



Beyond Carbon Financing: THE ROLE OF SUSTAINABLE DEVELOPMENT POLICIES AND MEASURES IN REDD

Florence Daviet

EXECUTIVE SUMMARY

BY DECEMBER 2009 THE 191 PARTIES TO THE UN Framework Convention on Climate Change (UNFCCC) are expected to have drawn up the next global climate agreement. The Bali Action Plan (BAP), on which the UNFCCC parties agreed in December 2007, provides the road map for this new agreement. Under the BAP, both developed and developing countries will need to take nationally appropriate mitigation actions, known as NAMAs, to reduce their greenhouse gas emissions. The parties also agreed that these actions would be measurable, reportable, and verifiable (MRV) and that the developed countries would help with the developing countries' NAMAs by providing support in the form of financing, technology transfer, and capacity building.

Unlike the Kyoto Protocol, the BAP affirms the importance of reducing deforestation, which accounts for 17 to 20 percent of the world's annual greenhouse gas emissions, as a strategy for mitigating climate change. It specifies "policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries" (REDD) to be included in the NAMAs that countries can undertake (UNFCCC 2007, 3; FCCC/CP/2007/6/Add.1 Decision 1).

For many experts, the term *REDD* has become synonymous with a carbon-financing approach, in which the developing countries' reduction of emissions from forests is supported by the developed countries' purchase of carbon credits, which they can use to meet their own emissions reduction or other obligations. In the Bali Action Plan's REDD (Decision 2 FCCC/CP/2007/6/Add.1), however, the term is defined more broadly to include a range of actions by both developing and developed countries to address the drivers of deforestation (UNFCCC 2007, 8). In this paper we use the term *sustainable development policies and measures* (SDPAMs) to refer to this broader set of options for REDD actions that can be NAMAs.

Because deforestation and forest degradation account for a significant portion of many developing countries' greenhouse gas emissions, addressing the drivers of forest degradation and loss could have a major positive impact on the global effort to counter climate change. It therefore is vital that the climate negotiators in Poznan recognize and encourage those countries that undertake sustainable development policies and measures to reduce forest-related emissions in developing countries.

Carbon Financing: Not a Panacea

To date, the discussions regarding REDD have been concerned with whether and how a carbon-financing approach could be used to create “positive incentives”—namely, financial flows—for reducing forest loss and degradation in developing countries.

For carbon financing to work, developing countries need to demonstrate that they can quantify market-quality emission reductions at either a subnational or a national level. This includes setting credible baselines (known as *reference scenarios*) showing that deforestation has not simply shifted from one place to another (known as *leakage*) and making certain that the emissions reductions will be permanent. These requirements will likely present significant barriers for many developing countries wishing to take NAMAs to reduce forest loss and degradation. For example,

1. In countries with historically low rates of deforestation, it is difficult to predict, for the reference scenario, reliable future rates and their related emissions. Attempts to project rates of deforestation may thus decrease the credibility of a carbon-financing mechanism.
2. In countries where deforestation and forest degradation are caused by highly unpredictable drivers (such as fires, droughts, insects, and external demand for products), setting reliable reference scenarios and defining where activities taken or not taken result in emission reductions may be particularly difficult.
3. In countries where the institutions that govern forests are especially weak, the capability of implementing policies that result in credible and permanent emissions reductions will be limited.

In addition, where the principal driver of deforestation or forest degradation is linked to the global demand for timber, food, or fuel, effective action means that consumer countries would address questions of demand and promote the procurement of sustainably produced products.

Framing the Alternatives: Sustainable Development Policies and Measures

The BAP does not specify that the actions that countries take to achieve REDD have to meet the quantification standards required for a carbon-financing scheme or support a carbon-financing mechanism. Rather, it simply states that these actions must be measurable, reportable, and verifiable.

For many of the policies and measures that developing and developed countries could use to address the drivers of deforestation

measuring reductions of greenhouse gas emissions with sufficient certainty for a carbon-financing mechanism may not be appropriate. For instance, building institutional capability to reduce fires or combat illegal logging may be hard to quantify in terms of absolute emissions reductions but will nonetheless have an important positive impact on REDD. The implementation of such measures should therefore be measured, reported, and verified using non-greenhouse gas metrics.

To help developing countries implement such approaches to REDD, developed countries should provide the financial, technical, and capacity-building support for concrete actions taken outside a carbon-financing framework. This support should still be linked to performance metrics, but the metrics should be broader than the tons of carbon dioxide not emitted. Support could be generated by selling allowances in developed countries' national cap-and-trade programs. Such funding may be applicable to a wider range of actors and actions than possible with carbon financing alone. For instance, support for sustainable development policies and measures could help countries with NAMAs to clarify land tenure, build firefighting capabilities, or track the legality of wood products for REDD.

The governments of both developed and developing countries could take complementary actions that are not related to managing their own forests. For example, they could implement policies to decrease the import and use of illegal products that have resulted in deforestation or forest degradation, which would also create a positive incentive for stronger forest management. The United States has recently taken such a step through an amendment of the Lacey Act that bans the import of illegally sourced timber and wood products. Actions like these support all timber-producing countries seeking to address illegality within their borders, and they increase the value of forests and sustainably produced timber. Indeed, the coordination of such policies by several countries could significantly change the timber market's dynamics. Furthermore, this approach would lower the risk that less logging in one country would translate into unsustainable practices in another.

