

covering a wide range of land types (i.e., forests, wetlands, agricultural and grasslands), to create the most comprehensive system possible and broaden the number of nations that would receive financial incentives to manage their lands for carbon benefits.

**Activities.** Almost all nations wish to address emissions from deforestation, but many nations also wish to include forest degradation, reforestation and afforestation. The United States is one of the few nations supporting comprehensive terrestrial greenhouse gas accounting, covering all land types and activities. Brazil supports focusing primarily on deforestation, while most other countries favor including all forest sector activities, but not land-use activities that do not involve forests.<sup>83</sup>

**Mechanisms.** Many nations favor mobilizing funding through private sector-oriented carbon markets, but others argue for a system of government-to-government payments<sup>84</sup> Brazil in particular has been staunchly opposed to a market-based system that would allow developed nations to substitute tropical forest conservation investments for domestic emissions reductions. Although some key nations have also been unclear or opposed, many other influential developing nations support transitioning to a market-based system after some initial public investments in planning, market readiness and implementation activities.<sup>85</sup>

*Finding: Several important issues to striking a global deal on climate change and tropical forests remain unresolved.*

**Eligibility.** Some proposals focus on nations with high deforestation rates, but others would also provide incentives for countries with low deforestation rates to maintain them.<sup>86</sup> The Bali Action Plan guiding current negotiations for the next global climate agreement allows for both approaches.<sup>87</sup> At present, these low deforestation nations are unlikely to gain access to lucrative carbon markets—which will likely require verified emission reductions—but these nations would be eligible for government-to-government assistance.

**Scale.** Many nations, including Brazil and the CfRN countries, wish to limit the most significant financial incentives to nations that have adopted strong nationwide programs to reduce forest emissions after a transition period. Some other developing nations object to this conditionality and favor allowing more ad hoc project-based approaches, or state- or province-wide approaches.<sup>88</sup>

**Methodologies.** Proposals also diverge on standards and procedures to ensure that emission reductions are genuine, particularly the setting of reference levels or baseline rates of deforestation for developing countries. Since payments would only be provided if countries improve upon these levels, they have a significant impact on the effectiveness and geography of forest conservation financing, including the eligibility issue discussed above. While these matters are quite technical, they are also politically important in global climate talks and infused with significant ideological content. Some countries support using historical deforestation data, but others favor using projected future rates.<sup>89</sup>

## Designing U.S. Climate Legislation

Despite these differences, most countries expect the next climate agreement to include tropical forest conservation in a robust way.

The United States has a strong bipartisan tradition of supporting conservation of tropical forests. Most of the major U.S. programs to date were initiated by Republican

policy makers with enthusiastic Democratic support. Former Congressman Rob Portman (R-OH), for example, sponsored the 1998 Tropical Forest Conservation Act, which provides debt relief to developing nations that conserve tropical forests—so called “debt-for-nature swaps.” President George W. Bush expanded that program significantly and appropriations now average \$20 million per year.<sup>90</sup> The largest U.S. international forest conservation program is managed by the U.S. Department of State (State Department) via the Agency for International Development (USAID). Its Congo Basin Initiative, the agency’s flagship effort, was launched by Secretary of State Colin Powell in 2002 and has helped central African nations place 115 million acres of tropical forests under improved management—more than the entire land area of California.<sup>91</sup> The United States also provides \$20-\$30 million annually for tropical forest conservation through the Global Environment Facility (a partnership between the World Bank and the United Nations).<sup>92</sup> In addition, the United States has supported international forests through its trade policies. In 2008, for example, Congress amended The Lacey Act of 1900 (named for Iowa Republican John Lacey) to help stop the importation of timber and forest products from illegal logging.<sup>93</sup>

While these bipartisan programs have had some success in conserving certain specific places, the scale and scope of these programs have paled in comparison to the global need. In fact, there is little evidence to suggest that global efforts, let alone U.S. programs, have had a demonstrable effect on tropical deforestation rates. Total annual U.S. appropriations for bilateral and multilateral tropical forest conservation programs have ranged between \$80 and \$100 million since 2000,<sup>94</sup> compared to the \$30 billion a year that would be required annually to reduce emissions from tropical deforestation by half in 2020.<sup>95</sup>

