

Forests in Fragile and Conflict-Affected States

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October 2010



Suggested citation: Harwell, Emily (2010). *Forests in fragile and conflict-affected states*, Program on Forests (PROFOR), Washington DC.

Acknowledgements

This work was funded by the Program on Forests (PROFOR), a multi-donor partnership managed by a Secretariat at the World Bank. PROFOR finances in-depth forestry research and processes that support the following goals: improving people's livelihoods; enhancing forest governance and law enforcement; financing sustainable forest management; and coordinating forest policy with other sectors. Learn more at www.profor.info.

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Executive Summary

Fragile states, defined by their failure to deliver security and basic services to their citizens, suffer from a complex array of weaknesses—in economic management, but also in political legitimacy, regulatory quality, social inclusion, and institutional effectiveness. Often these weaknesses can lead to violent conflict, but the precise mechanisms of how fragility leads to conflict is often underexplored.

Further, although quantitative evidence shows that economic dependence on natural resources tends to increase the likelihood that fragile states will experience civil war, most research has focused on oil, gas, and diamonds, rather than forestry. However, very extensive areas of the world's forests are found in countries which have been assessed to be either failed states or which are at moderate risk of becoming failed states. Furthermore, forests are valuable for local subsistence livelihoods, timber and other commercially valuable forest products, as well as ecosystem services including forest carbon and biodiversity. This makes the linkage between forests and fragile states of significant importance to local poverty reduction, national and global trade, and global public goods. The understanding and mitigating pressures on forests in fragile states also clearly has important implications for the donor community's interventions in both the forest sector and conflict and post conflict programming.

This paper provides a synthesis of key themes and current knowledge about the linkages between forests, armed conflict, poverty, and various aspects of state fragility.

The main themes include:

- how **predatory, incapable or absent states are 'fragile' in different ways**, and their diverse relationships to forests and conflict;
- the **mechanisms by which forests facilitate or prolong conflict**, including: financial flows from logging to state and non-state belligerents, the use of forests as patronage, the traffic of weapons by loggers, and the employment of belligerents by logging companies for security;
- the **impact of conflict and fragility on forests and forest livelihoods**, with a focus on cross-sectoral issues associated with the management of forests after conflicts end; and,
- the **focus of reform in post-conflict** interventions in order to more effectively protect forests and forest-based livelihoods, and to mitigate further conflict.

Because forests have multiple and often competing constituencies for commercial, subsistence and cultural uses, they are frequently the center of struggles over control of access and use. While these conflicts can be widespread, most tend to be non-violent, or if violence breaks out it tends to be localized. Indeed the quantitative evidence available shows that **countries with large amounts of forest (either in total area or as a proportion of national territory) are no more likely to experience civil war than those without forest.**

However, there is an association between likelihood of conflict and size of the forest industry. Additionally, **for countries experiencing civil war and that also have other extractive resources available, abundance of forest increases the duration of the conflict. This effect is heightened with increasing accessibility of forest.** That is, forests do not cause conflict and **armed conflicts tend not to be fought over forests, but rather armed conflicts are often exacerbated by certain aspects of forest use, especially when forests are lootable.**

The link between conflict and resources: What is unique about forests?

So what characteristics of forests and timber mitigate their role in causing armed conflict but exacerbate their likelihood to prolong it? In considering the relevance to conflict and fragility, the critical differences between forests and resources such as oil and diamonds include:

- Forests (and the land beneath them) are **critical to local livelihoods, especially the most vulnerable: women and the rural poor.** Forests are often valuable to national and global economies, and for global public goods of forest carbon and biodiversity. These competing values can cause grievance and conflict (not necessarily armed although it can become violent) when one is prioritized to the detriment of another.
- Forests provide **shelter and a protected pathway for movement of rebels**, which may prolong conflicts, and drive the government into accommodations with loggers in order to drive insurgencies out.
- Forests are “**lootable**” (requiring low cost and low skill for extraction), especially when located near roads, coasts, or navigable rivers. The footprint of logging operations is much **more diffuse than “point sources”** like oil and mining, often giving forestry a **large impact on livelihoods**, as well as being **more difficult to control**, thereby providing a revenue source for insurgencies, criminal gangs, or states whose revenue sources have been cut by sanctions. The diffuse footprint also necessitates the use of **security forces** for remote operations, who often act unaccountably and may even be combatants forces themselves, directly contributing to violence.
- Timber is bulky and easily **detectable**, making it relatively easy to monitor, and thus susceptible to **informal “taxation” at transport bottlenecks** (for those with capacity for territorial control, whether state or non-state), providing revenue for conflict.
- While timber itself is difficult to hide, its illegality is more easily concealed. Timber traffic can be more difficult to police than commodities such as drugs or wildlife, because **illegal timber can be easily mixed with legal**, requiring detailed systems for verifying legality of origin and permits, and expertise to identify restricted species. This makes control of illicit revenue sources difficult.

These aspects that contribute to conflict can be offset by characteristics that might reduce conflict:

- Timber has **low value to weight** ratio, which means there are **fewer discipline problems** compared to more easily smuggled resources (e.g. diamonds). It has lower overall value (e.g. oil, precious minerals), which means that there are **fewer spoilers** willing to prolong violence solely for economic reasons solely related to timber.
- Timber is vulnerable to **commodity boom and bust cycles** but is also **more easily discovered**, and **prices are less volatile** than oil (but more than diamonds). This means there are fewer destabilizing impacts from dramatic windfalls and declines.

- **End users of timber products are increasingly discriminating about sourcing and legality,** making certification increasingly attractive as a means to differentiate between wood sourced from “good actors” and “bad actors”.

Finally, trees are **renewable** but take **time to grow**, which requires **planning and investment over time** for sustainable management. **In the absence of incentives for long term investment, there will be temptation to rely on asset stripping of lootable forests by unaccountable companies and short sighted governments.** These safeguards are especially important during the post conflict rush to generate revenue for recovery.

Different types of Fragile States

As not all resources are the same, neither are all fragile states. The different types of fragility can lead to different dynamics in relation to forest use and its role in prolonging armed conflict.

In the case of ***strong but predatory states***, **governments are not incapable, but rather, the elite choose to focus their capacities not on the pursuit of the public good but on consolidating personal power through patronage relationships** with the private sector and a wide array of specialized criminal networks. The use of forest concessions for this form of **patronage undermines the rule of law and the development of governance institutions; encourages the expansion of shadow economies, while undermining the sustainable use of forests; reduces access for local livelihoods; short-circuits accountability, generates grievance, and undermines state legitimacy; and at its worst, fuels a resumption of violence.**

In other circumstances, fragility leads to the emergence of ***weak states with regions virtually beyond government control.*** **Of course, not all areas of state absence are violent, but those that are, appear characterized by: abundant, accessible lucrative resources, especially those with large global demand; these resources in a remote location from the capital, but close to a border porous to the flow of goods and people; a history of ethnic/religious polarization; and a high vulnerability to external influences,** such as flows of weapons, refugees, mercenaries, drugs and other illegal commodities, and political interference and influence of market demands. In these circumstances, **forests extraction is often not “uncontrolled” but rather tightly controlled by non-state forces** such as criminal gangs, insurgents, or unaccountable companies protected by armed militia.

Both of these scenarios of weak and predatory states set the stage, albeit in different ways, for forests to contribute to armed conflict, as well as for forests to come under pressure from conflict, to the detriment of local, national and global communities depending on these natural assets.

Impact on forests from conflict and in the post-conflict period

There is sparse quantitative data on the impact of conflict on forest cover, and the qualitative data present a mixed story that can change over the course of the conflict. For example, conflict can actually act to protect some areas of forest by reducing pressure. If the security situation in the forest

deteriorates so that the **loggers abandon their concessions and local communities flee**, meaning that pressures from logging, agriculture, and hunting are temporarily alleviated. However, this pressure may simply be displaced to other areas, especially those around displacement camps. For example, **construction materials and fuelwood demands for refugees** concentrated over short periods of time in small areas around camps can devastate local forests. Likewise, **hunting may also increase due to the availability of firearms**, the **loss of livestock** due to looting and displacement.

Nevertheless, there are a few clear dynamics of increased pressure on forests during conflict. First, for combatants, forests can play a role in providing either **shelter or blocking access to strategic territory**. Forests might be napalmed, defoliated, logged, converted to military use, or simply become the site of heavy militarized presence, especially along borders or areas of key strategic value.

Conflict causes **displacement** of people, who especially when concentrated in camps can cause spikes in demand for **fuel, construction materials, and bushmeat**, especially when livestock prices increase and protein rations in camps are low or unreliable.

Another important but often overlooked consequence of conflict is **the loss of management staff**, the **theft or destruction of resources** necessary for oversight, and the **redirection of funding** for management and conservation of forests.

Post conflict pressures on forests

The pressures on forests in the post conflict tend to be less ambiguous. **In the post-conflict environment, myriad demands and donor interventions often go uncoordinated, which combine to ramp up pressure on forests. There is urgent need for employment, quick revenue for reconstruction and to fund poverty reduction in order to visibly demonstrate a 'peace dividend'**. At the same time, **demand for timber** in post conflict settings is high from reconstruction and to service the large influx of foreign aid workers. These needs are often met by exploiting forests, recalling their low skill and technology demands. But while **access to forests quickly increases** with improved roads and bridges, de-mining, and increased population pressure, **reforms to management and law enforcement are often more time consuming and politically freighted endeavors that lag behind**.

Post conflict governments in forested countries tend to **overestimate the revenue potential of industrial logging concessions as a means to jump start the economic recovery, often to the detriment of smallholder access and health of forests important for local livelihoods**. A rush to allocate large concessions can result in a **resource grab** by political elite and other speculators. A failure to meet revenue projections can also **undermine reconstruction efforts and poverty reduction strategies**. More perniciously, emphasis on the industrial concession model can **disadvantage local communities by reducing their access to forests**, and **failure to deliver on poverty reduction can erode trust in the government**. Most troubling, **if concessions are allocated ahead of adequate oversight capacities, a return to 'business as usual' exacerbates fragility and could precipitate a return to conflict financing**.

Reforming conflict-affected forestry sectors

A several-pronged approach is needed that supports sustainable, equitable community use as well as reforms for industrial operations in the forestry sector, including:

- **Clear tenure, based on law**
 - a. **A concession review** to assess legality of existing claims,
 - b. **Land reform** to address inequities in legal recognition of customary and women's land rights, and a specialized institutional mechanism to mediate conflicts;
- **Participation**, especially of forest-dependent communities, in forest management decision making;
 - a. Support and empowerment of **community forest management institutions**;
 - b. Capacity building and protections for a **strong civil society**;
- **Anti Corruption** mechanisms
 - a. **Concession allocation** involving competitive bidding to avoid patronage;
 - b. Robust mechanisms of **reporting, transparency, and accountability, including chain of custody** for timber and **revenue tracking** systems;
- Penalties and functional **enforcement**;
- **Cooperative regional approaches** to forest management, forest product trade regulation, and enforcement.

While many fragile states are in urgent need of these types of reforms to bring their forest sectors under better management, **the post conflict environment brings unique pressures and opportunities in forest rich areas, and poses additional, special challenges in forest constrained ones.**

Spoiler Problems and Security Concerns

Post-conflict is a marked transition that produces a sense of **urgency** and **high expectations** from citizens as well as from the donor community. These expectations often lead to an overly **expansive agenda, which often falls short because capacity and political will may yet be in short supply.** While expectation may encourage an increased pace for change not found in other fragile contexts, **citizens are easily disappointed and impatient. Opposition may use this frustration** to bolster a spoiler movement that threatens the peace. **The presence of peacekeepers can aid in neutralizing the threat from spoilers, and therefore, DPKO should think about how to take a more deliberate role in critical natural resource sectors such as forestry. The donor community can play a role in raising capacity in these areas in peacekeeping.**

Triage While Avoiding Pitfalls of "Quick Wins"

The tenuous nature of the transition period makes the **temptation to make short term trade-offs in the interest of security that might wind up undercutting long term reforms and sustainable forest management**, and ultimately conflict prevention – moving quickly, for instance, in reintroducing production forestry, in the absence of a framework for good management. However, the nature of a full agenda with a sense of urgency necessitates a triage approach, looking for 'quick wins' for immediate, visible impacts that can build confidence and ownership without undermining longer term reform. This builds awareness and constituency for further reform, while recognizing that **the donor community**

should be prepared for a long term commitment to the forestry sector (on the order of 10 years rather 3-5).

It is critical in a triage approach to **target first the most vulnerable conflict-affected populations** and consult with them to identify their most urgent needs. **Women** in particular, a high number of whom are widowed heads of household due to wartime combat deaths, are often disadvantaged by the majority of **“quick impact” employment projects that focus on ex-combatants in male dominated sectors such as in logging**, especially when these activities undermine female dominated sectors such as agriculture.

Formalizing informal sectors such as logging and charcoal production can help meet local needs, as well as provide employment and boost economies. But **careful analysis is critical on the impacts and effective approaches**. Who would benefit from formalization? How can formalization balance the need for oversight and forest protections with the need to provide a level playing field given community capacities? What safeguards are needed to ensure local operations are not co-opted by political elite or used to launder illegal wood harvested elsewhere? These are important questions that must be unraveled in the local context, with strong support from the donor community to protect local community interests and local forests. Donors have a responsibility to inject realism into the debate about how to ensure safeguards are implemented for industrial as well as community operators.

Land conflicts and forest concession reviews

Displacement and legacies of use of land and forest for patronage create a multitude of land/resource disputes. Tenure reform requires regular consultation with stakeholders that cannot be rushed or it risks creating misunderstandings, instability, or being co-opted by powerful elite. Careful attention must be paid to developing **strong institutions for adjudicating land and forest ownership and mediating disputes**.

Even among forest companies, there are often disputed claims to the rights to log particular areas due to the use of concessions for patronage, making it impossible to determine who has the legal right to log in the post conflict environment. For this reason a **forest concession review** of what companies were not in compliance with existing requirements when concessions were issued is essential to reform and revitalization of the sector.

Corruption control

Corruption control and oversight mechanisms are an essential cross cutting issue for countries emerging from conflict. As a start, **forestry (and indeed all resource sectors in countries where these have played a critical role in conflict) should be explicitly incorporated into anti-corruption frameworks** and consideration given to **including accountability mechanisms in peace negotiations where power sharing of resource ministries is discussed**.

Building momentum and constituencies for change can be initially more effectively accomplished outside of the state through **capacity building and empowerment of communities and civil society**, including mechanisms for **public participation and transparency**. But expecting the least empowered to

conduct oversight over the most powerful requires **safeguards and whistleblower protections**, including support from international diplomatic core and the UN missions.

