

Forests, Climate Change, and Human Rights: Managing Risk and Trade-offs

October 2008

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Table of Contents^{1,2}

I. Background	4
II. The Relevance of Climate Change to Forests and Forests to Climate Change	5
III. Forest Governance and Human Rights	6
Forest governance	6
Forests and human rights	8
IV. The Human Rights Implications of Climate Change Related to Forests	9
Direct impacts	9
Impacts of forest policy responses to climate change	10
<i>Mitigation of forest-based emissions</i>	10
<i>Promotion of agrofuels</i>	11
<i>Adaptation</i>	12
V. The Challenge of Respecting Procedural Rights	12
<i>At the national level</i>	13
<i>At the global level</i>	13
VI. Reflections on Challenges to Justice and Equity	14
Duty bearers and rights holders	14
Equity versus efficiency	15
VII. Policy Implications	16
VIII. Conclusion	18
References	19

¹ This paper is the draft of a chapter with the same title which is to appear in the forthcoming publication, *Human Rights and Climate Change* edited by Stephen Humphreys, International Council on Human Rights Policy, published by Cambridge University Press. All Rights Reserved. The chapter builds on a note prepared for a roundtable on climate change and human rights convened by the International Council on Human Rights Policy in Geneva, October 12-13, 2007.

The author is indebted to Stephen Humphreys, John Mutter, Carol Colfer, Marcus Colchester, Jessica Campese, and Cecilia Luttrell for providing insights and/or comments on drafts, and to Lucy Heffern for research assistance.

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I. Background

In the mid-1980s, tropical deforestation splashed onto the international agenda as the world became aware of threats to the survival of the human and biological diversity sustained by tropical forests. Activists protested the road-building and transmigration projects that were catalyzing deforestation in Brazil and Indonesia; bilateral and multilateral donors mobilized funds for investment in forest protection; conservation organizations established alliances with indigenous and traditional peoples; and governments launched negotiations toward an international agreement on forests. Interest in tropical forests peaked in the aftermath of the United Nations Conference on Environment and Development in Rio in 1992, and steadily declined over the next decade as national and international efforts to reverse deforestation proved disappointing.

Tropical deforestation has now reappeared on the international agenda due to its newly-appreciated link to climate change. In 2006, a review commissioned by the Government of the United Kingdom (Stern 2006) called attention to the fact that some 20 percent of current annual global greenhouse gas emissions (GHG) is due to land use change – most of which is deforestation in developing countries – a share greater than the emissions produced by the transport sector globally. The review asserted that controlling deforestation could provide one of the least expensive strategies for reducing emissions, and that such efforts must be a key element of any future climate protection regime. As a result, Reducing Emissions from Deforestation and forest Degradation (REDD) is now central to discussions of global and national mitigation strategies.

While getting less attention than the importance of forests to the mitigation agenda, the potential impacts of climate change on forests, and the role of forests in adaptation to climate change, are increasingly appreciated by the scientific community and relevant policy arenas. For example, higher temperatures and changes in rainfall patterns will affect the resilience of forests to fires, pests, and disease. At the same time, maintaining natural forest vegetation can be seen as a key component of adaptation to climate change in other sectors. For example, forest-based sources of food and income can continue to provide a “safety net” for agricultural households as crop-based food security is undermined by increasingly unpredictable weather patterns.

Any change in the condition or management of tropical forests is relevant to human rights, posing both risks of increased human rights violations and opportunities for improvement. Many of the world’s poorest and most politically marginalized people are dependent on forests for their livelihoods. Compared to other economic and social sectors affected by climate change, forested areas and forest-related institutions tend to be especially characterized by unclear property rights, remoteness from public scrutiny, and a history of repressive state actions. As such, forest governance has profound implications for the rights and welfare of indigenous, traditional and other forest-dependent peoples, and vice versa. The purpose of this chapter is to provide an overview of the human rights issues likely to arise at the intersection of forests and climate change. These issues include the likely direct impacts of climate change on forest-based livelihoods, and consequent undermining of economic, social, and cultural rights. They also include the risks to civil and political rights that could be posed by the implementation of various policy responses to climate change: forest-related adaptation measures, REDD and other schemes to mitigate emissions from land use change, and agrofuels development in forested areas. Procedural rights are also at risk if forest-related climate policies at national and international levels are developed without meaningful participation by key stakeholders. The chapter concludes with some reflections on the challenges to equity and justice posed by alternative forest-related climate policies, and the policy implications of taking human rights into account in their design and implementation.

II. The Relevance of Climate Change to Forests and Forests to Climate Change

Forests and climate change are interrelated in a number of ways. While many of these relationships are complex and poorly understood (Bonan 2008), at least four linkages are generally accepted. First, forests and forest-based livelihoods will be directly affected by climate change. As described in greater detail below, forest ecosystems are vulnerable to a warming climate as well as to increased variability, and to an increased incidence and severity of extreme weather events. As a result, both government policies and community practices governing forest management will have to adapt to climate change in order to maintain the provision of direct goods and services that local communities and broader society derive from forests. For example, as higher temperatures and prolonged droughts render natural forests more vulnerable to forest fires, forest managers will need to invest more in fire control efforts to ensure that intentionally set fires do not escape and become wildfires, and that accidentally set fires are quickly detected and suppressed.

Second, maintenance of forest-based ecosystem services that support other economic sectors can strengthen societies' resilience to climate change. For example, forests play an important role in moderating the quantity and quality of water that flows out of watersheds. As rainfall patterns change, the hydrological services provided by forests will be increasingly important to maintaining municipal drinking water systems, agricultural water supplies, and the production of hydroelectric power. This set of potential contributions to climate change adaptation has been ranked as especially important in Central America (TroFCCA 2008). In parts of Southeast Asia, where droughts are anticipated to be more severe, and episodes of heavy rainfall more likely, maintaining the role of intact natural forest vegetation in controlling forest fires and landslides is a priority (TroFCCA 2008). Accordingly, the adaptation strategies of other economic sectors – such as agriculture and hydropower (which are affected by forest hydrology) and air and land transportation (which are affected by haze from forest fires and landslides, respectively) -- need to be linked to sustainable forest management.