*Finding: The United States has a bipartisan tradition of protecting tropical forests, but support has been inadequate to address the problem at the scale needed.*

The United States also has a strong bipartisan tradition of supporting the inclusion of tropical forests in climate



policy. While many of the Clinton Administration’s climate policies were controversial, its efforts to include tropical forests in the Kyoto Protocol drew support from a broad spectrum of congressional leaders. When President George W. Bush removed the United States from the Kyoto process, he identified reducing tropical deforestation as a fruitful area for greater international cooperation. The Bush Administration also launched a number of promising but small-scale forest governance initiatives in partnership with Indonesia and other allies.<sup>96</sup> Modest incentives for public and private sector technology deployment in developing countries, including for carbon sequestration by forests, have also been included in U.S. energy laws such as the Energy Policy Act of 2005.<sup>97</sup>

## The House Climate Bill (Waxman-Markey)

The climate bill (American Clean Energy and Security Act) developed by Representatives Henry Waxman (D-CA) and Edward Markey (D-MA) and approved by the House of Representatives in June 2009, if enacted into law, would reduce U.S. emissions 30 percent below 2005 levels by 2020 (including U.S. contributions to international reductions).<sup>98</sup> Most public attention has focused on what is arguably the centerpiece of that bill — a “cap-and-trade” system that would regulate emissions from 85 percent of the U.S. economy and allow regulated entities to engage in trading of emissions allowances to reduce costs. The cap-and-trade provisions alone would reduce U.S. capped emissions 17 percent below 2005 levels by 2020.

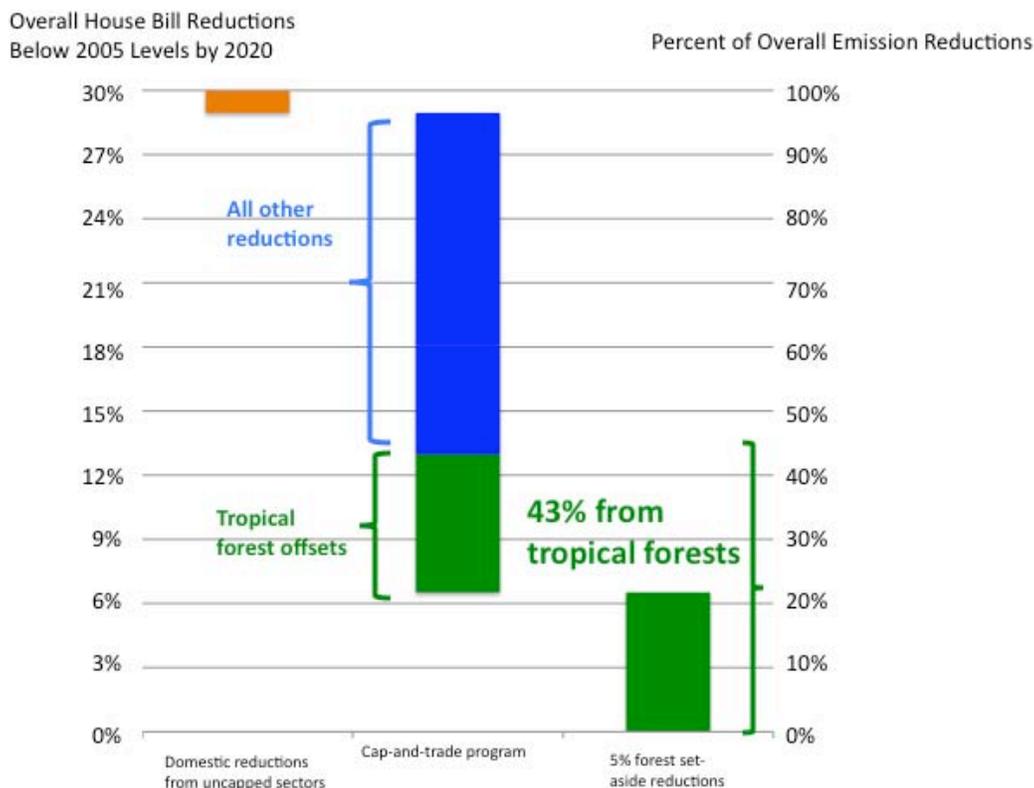
Tropical forests are at the heart of the House climate bill and could represent 43 percent of the total reductions achieved under the bill by 2020 (see Figure 9).<sup>99</sup> This means that if enacted in its current form, the House bill would channel an estimated \$11-\$18 billion in new funding for tropical forests annually by 2050 – a more than one hundred-fold increase in U.S. funding levels.<sup>100</sup> Reaching these high levels of funding requires substantial private investment in offsets, which is unlikely to occur at this scale without greater additional short-term financing for capacity building and market-readiness activities. These funding flows would greatly exceed any existing efforts by developed nations and would catapult the United States into a leadership role in conserving international forests. The funding level recommended in this paper—roughly \$14 billion per year by 2020—is intended to represent a minimum, realistic level of what would be necessary to catalyze a global effort to reduce emissions from tropical deforestation