Capitalize on opportunities for cross-sector coordination

Forest sector experts from the donor community should **take advantage of the available coordinating forums** for the various donor agencies, NGOs and government institutions (such as the Humanitarian Information Center) to raise awareness among about the variety of impacts from other sectors on forest resources. In addition, a **Natural Resource Working Group** bringing together a variety of sectors and stakeholders might be a useful mechanism for the communication of goals, priorities, expertise and approaches in order to avoid counter-productive measures. Some relevant topics for coordination include:

- Mitigation of impact of displacement camps and returnees,
- Resettlement of excombatants and displaced communities,
- Hotspot monitoring of excombatant involvement in illegal forest sectors.
- Employment programs and possible formalizing informal forest product sectors,
- Wood sourcing and procurement for reconstruction and donor projects.

Lack of capacity or lack of political will?

With flight of expertise and financial capital during the war, and institutions eroded by lack of funds and corruption, a significant challenge for post conflict governments is the lack of capacity. In addition to traditional capacity building measures, experience shows that **essential services for bringing forests under sound management can be effectively outsourced in the short term** if capacity is still lacking, accompanied by training and mentorship, and a plan for transfer back to government and building adequate oversight mechanisms.

However, recalling the distinction between states that are incapable and those that are unwilling to perform certain functions, it is also critical that donors should not mistake a **lack of political will for a lack of capacity**. **Transitions are often incomplete in post conflict countries**, with many of the old players still in positions of power, either officially or informally. Donors should not shy away from **analysis of what interests are at play in different institutional functions**. In absence of this analysis, reforms “on paper” are unlikely to be implemented if there are conflicts of interest that obstruct them.

1. Introduction

A significant body of research over the last decade has demonstrated the linkage between poverty, armed conflict, and weak state governance. Further, some analysts have noted that rigid adherence to a template of structural adjustment and austerity measures while neglecting the roles of governance weakness and insecurity in development has often failed to produce the economic growth these reforms were intended to stimulate.¹ As a result, academics and development practitioners, including the World Bank, have increasingly recognized that states exemplifying this nexus of human vulnerability and state failure suffer from **a complex array of weaknesses—including in economic management, but also in political legitimacy, regulatory quality, social inclusion, provision of physical security and basic services—which therefore require a diverse mix of interventions.**² Such states have come to be known as ‘fragile states’.

Why are states fragile? Analysts have traced multiple (often interacting) pathways, but among them are strong correlations between state fragility, conflict, and the means by which natural resources are managed by the state. Specifically, these risk factors³ include (*inter alia*) excessive economic dependence on resource exports to the detriment of other sectors, the untransparent use of resource rents, and the use by rulers of resource rents and allocation rights for political patronage and personal enrichment.⁴ However, analyses of these relationships have tended to focus primarily on oil, gas and minerals, leaving the role of forests in fragile states and conflict under-examined.

Further, analysis of the association between forests and conflict has focused primarily on correlations,⁵ leaving the causal pathways between forests, weakened governance and violence poorly understood. For example, the dependence on forest income (as a proportion of GDP) has been demonstrated to be a poor predictor of violent conflict. Likewise, the proportion of national land area under forest cover is a poor predictor of state fragility or of outbreaks of armed civil or international conflict. Indeed, there is no correlation whatsoever with the likelihood of a country falling becoming a failed state and the percent of its land area under forest (Figure 1).

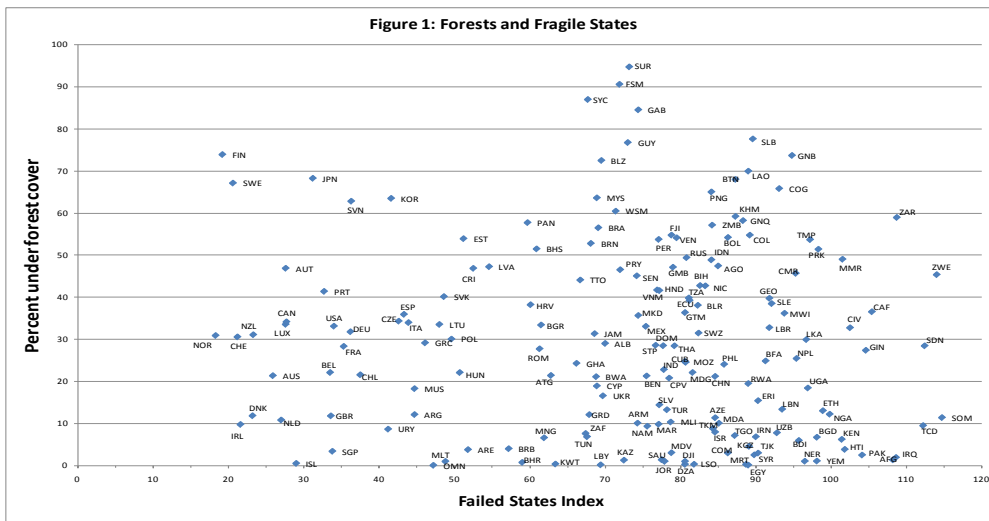
¹ See for example Paris 2004

² See for example World Bank, 2000, 2002, 2005, 2007b.

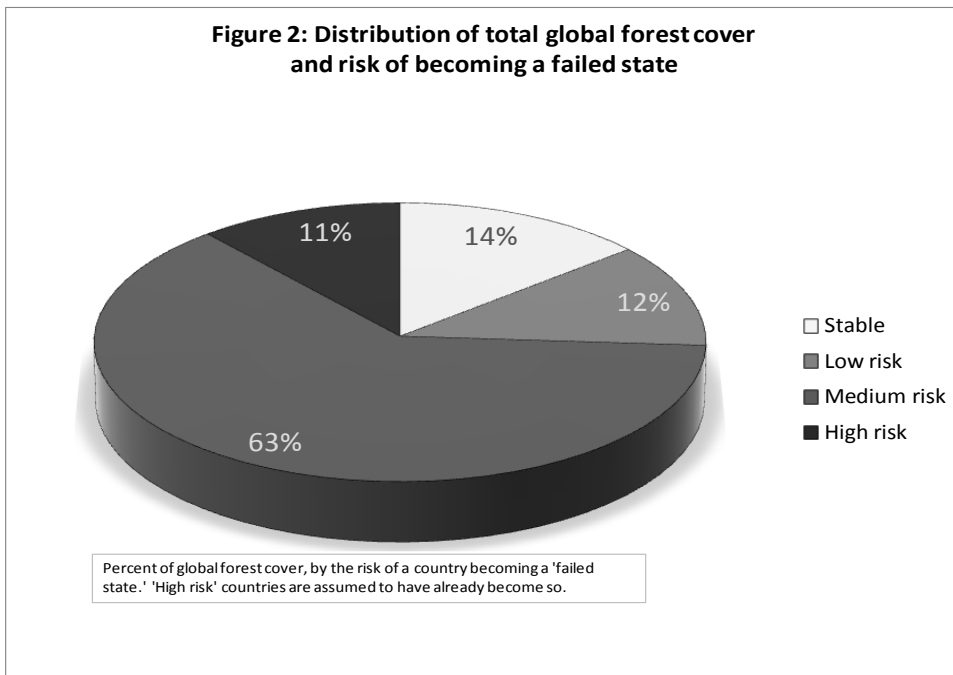
³ It should be emphasized that econometric analyses have found that these factors significantly increase the *risk* of conflict, but their presence does not necessarily predetermine fragility and likewise fragility can exist in their absence.

⁴ Reno,1995; Karl 1997; 2004; Ascher 1999; Keen 1998; Collier and Hoeffler 1998, 2001; Elbadawi and Sambanis 2001; Fearon and Laitin 2002; Fearon 2002; Hegre 2002; Reynal-Querol 2002; Doyle and Sambanis 2001; De Soysa 2002; Buhaug and Gates 2002; and Ross 1999, 2002a, 2002b, 2004; Humphreys 2005.

⁵ Rustad et al 2008; Humphreys 2005.



Nevertheless, there does appear to be an association between overall forest coverage and fragility. Extensive areas of the world’s forests are found in failed states or countries assessed to be at moderate risk of becoming failed states (Figure 2).⁶ This makes the question of forests and fragile states of significant importance to local livelihoods and cultural value, national and global economies and trade,



⁶ This assessment is based on various indices and data sets, in particular the Failed States Index produced by the Fund for Peace (www.fundforpeace.org) and compared with the World Development Indicators for forest cover (World Bank, 2010). A range of indicators have been tested for this association, including the International Country Risk Guide (ICRG) Indicators, and various indicators of transparency and corruption (cf Mata, J.F., and Ziaja, S. 2009.) All produce a similar result.

and global goods such as forest carbon and biodiversity. The issue also clearly has important implications for the donor community's interventions in both the **forest sector and conflict and post conflict programming**.

The objective of this paper is to provide a critical review and synthesis of key themes and current knowledge about the linkages between forests, conflict, poverty, and state fragility.

The main themes of the paper include:

- the **nature of fragility in predatory, incapable or absent, and conflict-affected states**, and their differing relationships to forests and conflict,
- **the mechanisms by which forests facilitate or prolong conflict**, including through financial flows from forest extraction to state and non-state belligerents, use of forests as patronage, the traffic of weapons by loggers, and the employment of belligerents by logging companies for security,
- **the impact of conflict and fragility on forests and forest livelihoods**, with a special focus on cross-sectoral post-conflict issues associated with the management of forest resources, and
- the **characteristics of fragile states that should be the focus of reform in post-conflict** interventions in order to more effectively protect forests and forest-based livelihoods and to mitigate further conflict.

A few caveats

On a practical level, we note that in this paper there is heavy emphasis on cases for which data exist—e.g. Liberia, Democratic Republic of Congo (DRC), Cambodia. The completion of a review of forest concession contracts in Liberia and DRC, a Truth Commission that investigated economic crime in the forest sector in Liberia, World Bank Inspection Panel reports for DRC and Cambodia, and a joint UN and Liberian government Task Force on rubber plantations have yielded an extraordinary amount of data. This has the unfortunate result of perhaps over-emphasizing cases about which much is already known (and perhaps implying that the forest-related dynamics are not important in other contexts where there are not data accessible). We note that a major objective of the study is to examine cross-sectoral dynamics within well-known cases where the donor community is heavily involved, however, whenever possible we include data on lesser known cases. There is a strong need for wider attention to the dynamics in lesser known cases for future research.

It should also be emphasized that “forests” have diverse meanings and uses—ecological, economic, cultural, physical—to a variety of local, national and global communities. The competition between these different values often leads to grievance, and the paper highlights several of these conflicts in forest uses, especially in post conflict. The paper also includes analysis of the unique characteristics of forested territories—often remote from capital cities and populated by ethnic minorities whose rights are weakly recognized, if at all, and the degree to which these rights and values are infringed by an over-emphasis on the industrial timber sector, especially in post conflict. However, the paper focuses most heavily on the productive role of forests in providing economic goods as these are the aspects of forests most commonly targeted by both conflict and post conflict governments as well as non-state combatants. This is by no means intended to imply that these are the most important aspects of forests,

only that they are the most relevant to our investigation of the role of forests in prolonging and recovering from armed conflict. The role of conversion of forests to agriculture or other uses also receives little attention in this paper, and would be a valuable focus for future work in this area.

The following section, **Section 2**, positions the paper by outlining the concept of ‘fragile states’ and some of the variability contained within it, before focusing on three specific types of fragile states: predatory, absent, and conflict-affected states and the relationships between forests and each of these dynamics. **Section 3** presents an analysis of what is different about forests in relation to the more studied natural resources of oil, gas and diamonds. The paper outlines the current state of knowledge regarding the relationship between forests and conflict. **Section 4** examines the variety of possible contributions of forests and “conflict timber” to armed conflict, both in financial flows and forest uses that undermine governance and stability. **Sections 5 and 6** examine the impacts on forests and forest-dependent livelihoods from conflict and post-conflict dynamics, and **Section 7** outlines best practices in forest governance that are needed to address the aspects of fragility the paper highlights as most salient in protecting forests and forest livelihoods. **Section 8** closes with conclusions and a summary of gaps in the current literature that might be useful targets for future work.

2. Conceptual background: Fragile and conflict-affected states

In the development community, the most commonly accepted definition of a *fragile state* is that used by DfID and OECD DAC: those states failing to meet core functions, whether to due to lack of willingness or capacity, to provide basic services and physical security to its citizens.⁷ Although not explicit, the definition implies that fragile states lack of rule of law (not just monopoly over the use of force), strong institutions, control of private interests and independence of the state from them, and accountability and concern for wellbeing of population. These weaknesses lead to a context of illegitimate and dysfunctional government and vulnerable citizenry that is not conducive to forest conservation and management.

However, **the definition is conceptually imprecise** in a number of areas. First, state fragility is not an “either/or” condition but rather exists on a **continuum**. The question is not *whether* states are fragile but to what degree and in what areas. However, different approaches to measuring fragility have been contentious and often producing significantly different assessments. What should be used as indicators: policies and legislation in place (whose presence are more objectively measured but may exist only on paper) or outcomes? If outcomes are to be the focus, which ones are the best indicators of different aspects of fragility? What methodology should be used to measure the outcomes?⁸ These approaches are significant for reform because, as the old adage says, “You manage what you measure.”

In addition to the degree of fragility, there are different types, including elements of state and societal fragility. A comprehensive discussion of all types of fragility is beyond the scope of this paper. This synthesis will focus on the linkages between forests and three main types of fragility: predatory states, incapable or absent states, and conflict-affected states. The discussion, however, is **not meant to imply that these conceptual categories are mutually exclusive. Indeed, there are often areas of overlap or lack of uniformity over time, over geographic territory, or between different government institutions.** But a politically sensitive analysis of the different challenges and interests at play in the different types of fragile states can provide valuable insight into where and how different reform interventions can find the most traction, especially when in collaboration with which local partners-- an issue we revisit at the end of the paper.

The focus on aspects of fragility in the state **does not deny the importance of societal aspects of fragility** that may contribute to conflict, or conversely, act as powerful prevention or mitigation mechanisms. Indeed, informal institutions are often much stronger than formal ones in conflict-affected

⁷OECD DAC 2005; DfID 2005

⁸ Some examples of different approaches include: the Bank’s Country Policy and Institutional Assessment (CPIA) (however assessments are provided only for IDA countries and concentrate primarily on investment policy and public spending management) and World Governance Indicators (aggregate scores combining external data from a variety of other indicator systems), The Fund for Peace’s Fragile States Index and The Global Integrity Report (which both assess a broad variety of pressures from social and political factors), and the TI Corruption Perception Index. The Political Stability Task Force seeks to predict state failure by assessing outbreaks of various forms of conflict. The private sector also produces risk assessments that can be used to assess different areas of fragility, for example the International Country Risk Guide.

countries. However, because of time and literature available to prepare this review, and because state institutions play a powerful role, if often a negative one, in the resource use dynamics of central interest to this paper, the paper takes the state (and its shadow partners) as its starting point. This state focus is also in recognition of the central mandate of the donor community, including the Bank, to work in partnership with state governments to achieve poverty elimination through the reform and support of governance institutions.