Third, forests are already being affected by the rapid development of agrofuels³, which is being driven in part by ostensibly “climate-friendly” subsidies on the part of the European Union, the United States, and other governments (IATP 2007). In some cases, the impact is direct, as when intact tropical forests are converted to agrofuel plantations. In other cases the impact is indirect, as when agrofuel development displaces other land uses into forest areas. The extent to which future climate policy includes agrofuels as an emissions mitigation strategy will have a significant impact on forests and forest peoples.

Fourth, deforestation and forest degradation are a significant source of the GHG emissions that drive climate change, and are among those that can be mitigated at relatively low financial cost. The Intergovernmental Panel on Climate Change (IPCC) estimates that about half of the potentially avoidable emissions at a cost of less than US\$100 per ton of CO₂ equivalent could be achieved by reducing emissions from deforestation (IPCC WGIII 2007, p. 14). The potential additional social costs are discussed below.

However, the mitigation potential of forests could itself be affected by climate change. A warmer, drier climate could trigger a positive feedback loop that results in the dieback of forests, and thus increased emissions and further warming (Bonan 2008). In other words, warmer, drier weather could lead to a vicious circle in which increased incidence of burning renders forests less able to recover and sequester carbon in forest vegetation, which in turn would accelerate climate change. Some models predict that a significant portion of the carbon-rich Amazon rainforest will be replaced by carbon-poor savannah ecosystems if global warming is allowed to proceed beyond a certain threshold, thus releasing significant amounts of carbon into the atmosphere (WHRC 2008; Mayle 2007, p. 299).

³ The term “agrofuels” rather than “biofuels” is used to distinguish between crops grown for production of liquid fuel -- such as sugarcane for ethanol and oil palm for biodiesel -- and other forms of bioenergy, such as firewood, charcoal, and dung.

Two forested nations – Indonesia and Brazil – currently account for some two-thirds of total annual emissions from land use change. As a result of those emissions, estimates now place those countries as the third and fourth largest overall GHG emitters, after the United States and China (PEACE 2007). The drainage, clearing, and burning of peatland forests – much of which are concentrated in Indonesia – is particularly emissions-intensive, due to the carbon-rich organic matter below the surface vegetation that can extend to a depth of several meters (Hooijer et al. 2006). Brazil's emissions are driven by high rates of deforestation in the Amazon.

While the linkage between deforestation and climate emissions has been on the global agenda for more than a decade, for a number of methodological and political reasons, mechanisms to address “avoided deforestation” were not included in the Kyoto Protocol of the United Nations Framework Convention on Climate Change (UNFCCC 2007a). Afforestation and reforestation activities were included in the Kyoto Protocol, but very few tree-planting projects have been approved under the Protocol's Clean Development Mechanism. The conventional wisdom is that the procedures for certifying such projects were too complex and transactions costs too high to justify investment (FAO undated, p.17). As a result, the current discourse on forest-related mechanisms stresses the need to “streamline” the so-called “safeguard policies”, which set minimum substantive and procedural standards for attention to social and environmental impacts.⁴ Such streamlining could imply less stringent attention to human rights implications.

In late 2005, the politics of linking forests to climate protection changed with an official submission by the Coalition for Rainforest Nations (led by Costa Rica and Papua New Guinea) to the UNFCCC. The submission called on Parties to the UNFCCC and the Kyoto Protocol to open a dialogue toward addressing emissions resulting from tropical deforestation, in recognition of their significant contribution to overall emissions, and the fact that the Kyoto Protocol did not provide developing countries with a vehicle to reduce emissions through reduced deforestation (UNFCCC 2005).

A plan for negotiating positive incentives for Reducing Emissions for Deforestation and forest Degradation in Developing Countries (REDD) was one of the key features of the so-called “Bali Road Map” negotiated at the Thirteenth Conference of the Parties (COP13) to the UNFCCC in December 2007 (UNFCCC 2007b). Under a REDD regime, industrialized countries would make financial transfers to developing countries – through market and/or fund-based mechanisms – to compensate them for the opportunity and other costs of avoiding emissions from deforestation. COP13 set into motion a process to resolve outstanding methodological issues related to the measurement and monitoring of forest-based carbon emissions, and encouraged Parties to support REDD “demonstration activities”. As a result, nations with significant areas of natural forest are now key players in international climate negotiations.

III. Forest Governance and Human Rights

Debates about REDD have arisen in a context in which forest governance at both national and international levels is contested and dynamic. Under such conditions, the impact of forest policy changes and programmatic interventions to promote climate change mitigation and adaptation objectives could either accelerate or retard efforts to mainstream a rights-based approach into forest-related law and management practices.

Forest governance

Forest governance in many tropical countries reflects a legacy of colonial era rights and management regimes, in which the State claims ownership of most forest areas, and forests are exploited primarily for

⁴ This is part of a larger discourse questioning the utility of safeguard policies for reaching development objectives. For an analysis in the context of the World Bank, see Seymour 2006.

commercial timber. State claims are often contested by indigenous peoples and/or traditional communities that reside in and around forest areas. In respect to forests,

... [t]he dominant pattern of government intervention has been one of increasing central control over forest resources, the denial of access to forest resources by groups that have traditionally or historically depended on them, and control over trade in (and thus the ability to benefit from) forest species and products (Peluso and Vandergeest 2001, as cited in Menzies 2007, p. 6).

As a result, who owns the forest and what constitutes legal uses of forest resources are often unclear.