*Finding: The climate bill recently passed by the House of Representatives places a strong emphasis on reducing emissions from tropical deforestation, including substantial public and private financing mechanisms.*

by 50% by 2050, achieve zero net emissions by 2030, and allow the United States to capture substantial cost containment benefits from reducing tropical deforestation. In the event that U.S. funding under the House bill were to exceed this amount, it would only serve to increase these benefits.<sup>101</sup>

The House climate bill includes both public and private sector financing mechanisms for international forest conservation.<sup>102</sup> The public financing generated by the bill would be used to fund reductions from forest conservation that are in addition to those achieved by the U.S. domestic cap-and-trade system. Private sector financing would pay for “offsets” in place of U.S.

**Figure 9: Percentage of Emission Reductions from Different Sources under House Climate Bill in 2020**



Source: Climate Advisers analysis, based on data from U.S. EPA

domestic emissions reductions under the cap-and-trade system. The total emissions reductions attributable to tropical forests under the climate bill includes those achieved through both dedicated public funding and tropical forest offsets expected under the U.S. domestic cap-and-trade system.

Emission reductions purchased with public funding are mandated by the House bill to generate 720 million tons of emission reductions per year in 2020, equivalent to 10% 2005 of economy-wide U.S. emissions.<sup>103</sup> The quantity of tropical forest offsets purchased by the private sector would depend on market prices, but U.S. government estimates suggest that they could represent over 20 percent of emission reductions achieved by the bill.<sup>104</sup> The paragraphs below explain in some detail how these two funding mechanisms would work. The Obama Administration supports the approach taken in the House bill on tropical forests and inclusion of tropical forests in the new global climate agreement being negotiated by the international community.<sup>105</sup>

**Public financing.** The House bill sets aside 5 percent of tradable allowances from the cap-and-trade program to finance U.S. government investments in tropical forest conservation programs from 2012-2025, declining to 3 percent from 2026-2030 and 2 percent from 2031-2050. Based on government estimates of likely allowance prices in U.S. carbon markets, this “set-aside” mechanism would likely generate \$3.1 billion in 2012 and \$5.1 billion in 2020 and decline back to initial levels in subsequent years (see Table 1). The regulation and distribution of this funding would be under the authority of the U.S.

