity-building activities (e.g., development of data systems, modeling capacity, establishment of new institutions) would be funded through a distinct capacity-building window. For example, proposed NAMAs in the energy sector could include a minimum energy performance standard for electric motors in line with international best practice. This NAMA may need to include a capacity-building component that examines barriers to optimizing energy efficiency in electric motors and designs a comprehensive policy portfolio aimed at overcoming such barriers (IEA, 2009). Since this capacity-building component is directly linked to the implementation of the policy target that is set by a larger NAMA, it should be integrated in the energy sector window. However, we recommend that a certain percent of total funding in that window be set aside for capacity-building activities. The distinct capacity-building window would probably be the place where developing countries could receive assistance for the development of comprehensive LCDSs and sector-specific LCDSs. Cross-sectoral capacity-building activities such as development of data systems and methodologies and development of modeling capacity could also be funded through the capacity-building window.

Capacity-building activities do not produce GHG-emission reductions but they set the foundation for these reductions and/or enhancements of sinks to occur through providing policy choices; securing accountability through accurate measurement and reporting; creating enforcement procedures; and developing human and technical capacity to manage the needed institutional and regulatory infrastructure. However, capacity-building activities could be effective only if they are engrained in domestic regulatory and institutional processes and have the engagement of and commitment from the national government to follow through.

REDD NAMA Window

If actions to address deforestation are selected to serve as NAMAs, the uniqueness of REDD from other sectors – such as electricity, cement, iron and steel or transportation – will necessitate separate MRV criteria, particularly with respect to issues such as permanence and leakage. REDD is also distinct in that it lacks discrete, technology-based solutions that yield consistent quantified emission reductions. Solutions for reducing deforestation in fact vary from one forested area to the next within the same country, as do the actual reductions in carbon achieved from one hectare to the next. Also, REDD actions need to work effectively for both countries with high rates of deforestation and those with high forest cover that may be at risk of being cleared in the future.

Apart from its unique characteristics, specific aspects of REDD make it a good fit for NAMAs on the whole. First, a three-stage approach to building REDD at the national level (widely discussed as readiness, implementation and credit-generating, (Arild, A., et.al. 2009) works conveniently with the three categories of NAMAs. In addition to readiness and other preparatory implementation measures, many low-cost REDD actions are available to host countries in meeting their unilateral NAMA commitments, leaving higher-cost REDD actions open for conditional financing or credit generation. This allows "low-hanging fruit" to be plucked by the host country, rather than by developed nations looking for cheap offsets. Second, unilateral deforestation-reduction strategies like agricultural intensification and sustainable forest management are both achievable and fit well as part of an LCDS. Third, while separate criteria would be used to establish and meet a REDD crediting baseline, once achieved it would become functionally compatible with a NAMA crediting baseline. Finally, views on which REDD+ activities should be included in a future mechanism differ widely among the Parties and have bogged down the negotiations, delaying achievement of early emissions reductions. NAMAs could allow early flexibility to explore a range of REDD+ activities – such as enhancement of carbon stocks and sustainable management of forests – and yield REDD reductions sooner rather than waiting for agreement on a separate mechanism.

Despite these selling points, valid challenges and concerns with the REDD-as-a-NAMA approach do exist and must be addressed. For example, allowing nations to choose REDD as a NAMA could provoke competition with other sectors for financing and potentially pit one nation against another. While certain countries suffer the bulk of their emissions from deforestation, others will bear the weight from industry. Whichever sector produces the least-cost reductions will out-compete the other for the same pot of money. The window approach promises to reduce this risk significantly. In addition, it seems that many developed countries have a preference for financing REDD actions in developing countries over other types of NAMAs. For example, both the legislation passed by the U.S. House of Representatives and the bill reported by the Senate Environment and Public Works Committee include a provision that sets aside 5 percent of the allowances in the domestic cap-and-trade system to finance REDD measures in developing countries. Therefore, it is conceivable that funds will be earmarked up front by developed nations for REDD activities.

Unlike major industrial sectors, the forestry sector does not pose any competitiveness concerns. Sources for REDD funding that are already established – including the World Bank, UN-REDD and others – could be maintained and accessed through a channel separate from mainstream NAMA financing.

Clearly, REDD methodologies are and must remain distinct from those of industrial sectors. Concerns have been voiced that this issue alone makes the NAMA framework unworkable for

REDD. However, mandating REDD-specific crediting criteria through a separate window of implementation would alleviate this concern by allowing REDD activities to be carried out consistent with a separate methodology. Establishing criteria that countries should meet as a basis for accessing the global carbon market can also relieve the fears that REDD credits may flood the carbon market or that poor-quality REDD offsets will weaken the environmental integrity of the overall climate program. Although REDD is integrated into the NAMA architecture, it still follows its own path toward crediting.