Over the last three decades, the international forestry profession has progressively embraced the rhetoric, and sometimes the practice, of “social forestry”, and what has now become known as “community-based forest management” or CBFM. CBFM departs from traditional forest management practices by including forest communities in both the decision-making and sharing of the benefits that result (Menzies 2007). Although CBFM has succeeded in providing some communities with new roles in and incomes from forest management, the progress of CBFM has been slowed by the reluctance of governments to cede real authority to communities (Menzies 2007).

While private and community-based forest management in the tropics is increasing modestly (White et al. 2002), most forest areas in developing countries continue to be claimed by the State, whether or not the State exercises effective management of those areas (Sunderlin 2008). Even in countries where indigenous and community rights over forests have been recognized on paper, local people have often failed to realize expected benefits due to inadequate enforcement of new forest tenure rights and other complementary rights – including citizenship, free prior and informed consent, and the right to redress (Sunderlin 2008, pp. 12-14).

Despite the importance of forests to the income, health, and identity of the communities that live in and around them (described further below), forest governance has tended to be dominated by the interests of political and economic elites. Laws and policies governing access to forest land and resources tend to be systematically biased against rural communities, and to grant special privileges to commercial interests (Larson and Ribot 2007). In Honduras, for example, the implementation of forestry regulations has favored logging companies, while erecting bureaucratic hurdles to the legal exploitation of forests by communities and smallholders (Larson and Ribot 2007).

Proximate causes of deforestation and degradation include both need as well as greed. Much forest destruction is driven by commercial-scale economic activity that enjoys implicit or explicit State subsidies. For example, poor logging practices by domestic and transnational corporations can open up forest areas to colonization and hunting, while wood waste left behind can make forests vulnerable to forest fire (Laurance et al. 2001). Structural overcapacity in the wood-processing industry in Indonesia has created a demand for fiber that cannot be met by legally and sustainably produced wood from plantations, thus creating a demand for illegally produced wood from natural forests (Barr 2001; World Bank 2006). Commercial scale agribusiness, ranging from cattle ranching in the Amazon region to oil palm plantations in Southeast Asia, has also caused large scale conversion of natural forests to other uses (Kanninen et al. 2007). It is often the case that such enterprises do not face the true costs of forest loss to the local, national, or global economy.

But some forest conversion and degradation is effected by the rural poor, and such activities often make the poor better off (Chomitz 2007). Conversion of forest frontiers to agriculture crops or tree crop plantations provides a livelihood for peasants across the tropics, and depending on resource tenure, market access, and commodity prices, a good living. As a result, in the absence of appropriate compensation, blunt policy instruments to protect forests can block a pathway out of poverty. Thus, simple formulations such as “poverty causes deforestation” or “deforestation hurts the poor” are both misleading generalizations and are insufficient to inform policy in particular circumstances.

A recent review of forest governance (Agrawal et al. 2008) highlighted three current trends:

- Decentralization of forest management, especially of low-value forests, which has brought an additional 200 million hectares under some form of community management;
- The dominance of private companies extracting timber from state-owned tropical forests under logging concession agreements; and
- The growing significance of forest certification as a market mechanism, especially for temperate forests.

The review stressed that the effectiveness of forest governance is only weakly associated with the type of formal ownership. The impacts of forest interventions on local people depend on clear user rights and responsibilities, enforcement of property rights, participation by forest users in decision-making, and downward and horizontal accountability of decision-makers (Agrawal et al. 2008, p. 1462; Wells 2006).

Forest governance at the international level is also contested and dynamic. Over the last two decades, the international community has repeatedly failed to negotiate a binding agreement on forests. According to one recent analysis of those efforts, the United Nations Forum on Forests and other intergovernmental attempts to address deforestation are doomed to failure as long as they are subservient to current neoliberal trade and investment regimes (Humphreys 2006). Most recently, the emergence of avoided deforestation as a key climate protection instrument has shifted the center of gravity of international forestry discussions away from forestry, agriculture, and biodiversity-related forums and into the UNFCCC.

Forests and human rights

Forest-based goods and services are central to the economic, social, and cultural (ES&C) rights of hundreds of millions of people around the world. The World Bank estimates that 90 percent of the 1.2 billion people living in extreme poverty depend on forest resources for some part of their livelihood (World Bank 2004; UNDP et al. 2005). In Indonesia, for example, more than 10 million poor people live in state forest zones with good forest cover, while millions more depend on forest for their income (Wollenberg et al. 2004). In the Democratic Republic of Congo, 40 million people rely on forests for food, medicines, energy, and income (Debroux et al. 2007).

Forests have proven to serve as important “safety nets” for communities in times of economic stress. During the financial crisis in the late 1990s in Indonesia, many households turned to the forest for supplementary income sources (Sunderlin 2002). For example, thousands of people went into remote peat forests in Kalimantan to gather turtles and treebark for sale in urban markets (Chokkalingam et al. 2005). Households unable to afford high prices for modern energy sources revert to collecting fuelwood from the forest. Forests also play a safety net role for vulnerable individuals: research in sub-Saharan Africa suggests that bushmeat from the forest provides an important source of protein to children orphaned by AIDS (Shackleton et al. 2006).

Forests are also important to the maintenance of cultural identity (Colfer et al. 1997). In East Kalimantan, Indonesia, research conducted with local communities identified more than 2100 forest species with 3642 different uses, including food, traditional medicine, hunting equipment, construction materials, and culturally-significant ornamentation. Some 119 of these species had no known substitute for the particular use (Sheil et al. 2001).

Despite the importance of forests to the realization of ES&C rights, forest communities are often denied access to forest resources. In many countries, there is a rich history of repressive measures taken by both State and non-state actors to control forest access and use. There is a large literature on the human rights implications of this history, which includes allegations of violations of civil and political (C&P) rights and procedural rights as well as ES&C rights (Peluso 1993; Alcorn and Royo 2007; Colchester 2006).