Environmental Protection Agency (EPA) Administrator, in consultation with other government agencies including the Secretary of State and the Administrator of the U.S. Agency for International Development. Importantly, the EPA Administrator would be required to manage these funds in such a manner as to purchase at least 720 million tons of verified emissions reductions from tropical forest conservation each year from 2020-2025, and a total of at least 6.0 billion tons from 2012-2025. The objective of this specific requirement is to ensure that the set-aside mechanism finances international emission reductions equivalent to reducing U.S. emissions an additional 10 percent below 2005 levels in 2020. These reductions would be above and beyond the reductions achieved through the cap-and-trade program.<sup>106</sup>

The House bill indicates that one permissible use of the set-aside funding would be to prepare developing countries to sell verified emission reductions to the United States government and/or to help them participate in U.S. carbon markets as “offset” providers to U.S. companies. In order to receive any funding from the set-aside program, developing countries would be required to enter into a bilateral or multilateral climate agreement with the United States covering forest sector emissions. The EPA Administrator is allowed to distribute international forest set-aside monies through multilateral funds and institutions that are pursuing comparable objectives, provided they have adequate safeguards for indigenous communities and high standards for environmental integrity.

**Table 1: Estimate of International Financing from Allowance Allocations in House Climate Bill.**<sup>107</sup>

	2012	2020	2030	Total (2012-2020)	Total (2012-2050)
<b>International Forest Conservation Funding</b> <sup>108</sup>	\$3.1 billion	\$5.1 billion	\$3.5 billion	\$38 billion	\$131 billion

Source: Climate Advisers analysis, based on allowance price estimates from U.S. EPA and the Congressional Budget Office

**Private financing.** The House bill would also allow U.S. regulated companies to “offset” their own domestic emissions by investing in emission reduction activities internationally or at home in uncapped sectors (mainly domestic agriculture). These offset provisions would permit U.S. companies to finance emission reductions outside the U.S. cap-and-trade program in lieu of lowering their own capped emissions. International offsets (those involving emission reductions outside the United States) are restricted each year to 1.0 billion tons total and to a defined percentage of each firm’s compliance obligation. Companies would be allowed to purchase up to 1.5 billion tons of international offsets if EPA finds that fewer than 900 billion tons of domestic offsets are available in a given year, provided, however, that total offsets do not exceed 2.0 billion per year from domestic and international sources combined. According to EPA, “Without international offsets, the allowance price would increase 89 percent relative to the core policy scenario.”

<sup>109</sup> Although these international emissions reductions may originate from a variety of sectors (i.e., transport, electricity, manufacturing, mining, agriculture and waste management), it is likely that 60 percent of international offsets will come from investments in tropical forests. These high numbers reflect the relatively low cost of reducing deforestation and promoting reforestation compared to other near-term international mitigation opportunities. In addition, beginning in 2017 firms are required to submit 1.25 tons of international offsets to substitute for 1 ton of domestic compliance, as a means of promoting stronger domestic action and leveraging limited U.S. funding internationally.

*Principle: U.S. policies to reduce tropical deforestation must advance cost-effective solutions.*

The emission reductions and funding levels that U.S. private sector investments in tropical forests would generate under the House climate bill would depend on the total number of forest sector offsets used, which in turn would be driven by the relative price of domestic and international emissions reductions, the supply of forest sector emission reductions and the readiness of

developing nations to participate in carbon markets. U.S. government projections of total international offset use in 2020 vary widely from only 340 million tons (by the Congressional Budget Office) to about 1.0 billion tons (by EPA). This means that private-sector forest conservation funding would likely range from \$6-\$13 billion in 2020.<sup>110</sup>

Although they are the best estimates available, these supply and funding projections are still very uncertain, as they rely on significant assumptions and not robust, concrete analyses. Offset supply is most unpredictable in the early years from 2012-2019, when few nations may be ready to implement needed programs and participate in highly regulated carbon markets. Private sector funding would likely increase steadily as countries sort out their internal politics, gain governance and technical capacity, and then start showing results. In fact, without the capacity building activities financed by the set-aside program discussed above, the supply of international forest sector offsets would likely to be smaller than U.S. companies need to keep their compliance costs down under the cap-and-trade program. The House bill would also condition participation in U.S. carbon markets and the sale of “offsets” on a country having entered into a bilateral or multilateral climate agreement with the United States that covers the forest sector.