Perhaps the greatest challenge rests in the complexity of the socioeconomic dynamics surrounding deforestation and its solutions. Beyond the questions of quality of emission reductions and potential leakage concerns, REDD actions must also be mindful of, and where possible address, the impacts on local communities, indigenous peoples, gender inequity, poverty and biodiversity, among others. Allowing REDD actions through NAMAs runs the risk that these issues and concerns will be inadequately addressed or neglected entirely in the race to produce measurable tons of reductions. Yet, in this case also, the separate REDD window can accommodate these concerns by building specific requirements into the methodology throughout all three NAMA categories. Meeting these requirements would be among the necessary milestones for achieving a crediting baseline. In this way, stipulations on transparency of process and distribution of revenues from carbon payments, consultation and involvement of local communities and indigenous peoples, prioritization of REDD actions that benefit biodiversity and climate resilience, and others, would strengthen the integrity of REDD as a NAMA.

Transportation-Sector NAMA Window

In principle, the transportation sector is a good fit for NAMAs. There are numerous low- and negative-cost mitigation options in the sector, including vehicle-efficiency improvements; land-use planning to reduce the need to travel; and reductions in fuel subsidies or changes in tax regimes to favor lower-carbon fuels. Although a substantial public-sector investment is required, such as with public transport infrastructure, co-benefits such as reduced local air pollution and economic development will often exceed project costs, even without considering GHG reductions.

There is thus a range of projects that could be funded through a transportation window for supported NAMAs. However, the funding likely available through a NAMA window will be small in comparison to total investment in transportation infrastructure and vehicles. Thus, supported NAMAs should seek to leverage limited funding to promote wider changes in transportation policies. In particular, NAMA funding should be available for the development of Low-Carbon Transportation Plans; for economic feasibility studies of the development of fuel economy standards and low-carbon fuel requirements; and other capacity-building and enabling measures. In addition, "bundled NAMAs," in which funding for infrastructure projects is conditional on a host country implementing supportive measures unilaterally, would be an attractive approach. For example, funding for a rail system might be conditional on the implementation of smart-growth, land-use planning measures in the rail corridor.

Emissions reductions from transportation projects are often difficult to measure precisely. Similar to forestry, the transportation sector lacks discrete, technology-based solutions that yield consistent quantified emissions reductions, particularly for measures that address travel demand and mode shift. For land-use planning measures and public transportation infrastructure, for example, reductions in vehicle travel through changes in development patterns are perhaps the most important long-term pathway for emissions reductions, but these

can only be measured imprecisely through metropolitan travel demand models. Furthermore, additionality can be difficult to demonstrate for most transportation projects. Coupled with the lack of success of transportation projects in the CDM to date, this suggests that credit-generating NAMAs are not a promising option for transportation at the current state of methodologies and data availability for this sector. In contrast, supported NAMAs seem to be an ideal approach for mobilizing cooperative efforts between developing and developed countries to reduce emissions from the transportation sector, and for creating incentives for long-term change in the carbon footprint from land use and transportation. Changes in this sector are also critical to achieving developing-country sustainable development, livability, air quality, and energy-security goals.

ANNEX II: PROPOSAL FOR A NAMA SUBMISSION FORM

Country:

NAMA Title:

NAMA Category (unilateral, supported, for crediting):

NAMA Type/Window (a choice will be offered):

NAMA Description:

BAU:

1. Reference value (e.g., emissions, emissions intensity, energy intensity, technology deployment level):

2. Reference Year:

3. Commitment Period:

4. Business-As-Usual (BAU) Conditions during Commitment Period:

5. BAU Methodology:

NAMA:

6. Unilateral Commitment:

   a. Goal for Commitment Period:

   b. Expected Emissions Reductions from BAU over Commitment Period:

   c. Cost of Attaining Unilateral Commitment:

   d. Methodology Used to Determine Emissions Reductions and Costs:

7. Cooperative/Supported Commitment:

   a. Goal for Commitment Period:

   b. Expected Emissions Reductions from BAU over Commitment Period:

   c. Cost of Attaining Conditional Commitment:

   d. Methodology Used to Determine Emissions Reductions and Costs:

   e. Support Request:

f. Reason for Support Request:

8. Crediting Baseline:

a. Proposed Crediting Baseline:

b. Expected Emissions Reductions from BAU over Commitment Period:

c. Cost of Attaining Crediting Baseline:

d. Methodologies Used to Determine Crediting Baseline, Emissions Reductions and Costs:

9. Consistency with either sectoral or national Low Carbon Development Strategy

10. MRV Plan:

11. Co-benefits or other considerations:

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