Strong v. Weak “Fragile States”

What *aspects* of fragility lead to conflicts where forests play a central role? This paper’s focus is specifically on:

- **Strong states where forests are used as patronage**
- **Weak states, where there are sub-national areas with no state presence and forests are uncontrolled by government authority**

In the case of strong states, the impacts of the use of resource rents and concession allocations for patronage by the state are wide-reaching: 1) it undermines sustainable use of forest assets for development; 2) it reduces access to forests for local livelihoods; 3) it short-circuits state accountability to citizens; 4) it arrests development of sound governance institutions; and 5) it undermines of state legitimacy, all to be discussed below. In these circumstances, such **states are not “incapable”;** rather, **the elite choose to focus their capacities not on the pursuit of the public good but on consolidating personal and state power through patronage relationships** with the private sector and a wide array of specialized criminal networks.⁹ This **patronage undermines the rule of law, encourages the expansion of shadow economies, and the further strengthening of criminal networks.**

In other circumstances, fragility leads to the emergence of **sub-national areas that are virtually beyond state control. Of course, not all areas of state absence are violent, but contributing circumstances include:**

- **Abundant lucrative** resources, especially those for which there is significant global demand
- **Remote** location from capital, but close to a **porous border**
- **Accessibility** for extraction of resources (distance to ports, roads, navigable rivers)
- **History of ethnic/religious polarization**
- High vulnerability to **external influences**, such as

⁹ Farah 2010. Reno 1999.

- “Neighborhood effects” of regional markets; flows of weapons, mercenaries, drugs and other illegal commodities; political interference; cross border ethnic ties
- Destabilizing influence of international markets and/or geopolitics.

Areas with these characteristics *can* (though not in all cases) lead to a proliferation of private militia and criminal groups struggling in the breach to control lucrative trade routes or commodity extraction (for illicit drugs, but also timber and tree crops such as rubber, palm oil, cocoa).¹⁰ Once these networks are established, they often become more powerful and resilient by diversifying into other illegal traffic such as weapons, people (laborers, refugees, sex workers), stolen vehicles, and untaxed consumer goods like tobacco and alcohol (or alternatively move from these channels into natural resource crime).¹¹

In addition to the negative impacts of state fragility on these dynamics, another important area of investigation is **the impact of interventions undertaken with development assistance, particularly in the active phase of post-conflict and how these might unintentionally contribute to forms of protracted conflict**. For example, in some post-conflict countries, transitional governments and the donor community have **over-estimated the potential contribution of industrial forestry to poverty reduction, and thereby over-emphasized concession allocation to and programs that support industrial forestry at the expense of smaller-scale forest livelihoods** that are adversely affected by these large concessions. This overestimate of production potential is exacerbated when the allocation process is co-opted by speculators who do not log, but hold their contracts for a number of years until they can sell the rights to a logging company and make a handsome profit--a point discussed later in the paper.

Variability Within and Across Borders

Another imprecise aspect of both the definition and measurement of fragile states is the variability with a state territory. There are often geographical pockets of fragility within countries, for example, Mindanao in the Philippines, Papua in Indonesia, Amazônas in Brazil, Chiapas in Mexico, the Naxalite strongholds in India. These areas have **poor access to government services** but are also **often the most richly forested** due to their remoteness from urban centers, and are often **populated by minority populations whose forest rights may be only tenuously recognized if at all**.

Because forest sector data tend to be collected on a national level and many analyses have therefore also concentrated at the national level, this synthesis cannot do justice to the unique dynamics of sub-national conflicts occurring in forested areas. **The history and causality of tensions in these areas is deeply contextual and cannot be reduced to a struggle over forests alone, but the damage caused by**

¹⁰ Farah 2010; Glenny 2008

¹¹ Farah 2010.

logging without significant revenue return is a source of grievance that animates the conflict, and the control of land and forests and the revenues derived from them are often central bargaining chips for peace agreements, suggesting this is an arena for in-depth field study.

Fragility-related problems of neighboring countries can also spread over porous borders, for example between Guatemala, Mexico and the US; Colombia, Venezuela, and Ecuador; the Horn of Africa; the Mano River region of West Africa; The Great Lakes region of Central Africa; Burma, Western China, and Thailand; Afghanistan and Pakistan. Cross border dynamics are especially relevant where there are **regional dynamics such as ethnic relations or flows of refugees, militia, labor, finance, and commodities** such as timber, charcoal, bushmeat and tree crop plantations such as cocoa, rubber and oil palm (as well as both regional and international markets for commodities such as drugs, gems, metals, and oil). In addition, **transnational networks of shadow facilitators** including specialized traders, financiers, weapons dealers, and other fixers who can provide transport, fraudulent documents, or set up shell companies are indispensable elements to the criminal activities of a predatory regime.¹² These cross border dynamics suggest a need for a more coordinated regional approach rather than a strictly state-based approach, a point to which we return in later sections.

Conflict-affected States

Conflict can be viewed as a point in a continuum of fragility that both precedes and follows conflict. However, armed conflict is worth special attention because it has significant effects on fragility and can be in many respects transformative, whether it occurs in predatory or absent states. Conflict destroys assets, weakens institutions, disrupts social networks, forges ties between criminal networks and combatants, drains financial reserves, and creates widespread emotional and physical trauma that has lasting effects. Conflict exacerbates old weaknesses as well as creating new ones, which can further drive perverse feedback loops of poverty, violence, and resource degradation. Although all conflicts are unique, there are some **generalizable conditions that produce high pressure on forests in post conflict, with cross-sectoral implications to which donors and governments should be attuned**, as discussed in the final section of the paper.

What kind of conflict is most relevant to forests? Forests are locally important for livelihoods, ecosystem services (such as water and soil fertility), and cultural meaning. **Forests are nationally important** as an economic asset, primarily for timber production and for land. **Forests are important to international markets** for timber and other forest products but also for **global goods**, which are increasingly monetized, such as biodiversity (useful for ecosystem function and for genetic material) and carbon. Because of these multiple and often competing constituencies, forests are frequently the center of struggles over control of access, use, and benefit streams. These conflicts can be widespread but tend to be mostly non-violent, or if violence breaks out it tends to be localized.¹³

¹² Farah 2010

¹³ HRW 2001, Wulan et al 2004, De Koenig et al 2008.

However, **under certain circumstances, forests can fuel armed conflicts that have other root causes, as this paper will describe. That is, armed conflicts tend not to be fought over forests, but rather armed conflicts are often exacerbated by certain aspects of forest use (including, but not limited to, financial flows from forest corruption and unregulated timber revenue as sources of conflict financing).** Our focus is on this **subset of violent conflicts that are fueled by forests or that have significant impact on forests or forest livelihoods.** As a result of this narrow focus, for the purposes of this work we use the terms “conflict” and “violence” interchangeably as the paper only examines conflict that is violent.

Out of necessity, our focus on “widespread armed conflict” is primarily **interstate and civil war (both coups/insurgencies and separatist conflicts) because that is where the majority of quantitative and qualitative data lie.** However, whenever possible we have also included examples of **protracted violence in contexts considered to be “post-conflict”** due to a formal peace agreement. Protracted violence can include that associated with organized crime, electoral violence, unrest associated with increased prices of food or other essential commodities, ethnic violence, etc. The term **“post-conflict” is in some ways misleading because it implies an end to violence which as noted above is not the case in many countries following a peace agreement.** We include the myriad forms of protracted violence that emerge in conflict-affected states but more research is sorely needed in this area. This gap is especially significant since **more than a third of all peace agreements break down within a decade, often because the belligerents gain revenue to fuel a resumption of conflict from the illicit exploitation of natural resources.**¹⁴

Nonetheless, **we use the term “post conflict” as a key focus because it marks the onset of a variety of dynamics unique to these contexts, dynamics outlined below and, crucially, involve an array of donor programs with important cross-sectoral implications.**

¹⁴ Collier et al 2003; Collier and Hoeffler 2004

3. Conceptual background: The link between forests and conflict

Following the emergence in the 1990s of the “resource curse” literature that explored the paradox of poor development outcomes in resource-rich countries,¹⁵ Paul Collier and Anke Hoeffler (1998) found a strong correlation between abundance of natural resources and risk of violent conflict. Collier and colleagues built on these findings to outline a nexus of abundant but mismanaged natural resources, repeating cycles of armed conflict, weak governance, and entrenched poverty—downward spirals Collier and colleagues refer to as “development in reverse”.¹⁶

Later analysis and improved datasets, however, found only weak associations when using Collier and Hoeffler’s broad definitions of resources, abundance, and conflict.¹⁷ But when these terms are more precisely defined, many authors found a strong correlation between risk of onset of civil war (but not all violent conflict) and contribution to GDP of high value resources (but not absolute abundance) such as oil, gas, and minerals (but not all resources) to GDP.¹⁸

In addition to the debates around the analytical methods and findings, the explanatory mechanisms of the relationship between resources and conflict also remain under-examined and somewhat delimited by the disciplinary focus of the investigator. Collier and Hoeffler interpreted their finding of a statistical correlation as a causal relationship, expressed as the now well-known and much-debated “greed over grievance” hypothesis. Among other things, this “greedy rebel” argument held that insurgencies are primarily economically motivated-- suggesting that conflict prevention and mitigation should focus on the economic criminality of these non-state actors, rather than addressing either the political grievance of the insurgents or applying oversight mechanisms to a corrupt state.

In response to these early formulations, several authors have countered that while economic gain may indeed facilitate insurgencies and may even be the primary motivator of many elite commanders (especially later in the conflict), grievances still have an important role in motivation to join or support a movement and are important elements of the individual character of conflicts to which donors must attend, rather than relying on blueprint approaches for addressing all conflicts.¹⁹ The importance of grievance resulting from oil extraction in predicting conflict has also been born out in at least one

¹⁵ This body of literature is broad but was spearheaded by seminal work by Gelb 1988, Auty 1993, Sachs and Warner 1995, Karl 1997, and Ross 1998.

¹⁶ Bannon and Collier 2003; Collier et al 2003.

¹⁷ De Soysa 2002; Fearon and Laitin 2003; Ross 2004; Fearon 2005.

¹⁸ But even this result for oil gas and minerals remains controversial, with some authors offering contradictory findings. (Smith 2004; Humphreys 2005; Ross 2006; Di John 2007).

¹⁹ For example, Ballentine and Neitzschke 2003, 2005.

econometric study.²⁰ In fact, Collier (2006) also later expanded his thinking to argue that in post conflict settings, policies for social inclusion were of a more urgent priority than macroeconomic management.

In addition, the **causality in these relationships between economic reliance on natural resources, weak governance, conflict and poor development outcomes remains unclear**. There is some econometric evidence that economies that depend heavily on agriculture are indeed at higher risk of conflict, but this is so regardless of the presence of other resources such as oil or diamonds, suggesting that the lack of economic diversification is reflective of some other weakness than over-reliance on lucrative sectors.²¹ In fact, some authors have argued that it is war and weak institutions undermined by lack of capacity that reduce other economic options and thereby increase reliance on primary resources-- not the other way around.²²

In sum, the research of Collier and colleagues—like Auty, Sachs, and Warner and other analysts of the “resource curse”—sparked a paradigm shift in thinking about the linkages between resources, armed conflict, and development. More recent research has since demonstrated the need for more fine-tuned analysis of the particular elements of the nexus and the circumstances under which it is relevant, and a more nuanced interpretation of findings, particularly in relation to causality and mechanisms.

How Do Forests Compare to Other Natural Resources?

As noted above, recent research has demonstrated that while linkages clearly exist between resources, conflict, and poverty, the *character* of the links cannot be easily generalized across different resources, conflicts, or management regimes. In contrast to earlier arguments for the primacy of either scarcity or abundance in keeping countries locked in cycles of conflict and underdevelopment, more recent work has shown the role of resources in conflict and fragility to be sensitive to aspects such as physical attributes, markets, accessibility of resources.

In considering the relevance to conflict and fragility, what are the critical differences between forests and other better studied resources such as oil and diamonds? Several of the salient aspects for different resources are summarized in Table 1.

There are several **characteristics of forests and timber that may make them likely to contribute to prolonging conflict**. Perhaps most importantly, forests (and the land beneath them) are **critical to local**

²⁰ Humphreys 2005

²¹ Humphreys 2005

²² Ross 2006; Brunschweiler and Bulte 2008

livelihoods, especially for rural poor and women (i.e. the most vulnerable both before and after conflict). These competing uses can lead to grievance and various forms of conflict.²³

Forests provide **shelter and a protected pathway for movement for refugees and rebels**, which may make the logging and increased presence in forested areas desirable for governments facing insurgencies or encroachment from foreign forces. Logging operations in these areas, particularly along strategic borders are often highly militarized (as in Indonesia and Burma).

Forests also contribute to conflict because they are **“lootable” (requiring low cost and low skill for extraction)**. However, **accessibility also has a strong role to play in lootability**. Forests are not lootable if they are far from roads, coastlines or navigable rivers and exist in mountainous terrain. This aspect is illustrated in comparing the role of timber in the conflicts in Liberia, which has relatively easy access to sea routes, and DRC, which has some of the most extensive forests in the world but few roads and virtually no sea access. Lootable resources have been demonstrated to act as sources of revenue to insurgents, criminal gangs, or state powers whose revenue streams have been interrupted by sanctions.²⁴

The **footprint** of logging operations is much more **diffuse** than “point sources” like oil and mining. Forestry, then, potentially has larger impacts on livelihoods as well as being **more difficult to control, contributing to insurgent or criminal funding**. While diffuse resources tend to be associated with rebel movements, point resources have been shown to be more associated with separatist movements, as their extraction is more easily controlled by a central authority.²⁵ Further, the enclave nature of point resource extraction can contribute to grievance as operations import labor and supplies (rather than hiring and purchasing locally) and build facilities that are closed to local use. The diffuse nature of logging operations also necessitates strong security. **Security forces in the employ of forestry companies have also been known to attack and loot surrounding communities** (Blundell 2010; Harwell 2003), thereby contributing to the violence.²⁶

Third, timber is easily **detectable**, making it (relatively) easy to **monitor**, and thus susceptible to **informal “taxation” at transport bottlenecks** (for those with capacity for territorial control, whether state or non-state), which provides revenue to fund conflict. For law enforcement, timber traffic can be more difficult to police than commodities such as drugs or wildlife, because **illegal timber can be easily mixed**

²³ De Koenig et al 2008

²⁴ Ross 2003

²⁵ LeBillion 2005

²⁶ Blundell 2010

with legal, requiring detailed systems for verifying legality of origin and permits, and expertise to identify restricted species.²⁷

In contrast to these factors, timber has other characteristics that make it less likely to cause conflict. Timber has **low value to weight** ratio, which creates **fewer discipline problems** than for more easily smuggled resources (e.g. diamonds). Timber has lower overall value (e.g. oil, precious minerals), and therefore **fewer spoilers** willing to prolong violence solely for economic reasons solely related to timber.²⁸ Timber is vulnerable to **commodity boom and bust cycles but is also more easily discovered and prices are less volatile** than oil (but more than diamonds). This means there are fewer destabilizing impacts from dramatic windfalls and price declines than for oil.