Nationally appropriate mitigation actions that the WRI broadly defines as “sustainable development policies and measures” already are part of the climate negotiations for other emitting sectors, such as energy and industry. Adopting such an approach for the forest sector has the added value that it can focus a country's attention on REDD actions that, once implemented, will have benefits over the long term even without carbon financing.

Recommendations and Next Steps

The following recommendations are meant to encourage all countries to develop and support sustainable development policies and measures that help reduce forest degradation and loss in developing countries:

- Developed countries should encourage and support developing countries to take actions to reduce forest degradation and loss under NAMAs, including sustainable development policies and measures that do not provide tradable carbon credits.
- Climate negotiators should support a range of approaches in the climate agreement to measure, report, and verify REDD NAMAs.
- Both developed and developing countries should adopt policies to slow the consumption of products that drive illegal deforestation as NAMAs, and they should start with the illegal timber trade.

Further work is urgently required in advance of the Copenhagen Conference of Parties (COP) meeting in 2009 to develop and refine the metrics for measuring, reporting, and verifying measures taken to reduce forest degradation and loss outside carbon-financing schemes. They include the following:

- Spelling out additional acceptable MRV performance metrics.
- Determining how different countries' activities can be both significant and comparable.
- Explaining how developing countries can combine carbon financing and other approaches to reduce forest loss and degradation.
- Exploring sources of sustainable funding and other incentives to support sustainable development policies and measures to achieve REDD.



I. HEALTHY FOREST ECOSYSTEMS AND CLIMATE CHANGE

Healthy forest ecosystems are a crucial part of mitigating, and adapting to, climate change. The current emissions from deforestation and forest degradation represent between 17 and 25 percent of annual emissions (IPCC 2007) and roughly 25 percent of total global greenhouse gas (GHG) emissions (Houghton 2005). In addition to their value for mitigating climate change, forest ecosystems provide important services, such as regulating water and soil quality and quantity, which in turn provide further services needed for livelihoods and health, such as agriculture, energy, and potable water (MEA 2005). As weather patterns become increasingly unpredictable and extreme weather events more common (IPCC 2007), these services will become even more important to shelter a growing human population from the impacts of climate change. Because more than one in four of the world's poor people depend directly on forests for their livelihood (World Bank 2000), ensuring the long-term health of the planet's green cover is imperative.

Reversing current emissions levels, protecting from future emissions, and ensuring that forests are able to help humans adapt to climate change will require a range of approaches:

- **Slowing high rates of forest loss and degradation.** Besides reducing current emissions, actions to slow forest loss and degradation are needed to increase forests' resilience to climate changes (Mackey 2008). Forests that already have been degraded and are vulnerable because of other stresses are more likely to reach a tipping point created by local environmental changes. If this happens, such forests could become huge sources of greenhouse gas emissions. Research using climate change models has shown that, for example, if the Amazon continues to be stressed by deforestation and degradation, it will become increasingly vulnerable to droughts. Droughts are predicted to become more frequent (Marengo 2006) and could transform the entire ecosystem into a savannah by 2050 (Nepstad et al. 2008).
- **Protecting existing forest ecosystems that are endangered.** Globally, forest landscapes store an estimated 283 gigatonnes of carbon in biomass alone (FAO 2006). When the carbon stored in forest deadwood, litter, and soil is added to this amount, the figure soars to an estimated 1 trillion tonnes, around 50 percent more than the amount contained in the earth's atmosphere (FAO 2006). Some of the highest concentrations of carbon sequestration and storage are found in primary forests in developing countries (IPCC 2007), so these ecosystems need to remain stable if we are to mitigate climate change.

- **Restoring lost native forest ecosystems.** Although it takes longer to see the benefits of restoring degraded and lost native forest ecosystems, these actions may be necessary to mitigate climate change to the extent required.

Accordingly, the next international treaty on climate change should recognize the importance of both supporting a range of forest management practices worldwide that will maintain healthy forest ecosystems over time and creating methods to support those developing countries that take such actions.

II. FRAMING FOREST-RELATED CLIMATE ACTIONS: THE BALI ACTION PLAN

The Bali Action Plan (BAP), on which the UNFCCC parties agreed in December 2007, provides the road map for a new climate agreement that is scheduled to be concluded at the Copenhagen Conference of Parties (COP) meeting in December 2009. Under the BAP, both developed and developing countries will need to take nationally appropriate mitigation actions, known as NAMAs, to reduce their greenhouse gas emissions. The parties also agreed that these actions would be measurable, reportable, and verifiable (MRV) and that the developed countries would support the developing countries' NAMAs with financing, technology transfer, and capacity-building activities.

Unlike the Kyoto Protocol, the BAP affirms the importance of reducing deforestation as a strategy for mitigating climate change. It specifies "policy approaches and positive incentives on issues relating to reducing emissions from deforestation and forest degradation in developing countries" (REDD) be included as NAMAs that countries can undertake (UNFCCC 2007, 3).

For many experts, the term *REDD* has become synonymous with a carbon-financing approach in which the developing countries' reduction of emissions from forests is supported by the developed countries' purchase of carbon credits, which they can use to meet their own emissions reductions or other obligations (e.g., the TDERM approach from Greenpeace 2008). In the Bali Action Plan's REDD annex, the term is defined more broadly to include a range of actions by both developing and developed countries to address the drivers of deforestation. In this paper we use the term *sustainable development policies and measures* (SDPAMs) to refer to this broader set of options for REDD (see box 1 for definitions of climate terms).