It must be noted that despite the exceptionally important role tropical forests would play in both reducing the cost of the House bill (hundreds of billions of dollars) and in increasing the environmental ambition of the bill (a full 50 percent higher), tropical forests were not a major part of the political debate in the House. It would be premature to conclude, therefore, that the House is strongly in favor of including tropical forests in future climate legislation and would defend international forest provisions in any compromise with the Senate.

## Prospects for Senate Action

Prospects for Senate action on climate legislation remain uncertain. President Obama has called on the Senate to approve legislation quickly so that Congress can send him a climate bill to sign into law. The Administration

is eager to secure enactment of climate and energy legislation, including a cap-and-trade program, before global climate talks in Copenhagen in December 2009. Senate Majority Leader Harry Reid (D-NV) previously promised a floor debate on climate legislation in October 2009, but recently announced they would act as soon as possible without providing a specific deadline. At the same time, it is unclear whether or how proponents of climate legislation can secure the level of support needed to adopt a climate bill in the Senate. Senate moderates in both political parties, whose votes would be essential, continue to have concerns about the economic cost and competitiveness impacts of climate action.

Quick action by the Senate is desirable to spur action by other nations, avoid dangerous climate change and reestablish America's leadership role. The House climate bill provides a good starting point for Senate deliberations. If the Senate declines to adopt a climate bill this year, the reality of climate change and the need to find workable solutions will persist and continue to demand the Senate's attention in the years ahead, particularly if the Obama Administration begins regulating emissions without the Congress through the Clean Air Act, as many experts and advocates predict. The full Senate has yet to engage in a robust examination of how tropical forest conservation fits in to U.S. climate policy. During discussions on the Boxer-Lieberman-Warner bill in 2008, some Senators expressed concerns that international forest conservation programs might not produce genuine emissions reductions, and others opposed as a matter of principle sending billions of dollars overseas for what they viewed as uncertain benefits. A 2008 survey of the most engaged congressional climate change staff, primarily in the Senate, revealed that these concerns were widespread and crossed party lines.

*Finding: Although many stakeholders and policy makers are supportive, the U.S. Congress has yet to have a robust debate about the role of tropical forests in climate policy.*

Over the years, Senators have received a mixed message from stakeholders on the role of tropical forests in climate policy. In recent months, however, the politics associated with climate and international forests

have begun to shift. Two major coalitions of Fortune 500 companies and influential environmental groups — the U.S. Climate Action Partnership and the Tropical Forests and Climate Coalition — have put forward policy recommendations broadly in line with the approach to international forests taken in the House climate bill. The support of these groups was instrumental in securing House approval of the international forest provisions described above. Climate and forest cooperation efforts are also moving ahead among a group of ten U.S., Brazilian and Indonesian states and provinces. Their primary objective has been to develop recommendations about how international forestry credits should be treated under California's state climate law, which could dovetail with a future federal climate change rulemaking process. While it would be premature to assume Senate action on climate change, let alone approval of ambitious tropical forest programs, the question before the Senate appears to be shifting from a debate over whether new climate laws should help reduce global deforestation to a discussion of how to achieve that outcome.

In crafting its policy recommendations, the Commission assumed that for the time being climate policy discussions in the United States would continue to center on "cap-and-trade" proposals, under which the federal government would set emission limits (cap) but allow regulated companies the opportunity to reduce costs by buying and selling emission allowances (trade). Cap-and-trade is the centerpiece of the American Clean Energy and Security Act, approved by the House of Representatives on June 26, 2009. It is also the approach endorsed by President Obama, and is expected to be the focus of Senate debate in the months ahead. A well-designed cap-and-trade program would provide an effective mechanism for financing and implementing the recommendations articulated in this report. However, the prospects for (and timing of) Senate approval of a national, economy-wide cap-and-trade bill are uncertain. Because the possibility of a cap-and-trade program is very real, the Commission has developed specific recommendations that would allow the United States to harness that approach to help reduce tropical deforestation.