Further, although timber laundering is a persistent challenge in legality tracking, **end users of timber products are increasingly discriminating about sourcing and legality**, making certification increasingly attractive as a means to differentiate between wood sourced from “good actors” and “bad actors”. Increasingly a reputational risk for wood from countries with a “bad brand”, which has produced an increased interest in concession level certification such as Forest Stewardship Council, as well as country-wide programs such as legality assurance through the EC’s voluntary partnership agreements for timber.

Finally, trees are **renewable**-- but take **time to grow**. This means that sustainable management and yields requires **planning and investment over time**. In contrast, a short term approach to logging that takes advantage of timber’s lootability undermines long term sustainability of revenues and accessibility for local livelihood. This means that although trees are renewable, in absence of incentives or enforcement for long term management, forests are vulnerable to asset stripping behavior by loggers and short-sighted governments.

A Comparison of Characteristics of Different Resources and Their Relevance to Conflict

	Oil	Alluvial Diamonds	Timber
Competing Uses	No	No	Yes
Shelter	No	No	Yes
Source	Point	Point	Diffuse

²⁷ It is worth noting that drugs and wildlife parts can be more easily concealed than bulky timber. For example, recent research estimates that over 5 tonnes of bushmeat is smuggled through Paris airports each week (Chaber et al 2010).

²⁸ Some studies found that high value resources such as oil and diamonds may in fact shorten wars, suggesting an incentive to reach an agreement to divide extraction rights (Humphreys 2005, Snyder and Bhavnani 2005, Sherman 2003 noted this for narcotics and timber in Burma)

Labor	Skilled	Unskilled	Skilled/ Unskilled
Technology	High	Low	Low /Medium
Detectable	Medium/High	Low	High
Value/weight	High	High	Low/Medium
Price Volatility	Very high	Low/Medium	Medium
Sustainable	No	No	No / Yes (if SFM)
End Users	Undiscriminating	Discriminating	Discriminating

What Do We Know About Forests And Conflict?

While most statistical analyses on these linkages focus on oil and diamonds, there are some studies that have investigated the role of timber. However, the body of statistical analysis reveals **mixed evidence on the general association between forests and armed conflict**. This is in part due to different datasets and different coding methods (i.e. what constitutes a “resource” and a “conflict”), but also to the complexity of variables at play in each individual conflict. It is also important to note that correlation is not the same as causation, and that correlations may be misleading as they can be indicative of a relationship with an as yet unrecognized independent variable.

Nonetheless, current analysis has suggested a few trends. First, there is a weak association between **increased size of the (formal) forest industry and likelihood of conflict**, although the significance of this trend is dependent on the inclusion of Burma. Likewise, there is a correlation between **prolonged conflict and increased lootability of forests, as measured by distance to coastlines**.²⁹ However, data sets are small and therefore dependent on the inclusion of PNG, Burma, Senegal and Bangladesh.

Second, although there is not clear evidence of a strong role for timber in the onset of civil conflict, there is an **association between prolonged conflict and increased forest cover when there are other lootable resources available (such as minerals and gems), but not with forest cover alone**. Both literature review and statistical study finds that oil and diamonds can either prolong or shorten civil war, while **“the only resource variable robustly linked to conflict duration is a measure of ‘contraband’, which includes gemstones, timber, and narcotics”**.³⁰

²⁹ Rustad et al 2008. See also Stedman (2001), whose survey of peace agreements at that time found that “no peace agreement has been successfully implemented where there are valuable, easily marketable commodities such as gems or timber.” For case descriptions of: Burma see Lintner 1999 and Smith 1999; DRC see the report of the UN Panel of Experts 2001; Cambodia see LeBillon 2000 and Brown & Zasloff 1998; Liberia see Blundell 2010; Casamance, Senegal see Evans 2002.

³⁰ Ross, 2006: 265. See also Fearon, 2004

This result suggests that while forests alone are not sufficient, revenue may provide supplementary income, or forest may act as a refuge to protect combatants against military defeat. Alternatively, the structural aspects of fragility such as weak institutions may increase the risk of conflict in countries with a variety of available lootable resources. Additionally, the high value of other extractive resources (and for diamonds, the ability to conceal them) often contribute to spoiler problems where combatants fracture and can become interested in prolonging violence for the sole reason of maintaining control over the resource. As noted above, spoiler dynamics are less problematic for timber alone, which is both bulky and less valuable. But again, data are sparse and seem to be driven by a few cases in Northeast India, Burma and Bangladesh.³¹

Finally, there is statistical³² and qualitative³³ evidence that **the form of the extraction regime and state institutions are more important predictors of fragility and conflict than the mere presence of resources, the size of industry, or dependence on resource exports as measured by the proportion of GDP made up by exports.** These analyses, however, deal primarily with oil and the authoritarian rentier state (so called “petro-states”). The particular role of the forest sector and its relationship to fragility and conflict remains under-studied. However, Ross (1999, 2001) is the exception, whose study of the Malaysian, Indonesian, and Philippine timber sectors reports that **rising timber prices and lack of adequate governance safeguards led to heightened levels of corruption, and the dismantling of institutions that had earlier protected the forest sector from misuse.**

The emergence of evidence of a link between weak state institutions and conflict, in addition to the general literature supporting the importance of the character of governance in one sector for predicting fragility in a variety of other sectors provides a good argument for focusing attention on the aspects of fragility associated with governance institutions rather than strict measures of abundance or resource dependence.

³¹ Rustad et al 2008.

³² Humphreys 2005

³³ Mahdavy 1970, Luciani 1990, Karl 1997, Ross 1999, Fearon 2005, Snyder and Bhavani 2005

4. Mechanisms for forests to contribute to conflict

We have seen that the data available suggest that under certain circumstances, there is a link between prolonged conflict and timber. **What are the precise mechanisms that forests contribute to armed conflict?** “Conflict Timber” refers to timber that has contributed to the outbreak, escalation or continuation of armed conflict. This contribution takes the form of:

- **financial flows from timber revenue or corrupt payments that fund violence,**
- **direct engagement in violence or weapons trafficking by loggers or those in the employ of loggers, and**
- **linkages between logging and other forms of crime and violence.**³⁴

But of course fragility predates conflict, and in many ways sets the stage for it. We will review in turn the aspects of state fragility that enable conflict timber, including:

- Opaque and **unregulated revenue systems** for resource rents, and associated corruption;
- **Use of forests as patronage** and its effect on rights, accountability, and management capacity;
- **State absence**, allowing transnational organized crime to control timber harvest and traffic;
- Links of predatory states and illegal loggers to **criminal networks**;
- **Engagement of state security forces in logging operations** or protection rackets.

Unregulated Financial Flows

On a national and sub-national level, fragile states and insurgencies that are able to control forests and transport points **use revenues from timber “taxes” and bribes to fund weapons** and other materiel. When the timber is controlled by an authoritarian state, **timber revenue can be used to fund repression and militarization.** Such a state may ironically be seen in statistical analyses as “stable” in that it avoids insurgency through suppression of opposition (although often with the use of violence), but it also entrenches fragility, poverty and grievance.³⁵

Although Liberia and Cambodia are the most well known examples of timber revenues funding conflict, there is also evidence that forest products have also been used to fund other conflicts. In Afghanistan, most attention to insurgent financing has been to opium trade, but a diverse trade in timber, gems, stolen cars, and a variety of consumer goods are also important sources of revenue for both Taliban, and the Northern Alliance, particularly in the Northwest border regions with Pakistan where there are few roads and so transport is easily controlled and “taxed”. Reports are that timber is taxed by the Taliban at a rate of ten percent.³⁶

³⁴ Blundell 2010; Farah 2010.

³⁵ See Blundell 2010 for cases from Liberia, DRC, Cambodia, Afghanistan, and Burma.

³⁶ Amber Robinson. “Soldiers disrupt timber smuggling in Afghan province” *www.usarmy.mil* June 8, 2009. Ashfaq Yusufzai, “Smugglers Profit From Landlocked Afghanistan” *IPS*. August 4, 2009; Joseph Giordano, “Military takes on illegal lumber trade in Afghanistan” *Stars and Stripes*, June 11, 2009; Kilkullen 2009; Peters, 2009; Gretchen Peters (pers. comm., March 14, 2010)

In southern Senegal's fertile Casamance region, the site of a small-scale but longstanding separatist uprising since the early 1990s, rebel commanders and military officers took over the region's timber production and trade as well as cash crop farms (cashews and various fruits).³⁷

In Somalia, the charcoal trade has become one of the most important economic sectors since the 1990s with significant exports to neighboring countries and even to the Gulf States and Saudi Arabia. Due to the lucrative nature of the trade in an otherwise resource-poor country, control over the charcoal trade has been hotly contested between different clans and insurgent groups.³⁸

In the DRC, the UN Panel found that the Kabila government requested logging companies to cut reserve forests in Bas Congo and split the proceeds in half with the government to help finance the war. Likewise, the Rwandan Patriotic Army's Congo desk is linked to illicit logging operations in eastern DRC, as have Ugandan forces been linked to illicit trafficking in commodities including timber.³⁹

Similarly, in the 1980s insurgencies in the Burmese Kachin and Karen border states funded themselves primarily from timber sold to China and Thailand.⁴⁰ After ceasefires with these groups in the early 1990s allowed the junta to take control of the border timber trade, the junta reportedly tried to use timber as partial payment to China for a \$1.5 billion arms shipment. The junta also allegedly tried to barter teak for oil with Iraq in May 2002.⁴¹ More successfully, Russia was willing to accept partial payment in teak for ten Mig-29 fighter jets and nuclear technology in a trade with Burma.

Patronage and Its Effects

In the wake of Collier and colleagues' "greed over grievance" hypothesis, the bulk of attention to policy conflict timber has been on cutting financial flows of the types described above. But the role of forests in contributing to conflict goes beyond financing from logging revenues. By using **lucrative forest concessions for patronage**, high-ranking officials in fragile states fund conflict, enrich themselves and consolidate/protect their power (*rent-seizing*).⁴²

When used for patronage, forests can also be the source of private revenue even when no logging is happening. In DRC, for example, many of the heavily forested areas fell under rebel control, while the government retained control of the major transport routes to the export markets. Thus, government-licensed logging concessionaires could not operate, and loggers in rebel territory could not export

³⁷ Evans 2003

³⁸ Lacey 2002

³⁹ USAID 2003, UN POE 2001

⁴⁰ Sherman 2003

⁴¹ Global Witness 2005

⁴² Ross 2001, Blundell 2010.

Liberia's Conflict Timber: A Textbook Case

Liberia is one of the best known examples of the central role that timber can play in conflict financing when lucrative forests are abundant and accessible, and a rebel or state group has the capacity for asserting strong territorial control over the forests, their extraction, transport and trade.

Charles Taylor used territorial control over the Liberian forestry sector to enrich himself and to fund conflict, first as an insurgent (as leader of the national Patriotic Forces of Liberia, NPFL) and later as elected president. He also used forests for patronage, rewarding loyalists and businessmen willing to pay for access with lucrative logging concessions. One of most important of these was the Oriental Timber Corporation (OTC), which Taylor referred in public as his personal 'pepper-bush' (akin to the goose that laid the golden egg). So unshakeable was Taylor's confidence in his right to use the nation's forests as he saw fit that he has publicly admitted to doing so (in testimony before the Special Court for Sierra Leone) and even had his Minister of Finance issue tax receipts to OTC for at least \$7.5 million in cash deposits to his personal bank account. In fact Taylor has admitted to the Special Court for Sierra Leone (where he is on trial for war crimes) that he had covert accounts in his name to fund the war. This was at the same time that the country's coffers were so depleted that the army and government officials were told to "pay yourself"—an invitation to looting and corruption.

Extortion and Looting

Prior to becoming president, Taylor partially funded his rebel-administration (the erstwhile National Patriotic Reconstruction Assembly Government (NPRAG), although unrecognized by any country) through the extortion of commercial operations like forestry. For example, the NPRAG demanded logging companies contribute directly to port managers' salaries, to 'National Security Administration' expenses, and to generate electricity. The revenue sources from timber became even more important after the UN put diamonds under sanction due to their contribution to the war in Sierra Leone.

Likewise, belligerents profited by looting logging companies. Although only 15% of logging companies have submitted reports of losses from looting in Liberia, the claims total more than \$133 million. For example, in May 1998, a former NPFL commander Cocoo Dennis, accompanied by 45 NPFL ex-combatants, allegedly seized \$355,000 of logging equipment from B & Sons Logging Corporation. OTC security forces allegedly looted 5,000 m³ of logs from EJ & J Investment Corporation, and Charles (Chuckie) Taylor, Jr., and the government's Anti-Terrorist Unit (ATU) that he led, looted an additional \$1 million worth of logging equipment.

Tax evasion

In a comprehensive forest concession review report conducted in 2005, a forensic accounting evaluation concluded that based on forest Development Authority (FDA) and the Central Bank of Liberia (CBL) records, logging companies were more than \$64 million in tax arrears, i.e., less than 16% of the FDA's tax assessments were paid. For example, two operators (sister companies, the Mohammed Group of Companies and BIN Liberia Inc) paid less than 1% of total revenue (which was in excess of \$1 million/month, but payments averaged only \$5,800/month).

In fact, the arrears are likely much worse. According to reports from importing countries, the trade from Liberia was at least three-to-four times more than that reported by the Government of Liberia. This under-reporting is consistent with transfer pricing (where companies under-value exports when reporting in order to avoid paying taxes in the exporting country), and/or document fraud.

But even these official reports by the importing countries likely underestimate the amount of tax loss to Liberia under Taylor. While exports from Liberia reportedly declined during the outbreaks of extreme violence, much of the production was undoubtedly smuggled, especially through Côte d'Ivoire, where a large number of sawmills drove demand for logs. In the 1980s, before the Liberian civil war, Côte d'Ivoire reported exports of about \$250 million per year, but during the war, Ivorian exports jumped to \$350 million per year, falling back to \$220 million in

1997. In contrast, in Liberia, once the war ended in 1997, timber exports reportedly rose again.

Taylor was able to use timber for his war effort and for his personal enrichment because he was able to effectively control both physical territory where the forests were and where timber traveled, as well as the diverse networks needed to convert wood to weapons.