Because deforestation and forest degradation account for a significant portion of many developing countries' greenhouse gas emissions, addressing the drivers of forest degradation and loss could

Box 1

Forest and Climate Terms

Forests have created their own terminology in regard to climate policy. Although not all these terms are used consistently, the following are some of the main ones and their definitions in this document:

Nationally Appropriate Mitigation Actions (NAMAs): The Bali Action Plan, which sets the terms for negotiating the next climate agreement, indicates that both developed and developing countries need to take “nationally appropriate mitigation actions.” Developed countries should support developing countries’ NAMAs through finance, technology, and capacity-building activities. Both the actions and the support need to be measurable, reportable, and verifiable (MRV). NAMAs is an inclusive term: besides being defined in GHG terms, other ways of measuring their implementation are possible as well. For example, if a developing country decides to levy a \$30 tax on CO₂ emissions, the implementation of this tax, instead of the country’s resulting reductions in GHG emissions, may be measured, reported, and verified.

Reduced Emissions from Deforestation and Forest Degradation in Developing Countries (REDD): REDD is perhaps the most common term in forest-climate discussions. It is the goal that both developing and developed countries seek to achieve as part of their NAMAs. The goal is to immediately reduce emissions (from countries with high rates of degradation and forest loss), shield the atmosphere from future greenhouse gas emissions by protecting forests at risk of loss and degradation, and restore degraded and lost native forests to create long-term stable landscapes that continue to store carbon. This document uses the term REDD for all activities that maintain healthy forest ecosystems over time, including activities that may or may not be recognized in a carbon-financing mechanism.

Carbon Financing Approach: This paper uses a carbon-financing approach to describe all proposals that seek to achieve REDD using financial flows from developed countries in return for quantified greenhouse gas emission reductions generated by national-level actions in forest-rich developing countries. This approach usually sets a baseline, called a *reference scenario*, representing a rate of

emissions from deforestation and degradation in the developing country. Discussions have indicated that this rate of emissions should be based on historical data, if available. At the end of the commitment period, the actual emissions are compared with this baseline. If the actual emissions exceed the baseline, the penalty is the loss of the “positive incentives;” if the emissions fall below the baseline, the difference is rewarded with “credits” given to the actors, perhaps the government, of the forested country. These credits can then be sold to countries that have obligations to reduce emissions and used—depending on the final rules—to meet these obligations, rather than reducing emissions at home. In sum, any reductions of emissions should be quantified with sufficient credibility to compensate for the emissions reductions that the buyer country should have made. This “baseline and credit” model is familiar in regard to the Clean Development Mechanism (CDM). That is, a carbon-financing approach to REDD effectively treats a country’s forests as a giant CDM project.

Sustainable Development Policies and Measures (SDPAMs): SDPAMs are an alternative or complementary approach that can be used to frame the “policies and positive incentives” discussion for REDD. Developing countries could propose one or more specific policies and measures to achieve REDD. In return, developed countries would offer one or more policies and programs that would supply new financing, technology transfers, and capacity-building activities to create incentives for REDD in developing countries. An example could be setting up a specific fund to support those developing countries taking REDD NAMAs. A developed country could pledge to support a single developing country’s actions, or groups of countries could offer coordinated or complementary nationally appropriate mitigation activities (Bradley et al. 2005). All such activities would need to be measurable, reportable, and verifiable (MRV) so that the countries could be recognized and/or supported for their actions where appropriate, but not in terms of the reduction of GHG emissions as defined for tradable credits. The metrics by which actions would be MRV would depend on the country’s circumstances and the types of actions undertaken.

greatly benefit even those countries whose rates of deforestation are relatively low. For any mechanism to actually achieve change, however, negotiators need to recognize the diversity of the countries’ contexts and possible actions they could take, as well as the limitations that some developing countries will face.

III. CARBON FINANCE: NOT A PANACEA

Much of the discussion about how to best integrate forest-related climate actions in the next international agreement on climate change has focused on a CDM-like carbon-financing approach. Many experts see this approach as a win-win solution. Placing an economic value on emissions reductions, they argue, creates an incentive to control the emissions and offers a new model for financing the protection of forests. Since many economists think that reducing GHG emissions from forests will be relatively inexpensive compared with other mitigation options, they believe that developed country actors seeking to meet their own caps will welcome the opportunity to buy less expensive emissions reductions rather than undertake activities within their own borders (Cabezas and Keohane 2008; Stern 2007). Many thus see this as a long-term strategy for ensuring that developed countries pay developing countries for the global services that their forests provide and for slowing climate change inexpensively.

For carbon financing to work, however, and for the environmental integrity of the climate agreement to be maintained—given the need for the developed and developing countries to undertake nationally appropriate mitigation actions—the developed countries will have to set national caps that they cannot easily meet by undertaking actions only at home, thereby generating the demand for “credits.” For their part, the developing countries will need to demonstrate that they can quantify market-quality emissions reductions on either a subnational or a national level. This includes setting credible baselines (known as *reference scenarios*) showing that the deforestation has not simply shifted from one place to another (known as *leakage*) and that the emissions reductions will be permanent. It also requires showing that the country has sufficient institutional capacity to achieve REDD, which includes the ability to implement programs with the support and trust of the communities that will be affected by them.

These requirements will likely present significant barriers for many developing countries wishing to take nationally appropriate mitigation actions to reduce forest loss and degradation. The requirements are likely to create barriers, especially:

1. In those countries with historically low rates of deforestation and/or forest degradation facing future pressures, as it is difficult to predict, for the reference scenario, reliable future rates and their related emissions. Attempts to project rates of deforestation may thus decrease the credibility of the carbon-financing mechanism.