For example, commercial timber companies have relied upon military and paramilitary assistance to deal with local opposition to their logging activities (Colchester 2006, p.49). Conservation organizations have cooperated with law enforcement authorities to police access to protected areas, and in some instances communities have been forcibly evicted from those areas (Seymour 2008). Case studies on forest law enforcement from around the world indicate that high profile “crackdowns” on illegal logging tend to be targeted against the rural poor rather than against the business people and officials who are often behind forest crime (Colchester 2006).

Such examples suggest that in many countries, current forest governance regimes are inadequate for upholding international human rights standards. Combining various strands of international law – including such instruments as the UN Declaration on the Rights of Indigenous Peoples and the Convention on Elimination of All Forms of Discrimination – it has been asserted that such standards

...recognize the right of forest peoples to *'own, control, use and peacefully enjoy their lands, territories and other resources, and be secure in their means of subsistence'* (Colchester 2007, emphasis in original).

There is often a disconnect between the recognition of such rights and standards in ratified treaties and national constitutions and their realization through law and practice in the forestry sector (Colchester 2007).

A key implication of this disconnect – and the broader characterization of the state of forest governance offered above -- is that new initiatives designed to harness forests in the service of climate change adaptation and mitigation risk exacerbating existing weaknesses and inequities in current forest governance regimes.

IV. The Human Rights Implications of Climate Change Related to Forests

Direct impacts

As mentioned above, forests will be affected by increasing global temperatures and climate variability. Warmer surface temperatures and longer periods of drought will increase the risk of forest fires (IPCC WG II 2007, p. 18). In September 2007, Hurricane Felix devastated large swaths of forest in Central America, demonstrating the vulnerability of forests to extreme weather events, which are likely to increase in frequency and severity. To date, very little attention has been given to the policies and practices needed to maintain the adaptive capacity and productivity of natural or planted forests in the face of climate change (Guariguata et al. 2007).

Disruption of forest ecosystems will in turn lead to disruption in the provision of forest-based ecosystem goods and services. Such goods include timber, fuelwood, forage, fruits, medicines, and materials for handicrafts, which are often of particular importance to poor communities in developing countries (Millennium Ecosystem Assessment 2005; Sunderlin et al. 2005). For example, research in Uganda indicates up to 26 percent of rural household income comes from forest resources (Jagger 2007). More generally, forest-based ecosystem services include cultural, spiritual, and aesthetic services, as well as hydrological, pollination, and pest control services important to other sectors of national economies (Millennium Ecosystem Assessment 2005).

The degradation of forest ecosystems – and associated resilience to the impacts of climate change mentioned above – will thus reduce forest-based incomes. Women, whose household responsibilities and income sources often include the gathering of forest products, are likely to be particularly disadvantaged by their loss (Colfer, forthcoming). The impact of climate change on forests will also render already vulnerable communities even more vulnerable to “natural” disasters such as forest fires, landslides, and floods that will result from human-induced climate change.

As with other direct impacts of climate change on the lives and livelihoods of vulnerable people, those mediated through their impacts on forests pose a challenge to the traditional human rights framework. “Duty bearers” are widely dispersed in time and space, and it is virtually impossible to trace the responsibility for climate change from individual sources of emissions through to impacts on particular individuals.⁵ Nevertheless, the impacts are real, and in principle can be mitigated. Accordingly, the loss of forest-based income sources and ecosystem services due to climate change could be seen as violations of economic, social, and cultural rights. Further, the exacerbation of those losses (through adaptation options foregone) due to poor forest management could be similarly understood.

Impacts of forest policy responses to climate change

The impacts of climate change on human rights through the disruption of forest ecosystems is a subset of a wider and increasingly well-understood set of effects resulting from the *direct* impacts of climate change. Less prominent in the discourse to date linking climate change and human rights is the potential for policy initiatives taken in *response* to climate change to have unintended negative consequences for human rights.⁶ Specifically, if such responses were to be implemented in a repressive manner under conditions of weak governance, violations of civil and political rights could be at stake.

The forestry sector provides several illustrations of such risk. As mentioned above, climate-related interventions risk exacerbating existing weaknesses in forest governance regimes. Human rights are potentially at risk from policy responses to reduce GHG emissions from forests, to increase production of “climate-friendly” agrofuels, and to harness forests for adaptation to climate change.⁷

Mitigation of forest-based emissions

The prospect of a global REDD regime is already having an impact on forest-related decision-making around the world. In anticipation of REDD finance, national governments have begun making high-level commitments to the approach, and are making efforts to improve their capacity to monitor deforestation and forest degradation.⁸ In addition, sub-national governments have announced initiatives ranging from moratoria on logging in Aceh and Papua in Indonesia (Reuters 2007) to pilot payments for ecosystem services schemes in Brazil (Government of Amazonas and CC-AI 2007, pp. 16-17).

Public and private sector project proponents have announced the initiation of a number of REDD-related initiatives. In Madagascar, for example, the Swiss Agency for Development and Cooperation (SDC) in collaboration with GTZ (the German government agency for technical cooperation) and Intercooperation are implementing a demonstration activity called, “Committing Forests as Carbon Reservoir” (Intercooperation 2006). In 2007, the investment firm Merrill Lynch announced a \$9 million deal brokered by Carbon Conservation, an Australian company, to protect forests in Aceh, Indonesia. According to the press release announcing the deal, the firm is betting that the avoided carbon emissions will generate \$432 million in carbon financing over the next 30 years (Wright 2008; Merrill Lynch 2008).

Donor governments have also made significant commitments to advancing the REDD agenda: in March 2007, the Government of Australia committed Aus\$200 million to be focused in South-East Asia and

⁶ For example, a March 2008 request from the United Nations Human Rights Council to the Office of the U.N. High Commissioner for Human Rights for a “detailed analytical study of the relationship between climate change and human rights” highlighted on the effects of climate change, not the effects of efforts to address climate change (UN Human Rights Council, 2008).

⁷ Efforts to sequester carbon through tree-planting (afforestation/reforestation in the context of the Clean Development Mechanism, or ARCDM) could also pose human rights risks, but are beyond the scope of this paper.