Source: Blundell 2010

profitably. However, this did not stop speculators ('war profiteers') from obtaining concession rights to millions of hectares of forest, thereby financing belligerents, including the DRC government.⁴³

In another vivid example, by the end of the Liberian war in 2003, the area claimed by logging companies exceeded the entire area of the country's forests by 2.5 times. The report from the forest concession review illustrates how this could happen when a concession allocation process designed for patronage, not forest management:

During 1998 and 1999, after former President Charles Taylor took office, there was another re-allocation process in which Taylor called concession holders to his office and dictated where they would work or not work. The objective was to re-align forest lands into several large concessions. That 'Mega-Concession' policy allowed the inner circle of the country's leadership to hand out concession rights to favored political cronies, militia leaders, and arms dealers.

Representatives of the Liberia Agricultural Logging and Mining Corporation reported that the Mohammed Group of Companies (MGC) took over their concession area by force and that when they objected, they were told by Mohammed Salamé⁴⁴ that they should go and see Charles Taylor.⁴⁵

Patronage produces several other aspects of fragility. As the Liberia example above illustrates, waxing and waning political-economic alliances produce **overlapping claims** to concessions. This lack of clear ownership in turn produces grievances and conflict, both between (and within) local communities and the private sector⁴⁶ as well as within the private sector itself.⁴⁷ Unclear property rights thereby increase risk for investments for logging companies as well as local users.

For example, in Indonesia violent clashes have resulted between local communities and pulp plantation staff over access to land under indigenous claim but granted under concession. In several examples in Riau Indonesia, where the world's two largest pulp and paper mills are located, long simmering disputes

⁴³ Ibid.

⁴⁴ Salamé, director of MGC, is a close business associate of Taylor and alleged to have facilitated arms trafficking; he was an Ambassador-at-large during the Taylor regime, and an Ambassador Plenipotentiary during the subsequent NTGL; he is on the UN travel ban and assets freeze sanctions list (Blundell 2010).

⁴⁵ Government of Liberia Forest Concession Review 2005

⁴⁶ Harwell 2001, Wulan et al 2004, De Koenig et al 2008.

⁴⁷ Blundell 2010

over land and compensation have resulted in local communities blockading plantation access roads, actions which in turn were met with violent attacks by company militia and local police forces.⁴⁸ Likewise, in Peru, indigenous concerns over increased access to loggers, plantation companies and oil exploration on indigenous territories under a new environmental law culminated in violent riots in which several people were killed.⁴⁹

The use of resources for patronage by an authoritarian rentier state also undermines basic democratic principles of a “social contract” between the state and its citizen constituents. Because **state power is protected by patron support derived from preferential allocation of concessions, there is no need for accountability to citizens** as a means of retaining office. There is therefore **no incentive to develop strong institutions** for good governance, such as the infrastructure for delivering basic services. A state that is seen as enriching itself while failing to deliver basic services to its people is not seen as legitimate. Resulting grievances and a lack of respect for state authority and rule of law in such circumstances can generate violence in various forms.⁵⁰

In states that depend on patronage rather than citizen accountability, there is also **little incentive for sound forest management and therefore little incentive to develop the capacity and institutions for management and enforcement**. The major incentive is to control of forest access to protect patrons’ interests and to ensure that the proper bribes are paid. Logging companies are not chosen for their capacity to manage the resource and therefore also are prone to **cutting corners to recuperate the cost of bribes and high security costs** required by operating in a conflict zone. This incentive structure results in the **degradation** of resource, which undermines local livelihoods and environmental services (e.g. clean water, soil fertility) and produces **grievance**.

There is no clear dichotomy between weak states and strong predatory states. States may be quite capable of control in some areas (either geographical or sectoral), while neglecting others that are not in their interest. **On a sub-national level, there is often an absence of state presence in remote forested areas, which can create a vacuum that can be filled by organized crime, especially in porous border areas.** This can result in commodity trafficking, private militias, and associated violence and further marginalization of rural (often minority) poor.⁵¹

⁴⁸ See for example, Harwell 2001.

⁴⁹ Salazar 2009.

⁵⁰ Farah 2010; Blundell 2010; Harwell 2010.

⁵¹ Petén Guatemala and Colombia (Farah 2010), Liberia (Farah 2010, Blundell 2010, Harwell 2010), Cambodia (Blundell 2010, World Bank 2006; Global Witness 1995, 2002a and b, 2005), DRC (Blundell 2010), Burma and Afghanistan (Blundell 2010), Casamance Senegal (Evans 2003).

The Impacts of the Indonesian Occupation on East Timor's Forests

The East Timor Commission for Reception, Truth, and Reconciliation found that during the three decades of Indonesian occupation, the military government established control over the economic and natural assets of East Timor (now Timor Leste) for the enrichment of individual officers and patrons, deeply exacerbating the impoverishment of the Timorese people:

Even at times of relative normality, security concerns, which sometimes became intertwined with private and corporate interests, took precedence over the well-being of the East Timorese people... The manipulation of coffee prices to fund military operations and benefit military and civilian officials personally limited farmers' chances of making an adequate livelihood. The unsustainable and destructive extraction of natural resources by government officials and their business partners undermined survival strategies and depleted the "natural capital" on which East Timorese had expected to draw for many years to come.

In particular, valuable sandalwood, was harvested at an unsustainable rate under the Indonesian occupation, either directly by or under the orders of the military. The Truth Commission's research documented that military personnel ordered local people to fell sandalwood trees of all sizes, including tearing out the roots. Although logged directly by or for officials in the military, sandalwood was exported solely through one well-connected trader in the early years after the invasion. In October 1979, in exchange for assistance in transporting materiel for the invasion and occupation, Indonesian generals granted Indonesian-Chinese trader Robby Sumampouw exclusive export rights to Timor's sandalwood and coffee. By 1982, 240 tons of sandalwood and oil were being exported, rising to 328 tons in 1986. However, as the resource was depleted, yields began to fall to less than 150 tons in 1988, less than 60 tons in 1990 and just 11 tons in 1991.

In addition to the widespread pillage of sandalwood and timber for personal gain, the occupation government used its authority to issue logging and plantation concessions to cronies on land claimed by local communities. Although the use of concessions for patronage was and is common throughout Indonesia, the degree of militarization and the level of violence and intimidation waged by the security forces made the process of land appropriation that much more menacing. Local human rights organization Yayasan Hak reports numerous cases in which local people were displaced from land by the state with little or no compensation, including one in which Yayasan Hak was asked to represent one village's claims in court, but security forces sealed the village to outside visitors. The report summarizes the nature of land dispossession in East Timor during that period:

Under the Indonesian occupation, there was little or no compensation to occupiers, very little independent mechanisms for valuation, no effective right of appeal to an independent judiciary, harassment and intimidation of complainants, no natural justice in either determining the status of land or in the lodging of complaints, and no clear definition of what constitutes a "public purpose" development.

In addition to terrorizing local communities and interfering with their livelihood by reducing access to land and forest, the use of concessions for patronage also contributed to already complex layers of property claims caused by decades of Portuguese colonial occupation, followed by waves of displacement during the occupation. As a result, land conflicts are endemic to post-war Timor.

Sources: East Timor Commission for Reception, Truth, and Reconciliation 2005; Yayasan Hak, n.d.

Sub National Pockets of Fragility and the Struggle for Control

We do not suggest that state control is always benevolent or that all areas where there is no state presence suffer from crime and violence. Indeed, authoritarian control is often maintained through state violence while communities on the margins of state control often develop local mechanisms for social order and dispute resolution that prevent violence. There are also examples of non-state actors, sometimes even insurgents and criminal organizations, stepping into the breach to provide basic services where the state has failed to do so.

However, where resources are lucrative and outside influences are strong, producing market demand and an influx of labor, capital, and/or belligerents, local institutions are likely to be overwhelmed by spillover fragility, competition, and violence. These have long been the prevailing dynamics in Kivu DRC and indeed much of the borderlands in Great Lakes region;⁵² the borders between Sudan, Chad, and the Central African Republic;⁵³ Afghanistan and Pakistan;⁵⁴ Burma's borders with Thailand and China;⁵⁵ Colombia and Ecuador;⁵⁶ and increasingly between Mexico and Guatemala.

⁵² International Crisis Group 2003.

⁵³ UN Security Council, November 13, 2009; *Reuters*. July 23, 2007.

⁵⁴ Bajoria 2009.

⁵⁵ Wyler 2007; International Crisis Group 2004a; Sherman 2003

⁵⁶ Internal Displacement Monitoring Center and the Norwegian Refugee Center 2009; International Crisis Group 2004b.

Petén Guatemala: Timber Traffic Paves the Way for Other Crime

The Petén region of northeastern Guatemala is one of the most rapidly deforested regions in Latin America and a transit zone that is home to a variety of overlapping criminal structures that often work in concert to move a large variety of illegal goods from South America to Mexico, Belize and the United States. Among the primary products in the pipeline circulating through the jungle region are cocaine, timber and migrants seeking to illegally move across porous national borders. In return the traffickers bring sophisticated weapons, cash for salaries that are far above those normally paid in the impoverished region, a social structure that the state has failed to provide. This traffic demands territorial control and the use of extreme violence and terror tactics. The area of 36,000 square kilometers has only twelve towns, none of which can be really classified as an urban center. Yet the homicide rate in the once predominately indigenous province is among the highest in a nation that already has among the highest homicide rates in the world.

In the Petén, the state is virtually absent and state territorial control non-existent. This situation has its roots following the civil war, when beginning in the 1970s, the vast forested and sparsely populated region absorbed a growing number of people displaced by the civil war and driven off their land by either government-supported paramilitary groups or guerrillas. These Marxist guerrillas used the region as a strategic rearguard to escape military offensives. By 1980 the first serious clear cutting of the Petén began, with illegal loggers paying a "tax" to the rebels in order to obtain access to the mahogany and Spanish cedar trees. At the time almost 50 percent of Guatemala's land mass was covered by forest. Today it is closer to 35 percent, with wood primarily used as cooking fuel. Only a small amount of timber is legally exported. Illegal timber cutting, which opened up undisturbed forest, has also led to the creation of unmonitored roads and widespread clear cutting of the land and was a vital factor in channeling the drug trade to the region. The situation is exacerbated by the long and porous borders with Mexico and Belize, which make the smuggling of illicit goods relatively low cost and low risk.

By the late 1990s and into the first decade of this century the trend of amassing large land holdings in the Petén accelerated for a simple reason. Mexican cocaine cartels, growing in strength and expanding their reach, were looking for new routes to move their illicit product from Colombia to the United States. Because of the relative success of U.S.-led interdiction efforts in the Caribbean Ocean, more cocaine was being shipped by air. Given the limited range of the small aircraft the drug traffickers were flying, most of the aircraft had to refuel before reaching Mexico. This made the Petén, with its large, deforested ranches and no law enforcement an ideal landing place. By 2007 the U.S. Drug Enforcement Administration estimated that 70 percent of the cocaine moving from Colombia to the United States passed through Central America, with Guatemala at the heart of the new trafficking routes. Hundreds of airstrips had been carved out of the ranches in the Petén, and the inflated price of the land is largely attributed to the drug traffickers' desire to control the region as a cocaine way station.

The lack of a formal state therefore does not mean there is a lack of authority or control. A relatively new class of "narco-ranchers" has emerged—large landholders who are part of the cocaine pipeline and have used their new wealth to buy large tracts of land, forcing the displacement of local residents, and clearing forest to sell timber and establish cattle pasture. This class must also negotiate and coexist with groups who traffic in timber, other natural resources available in the region and human smugglers, where access (particularly roads) are controlled by drug traffickers and their allies. The social networks that ensure the movement of cocaine and guarantee access to timber and other commodities revolve around the local elites and Mexican drug trafficking organizations (DTOs). There are also credible reports about growing social ties between the armed branches of different Mexican DTOs who are recruited from elite military and police units and Guatemalan criminal organizations led by former elite troops in the Guatemalan military.

The human and natural crisis in the Petén has been precipitated by its geographic, political and social vulnerability. The region has been historically abandoned by the state due to its distance from the capital, its use as a rearguard safe haven for guerrillas during the nation's recent civil war, and its predominantly indigenous population on the margins of society who were considered to be "natural allies of the guerrillas". This neglect of local communities' rights also facilitated the narco-ranchers territorial control through the acquisition of large tracts.

Without the earlier timber exploitation there is little doubt the region would not have proved to be as attractive to drug traffickers. In this case, one can trace the emergence of greater levels of sophistication in the organized crime structures as they have diversified into more lucrative and easier to conceal products once the networks and infrastructure are in place. The value of the cocaine traffic through the region, and the relative wealth it has brought to a few while strengthening criminal structures reduces the chances the state will be able to regain control of that territory, even in the long run and with a predominately positive presence.

Source: Farah 2010

Criminal and Military Networks

A predatory state with an agenda for private enrichment through the illegal extraction and trade of timber and other commodities cannot acquire the diverse skill set, contacts, and resources needed. Like all successful businesspeople, savvy heads of predatory states cultivate a complex **network of contacts with specialized local, regional, and international fixers** who procure finance and launder money, transport illicit products and weapons, falsify passports and legal documents, and set up shell companies necessary to access international markets for illicit timber and weapons. These networks, which span borders and even political and ethnic or religious divides, **foster organized crime, protection rackets, and trafficking** of other commodities, which leads to other forms of protracted violence.⁵⁷ In addition, the **revenues from corruption and illegal logging encourages money laundering and other financial crime**, which in turn facilitate other forms of organized crime and conflict financing.

In addition to the state's criminal networks and activities, **logging companies operating in conflict zones can themselves directly contribute to violence. Loggers have been documented to traffic in weapons and materiel**, and thereby also facilitating connections to criminal networks.⁵⁸ Because of the high risk to operations in diffuse forest areas, loggers also frequently hire (either voluntarily or under duress by the state or rebel forces controlling the concession area) **unaccountable security forces** that directly participate in the conflict as combatants, and attack and loot local communities.⁵⁹ And in some places, state security forces are themselves part owners or brokers for logging companies.

⁵⁷ Farah 2010

⁵⁸ Liberia (Farah 2010, Blundell 2010), Petén Guatemala (Farah 2010), Colombia (Farah 2010), Afghanistan (Blundell 2010)

⁵⁹ Liberia (Blundell 2010), Colombia (Farah 2010), Petén Guatemala.(Farah 2010)

Liberian Forestry Companies and Weapons Traffic

The president of Oriental Timber Corporation (OTC), Guus Kouwenhoven, a Dutch citizen, was convicted in Dutch court of running arms to Liberia in violation of sanctions (both UN Security Council embargoes and regional moratoriums). However, the conviction was overturned on appeal, despite having admitted to purchasing, a Mi-2 helicopter through a known arms dealer, Sanjivan Ruprah.

The Liberian forestry concession review concluded that OTC made over \$20 million in payments to non-government bank accounts, including \$1.9 million to known arms dealers and “security consultants”. In exchange, OTC was apparently provided tax receipts signed by the Deputy Minister of Finance for Revue Collection. In a letter to the Ministry of Foreign Affairs, Charles Bright, Minister of Finance under Taylor, acknowledged that various payments were made by OTC, used for military-related purchases, and credited as tax payments.