Box 2

Fires and Carbon Financing: A Bad Fit

In many countries, dealing with forest fires is critical to achieving REDD. For example, both Indonesia and Brazil have had extensive fires during the last 20 years, which have created significant emissions and forest degradation, if not actual deforestation. During the severe drought of 1998, approximately 39,000 km² of standing forest caught fire in the Brazilian Amazon (Alencar et al. 2006, quoted in Nepstad et al. 2008), an area twice the area of Brazil's annual deforestation. In addition, “escaped” fires are estimated to have burned as much as three times more than the areas intentionally converted by landowners (Alencar et al. 1997 cited in Bowman et al. 2008).

Dealing with forest fires would not be an easy policy option to pursue if countries were able to seek support only through carbon financing, for the following reasons:

1. Forest fires often are the result of more than one variable, including rainfall, which human actions cannot influence. Therefore, reducing the incidence of forest fires may not change annual deforestation rates.
2. Methods for capturing fire events in reference scenarios, which the carbon-financing approach requires, may be difficult to design, given their variability.

Hence, even though programs to prevent escaped forest fires could make a significant difference in achieving REDD, such programs might be overlooked if a carbon-financing mechanism is the only available means of supporting, monitoring, reporting, and verifying REDD NAMAs.

2. In those countries where deforestation and forest degradation are caused by highly unpredictable drivers (such as fires, droughts, insects, and external demand for products), as setting reliable reference scenarios may be particularly difficult (see box 2).
3. In those countries where the institutions governing forests are especially weak, as the capacity to implement policies that result in credible and permanent emissions reductions may be limited in the near term. (See box 3 for a description of what would be needed to participate in a carbon-financing mechanism.)

Box 3

Basic Criteria for Credible Offset Credits

Any carbon dioxide credits to be traded or bought must be real, additional, verifiable, permanent, and enforceable, whether between or within developed countries or between developed and developing countries. The following is required in order for emission reductions that will be bought to be credible:

Credible reference scenarios: Setting reference scenarios in which the credit for reducing pollution properly goes to additional emissions reductions means having good historical data on deforestation and forest degradation, emissions information about those activities, and an understanding of the trends driving those emissions.

Credible legal institutions: Credible legal institutions are needed to ensure that REDD programs will be implemented in a manner likely to mean permanent change, with limited leakage within the country, and will address needs of relevant stakeholders, including indigenous peoples' and local communities' needs and rights. These are issues that buyers will weigh when considering investment risks related to programs to achieve REDD in return for offset credits they hope to use or sell.

Rigorous and transparent accounting of emissions and of monitoring: Both monitoring equipment and information about what pollutants and in what amounts are being sent into the atmosphere are needed.

Credible civil society monitoring: Local communities must be able to monitor government activities and speak to any resulting social issues and concerns so that policies or programs can be adjusted.

Rigorous and transparent implementation and enforcement of emission-reducing policies and programs: Programs to reduce emissions must be enforced and backed up by real penalties. Both the enforcement and any violations of these actions must be reported and addressed up front in order to build confidence that the REDD programs are being undertaken seriously and fairly.

Clear property rights: When "emissions reductions" are sold or traded, property rights and the laws supporting them must be clearly understood in order to minimize the risk of a transaction regarding an intangible item (carbon dioxide) (Bell 2006). As Bell notes, "Issues of ownership—even basic comprehension of what it means to be an owner—and of contract rights and obligations are of particular importance for emissions trading" (Bell 2006, 32).

Permanent emission reductions: The party producing the pollution credits must credibly promise that the reductions will continue uninterrupted for quite a long time into the future. In order to issue credits, if the emissions reductions are not believed to be permanent, a mechanism will be required to make reversible reductions/removals functionally equivalent to permanent reductions. This mechanism includes making clear whether the selling or the buying actor is liable for any emissions occurring after receiving the credits.

This list has been adapted for REDD carbon financing from Ruth Greenspan Bell's article "Market Failure" 2006, which looks more broadly at requirements for emission-trading programs in developed and developing countries.

Besides the programs, countries themselves are starting to recognize that a different approach is required to address these concerns. In a meeting on REDD of the parties to the UNFCCC at Accra in August 2008, Papua New Guinea (Conrad 2008), a strong voice in the Coalition for Rainforest Nations and an active supporter of the carbon-financing approach, presented the need for a range of approaches, even for those countries with a high rate of deforestation. Papua New Guinea placed the countries in one of three categories. Category 1 countries would work on establishing basic foundations, structures that would allow the government to take mitigation actions, and those required to MRV their emissions reductions. Category 2 countries would "scale up" their activities to reduce deforestation but might not be able to quantify absolute national-level emissions

reductions. Category 3 countries would be those confident that they could reduce their emissions according to a national-level reference scenario in a manner credible for selling offsets.

During the same meeting, other developing countries voiced concerns about how the international climate treaty framework could recognize the NAMAs of countries with low rates of deforestation. Brazil's delegation especially noted the importance of protecting existing stores of carbon in forest landscapes (Krug 2008).