**Recommendation: The United States should allocate 5 percent of the value of tradable emission allowances in a cap-and-trade program to new international forest conservation programs.** Reducing emissions from tropical deforestation in partnership with developing nations by 50 percent within a decade and achieving zero net emissions from forests by 2030 will require sustained U.S. leadership. The United States is uniquely positioned among developed nations to catalyze an effective global response given its strong history of bipartisan cooperation on tropical forest conservation, its long record of leadership on forest issues in global climate negotiations and its enormous need for an early, steady supply of international forest carbon offsets to keep domestic climate policies affordable. Historically Europe has been less supportive of integrating tropical forests into climate policy, although that has recently changed. Other major industrialized powers would stand with the United States but are unlikely to achieve a globally successful forest conservation partnership without its active involvement.

To play a leadership role, the United States will need to invest substantial financial resources. The scale of funding, of course, should match U.S. policy goals and is best calculated with specific needs in mind.

U.S. investments with public resources are needed in the following four areas and amounts.

- **Upfront funding for building capacity and reforming policies in forested developing nations to help them produce verifiable emission reductions and participate in U.S. carbon markets.** Capacity building and policy reform are likely to require at least \$1 billion from the United States between now and 2012. This sum represents roughly 25 percent of the at least \$4 billion global need by 2015 that has been estimated, a level generally in line with past U.S. foreign aid practices. However, given the likelihood of a U.S. cap-and-trade system starting in 2012, and the immediate need for verified emission reductions, it would be in the U.S. interest to catalyze global efforts with an early funding commitment.<sup>115</sup>

- **Helping forest-rich developing nations with low deforestation to avoid increases in deforestation despite mounting economic pressures.** Given current deforestation rates in some forest-rich nations and potential increases driven by economic activity and reductions elsewhere in the world, providing incentives to such nations is likely to require roughly \$5 billion globally per year by 2020. The U.S. share of this would likely be at least \$1 billion per year.<sup>116</sup>
- **Supporting action in low governance, high-risk countries that will likely be unable to attract private sector investors, including many nations in Africa.** Reducing international forest emissions by 50 percent within a decade and achieving zero net emissions by 2030 will require substantial action by a broad group of nations. Depending on the countries participating in carbon markets, the United States may need to finance with public monies 0.5 billion tons of emissions reductions annually from non-market nations to meet the goals of a U.S. cap-and-trade system similar to that in the bill passed by the House. Combined with support for policy and governance reforms, the total global cost of engaging these non-market countries could exceed \$5 billion, with the U.S. share being roughly \$1 billion annually by 2020.<sup>117</sup>
- **Financing verified emission reductions from nations that may not participate in U.S. carbon markets, including Brazil.** Halving tropical forest emissions by 2020 and eliminating them by 2030 will require at least 80 percent emission reductions in Brazil and other countries that have the capacity and political will to act, and achieving zero net deforestation in later years. With at least 1 billion tons of reductions annually from Brazil alone by 2020, and several hundred million from other nations, these low-risk, non-market countries will require at least \$12.5 billion per year, with a U.S. share of at least \$3 billion.<sup>118</sup>

The sum of these public funding needs is approximately \$5 billion annually by 2020. Generating this level of public funding will not be possible through traditional

foreign assistance programs. Setting aside a share of the allowance value of emission allowances auctioned in a cap-and-trade program, as the House climate bill would do, could provide this level of funding in a highly reliable manner. Government estimates indicate that the 5 percent of emission allowances devoted to international forest protection in the House bill would generate \$3.1 billion in 2012 rising to \$5.1 billion by 2020. If the United States adopts cap-and-trade legislation, the Senate should also set aside this percentage of tradable emission allowances to fund international forest programs.