Milton Teahjay, Taylor’s former media advisor, implicated OTC as one of the primary actors in the arming of the Revolutionary United Front (RUF) insurgents in Sierra Leone. He claimed that logging roads into Sierra Leone paid for with OTC funds, for instance, were widely used for weapons transfer, as was a private OTC airstrip used to covertly move weapons.

The TRC also alleges that logging concessions were traded for weapons supplies. Leonid Minin, a Ukrainian-Israeli arms dealer, allegedly delivered hundreds of tons of weapons to Liberia between December, 1998 and August, 2000 through, for example, Burkina Faso and Niger, in partial exchange for a logging concession, the Exotic Tropical Timber Enterprise (ETTE). Minin used forged End-User Certificates for a company in Guinea that were signed by General Robert Gueï, the former head of State of Côte d’Ivoire. In August, 2000, Minin was arrested in Italy, while in possession of \$500,000 in illegal diamonds, \$35,000 in foreign currencies, drugs, prostitutes, and documents regarding arms trafficking to Liberia. He claimed that a July 2000 shipment was financed by his partner in Russia, Valery Cherny of the company Aviatrend, and was organized by Mohammed and Yussuf Salamé of the logger Mohammed Group of Companies (MGC) in an arms-for-timber deal. (Records seized by the FCR indicate that in 2002 MGC sought and obtained written approval from Taylor for tax credit of \$750,000 “re: military costs”.)

Source: Blundell 2010

5. Impact on forests from conflict and post-conflict

Conflict-driven forest loss -- whether caused by belligerents using timber to fund conflict or by conflict-affected people seeking access to fuel or alternative livelihoods--has a direct impact on the management of global public goods such as carbon and biodiversity, as well as on national resource-based economies and locally important forest-based livelihoods. Yet, in some cases, conflict has acted as a buffer to forest loss by shutting down logging operations, whether because of security concerns or market changes (such as decreased market demand due to timber sanctions, decreased operations due to security, loss of financing, and reputational risks). Whether forest cover will be protected or degraded by active conflict is a highly contextual question.

There is sparse quantitative data on the impact of conflict on forest cover and the qualitative data present a mixed story. Impact on forests can vary greatly depending on prevailing circumstances of the conflict and change over the course of the conflict. However, significant influences on forests are exerted by the strategic role of forests as shelter or as obstructions to access to territory by combatants, the tide of displacement of civilians toward or away from forests, and the reliance on forests for fuel, timber, and protein during the crisis of wartime. Although the data are variable, the clear message is that **forests are important sources of emergency subsistence and revenue to both combatants and vulnerable civilians when there is little other economic and livelihood alternatives available. This makes forests a field of either competition or collaboration—and therefore a significant variable in conflict resolution or further exacerbation.**

Strategic Value: Refuge or Obstacle?

For civilians, forests are a critical place of refuge and subsistence, especially for those who for either reasons of illness, tradition or lack of information do not flee conflict to organized camps. Likewise, for combatants, forests can play a role in providing either **shelter or blocking access to strategic territory**. Particularly for rebel or separatist forces, forests are an important place of refuge, and therefore often a site of destruction from states with an interest in seeing this source of refuge neutralized. Forests might be napalmed, defoliated, logged, or simply become the site of heavy militarized presence, especially along borders or areas of key strategic value. Perhaps the most infamous example is that of Vietnam, where the U.S. Operation Ranch Hand sprayed defoliant on some 6 million acres, destroying both forests and crops, and creating persistent dioxin pollution problem that would have long-lasting health effects.⁶⁰ Studies of the impacts of the defoliants estimated that 10% of trees sprayed were not only defoliated but killed by one application of Agent Orange, with a particularly strong effect on sensitive and ecologically important mangrove forests along the Mekong Delta. It was estimated that about 25% of the country's forests were sprayed more than once.⁶¹

⁶⁰ Buckingham 1982; Biggs 2005; Nakamura 2007

⁶¹ Orians and Pfeiffer 1970; Westing 1971

Similarly, in East Timor, the Indonesian military repeatedly bombed and napalmed forested areas where independence guerillas took shelter, with devastating impacts to the environment.⁶² In Colombia, a study found that 20% of Colombia's remaining forest was located in municipalities experiencing conflict and contestation of political authority either from the insurgent FARC, the paramilitaries or both. These forests have been subjected to heavy herbicide spraying to eradicate coca and poppy plantations, also devastating both forests and local livelihoods.⁶³ In Nepal, the forests were cleared for military installations and training by the Communist People Liberation Army as well as the Royal Nepal Army.⁶⁴ In Sudan, there is evidence from Darfur that trees were deliberately destroyed by militia in an attempt to sever community ties and reduce possibilities for resettlement in the area.⁶⁵

Additionally, forests are sometimes seen as an obstacle to access and are cleared in order to make strategic roads for movement of troops and weaponry. For example, In Rwanda in 1991, the Rwandan army cut a swath 50 to 100 meters wide through the bamboo forest connecting the Virunga Volcanoes in order to reduce the possibility of ambush along a key trail.⁶⁶ In Mozambique, forest in the Beira-Machipanda transport corridor linking Beira port to Zimbabwe was cleared of vegetation for security purposes, to reduce the risk of attack by REMAMO forces.⁶⁷ Once roads into the forest are open, loggers, agricultural pioneers, and hunters are likely to follow, thereby bringing further negative impact on the forest.

Loss of Forest Management Staff and Funding

One of the defining aspects of fragility is the lack of capacity of state institutions, a condition which predates the outbreak of conflict but is further worsened by it. Case studies overwhelmingly find that an important but often overlooked consequence of conflict is the loss of management staff, the theft or destruction of resources necessary for oversight, and the redirection of what little funding existed for management and conservation of forests.⁶⁸ Forest management authority and conservation patrol posts were reported attacked, occupied, burned, and/or looted by combatants on both sides of conflicts

⁶² East Timor Commission for Reception, Truth, and Reconciliation 2005

⁶³ Alvarez 2003

⁶⁴ Adhikari and Adhikari 2010

⁶⁵ UNEP 2007

⁶⁶ Kalpers 2001b

⁶⁷ Hatton et al 2001.

⁶⁸ USAID Biodiversity Support Program 2001; Hatton et al 2001; Conca and Wallace 2008, Hanson et al 2009; Adhikari and Adhikari 2010.

in Nepal, DRC, Mozambique, CAR, Ethiopia and Rwanda.⁶⁹ Forestry and park staff either fled their posts as the conflict approached, were attacked and sometimes killed or taken hostage—leaving the forests unprotected. In some cases, committed junior staff⁷⁰ and the empowerment and sense of ownership of local communities⁷¹ was a defining factor in maintaining some protection during the crisis. In fact, some cases studies from Nepal suggest that community based forestry operations were able to remain quite stable throughout the conflict, maintaining not only forest management but local incomes from a local sawmill although state institutions had all but collapsed.⁷²

Displacement

Conflict generates waves of civilians fleeing the violence and persecution, sudden and often high **density population influxes that strain social, financial, and environmental resources**. Refugees and internally displaced people, whether housed in formal camps or fending for themselves, experience a radical and life-threatening **loss or disruption of livelihood, shelter, social networks, and saved assets**. **Short-term survival becomes a priority** over long-term investments or sustainable practices and **unfamiliar ecosystems and social circumstances may not be appropriate for traditional management practices**. Construction materials and fuelwood demands in particular, not to mention waste disposal and water issues, for hundreds of thousands if not millions of people concentrated over short periods of time in small areas are devastating to the local environment and vegetation regeneration capacity—impacts that have only recently begun to be recognized by the humanitarian community.⁷³ Likewise, the **sale of fuelwood to meet this boom in demand is often one of the only income generating opportunities available** in refugee and IDP camps.⁷⁴ These dynamics are illustrated in the box below outlining the issues in displacement camps in DRC and Tanzania.

Under pressure from frequent looting and displacement, civilian livelihoods shift from agriculture and pastoralism to hunting, gathering and commercial extraction of the most accessible and easily extracted commodities near at hand—often forest products. If animals and seeds are available and not eaten as food, the displaced population may (re)engage in agriculture and livestock husbandry in and around their temporary home, clearing forest (and potentially introducing exotic species) in the process.

⁶⁹ Plumptre 2001

⁷⁰ Plumptre 2001, Hatton et al 2001

⁷¹ Adhikari and Adhikari 2010

⁷² Ibid.

⁷³ UNHCR 1998; 2002; 2005a, b

⁷⁴ UNEP 2008

Charcoal and Fuelwood Use in Conflict-Affected Communities in DRC and Tanzania

Goma is the capital of North Kivu located near some of the most biodiverse forests in the world. It is also the largest city in the province, and its population has swelled from some 30,000 to a sprawling city of 520,000 after the influx of Rwandan refugees after the genocide in 1994 and the various cycles of violent conflict and displacement that followed in DRC. The fuelwood demand for such a population is massive. In 2004, the population of Goma and its sprawling suburbs and surrounding IDP camps consumed an estimated 2,947 tons of charcoal and 3,926 cubic meters of wood. To find firewood, collectors have to venture ever farther, mainly into the densely wooded areas of Virunga National Park. Estimates suggest that at least three to four hectares of tropical forest in Virunga National Park disappear every month due to the fuelwood needs of the local economy. To meet this demand, and in absence of many other income opportunities, several thousand individuals and their dependents rely on income from wood collection, charcoal production, transport, and trade.

In addition to the coping economies of conflict-affected communities, charcoal production and fuel collection are also closely linked to the local combat economies. According to reports, a large market for charcoal was located in Kiorirwe in Masisi territory, approximately 100km north of Goma, just west of Virunga National Park. This market was allegedly set up by renegade general Laurent Nkunda and his CNDP (Conseil National de Défense du Peuple) rebel group since 2004. The rebel leadership apparently encourages locals to cut wood in the National Park and produce charcoal in areas controlled by them. At the same time, there are reports that many wives of military personnel are involved in the fuelwood collection and trade in areas controlled by the Congolese military.

In the Greater Benaco in Tanzania camps, immediately after their arrival in 1994 refugees began felling trees for the construction of shelters and fuel for cooking, heating, lighting, and brewing. In December 1994, the daily fuel wood consumption was 1 200 tonnes for the entire refugee population or an annual demand of about 550 000 m³ (1m³ = 800 kg) for the entire camp. In addition, the annual fuel wood demand for Bukoba Urban, Rural and Muleba Districts was estimated at 1.5 million m³. CARE reportedly attempted to address the impact by providing fuel wood to camp residents but discontinued the program after noting that it had caused an increase in fuel use.

At first, dead wood was gathered in the vicinity of the camps, but within a year, people were forced to collect and cut wood within a radius of more than 10 km. Such a huge demand of firewood led to severe deforestation of the surrounding savannah woodlands. Satellite and aerial photos taken in 1996 revealed more than 226 km² (20, 600 ha) of completely deforested land and a further 470 km² (47,000 ha) of moderately deforested land. The most affected areas included Gagoya in Ngara District, Kasogeye, Nyantakaraya and Biharamulo Forest reserves. In some areas, even stumps were uprooted thereby exposing the soil to erosion and endangering soil fertility. The effects of reduced vegetation cover included soil erosion on slopes, reduction in soil organic matter and nutrients, diminished water retention capacity, reduced soil depth required for root growth and uncontrolled bush fires, with a resulting marked reduction in soil fertility.

In December 1996 after some 42 months in Tanzania, the refugees were forcibly repatriated to Rwanda. The impact of forest clearance, even with secondary growth beginning to emerge, was still evident a decade later.

Fuelwood and charcoal, therefore, are integral parts of both the coping economies of vulnerable civilians as well as sources of revenue for war economies of belligerents. Both economies inflict a heavy toll on forest cover.

Sources: Traffic 2007; Bloesch 2002; UNHCR 2002b; Owen et al. 1997a,b; Kagera Environmental Project 1997; Rutinwa et al., 2003

Wildlife

There is also sparse quantitative evidence of the negative impact on wildlife from increase in bushmeat trade during conflict, but what data exist are compelling (see Figure 3). Hunting by civilians increases due to displacement to the forest (or nearby refugee camps where there are insufficient food rations), and the **loss of other livelihoods such as farming and livestock** due to looting. Other negative impacts on wildlife stemming from human encroachment include death from landmines; disturbance to migration, feeding and reproduction; and loss of habitat from logging and conversion of forest.

In addition to civilians pushed to subsistence crisis during the conflict, both state or non-state **combatants are often camped in remote sites without provisions** and rely on what they can hunt and loot from civilians. In addition, belligerents, like civilians, also hunt for both subsistence and commercial purposes and the proliferation of weapons in and near the forest makes combatants' hunting very efficient.

For example in Tanzania, TRAFFIC has documented how numerous protected areas rich in wildlife were heavily impacted by the influx of some 800,000 refugees in the mid 1990s. Rwandan refugees by tradition eat a high protein diet from cattle, most of which were lost prior to or during their sudden flight. **Food shortages were reportedly common in the camps and even when available, the rations were deficient in protein.** Refugees naturally turned to bushmeat hunted with snares, nets, and firearms.⁷⁵ **Hunting was also a source of needed income.** A daily bushmeat market was reportedly held in one of the camps with carcasses openly hung for sale, while in other camps it was traded clandestinely at night (referred to as "night-time spinach").

The impacts on wildlife were significant. Burigi Game Reserve used to be renowned for its diverse and large populations of wildlife. However, studies report large mammal populations declined between 60-90% from 1994 and 1996, at the peak of the refugee influx.⁷⁶

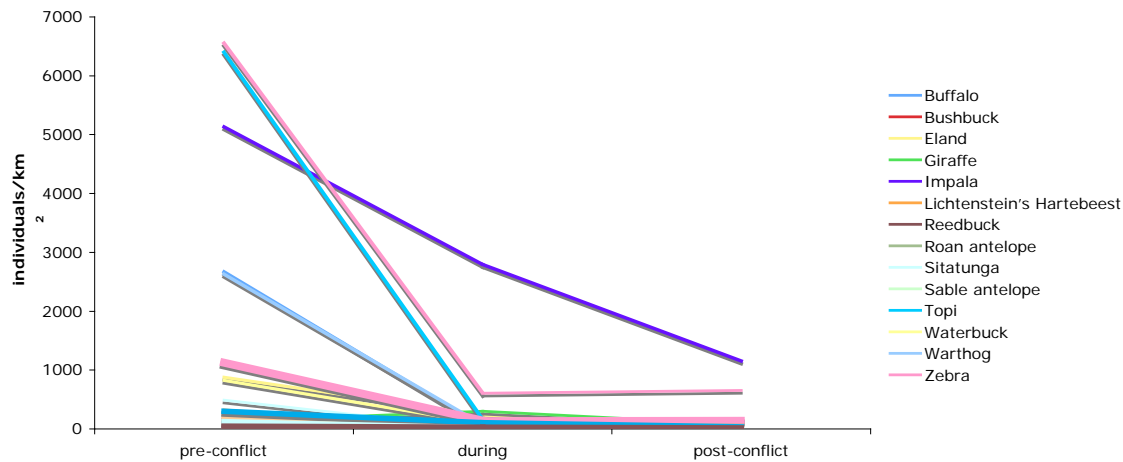
In a spillover effect from the war in Sudan and later DRC, wildlife in the DRC's Garamba National Park, just across the border, was heavily exploited by combatants, traders, and impoverished local people. Patrol monitoring and maps show the poaching moved steadily south through the park, killing large mammals—initially buffalo and later elephants. Between 1991-1996, more than 70 percent of the incidents involved combatants from the Sudan People's Liberation Army based on the Sudan side of the border. However, the poaching became especially acute when, due to the onset of DRC's own war in

⁷⁵ Hunting is done with both local homemade shotguns and modern firearms, which are readily available because those in the camps include armed combatants as well as civilians. Biswas and Tortajada reported that "Close to one million people poured over the border into camps in and around Virunga [National Park]. The Mugunga camp lodged an estimated 50,000 soldiers with arms and ammunition."