⁸ See, for example, presentations by the governments of Papua New Guinea and Costa Rica presented at the UNFCCC Workshop on Methodological Issues relating to Reducing Emissions from Deforestation and Forest Degradation in Developing Countries in Tokyo, Japan, June 25-27, 2008, available at: http://unfccc.int/methods_and_science/lulucf/items/4289.php.

Pacific (Howard 2007); at COP13 in Bali, the Government of Norway announced a commitment of up to US\$500-600 million annually (Halvorsen 2007); Germany has committed US\$59 million to the World Bank's Forest Carbon Partnership Facility (World Bank 2007).

As payments for conserving forests for carbon storage become increasingly likely, State and non-state actors alike will have strong incentives to passively ignore or actively deny the land and resource rights of indigenous, traditional, and/or poor forest users in order to position themselves to claim compensation for forest stewardship in their stead.

While some representatives of indigenous peoples groups have cautiously welcomed REDD, others have denounced its potentially devastating impact on their communities.

The International Forum of Indigenous Peoples on Climate Change has stated that:

REDD will not benefit Indigenous Peoples, but in fact, it will result in more violations of Indigenous Peoples' Rights. It will increase violation of our Human Rights, our rights to our lands, territories and resources, steal our land, cause forced evictions, prevent access and threaten indigenous agricultural practices, destroy biodiversity and culture diversity and cause social conflicts (Forest Peoples Program 2007).

A second human rights concern raised by REDD is the prospect of increased law enforcement efforts to deal with illegal logging, which is currently a significant if poorly understood driver of forest degradation in many countries (Tacconi 2007). High profile "crackdowns" to deal with forest crime tend to discriminate in favor of those with the means to pay off law enforcement and judicial officials (Larson and Ribot 2007, p. 8). As a result, REDD-inspired law enforcement efforts could lead to an increase in arbitrary arrest and detention.

The prospect of REDD has raised concerns that rural communities that currently exercise stewardship over forests will be pushed aside by local elites, private investors, or others seeking to position themselves to receive new revenue flows in exchange for protecting the forest (Griffiths 2007). However, it is also plausible that the prospect of REDD could accelerate long overdue reforms in forest governance. Because REDD payments are likely to be linked to performance in actually reducing rates of deforestation and forest degradation, governments and private sector proponents could be forced to negotiate with rural communities who are in a position to control whether or not forests are functionally protected from fire, theft, conversion and other threats.

The prospect of REDD financial incentives will certainly put a premium on resolving questions about who owns (and therefore has a right to sell) forest carbon; the question is whether or not forest communities will be made better or worse off as a result. Creating the conditions for a rights-based approach for resolving these questions is thus a priority on the human rights agenda.

Promotion of agrofuels

Another issue linking forests, climate change, and human rights is the rapid expansion of agrofuel plantation development. The use of agrofuels, including bioethanol (principally from sugarcane) and biodiesel (principally from oil palm), is being promoted in developed and developing countries alike as a "climate-friendly" alternative to fossil fuels. As demand for agrofuels increases, it is driving land use change to substitute sugarcane, oil palm, or other agrofuel crops for current land uses, including forestry as well as food production (Fargione et al. 2008, p.1).

Due to the unclear and contested property rights over forest areas mentioned above, the human rights implications of such agrofuel development are profound for indigenous and traditional forest users, who risk alienation from their land. The rapid expansion of oil palm plantations in Indonesia illustrates the risk. Social factors are rarely assessed prior to project initiation, and conflicts over land are widespread, and have resulted in intimidation and violence (Sheil et al. forthcoming). In 2007, affected communities in West Kalimantan alleged that oil palm development had led to the takeover of indigenous peoples'

customary lands without due process, resulting in conflict, in turn triggering repressive actions by companies and security forces (Colchester et al. 2007).

Ironically, to the extent that agrofuels development comes at the expense of natural forests – as is occurring – the net impact on GHG emissions is a significant net *increase* (Searchinger et al. 2008). Research suggests that it would take more than 840 years to repay the “carbon debt” from converting Indonesia’s carbon-rich peatland forests to oil palm plantations (Fargione et al. 2008, p.2). Agrofuel development can thus pose a “lose – lose” proposition from the perspectives of both climate protection and the rights of forest communities.

Adaptation

The forest management policies of many countries likely to be affected by climate change do not yet take into account the role of forests in supporting societies’ adaptation strategies, nor their importance to sustaining livelihoods with the onset of climate change (Kalame et al. 2008). In the future, governments and the general public are likely to become increasingly aware of the importance of protecting natural forest cover as a way of maintaining ecosystem resilience to climate change. While such increased awareness would be a positive development overall, it could also prompt the implementation of policies that could result in human rights violations such as those described for forest-related mitigation interventions above.

For example, deforestation has often been blamed for massive landslides and flooding of the sort likely to become more frequent with climate change.⁹ In the past, governments have been quick to announce logging bans and other controls on forest use in response to such catastrophes (FAO and CIFOR 2005). For example, catastrophic floods in China, Thailand and the Philippines prompted logging bans that put millions of people out of work. There is a risk that in the name of adaptation to climate change, governments will limit settlement and farming in sensitive watersheds, which could in turn displace the poor without offering adequate compensation.

Further, the incidence of forest fires in the Amazonian and Southeast Asian rainforests is likely to increase along with longer droughts and higher temperatures (WHRC 2008; TroFCCA 2008). In the past, catastrophic forest fires have led governments to impose blanket bans on burning forests, without discriminating between commercial and traditional uses of fire, as happened in Indonesia (Barber and Schweithelm 2000). Some governments already have policies in place to limit shifting cultivation (Fujita et al. 2008). For example, the government of Lao PDR has an explicit policy goal of “stabilizing” shifting cultivation, on which 39 percent of the population was dependent in 2000 (Thomas 2003). As fires become more frequent, others will be tempted to ban traditional agricultural burning practices altogether. If enforced, such policies would disrupt the livelihoods of poor forest communities.