IV. FRAMING THE ALTERNATIVES: THE SUSTAINABLE DEVELOPMENT POLICIES AND MEASURES APPROACH

Experts discussing how a sustainable development policies and options approach would recognize developing countries' NAMAs have considered the issue mainly in regard to reducing emissions from other economic sectors. This approach, however, was developed by experts considering many of the same dynamics present in the REDD discussions, including questions of different but common responsibilities and the difficulties that developing countries face in putting in place the infrastructure required for the credible accounting of emissions, as well as the emissions trading of emissions reductions in any sector (see box 3) (Bell 2006; Bradley et al. 2005). Their basic thinking was as follows:

1. Many policies and measures that developing countries could undertake to mitigate emissions may not be suited to measurements using greenhouse gas metrics.
2. Nonetheless, these NAMAs can still be credible and, in their own way, measured, reported, and verified.
3. The international community's recognition and support of such actions would be a positive incentive for the developing countries taking them.

This is as true for REDD NAMAs as it is for actions taken in any other sector. For instance, building institutional capacity to reduce fires or combat illegal logging may be hard to quantify as emissions reductions for carbon-financing needs, but it still will be important for achieving REDD. The SPDAMS approach seeks to recognize and support developing countries' transformative policies that produce both forest-related climate mitigation and social and development benefits. The ultimate goal is that these activities will enable developing countries to stop relying on developed countries for financing to continue these actions. Accordingly, in this section we focus on activities that would have both development and mitigation benefits.

SDPAMS in Action: Components and Examples

A successful and credible SDPAMS approach to reducing forest loss and degradation requires the ability to measure, report, and verify credible actions and to create positive incentives for developing countries. These positive incentives can be either support for developing countries undertaking REDD NAMAs or activities that use demand-side market measures to change drivers of deforestation and forest degradation.



MEASURABLE, REPORTABLE, AND VERIFIABLE PERFORMANCE METRICS

Both actions by developing countries and commitments by developed countries—whether policies and measures, financing, technology transfers, or capacity building—will need to be measurable, reportable, and verifiable. Two kinds of performance metrics could be used to measure SDPAMS: *outcome metrics*, such as the number of farmers who have adopted a specific practice to prevent fires or the amount of support spent; and *implementation metrics*, such as the passage of a law or implementation of a program. Either method would help maintain a results-based approach. The selection of credible performance metrics, however—that is, metrics that will help track whether real change has occurred—will enable the parties both undertaking and funding activities to ensure they are successful and worth continuing. The Annex 1 national communication documents that describe the policies and measures being taken, and an analysis of their value, could be the impetus for a more detailed discussion of MRVing SDPAMS.

INCENTIVES

Support. In many developing countries, defining which activities are required to reduce the loss and degradation of forests in a manner that will also achieve sustainable development outcomes—besides implementing those activities to achieve the outcomes sought—will

require support. This support could come in various forms, such as the following:

1. Providing the technologies and related support needed for their dissemination.
2. Increasing governmental and nongovernmental institutional capacity to effectively implement and monitor mitigation actions over the long term. This would include undertaking transparent and inclusive decision-making processes, promoting greater coordination among ministries and agencies, clarifying the relevant communities' land tenure and resource rights, and building institutional capacity to measure the activities' outcomes, both the impact on forests and their value to other goals, such as poverty alleviation.
3. Supporting research to ensure permanent and healthy forest ecosystems, including:
 - New models for sustainable development in forested areas.
 - Identification of those forests providing essential ecosystem services for human resilience to climate change, such as the provision of potable water, with special consideration of the most vulnerable communities.
 - Identification of those forests that are most vulnerable to climate change, as well as the activities that could be undertaken to reduce their vulnerability, such as fire management.

The support of developed countries, through financing, technology transfer, and capacity building, will therefore be vital to the success of REDD NAMAs.

Demand-Side Market-Drivers. Developing countries' incentives for REDD NAMAs often are related to the development value of the action itself. In such cases, the developed countries' support should be sufficient to undertake the NAMA. In other cases, however, additional positive incentives may be required. These could be demand-side policies and measures taken by developed countries to change the value of standing forests. An example is a carbon market approach to carbon financing, which creates a demand for REDD offset credits. Another positive incentive is creating a demand for legal and sustainable products, such as timber. Two examples are the Lacey Act and the EU's Forest Law Enforcement Governance and Trade (FLEGT) initiative.

To help negotiators think about what SDPAMs countries could do and how these different components could be coordinated, we offer three examples:

EXAMPLE 1:
FIRE PREVENTION PRACTICES IN INDONESIA
Importance to REDD

As box 2 notes, dealing with forest and peat fires in Indonesia is critical to reducing GHG emissions from forests. During the El Niño–Southern Oscillation (ENSO) years of 1997/1998, for example, approximately 11.7 million hectares were affected by fires (Tacconi 2003), which is significantly more than the annual 1.8 million hectares of deforestation in Indonesia estimated by the Food and Agriculture Organization (FAO 2006).

Besides releasing carbon from burning trees, such fires can have other destructive impacts resulting in more fires and emissions. First, smoke from fires is thought to decrease rainfall (Aragão et al. 2008, quoting Ackerman et al. 2000; Rosenfeld 1999). Second, fires are believed to reduce regional evapotranspiration, which in turn contributes to the severity of droughts (Bowman et al. 2008, quoting Carvalho et al. 2004). Third, prolonged droughts can make forests less healthy and may lead to the death of the largest trees in the canopy (Nepstad et al. 2008). Then, as the canopy becomes more open and the accumulated litter dries, the forest becomes even more susceptible to fire (Nepstad et al. 2008). Since more ENSOs are predicted in Indonesia, with more prolonged dry seasons predicted as a result of climate change (Hulme and Sheard 1999), there is significant concern about the rainforest's future and the related emissions if fires are not better managed in sensitive areas.