⁷⁶ Kagera Environmental Project 1997; Rutinwa et al. 2003; MNRT 2005 (cited in TRAFFIC 2007)

1996-97, park guards were disarmed and enforcement came to virtual standstill. In that brief period, the elephant population was reduced by half, the buffalo by two-thirds, and the hippo by three-quarters.⁷⁷

Figure 3: Animal Population Surveys, Burigi, Moyowosi and Kigosi Game Reserves, Tanzania (1990- 2000)



Sources: TRAFFIC 2007 (from aerial surveys Tanzanian Wildlife Conservation Monitoring Unit, MNRT 2005). The thin lines are from the Burigi Reserve, the thick lines are from the Moyowosi and Kigosi Reserves.

In Mozambique, Gorongosa National Park and Morrumeu Reserve reportedly suffered massive declines in large mammal populations from hunting by combatants stationed in the area for long periods of time.⁷⁸ Surveys in 1994 (two years after the end of the war) showed that in Gorogosa, the elephant population declined to some 100 individuals from some 3000 prior to the conflict. Populations of buffalo (some 14,000), hippo (some 4800), and wildebeest (some 5500) were virtually wiped out. Only 129 waterbuck remained of a previous count of 3500.⁷⁹ The Central African Republic also saw massive declines in elephant populations (a reduction in some 90%) and rhino (virtually extirpated from a population of 10,000).⁸⁰

⁷⁷ Hillman Smith and Smith 1997; Hillman Smith et al. in press

⁷⁸ Hatton et al 2001.

⁷⁹ Cummings et al 1994, cited in Hatton et al 2001.

⁸⁰ Blom and Yamindou 2001

Although hard data are largely unavailable, anecdotal evidence from Afghanistan suggests a combination of the war and changing dynamics of hunting, trade, and environmental factors related to the war and movements of populations have pushed a number of important species to the brink of extinction. The importance of Afghanistan's mountains as strategic frontlines has brought heavy fighting and pushed wildlife to the valleys, where they are easily targeted by hungry villagers and combatants with a ready supply of firearms. Afghanistan's populations of lion, leopard, wolf and fox have been reportedly wiped out. The Marco Polo sheep are also in severe decline, and in 2005 one of two remaining populations of Siberian crane was thought to be down to just one pair and a single chick after a US bombing campaign in 2001 disrupted their migration. Falcons, once common in Afghanistan's mountains, are now rare due to demand from Arab countries, where they are highly prized for their hunting ability. The number of snow leopard, one of the world's rarest animals, is estimated to have been reduced to around 100. Ironically, some of the decline may have been attributable in part to the donor and peacekeeping community themselves: one source cites UNEP estimates that foreign aid workers and peacekeepers have contributed significantly to the decline of snow leopards by increasing demand and driving up the price for skins in Kabul markets.⁸¹

Land Seizing and Conversion

One of the frequent disruptions of conflict is the loss of resource rights and access. For example, Alvarez notes for the pervasive impact of Colombian forest fragmentation due to expansion of coca farms and the seizure of land by paramilitaries for conversion to cattle ranches and agricultural plantations.⁸² Some argue that coca eradication programs may have led to greater conversion pressure as displaced farmers seek new land to recover lost revenue.⁸³

Farah documents how the demand for palm oil has sparked violent land seizures in rural Colombia by paramilitaries, who drive traditional Afro-Colombian communities off the land they collectively own under indigenous title (and with Constitutionally-recognized rights). The seized land is then classified as being without an owner because the community no longer exists. It is then sold or rented by the government or new owner to businesses, who convert it from forest and traditional subsistence agriculture to large-scale palm plantations, some of which ironically receive development subsidies from the US Plan Colombia.⁸⁴

Likewise, in its environmental assessment of Afghanistan, UNEP found that in 2003, over 50 % of the natural pistachio woodlands had been cut in order to sell wood for income or to stockpile fuelwood for

⁸¹ Samander 2005.

⁸² Alvarez 2003.

⁸³ Kaimowitz 1997; Reyes 1999

⁸⁴ Farah 2010

fear that access to the forests would be lost. UNEP analysts argued that regeneration has been prevented by extensive grazing and soil erosion and decreased vegetation cover and accelerated erosion have reduced water quality and quantity, further compounding existing water scarcity.

Positive Effects for Forests

Conflict can at certain points be positive for forests under heavy pressure. If the security situation in the forest deteriorates so that the logging industry abandons concessions, and local communities flee their homes or do not enter the forest, logging and hunting pressure is alleviated. Areas cultivated for agriculture may be abandoned and therefore able to revert to forest. Rebel and government demands for exorbitant “taxes” on forest products may discourage their exploitation. This side effect of conflict, referred to by Alvarez (2003) in her analysis of remote sensing images of forest cover in Colombia, as “gunpoint conservation.” In another example, at least one systematic study used archival research and photographic material to document that during the civil war in Eritrea, fear of the military and the use of landmines significantly reduced use of forests and grazing of livestock, which had a positive effect on vegetation regrowth.⁸⁵ Additionally, there are anecdotal reports of temporarily improved biodiversity and forest cover outcomes due to declines in use because of insecurity and violence in areas of Nicaragua,⁸⁶ Burma,⁸⁷ Aceh, Mozambique⁸⁸, Nepal,⁸⁹ and the Demilitarized Zone between North and South Korea⁹⁰ during conflict.

The protective effect on forest cover can persist for some time afterward if land mines were used and are not quickly cleared (although mines have an obvious negative impact on large wildlife). However, Alvarez argues that gunpoint conservation is rare and fleeting. Indeed, if the security situation has deteriorated, it implies the presence of armed forces, who are likely to hunt and extract timber themselves. Likewise, the negative **impacts may only be displaced from one forest to another if people are driven to use more marginal and ecologically sensitive areas** for agriculture, logging, or fuel collection.⁹¹

⁸⁵ Boerma 2006

⁸⁶ Nietschmann 1990

⁸⁷ Rabinowitz 2005

⁸⁸ Hatton et al 2001

⁸⁹ Adhikari and Adhikari 2010.

⁹⁰ Kim 1997

⁹¹ USAID Biodiversity Support Network 2001; Conca and Wallace 2009

Another potential positive effect of conflict on forests is the **raised awareness of the importance of forests as an important safety net** for subsistence and shelter in times of crisis. This recognition may help to spark **cooperation to protect forests--through community based management, trans-border protected area management, and coordination across sectors (humanitarian, nature protection, security, and development agencies)**.⁹² For example, the governor of Aceh (a former rebel commander) has engaged with carbon trading partners to generate funds for its vast national forest, while **employing thousands of ex-combatants and conflict-affected community members as wardens**. We return to these issues later the paper.

⁹² Harwell 2010; UNEP 2005; Ali 2007.

6. Impact of Conflict on Forest Livelihoods

Recent focus on the “greed or grievance” hypothesis has directed much attention to the economic activities of elite combatants and the need to disrupt their sources of conflict financing. However, war economies engage complex networks of actors at all levels of society, some of whom may have few other opportunities for livelihood in times of conflict when the formal economy is in ruins and other livelihoods such as farming are abandoned due to looting and insecurity. It is more useful, particularly with poverty reduction goals in mind, to differentiate between ‘combat’, ‘shadow’ and ‘coping’ economies and the importance of livelihood analysis that focuses not on material assets themselves, but on different capacities to access adequate resources.⁹³

Forests as Safety Nets

Forests provide **essential products** (protein, fuel, medicinals, construction materials), **essential functions** (subsistence, employment, goods for sale), and **indirect benefits** (land for other uses such as fertile agricultural land, ecosystem services, and social and cultural uses). The role of forests is **most critical for those who are already the most vulnerable—the rural poor⁹⁴ and women.⁹⁵ With few other assets, these groups rely on forest products to an even larger degree during seasonal or temporary hardship, in periods of climatic extremes or when the previous year's crop has been consumed and new crops have not been harvested. During these times, forests often are the main food and income source for poor households.⁹⁶ The relationship is even more critical in refugee communities, where, in the urgency of providing services for large influxes of conflict-affected people, the question of how refugees might exploit forests is often neglected.**

The vulnerability of these groups is further increased by conflict, and forests are vital safety nets when civilians flee violence to forest for shelter and emergency subsistence. Displacement during conflict disrupts social networks for reciprocal labor, and access to credit. Looting and labor shortages due to displacement, recruitment into fighting forces, illness/death from fighting make it difficult to rely on livelihoods from maintenance or accumulation of immobile assets that require time to mature (agriculture, livestock). However, as discussed above, conflicts often occur in or near forests and

⁹³ Jackson 2002; Pugh et al 2004; Goodhand 2003

⁹⁴ This is not true for all forest products, though. For example, in central Africa, while overall poor rural household depend most on the production and sale of bushmeat, it is the more affluent households in the village who benefit most from the wild meat trade since hunting requires a particular skill and traditional hunters often have an elevated social status. In contrast, the poorest village households depend to a much higher degree on the collection, consumption, and sale of wild plants or fruits (De Merode et al. 2003).

⁹⁵ Kaimowitz 2003

⁹⁶ Ibid.

resulting insecurity may preclude forest livelihood activities, as noted above in Colombia, Nicaragua, Burma, Aceh, and Nepal.

Impacts of Timber Sanctions on Forest Livelihoods

Local livelihoods suffer losses when combatants in resource areas require locals to supply goods or “taxes” to combatants on forest products, as mentioned above for Casamance and Afghanistan. Further, even “smart” sanctions designed to target individual commodities may have the unintended consequence of harming those pushed into these sectors as a survival strategy. **UN sanctions to obstruct the marketing of conflict timber have only been imposed in Liberia, but may have had unintended negative consequences for coping livelihoods** by reducing demand/employment.

However, the only formal assessment of impacts was only able to be conducted as a desk study due to ongoing combat conditions, and the assessment admits that “sources must be treated with caution, however, given the overt inconsistencies in the data, and questions regarding the reliability and integrity of reported statistics.”⁹⁷ **It is also difficult to estimate the impact with any precision because of the informal nature of the coping economy.** But an analysis of the available information suggests the impacts were likely small on the livelihoods of the poor.

Given the size and the importance of the forestry sector in Liberia during the war - providing up to one quarter of the country's GDP and more than 50 percent of export revenue in the early 2000s - a sudden halt to all timber export activities could have had serious economic consequences. In fact, sanctions against Liberian timber exports were indeed effective in that large-scale logging for export completely ceased after the imposition of the embargo in July 2003. However, **much logging had already ceased prior to the sanctions due to insecurity and rampant looting during the conflict.** In addition, due to the nature of the Liberian export timber sector and the small role it played in the livelihoods of rural households, the direct economic impact on the poor seems to have been limited.

Further, despite the importance of timber exports for the country's GDP and as a source of government revenue, the **share of timber receipts that went to the national budget was small in comparison to the total estimated receipts.** For example, the estimated government revenue from timber exports in 2002 was approximately USD13 million as compared to up to exports of up to USD200 million.⁹⁸ Government budgets were already at a minimum and most of the spending on social service was already provided by international donors and most of the revenue from timber exports benefited the companies and President Charles Taylor personally.⁹⁹

In addition, although estimates suggest that the **logging companies employed between 5,000 and 8,000 workers in Liberia in the early 2000s, about a third of the jobs were filled by expatriate workers.**

⁹⁷ UNSC/2003/779

⁹⁸ Ibid, p. 7

⁹⁹ Blundell 2010; Global Witness 2002

Most of the Liberians hired by the logging companies were "casual" day laborers, paid between USD 1 -2 per day. Due to the high seasonality (most roads in the interior are impassable during the rainy season) and transient nature of the logging business and the instability in the country due to the war, most of the **employment was especially sporadic and uncertain.**¹⁰⁰

Rural communities might have benefited from demand for local products and food from company employees and by social services such as health care and educational facilities promised by the companies. However, given the widespread use of forests as patronage and the general lack of oversight prevailing in the sector at the time, many **companies routinely failed to fulfill promises to provide community facilities.**¹⁰¹ In a 2002 survey in Liberia, 90% of rural communities had no access to clean water, sanitary services, schools or clinics—and there was no difference between communities inside or outside of logging concessions.¹⁰²

Consequently, **while the income from employment in logging might have made a significant seasonal contribution to some households, the overall importance for rural livelihoods of employment or demand for local products seems to have been rather limited.** This potential benefit must also be weighed against the negative consequences from deforestation, the reported dangerous working conditions, as well as the reported sexual exploitation of women and girls in logging areas.¹⁰³

Further, this benefit might have been offset by an **unintended boost that the local small-scale logging operations received from the cessation of large-scale timber logging.**¹⁰⁴ As a result, one longer-term effect of the timber sanctions was the opening up of space in the domestic timber markets for large numbers of chainsaw loggers to expand these smaller scale operations to the benefit of a significant number of rural households (although some argue that it is mainly the local political and village elite who benefit from these smaller operations).

Nevertheless, many authors have rightly expressed concern that livelihoods of the already vulnerable poor than will bear the brunt of recent increased attention to cutting the lines of conflict commodities,¹⁰⁵ and indeed of forest law enforcement more generally.¹⁰⁶ These authors note that **policy makers must differentiate between commercial use of timber and forest products in coping**

¹⁰⁰ UNSC/2003/779

¹⁰¹ SAMFU, Global Witness 2001, p. 24

¹⁰² UNSC/2003/779, paragraph 58.