V. The Challenge of Respecting Procedural Rights

As described above, to the extent that policies intended to protect or exploit forests in the name of climate change mitigation or adaptation result in reduced livelihoods for the rural poor, economic, social and cultural rights are at stake. To the extent that such policies are enforced using repressive measures, civil and political rights are at stake as well. This section highlights the special challenge of respecting *procedural* rights in forests and climate-related decision-making.

⁹ Despite the conventional wisdom linking forests and floods, the science is controversial. Bradshaw et al. (2007) have demonstrated significant correlation, but Bruijnzeel et al. (2007) dispute causality.

It is increasingly recognized that so-called “access rights” – access to information, participation, and justice as codified in the Aarhus Convention¹⁰ – constitute human rights that are rooted in civil and political as well as economic, social, and cultural rights (Foti 2008, p. 22). Procedural equity – in terms of participation in decisions regarding what actions are to be taken and who will implement them – will in turn affect what options are available (Thomas and Twyman 2005, pp. 116-117).

Changes in forest policy and implementation in response to the new imperatives of climate change mitigation and adaptation will challenge existing forest governance mechanisms at both national and global levels. Governance mechanisms more generally, and mechanisms for forest governance in particular, are for the most part poorly equipped to respect procedural rights in a consistent manner.

At the national level

National systems for providing public access to information, participation, and justice related to decisions that affect the environment are still a work in progress. In case studies from around the world, The Access Initiative found a consistent lack of public participation in project-level decision-making. More than half of the cases of policy-level decision-making studied were characterized by insufficient lead time or inadequate information for meaningful participation by affected stakeholders (Foti 2008, pp. 62-65).

Extractive sectors (including forestry) tend to lag behind others in good governance practices such as transparency of information, public participation in decision-making, and access to justice, in part due to the vested interests that oppose increasing openness (Foti 2008, p. 43). Communities whose rights are most at risk from decision-making related to forests are often poor, located in remote areas, and members of ethnic and linguistic minorities subject to discrimination. For example, communities with unclear land rights and those less integrated into markets are less likely to benefit from REDD (Macchi 2008, p. 45).

Establishing the Free Prior and Informed Consent (FPIC) of affected communities is increasingly recognized as a procedural standard to be achieved by governments and private corporations prior to the implementation of major infrastructure or extractive industry projects (Colchester and Ferrari 2007). Consistent implementation of FPIC in forest-related decision-making would require significant changes in the way governments and corporations interact with communities in many countries (Colchester 2007, pp. 20-21). Not infrequently, forest communities first learn of plans for timber concessions or industrial plantations when the bulldozers arrive.

As a result, there is a strong risk that procedural rights in the formulation and implementation of national climate policies related to forests will not be adequately respected. Significant donor investment in capacity-building for REDD, now focused on building the forest carbon assessment and monitoring capacity of governments, will need to be broadened to include capacity for inclusive decision-making and meaningful participation by less powerful groups. This suggests that REDD interventions will need to be paced and sequenced in accordance with capacity-building achievements, and thus the level of urgency for the latter is high.

At the global level

Inadequate attention to the rights and voices of forest communities within countries is recapitulated at the international level. Advocates for indigenous peoples' rights have pointed out the limited attention that the scientific community such as the IPCC has given to the likely impacts of climate change on tropical forest-dependent people (Salick 2007, p. 4). Others have observed that the special risks posed by climate change to such communities are not given sufficient attention in negotiations related to mitigation and adaptation options (Macchi 2008, p. 38).

¹⁰ The United Nations Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, available at <http://www.unece.org/env/pp/documents/cep43e.pdf>.

Indigenous groups have challenged their lack of inclusion in international debates on issues such as REDD (Diaz, undated). For example, at COP13 in Bali in December 2007, activists protested the launch of the World Bank's Forest Carbon Partnership Facility (FCPF) in part due to inadequate consultation with indigenous peoples during the Facility's design (FPP 2008). At that event, the Chair of the United Nations Permanent Forum on Indigenous Issues called for recognition of indigenous rights, consultations with indigenous peoples, and representation in the FCPF governance structure (Corpuz-Tauli 2007).

In this context, it is relevant to note that the Aarhus Convention requires signatories to promote its principles in international negotiations related to the environment (UNECE 1998). Thus most European governments are obligated to incorporate concerns about respect for procedural rights in their negotiations concerning REDD.

VI. Reflections on Challenges to Justice and Equity

Duty bearers and rights holders

The overall discourse about equity and justice in the climate change policy arena has been characterized by a grouping of rich consumers and nations as the perpetrators of injustice (through past and current profligate fossil fuel use while facing lower vulnerability to the probable impacts of climate change) versus poor people and nations as the victims (in terms of their significantly lower fossil fuel consumption historically and per capita, and higher vulnerability to the probable impacts of climate change). Projections of the impacts of climate change across countries suggest that poor countries will suffer the greater share of damages, despite having contributed historically the least to the problem (Mendelsohn et al. 2006, p. 175). Translated into the language of human rights, the "duty bearers" and the "rights holders" related to climate change are discussed as two distinct groups, corresponding to rich countries and poor countries, respectively.

The addition of forest-based emissions to the mix complicates the discourse. Sources of net forest-based emissions are currently concentrated almost exclusively in developing countries, while the net forest cover change in some industrialized countries is marginally positive.¹¹ This raises the question of the degree to which governments of countries with high forest-based emissions become duty bearers to mitigate the climate change-related impacts of those emissions. Clearly, industrialized countries are responsible for the lion's share of *cumulative* emissions (including those from past deforestation as well as fossil fuel use), and are also implicated as important drivers of current deforestation in developing countries through consumption, trade and investment patterns. Thus any new "duties" on the part of forested developing countries would not reduce – nor be fully distinct from -- the duties of industrialized countries to reduce emissions.