Incentives

Besides forest damage and emissions, forest fires lead to considerable economic losses from damage to human health, private property, public infrastructure, crops, nontimber goods, and timber degradation of pasture. Some estimates placed the economic damage from the 1997/1998 fires at \$1.67 million to \$2.7 billion. The cost of smoke haze pollution was between \$291 million and \$416 million, not counting the economic impacts on Indonesian business activities, which may have been as high as \$2.8 billion (Tacconi 2003). Actions to reduce forest fires in Indonesia therefore have their own development and economic value, and even though the country might need support to develop greater institutional capacity for programs to reduce forest fires, once they are in place, the national and local governments should be able to continue to support the programs over time as part of good forest management.

Support

According to Tacconi (2003), when drawing up policies to address the issue, we still need to have a better understanding of the

fundamental drivers/causes of Indonesia’s fires as well as to differentiate among the kinds of fires (e.g., fires that do and do not cause haze). Forbidding people ever to set fires, Tacconi notes, is too coarse a policy tool and so is unlikely to result in real change. He also observes that because governments have a limited capacity to fight forest fires, they need to identify where to intervene in order to avoid the greatest damage. In this case, support might range from doing more research on which policies could really reduce fire instances to technologies that would help fight fires once they have begun.

MRV Performance Metrics

The following table provides examples of metrics that could be used to MRV both developed countries’ and developing countries’ actions to reduce fires. In many cases, the performance metrics for developed countries are similar for each of the examples.

Fires in Tropical Forests

<p>Developed Countries’ Actions</p>	<p>Action: Support developing countries with REDD NAMAs that include actions to reduce forest fires. MRV Metrics: (1) Language in climate legislation to support developing countries’ NAMAs related to REDD (Implementation). (2) Funds and programs to transfer and disseminate technology (Outcome).</p>
<p>Developing Countries’ Actions</p>	<p>Action: Enact policies to reduce underlying causes of forest fires. MRV Metrics: (1) Identification of the underlying causes of fires (Implementation). (2) Implementation of policies with sufficient capacity to achieve results (Implementation). (3) Reductions of fire events, e.g., size and quantity (Outcome).</p>

**EXAMPLE 2:
REDUCING ILLEGAL LOGGING PRACTICES**

Importance to REDD

Illegal logging contributes in a number of ways to emissions from deforestation and forest degradation, and in many developing countries illegal logging is one of the dominant causes of forest degradation or may soon become so (Gabon 2008). In addition to the direct emissions related to the degradation of the forest, illegal logging may indirectly result in emissions from deforestation where new logging roads lead to settlements, fires, and the conversion of forest to agriculture. Most

important, illegal logging is a symptom of the developing countries’ lack of institutional capacity to create, monitor, and/or enforce rules regarding the sustainable management of forests. Without these capabilities, institutions’ REDD efforts also will not be successful.

Incentives

Developing countries seeking to abolish illegal logging as a REDD NAMA have numerous positive incentives to do so. The World Bank calculates that the loss of revenue and assets to developing countries’ governments is nearly \$15 billion annually, more than eight times the amount of money spent on sustainably managing the world’s forests (World Bank 2006). This calculation does not include the additional costs in terms of social conflict, human rights abuses, and economic dislocation in the developing countries’ forests caused by the illegal wood products trade.

This positive incentive is supported through the passage of regulations and programs in countries seeking to reduce their consumption of illegal timber, such as the Lacey Act in the United States and the FLEGT in the EU. In addition these regulations and policies will help increase the value of forests and sustainably produced timber and create a positive incentive for REDD for all timber-producing countries by changing the timber markets directly (Buongiorno et al. 2008). The adoption of such policies by several consumer countries would strengthen this positive incentive and also minimize the opportunity for trade in illegal and unsustainable products simply by shifting from one country to another. These policies would also have a positive outcome for a carbon-financing mechanism dealing with the international leakage that could occur between those countries that are undertaking REDD and those that are not.

Support

Many countries will require significant support to build the institutional capacity to abolish illegal logging. More specifically, extensive support may be needed to clarify land tenure rights and to create, enforce, and monitor laws and practices. Developing countries should determine what support they will need and where it would be best used.

MRV Performance Metrics

The following table gives examples of metrics that could be used to MRV both developed countries’ and developing countries’ actions to reduce illegal logging:

Reducing Illegal Timber Production

Developed Countries' Actions	<p>Action: (1) Policies to eliminate consumption of illegal timber.</p> <p>(2) Language in legislation to support developing countries with NAMAs to reduce illegal logging activities.</p> <p>MRV Metrics: (1) Passage of laws with a commitment to support developing countries.</p> <p>(2) Actual support to developing countries.</p> <p>(3) Number of cases to enforce the law.</p>
Developing Countries' Actions	<p>Action: Policies to track and eliminate the production of illegal timber.</p> <p>MRV Metrics: (1) Identification of the underlying causes of illegal logging.</p> <p>(2) Implementation of policies with sufficient capacity to achieve results.</p> <p>(3) Reductions of illegal timber production.</p>

**EXAMPLE 3:
FOREST RESTORATION
TO CREATE RESILIENCE TO CLIMATE CHANGE
Importance to REDD**

Although REDD is often framed as a mechanism focusing on emissions reductions only, maintaining healthy ecosystems in fact requires stabilizing forest carbon stocks in the medium to long term. In other words, deforestation should not only be slowed but also stopped, in order not to precipitate events leading to the loss of large intact forests.