**Recommendation: To lower the cost of U.S. climate action, the United States should permit regulated U.S. companies to “offset” a substantial portion of domestic emissions through investments in tropical forests. In this manner, the U.S. policy should mobilize roughly \$9 billion annually from private investment to save U.S. companies up to \$50 billion by 2020.** In the long run, U.S. private sector financing can and should outpace U.S. public funding by a good measure. The United States can reduce the cost of climate action by hundreds of billions of dollars over the next decades if it allows regulated companies to offset a substantial portion of domestic emissions by investing in tropical forest conservation. The U.S. Climate Action Partnership, the leading coalition of major companies and influential environmental organizations, has called on Congress to initially allow up to two billion tons of emission reductions annually as a cost-saving measure and permit this amount to be increased by 1 billion tons if necessary to further manage costs. The House climate bill could permit up to 1.5 billion international offset tons to enter U.S. compliance markets. By most estimates, these figures are roughly in line with what is needed to keep new climate legislation affordable.

The Commission estimates that investments of roughly \$9 billion annually by 2020 from the U.S. private sector are needed to finance cost-saving offsets from reducing tropical deforestation. Achieving this goal under the House climate bill could help reduce climate costs faced by U.S. companies by up to 50 percent, saving up to \$50 billion annually by 2020.<sup>119</sup> The House climate bill could achieve and possibly slightly exceed these goals

(mobilizing \$6-13 billion per year by 2020 in private sector investments). The high end of this range would only be possible with substantial upfront public investments to unlock potential savings from forest carbon. Provided they do not detract from efforts to reduce domestic emissions, even higher amounts of private sector offsets and investments would be desirable, producing additional climate, economic, national security and biodiversity benefits for the United States.

**Recommendation: To unlock these savings, the United States should invest at least \$1 billion before 2012 in programs that would build the capacity of developing nations to reduce forest-sector emissions.** As discussed throughout this paper, the United States and the world need to support the efforts of developing countries to create national deforestation reduction plans, as well as undertake some of the policy and governance reforms necessary to implement these plans. Since the availability of low-cost forest offsets is so important to containing the cost of U.S. climate policy, especially in its early years, this funding should be provided before 2012. A funding commitment of \$1 billion by the United States would make up about 25 percent of the expected global need for these pre-2012 activities, and would catalyze additional commitments from other developed nations. A more detailed rationale for this specific funding level was presented earlier in this report.

**Recommendation: The United States should channel new forest conservation investments to high priority areas for national security, poverty alleviation and biodiversity conservation.** Earlier portions of this report demonstrated how well-designed forest conservation policies would advance vitally important U.S. national interests beyond climate change, including by helping to strengthen international security, improve living standards, protect biodiversity and safeguard valuable ecosystem services. But not all forests are equal. Some forests contain more biodiversity than others. The rainforests in the Amazon-Andes region hold many more endemic species as equally carbon rich forests in some other parts of the world. Some forests, such as those that contain water sources for major cities, are more important than others to economic development. Reforestation in weak or

fragile states such as Afghanistan, Pakistan, Kenya and Tanzania, for example, would yield greater development and security benefits than would similar activities in more stable nations. The forested watershed that enables transit across the Panama Canal, for example, is of greater global economic and security significance than a potentially far larger but indistinct forest elsewhere. Conserving this forested watershed, as existing U.S. policy seeks to do, is a high priority. From a geopolitical perspective, the United States may simply have more at stake in some parts of the world than others. In addition, not all forest conservation activities produce the same benefits. Restoration of natural forests provides greater ecological benefits than planting trees for future cultivation, although both types of activities may sequester similar quantities of carbon.

U.S. climate policy, therefore, should be designed to maximize the biodiversity, economic development, and security benefits of reducing deforestation without detracting from emission reduction objectives. This can be achieved by creating policy frameworks that encourage investments in the highest priority countries and places. Congress should consider making sure that new climate laws contain criteria for the Executive Branch to apply when exercising discretion about where to direct U.S. funding. The Executive Branch should report to Congress on the measures it is taking to focus U.S. funding in ways that maximize climate, national security, biodiversity, economic development and humanitarian benefits. Together, these mechanisms would help ensure that the forests that are most important to advancing a broad range of U.S. national interests receive an appropriate share of available U.S. funding.

*Principle: U.S. policies to reduce tropical deforestation must further the economic development objectives of developing nations.*