Indeed, many advocacy groups in both Northern and Southern countries have opposed REDD on the grounds that, by flooding the carbon market with cheap carbon emissions reduction credits, REDD will lift pressure on industrialized countries to reduce fossil fuel based emissions (Hare and Macey 2008). However, recent analyses suggest that catastrophic climate change can only be averted by a "both/and" solution that includes reduced emissions from both deforestation and fossil fuel use. In addition, the possibility that climate change could itself reduce the ability of forests to sequester carbon implies that reductions of all kinds need to be addressed with urgency to keep this option open.

Another complicating factor is that the underlying causes of deforestation – consumption of forest products that cause forest degradation, and of agricultural and industrial commodities that lead to forest conversion – include both rich and poor people and rich and poor countries alike. For example, the market for palm oil is driven by its use as a domestic cooking oil in developing countries as well as by its use as a "climate friendly" transport fuel in industrialized countries (Naylor 2007). Thus, while debates

¹¹ The outlier among developing countries is China, which has achieved a significant recent increase in forest cover due to extensive reforestation efforts.

over agrofuels have been framed as “food vs. fuel” or “forest vs. fuel”, there is also a potential “food vs. forest” trade-off that cannot be ignored.

The primary rights holders related to the impacts of climate change – the poor in developing countries – remain the same whether climate change is driven by forest-based or other sources of emissions. But some of those same poor people in developing countries are rights holders who are at most risk from policies intended to mitigate forest-based emissions. Who should be included in the group of duty bearers for reducing forest-based emissions will certainly remain a contentious question. Given the significance of forest-based emissions, and the urgency of reducing emissions overall, *all* actors with potential to affect rates of deforestation – including relevant governments and corporations in both North and South -- could be considered to have an obligation to be part of the solution. The question then becomes how such responsibility should be shared (e.g., how financed), and how to protect human rights as governments and corporations act on those obligations.

Equity versus efficiency

The prioritization of investments to promote REDD raises a number of thorny equity issues. It is true that there is some scope for “win-win” opportunities to address forest-based sources of emissions and other objectives related to human rights such as poverty reduction. For example, payments to rural communities to conserve forests could potentially advance both (Luttrel et al. 2007). Unfortunately, there is no neat alignment between need and the most efficient uses of scarce resources to achieve climate protection objectives.

Sources of forest-based emissions are distributed unevenly within and between individual developing countries. Different countries are arrayed along the so-called “forest transition curve”, with some maintaining a significant amount of their original forest cover, others rapidly deforesting, and still others with little forest left (Kanninen et al. 2007). Efficiency and urgency criteria would dictate concentrating REDD payments in those countries on the “steep part” of the forest transition curve – such as Indonesia and Brazil – that are responsible for the bulk of current forest-based emissions. But such a narrow targeting leaves out countries that retain significant forests (such as some of those in the Congo Basin) and those that have little forest area left (such as those in South Asia), both with significant numbers of very poor people made further vulnerable by climate change.

Debates over how to incorporate REDD into the global climate protection regime are now grappling with the question of how to achieve equity across countries and regions with different deforestation histories. All else equal, carbon markets will certainly favor countries and regions with the largest number of inexpensive credits, untempered by concerns about other so-called “co-benefits”, such as poverty reduction or biodiversity conservation. Such objectives will need to be internalized into REDD instruments, or explicitly addressed through complementary initiatives. Developing countries have reason to be nervous that the allocation of development assistance funds will also be skewed by climate protection objectives at the expense of poverty reduction objectives.

Similarly, at a more micro scale, the most effective allocations of funds for REDD will be those that most efficiently affect marginal land use decisions (Wunder 2007). As a result, optimal allocations of REDD funds within countries from a climate protection perspective may offend our sense of justice. For example, if one community – say, migrants to a forest frontier – is rapidly converting forests to a land use that is of lower value than carbon storage (e.g., cattle ranching), and another community – say, an indigenous group – has a strong track record and likelihood of continuing to protect its traditional forests, then the most effective allocation of REDD funds would be to the migrant community, to compensate them for foregoing expansion of their ranching activities. Payments to the indigenous community would not “buy” a reduction in emissions, as the community would likely protect the forest anyway. Gender justice advocates have noted that those most likely to benefit from REDD payments would thus be those responsible for the problem, not those – such as women – who have contributed to protecting forests (Gender CC 2007, p. 2).

Trade-offs thus emerge between allocating resources to “deserving” countries and communities (based on need and merit) versus allocating resources to the countries and communities where emissions reduction potential is highest (in the interest of protecting equally deserving communities from the adverse impacts of climate change). From the perspective of the countries and communities most vulnerable to climate change – such as small island states—there is a need to focus resource allocations on investments that maximize efficiency and effectiveness in reducing emissions rather than other considerations, based on the proposition that the greatest threat to the world’s poor is in fact climate change. According to a 2007 submission from the Government of Tuvalu to the UNFCCC on REDD:

The crucial element in the consideration of tropical forest loss under the UNFCCC is the reduction of greenhouse gas emissions at the global level. This must be the principal objective of any action taken by the COP. Other considerations will be important. In fact co-benefits may be possible but these should not outweigh the key principle of reducing emissions at the global level. This principle has significant implications for what can and cannot be achieved with respect to possible actions under the UNFCCC to reduce emissions from deforestation (UNFCCC 2007c).

Thus, design of REDD regimes at national and international levels will force difficult decisions regarding whether and how to incorporate multiple and potentially conflicting objectives into an instrument designed to reduce emissions. The effectiveness, efficiency and equity of the resulting instrument can only be assessed with respect to those agreed objectives.

VII. Policy Implications

In facing the dangers from climate change there are three options: mitigation, adaptation and suffering. Minimizing the amount of suffering can only be achieved by doing a lot of both mitigation and adaptation (Holdren 2008).