Restoring lost or degraded forests or allowing them to regenerate naturally is the other part of the equation that can help achieve this goal. In those countries whose current forest cover and rates of deforestation and forest degradation are low, a REDD NAMA may not be needed to reduce emissions from recent deforestation or forest degradation or to prevent this from happening in the future but, rather, to actively reestablish native forests that can store carbon. These actions would need to be undertaken carefully to ensure that they do not cause negative environmental impacts and do maximize positive social impacts.

Several recent forest restoration activities and models have been shown to be beneficial for local communities and also to have climate value. In Niger, for example, a change in laws contributed to farmers' efforts to regenerate trees from roots and stumps. This has resulted in the reforestation of an estimated 5 million hectares

of degraded, semiarid land, with at least 45 million people gaining food, fuel, and fodder supplies, and many also earning additional income (WRI 2008b, 142).

While native forest restoration may not be a priority when creating incentives beyond the Clean Development Mechanism, these policies and measures by developing countries should be recognized where high rates of deforestation and forest degradation or potential deforestation and forest degradation exist, as this represents a valuable NAMA.

Incentives

For Niger, the incentive was the value of the trees to the local community as offering both income and direct environmental and social benefits, such as greater food security. The restoration activities have continued beyond any direct support for the activity.

Support

Niger's re-greening movement resulted in part from support by the U.S. Agency for International Development and other donors to identify and address the drivers of deforestation and supporting community and by NGO-led forest restoration activities. New funding should be considered specifically for these types of activities—when framed as NAMAs—that provide mitigation, adaptation, and development benefits.

MRV Performance Metrics

The following table provides examples of metrics that could be used to MRV both developed and developing countries' actions to restore native forests.

Restoring Vital Forests

Developed Countries' Actions	<p>Action: Support developing countries with REDD NAMAs that include actions to restore forests.</p> <p>MRV Metrics: (1) Passed laws with a commitment to support developing countries.</p> <p>(2) Actual support to developing countries.</p>
Developing Countries' Actions	<p>Action: Enact policies to restore forests.</p> <p>MRV Metric: (1) Implementation of policies with sufficient capacity to achieve results.</p> <p>(2) Restored native forest cover.</p>

Concerns about the SDPAMS Approach

A number of concerns have been raised about NAMAs that focus on registering SDPAMS, so addressing them is important to ensuring that the countries use them effectively to mitigate climate change.

SOVEREIGNTY

One such concern is that developing countries' sovereignty rights will be undercut by presenting specific SDPAMS for support. Developing countries may feel that they will be judged according to which policies they choose to implement, whereas when using a carbon-financing approach, they need only demonstrate emissions reductions to receive financing. Although developed countries will likely try to determine how their support is being used and will choose to support those SDPAMS that they feel are credible and likely to be successful, they will also do the same for a carbon-financing mechanism. Developed countries already have shown that they are not willing to buy emissions reductions in undeserving circumstances. For example, it was thought that Russia would have many emissions reductions to trade with Annex 1 countries as a result of how their cap was set. But Russia's emissions reductions—widely known as “hot air” by the climate community because they resulted from the year selected against which to set the cap rather than from taking any real action—have not been bought to date, even by countries unlikely to meet their own Kyoto commitments. In order to receive financial and other support, developing countries will be required to provide comprehensive evidence of the concrete actions and outcomes they take to reduce greenhouse gas emissions. Another example of these transparency requirements is the World Bank's current Forest Carbon Partnership, according to which countries must specify how they hope to address deforestation in an “R-Plan” as a condition of participating in the program. When developing countries commit to SDPAMS to mitigate climate change that can be measured, reported, and verified, the governments of developed countries are unlikely to question the particular measures chosen. But when these governments agree to support specific actions, either buying the emissions reductions or supporting the policies and measures taken to achieve them, they are more likely to require accountability and transparency.

FINANCE

The financing, technology transfers, and capacity building required to support developing countries' NAMAs are greater than any such support committed to date. Some experts believe that putting a price

on carbon and trading—the carbon-financing approach—will give developing countries more reliable sources of financing by attracting the private sector. The dynamics of carbon financing on such a large scale and for such a variety of needs, however, have not yet been tested (Bell 2006). The outcomes will depend on many variables, including the targets set by the developed countries and the reference levels in the developing countries, how quickly various technologies in other sectors (such as energy and industrial) are developed and adopted, and the perceived risk and credibility of the investment. Moreover, the SDPAMS approach may attract private-sector funding for certain types of actions. In any case, securing firm commitments from developed countries for funding specific forest-related climate activities proposed by developing countries may be a significant step toward countries' ability to hold one another responsible for meeting their obligations.

INACTION

A third concern is the fear that the developing countries will spend the allotted funds without actually achieving any emission reductions. Many feel that only a “performance-based” payment approach, such as carbon financing, will create a real incentive for change, since payments are made only when such an outcome has been achieved. While the SDPAMS approach does not make the same link between financing and ton-per-ton CO₂ emission reduction outcomes, the MRV component of this approach does mean that support will be linked to transparent and clear evidence—including tracking emissions and sequestration/storage over time—that change is being, or has been, made. If countries cannot show that the support is actually being used to implement the activities to which they committed and that they have been successful, then the support could be withheld. In addition, the SDPAMS approach would not offer any positive incentives related to development objectives—such as the trade benefits of a governance framework clearly showing that the companies were legally engaging in business—if the activity was not successful. Consequently, the SDPAMS approach can be seen as a middle ground between a pure carbon-financing approach, in which payments are made only (in theory) after the policy has been successfully implemented and the less stringent current “readiness” funding that disburses money without much discussion of the expected results in terms of participation in the international agreement.