In the quote above from John Holdren, Director of the Woods Hole Research Center, “suffering” can be used as a proxy for the human rights violations that will surely result from the direct impacts of climate change. Thus, policy initiatives to support mitigation and adaptation are urgently needed. And yet from the evidence presented in this chapter, it is clear that at least in the forestry sector, human rights violations may be the unintended consequences of mitigation and adaptation efforts themselves. Addressing the linkages among climate change, forests, and human rights thus presents potential conflicts among rights and rights holders.

As a result, climate policy needs to include human rights risk as a criterion in the selection among alternative policy options and institutional choice decisions. One way to apply the criterion would be to ask which mitigation or adaptation initiatives significantly preserve or enhance the human rights of the greatest number of people. An alternative method would be to determine which policies pose the lowest risk of significant human rights violations.

Such risk assessment should temper the pace and sequencing of the implementation of alternative policy options. For example, one might argue that, in light of the fraught human rights record of the forestry sector, forest-related emissions reduction schemes should be delayed in favor of less risky interventions related to renewable energy development, at least until more robust institutional safeguards are in place. But applying such criteria will not be easy in light of the suffering likely to result from failure to act. For example, a delay in addressing forest-based emissions would almost certainly result in higher emissions overall due to the higher cost of abatement in other sectors, and thus more suffering from climate change. There is also a significant time value of keeping carbon sequestered in trees and soil as long as possible, to buy time for technological advances to support the development of other mitigation options.

In addition, there is the need to avoid the risk of catastrophic dieback of forests as a result of climate change itself. As mentioned above, some models predict that increasing temperatures and drought will

lead to the loss of forest cover if global warming is allowed to proceed beyond a certain threshold, thus releasing significant amounts of carbon into the atmosphere in a positive feedback loop (WHRC 2008). In other words, the international community may face the tragic choice between risking human rights violations to address forest-based emissions now, or risking the human rights implications of more catastrophic climate change later.

At a practical level, such choices will be faced in international negotiations regarding the degree to which human rights procedural safeguards should be embedded in global REDD governance and financing regimes. Governments of forested countries will resist any perceived infringement on their national sovereignty. Others will argue that if REDD mechanisms are too encumbered by such safeguards, finance will flow only to international consultants and not to actual activities on the ground, as is asserted to have happened with the inclusion of afforestation/reforestation measures in the Clean Development Mechanism. Achieving the right balance between effectiveness and efficiency in ensuring compliance with standards will not be easy.

At the level of individual REDD investments, such choices will be faced in the selection of specific countries and sites for programmatic interventions. For example, how much national and local institutional capacity is “enough” to manage risks of unintended consequences for human rights? Consistent implementation of the procedural rights codified in the Aarhus Convention would be one strategy for ensuring that such decisions are made with the participation of key stakeholders.

Weighing trade-offs between the risks of action versus the risks of inaction could make use of the concept of human rights “thresholds”. Under this approach, policy would require that a minimum acceptable level of protection of individual rights be defined and respected, whether from direct climate change impacts on the one hand, or adaptation and mitigation efforts on the other (ICHRP 2008). Application of such minimum thresholds would likely have the effect of ruling out both the most risky forest-related interventions, as well as the argument for no action.

One clear policy implication is the need for all forest-related mitigation and adaptation initiatives to be accompanied by robust monitoring and early warning systems to flag human rights problems as soon as they appear, and force immediate course correction. Proponents of REDD policies and projects and forest-related adaptation interventions need to have policies in place to protect human rights, and ensure that those policies are enforced, and subject to both internal self-assessment and external monitoring (Alcorn and Royo 2007, pp. 131-132). For example, the World Bank’s new resettlement policy includes a “process framework” for reviewing human rights issues on an ongoing basis, while the World Wide Fund for Nature (WWF) undertook a self-assessment of its policy on indigenous peoples 10 years after its adoption.

Development assistance related to forests and climate change should be targeted to develop the capacity of duty bearers to meet their obligations, and the capacity of rights holders to claim those rights (UN Interagency Agreement 2003, as quoted in Luttrell and Piron 2005, p. 7). Proponents of forest-related responses to climate change must also themselves invest in or be advocates for greater investment in strengthening forest governance more generally. Administrative capacity necessary to implement forest tenure reforms includes the ability to coordinate among different branches of government, sufficient budget to implement land titling, appropriate expertise at local levels, and reform of unnecessary regulations that undermine fulfillment of local rights to forest land and resources (Sunderlin 2008, p. 23).

If human rights violations are to be avoided, adoption of a rights-based approach to forest policy and management must accompany, and in many cases precede, implementation of climate-oriented interventions. Such an approach would include, *inter alia*, the training of forestry officials regarding their rights-related responsibilities, accelerated efforts to resolve conflicts over forest land and resources, increased transparency of forest-related data and decision-making, and reform of laws, regulations and administrative and judicial mechanisms to recognize and protect forest peoples’ rights and forest management systems (Colchester 2007).

VIII. Conclusion

The forestry sector illustrates how human rights are put at risk not only by the direct impacts of climate change, but also by policy responses designed to advance adaptation and mitigation objectives. Climate-related interventions risk exacerbating existing weaknesses and inequities that characterize current forest governance regimes. Because of the significance of forest-based emissions, and the possibility that climate change itself will undermine the mitigation potential of forests, the international community faces trade-offs between the human rights risks of forest-related interventions in the short run, and human rights risks of no action in the longer run.

The paper suggests that such trade-offs be weighed explicitly, and that the risks of forest-related interventions be minimized through human rights safeguard policies, monitoring, and assessment. In particular, respect for procedural rights is highlighted as a way of managing risk. In addition, capacity-building efforts should target the ability of duty bearers to guard against human rights violations resulting from changes in forest management, and the ability of rights holders to claim their rights through meaningful participation in climate policy formulation and implementation.

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