INCENTIVES TO BETTER UNDERSTAND EMISSIONS AND EMISSIONS REDUCTIONS

A fourth concern is that by not emphasizing GHG emissions reductions as the metric on which financing would center, developing countries will not have an incentive to better understand their forest-related emissions. This concern underscores the need for careful thought about the design of MRV metrics for SDPAMs and about the type of institutional capacity-building activities that developed countries need to continue supporting.

V. PUBLIC AND PRIVATE FINANCIAL FLOWS: LEVERAGING CHANGE

As noted earlier, one of the main questions for developing countries seeking to take SDPAMs is how they can be assured of financing, technology, and capacity-building support. Would the support of SDPAMs come only from public financing, or could it also attract private financing?

Public Funding

Public funding may be the only source available in the near term, especially to support REDD NAMAs. Many experts have suggested that new public finance could be secured through domestic climate legislation or other regulations or taxes. The Lieberman–Warner bill discussed in the U.S. Congress during 2008, for example, specified that the money collected from the sale or auction of polluting permits to companies under a national cap on U.S. GHG emissions could be used for both national and international activities, including international forest actions. Even with only 1 percent of the revenue promised in a later version of the bill, this would generate financing of more than \$1 billion a year, increasing annually to nearly \$3 billion by 2050 (WRI 2008a). A similar approach by the EU, Canada, Australia, and others would represent significant new public funding.

Another fund-raising model is Norway's recent investment in forest-related climate activities using revenue raised by taxes on petroleum extraction. This also offers another model for generating money to address the social and environmental issues. Both models generate support for developing countries that would be easy to MRV.

Neither approach is free of challenges, however. Many ideas have been offered about how the money raised from such mechanisms should be spent. Furthermore, during domestic conversations in developed countries about allocating these funds, the international community may not always be directly represented.

The Private Sector's Role

Another source of funds might be technology and capacity building from the private sector of Annex 1 countries, encouraged by either incentives or regulations in the developed countries. Transferring appropriate technologies or best practices could increase the productivity of working forests. Similarly, improving agricultural practices and productivity in rural areas may ease the pressure to expand the area of land under production and thus prevent deforestation. Such technology and capability-building transfers could be central to resolving some of the developing countries' agricultural land use and management issues. Private-sector funding might also be used for better timber-tracking infrastructure or other tools that would allow companies to be more confident of the legality of timber in order to comply with the demand-side policies like FLEGT or the Lacey Act. In addition, financial institutions might be willing to consider funding activities like fire management practices to lower the risk of climate change for their investments in the forestry sector or in other sectors relying heavily on wood or forest products. For example, the financial sector has become increasingly concerned about how climate change might affect its investments and whether it should invest in efforts to mitigate such risks or to help clients address risks associated with climate change (JPMorgan 2008).

In addition, the private sector will begin to consider climate change more systematically as the value of these products is judged according to their impact on GHG emissions. Sustainable procurement has already helped put sustainability concerns on major businesses' agendas. In Europe, for example, buyers are willing to pay a higher price for Brazilian soy and beef products when producers can prove they own and manage their lands according to rules setting an 80 percent forest cover standard in the Amazon region of Mato Grosso (IPAM 2008; Nepstad et al. 2008).

These examples represent just a few of the many opportunities to support forest-related climate mitigation actions that also provide sustainable development benefits. Most of these could be captured in a measurable, reportable, and verifiable framework. Just as a multitude of actions will be required in developing countries to address forest-related GHG emissions, so financial flows from a variety of sources will be required to sustain such actions over time.

VI. CONCLUSIONS AND RECOMMENDATIONS

A variety of opportunities are available to reduce developing countries' forest-related greenhouse gas emissions, but these countries have different needs and abilities to participate in mechanisms that could be created under the UNFCCC. Accordingly, policymakers and climate negotiators should consider a range of options to recognize nationally appropriate mitigation actions and help countries achieve healthy forest ecosystems for the long term. An SDPAMs approach offers an important opportunity for both developing and developed countries to propose and support near-term actions. The international community's acceptance that carbon financing may not be the only source of funding for developing countries' forest-related climate activities will also help ease the current pressure to include every conceivable activity in a carbon-financing mechanism.

The following recommendations are intended to encourage all countries to develop and support sustainable development policies and measures that will help reduce forest degradation and loss in developing countries:

- Developed countries should encourage and support developing countries to reduce forest degradation and loss under NAMAs, including sustainable development policies and measures that do not provide tradable carbon credits.
- Climate negotiators should support a range of approaches in the climate agreement to measure, report, and verify REDD NAMAs.
- Both developed and developing countries should adopt policies dealing with the consumption of products that drive illegal deforestation as NAMAs, and they should start by addressing the illegal timber trade.

More work is urgently required before the Copenhagen Conference of Parties (COP) meets in 2009 to create and refine metrics to measure, report, and verify actions taken to reduce forest degradation and loss outside carbon-financing schemes. This work includes:

- Defining acceptable MRV performance metrics.
- Determining how different countries' activities can be both significant and comparable.
- Determining how developing countries can combine carbon financing and other approaches to reduce forest loss and degradation.
- Exploring sources of sustainable funding and other positive incentives to port sustainable development policies and measures in order to achieve REDD.



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About the Author

Florence Daviet is an Associate with the World Resources Institute's international climate policy team. Her research focuses on international forest and climate policy issues.

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