¹⁰³ UNSC 2003, p. 9

¹⁰⁴ Blackett et al. 2009

¹⁰⁵ Jackson 2003, Goodhand 2004

¹⁰⁶ See for example, Kaimowitz 2003.

economies and that of combat economies to avoid unintended negative consequence for conflict-affected civilians.¹⁰⁷ Further, existing legislation that defines legal forest use often prohibits community activities such as subsistence and small scale commercial logging, fuelwood collection, and hunting on “state forest” and, given the frequent lack of political will to target powerful industrial operators (many of whom may of received their concessions in return for political patronage), law enforcement efforts often focus disproportionately on small operators.¹⁰⁸ Therefore, **it is vital that increasing attention to targeted “smart sanctions” be accompanied by robust monitoring and flexible responses to mitigate economic impacts on the rural poor.**

¹⁰⁷ Jackson 2003, Goodhand 2004.

¹⁰⁸ Kaimowitz 2003

7. Post Conflict Pressures on Forests and Livelihoods

While the impact of conflict on forest is mixed, in post conflict, the impacts of forests tend to be less ambiguous. In the post-conflict environment, there is **urgent need for employment, quick revenue for reconstruction and to fund poverty reduction in order to visibly demonstrate a 'peace dividend'**. In the absence of strong political will and capacity for fundamental forest reform, these pressures often results in an increase in logging or clearing forest to establish plantation or smallholder agriculture, which are often viewed as quick and cheap ways to generate employment and revenue. Without safeguards, one of the easiest sources of financial and political capital is the asset stripping of natural capital.¹⁰⁹

At the same time, **demand for timber in post conflict settings is high. Construction projects, which are also easy to means of quickly generating jobs, are often emphasized during post-conflict.** This emphasis along with the **need to rebuild damage to infrastructure done by the conflict and to service the large influx of foreign aid workers** fuels the demand for wood. The FAO has estimated that wood demand in post conflict and post tsunami Aceh, for example, solely to rebuild homes at over 650,000 cubic meters (roundwood equivalent), much of it supplied by ex-combatants involved in illegal logging.¹¹⁰ In Liberia, which did not have the destruction from the tsunami to contend with, the FAO estimated the increase in demand for timber to meet reconstruction needs was an additional 40,000 m³ annually (for a total annual wood demand of some 100,000 m³).¹¹¹

At the same time, **displaced people and combatants who abandoned their homes during the war begin to return or are resettled in or near forested areas** and take up livelihoods in clearing land for agriculture or livestock, or felling trees for timber or charcoal production and sale.

However, although **access to forests quickly increases in post conflict with new roads and increased population, reforms to management and improved capacity for law enforcement are often more time consuming and politically freighted endeavors that lag behind.**¹¹² Therefore, as pressure increases on the forest there are often few accompanying safeguards against destructive harvesting.

The end of the war also often does not bring an end to pressure on wildlife as access to wildlife improved ahead of adequate law enforcement. Hatton et al (1994) report that **reconstruction programs focused on de-mining and rehabilitation of roads and bridges, which improved access to wildlife areas.** In addition, although returning refugees initially received food aid, they also hunted for protein to supplement their diets, targeting small mammal species and birds since larger species were already

¹⁰⁹ Blundell 2010, Harwell 2010, Kaimowitz and Faune 2003.

¹¹⁰ FAO 2005

¹¹¹ Whiteman 2005

¹¹² Conca and Wallace 2009; Hanson et al 2009

scarce. Besides subsistence hunting, there was a booming market for bushmeat in rural and urban markets and along major roads meat because most livestock had been looted or eaten during the war. In mid-1994, for example, an IUCN team estimated that between 30 and 60 tonnes of carcasses were removed per month from the abandoned Gorongosa National Park.¹¹³ With **increased access and enforcement still at a minimum due to lack of government staff and resources and compromised village chiefs' authority**, urban-based hunters with vehicles moved progressively further into "protected" areas, mainly hunting illegally at night with spotlights. Hatton and colleagues reported that post conflict illegal logging followed a similar pattern after the onset of peace. As a result of the severe depletion of these natural assets, which otherwise could have made a rapid recovery, Hatton et al note that "rural communities and the private sector are now faced with a considerably depleted resource base for future economic activities."¹¹⁴

Post conflict pressures also have negative impacts on wildlife when **land is degazetted from protected areas to support resettlement** of refugees and/or ex-combatants.¹¹⁵ For example, in Rwanda, two-thirds of the original area of Akagera National Park was removed from protected status for resettlement of refugees and their livestock. The result was the virtual local extinction of some species of ungulates, including the roan antelope and the eland.¹¹⁶ In northwestern Rwanda, the Gishwati Forest Reserve was degazetted to provide land to returning refugees and, simultaneously, exploited as pastureland by absentee ranchers.

Another pressure on forests comes from the type of investors likely to be attracted to post conflict environments—frequently **speculators or companies looking for high returns and willing to cut corners to offset high risk**.¹¹⁷ As mentioned above, many speculators delay production (and indeed may not even have the capacity to log) as they wait to sell their rights at a higher price. Alternatively, some may seek to deplete forests assets as rapidly as possible while cutting costs by neglecting environmental remediation and management responsibilities, as well as obligations to local communities.¹¹⁸

Domestic political elite seen as critical for stability during the fragile transition are often appeased/bought-off with forests and other resources—through privileged granting of forest

¹¹³ Hatton et al 2001.

¹¹⁴ Hatton et al 2001, p 48.

¹¹⁵ Mascia and Pailler 2010

¹¹⁶ Kalpers 2001b

¹¹⁷ This may increasingly be the case for speculators in the burgeoning carbon market. For example, UK based Carbon Harvesting Corporation, which has no prior carbon market experience, acquired a 400,000 hectare for REDD carbon credits, without following the legal requirements for tender. The CEO was subsequently arrested on charges of bribing government official. (Global Witness 2010)

¹¹⁸ Blundell 2010

concession, watered-down regulations, and lax enforcement (essentially a continuation of patronage model). As noted above, conflict may bring cooperation for protection of forests but warring parties and political elite may also cooperate for more rapid forest exploitation and destruction. Indeed, the prospect of cooperation in exploiting lucrative timber resources is sometimes enough to bring warring parties to ceasefires, as was the case in Burma.¹¹⁹

In another example, post-war elections in Cambodia in mid-1993 led to a power-sharing government between Hun Sen of the Cambodian People's Party (CCP) and Prince Sihanouk Ranariddh of the royalist FUNCINPEC party, and the tacit agreement to divide up receipts from logging operations. This agreement included quiet arrangements with both Khmer Rouge commanders and Cambodian military, which controlled the ministry of forestry, ostensibly for security reasons. This spoil-sharing agreement by all major political actors led to an unprecedented pace of deforestation in the mid-1990s. By 1993, the country's entire non-protected forests had been allocated to logging concessions. Large timber concessions were handed out to a small number of companies. Most concessions were not officially tendered, or if they were, contained side-agreements for larger areas. Regulations were not enforced and rapacious logging took place all across the country, in particular from 1993 to 1995. International donor pressure led to a nominal moratorium on logging and timber exports from 1992 to 1996, although enforcement was lax and the ban was suspended on five occasions in that period.¹²⁰ Although the Cambodian government conducted a concession review, when remaining operators failed to provide management plans within one year as required and their concessions were not terminated, this sent the message that meaningful reform was not likely.¹²¹

In DRC, following on from the recommendations in the 2002 UN Panel of Experts report, the Sun City Agreement called for a review of all forest contracts allocated during the conflict. The review was completed with the assistance of an independent observer from the World Resources Institute. Article 5 of the new forestry act set forth simple criteria for cancellation. The result was to cancel 25.5 million ha of non-compliant concessions, and place a moratorium on the allocation of any new concessions. Nonetheless, 100 new contracts were signed after the May 2002 review, adding at least 2.4 million new hectares. The government argued that it was in the national interest to allow these concessions to continue operating even though they had been granted after a moratorium on concessions was enacted.

More positively, some post conflict contexts have brought some form of **decentralization** of authority of resources (Aceh), or **legal recognition of customary rights** (Mozambique, Nepal, Liberia¹²²), with the aim at reducing the destruction of forests under central administrations with little benefit for local

¹¹⁹ Sherman 2003

¹²⁰ LeBillon 2002

¹²¹ World Bank Inspection Panel on Cambodia 2006, Blundell 2010.

¹²² In Liberia, the Community Rights Law actually represented a (partial) return of indigenous land rights that were originally recognized, even by the founding Americo-Liberian settlers, but subsequently eroded by the state. (Wily 2007)

communities who bear the brunt of environmental damage and lost forest resources, as well as an attempt to make state agencies more efficient and accountable. Indeed, in some contexts, this recognition of local autonomy over resources and resource revenues was a central condition of the peace agreement, as in south Sudan and Aceh, and the ongoing Moro Islamic Liberation Front's negotiations with the Government of the Philippines.

However, it should be emphasized that, in practice, regional autonomy and **decentralization of government authority (as in Aceh, and indeed in the rest of post-Suharto Indonesia) is not the same as recognition of customary rights**. As Ribot and colleagues¹²³ point out for Indonesia, Nicaragua, Uganda and others, decentralization was undertaken as repositioning of authority to local government agencies, who nonetheless are ultimately upwardly accountable to the central government, and in many cases (for better or worse) strengthens state authority in the periphery where it previously only had tenuous reach. Recognition of customary rights, in contrast, is a recognition of locally-rooted authority and institutions.

Further, **without careful oversight, even efforts to legally recognize customary rights can wind up co-opted by political elite**, as occurred with Liberia's Community Rights Law, which grants use rights but not ownership rights also mandates that committees overseeing community forest ventures must include a member of local parliament. Although the law enables more community consultation and benefit than under previous legal regimes, such a condition for committee membership, coupled with the fact that community committees may contract logging concessions of up to 50,000 hectares without submitting to competitive bidding procedures required of other logging companies, is likely to result in local parliamentarians making use of "community concessions" to avoid the rigorous new reforms put in place.

Unless crafted to create local accountability, positive incentives for sound management, and oversight mechanisms, even what is often billed as a "democratization" of forest use may be not in the long term interest of either forests or local people, and may result in more localized corruption and faster forest destruction.

Ex combatants and Security "Trade-Offs"

Security is a high priority in the often fragile environment following peace agreements. In addition, high **unemployment and lack of income generating opportunities represent a significant but often under-recognized and inadequately planned for threat to security**. As a result, **trade-offs are often taken to allow ex-combatants' illegal resource extraction with the intention of maintaining short term stability, which can have the unintended consequences of disenfranchising local communities and, ironically, an escalating security situation that can threaten the peace.**

¹²³ Ribot et al 2006; Ribot and Mearns 2005.

In many of recent conflicts where lootable natural resources played a central role, control of the extraction and trade of resources such as forest products is important not only for environmental protection and sound management of natural capital, but also for security concerns. Yet, the **sound and equitable regulation of natural resources, even when they were significant sources of grievance or conflict funding, are topics that rarely figure in peace negotiations or planning for ex-combatant peacetime employment. To the degree natural resources are considered, they are treated as bargaining chips to induce fighters to lay down arms.**¹²⁴ Further, in the urgency to disarm combatants and establish security, the cross sectoral impacts of interventions such as Disarmament Demobilization and Reintegration (DDR) on forests have rarely been the subject of analysis or responsive planning.

The difficulties routinely faced by DDR programs in challenging post conflict environments also represent threats to the control and management of lootable forests. These difficulties include the **continued availability of weapons, persistence of command structures, widespread unemployment and difficulty in creating alternative livelihoods for fighters. Coupled with criminal experience gained during wartime, eroded social networks, dysfunctional law enforcement and forestry agencies, and high demand for raw resources for reconstruction and recovery, these difficulties feed an illicit economy of forest extraction by ex combatants and corrupt government partners, which can disadvantage the livelihoods of conflict-affected local communities, as well as flaring up into renewed violence of various types, including a return to full armed combat.**

In Nicaragua for example, the government downsized its army following the close of the civil war in 1990 putting tens of thousands of soldiers out of work, on top of some 22,000 insurgents who had laid down their arms. In compensation, many of these ex-combatants were resettled in “development poles” and security zones located in “unclaimed” areas of dense forest. Not long afterwards, for a variety of reasons, factions of former Sandinista, resistance and indigenous Miskito fighters rearmed themselves, funded in part by revenues from timber and agriculture for the forested regions.¹²⁵

The perceived need for these “quick wins” can undermine long-term goals of deeper and more difficult reform.

¹²⁴ See peace agreements for Sierra Leone, Liberia, Angola.

¹²⁵ Kaimowitz and Faune 2003.

Ex-combatants, Security, and Liberia's Rubber Sector

Rubber is the largest source of employment in the Liberia and in 2006 (when other sectors had ground to a halt due to the conflict) accounted for 90% of the country's export value. At the close of the civil war, ex-combatants from variety of rebel fighting forces occupied rubber plantations and installed their own system of extracting 20 percent "tax" from tappers and rubber buyers. The occupation robbed the government of income and the inexperienced fighters used "slaughter tapping" methods that destroyed trees and threatened the viability of an important sector. Nevertheless, ex-combatants retained their illegal occupations in part by bribing local officials, as well as through violence and intimidation.

Recognizing the security threat the situation on the rubber plantations posed, one of President Johnson Sirleaf's first actions was to establish the Rubber Plantation Task Force (RPTF). The RPTF was formed in large part due to local security "hotspot" monitoring by the UN Mission (UNMIL), and concerns around not just security threats but also the human rights and livelihood needs of tappers, conflict-affected communities, and ex combatants. As such, the RPTF was a flexible response to both security and conflict-sensitive development needs.

Another strength of the RPTF was its cross-sectoral coordination, which contributed to success. The Task Force involved 13 concerned agencies of the Government of Liberia (GOL), 13 departments of UNMIL and the private sector Rubber Planters Association. This coordination was vital to consensus and constituency- building on some key elements of reform embodied an Executive Order mandating the reduction and licensing of predatory middlemen, a prohibition of buyers setting up buying stations next to plantations (which encourages rubber theft), and a ban on exporting raw rubber (which results in an estimated 40% loss in processed value).

However, this momentum seems to have been only partial, or at least short-lived. The Executive Order satisfied the immediate security concerns but also offered new opportunities for rent seeking for some in government and the Rubber Tappers Association, who were put in charge of establishing Interim Management Teams on the plantations. As a result, in absence of anti-corruption and oversight mechanisms, there seems to be little appetite for a thorough reform of the sector and a review of existing concession agreements.

The Task Force produced differing results on different plantations. On one plantation, the Task Force established a security post and successfully negotiated with the ex-combatants to either apply for formal employment at the plantation, enroll in job training, or take alternative jobs in construction (including to improve basic facilities for tappers and surrounding communities). As a result, on this plantation, the Task Force claims to have been successful in strengthening security and regaining government of the plantations; improving government revenue collection on rubber; clarifying concession and management agreements; improving management of plantations; and helping to break combatant command networks by offering formal employment or alternative livelihoods to illegal occupants.

On a second plantation, however, state control was not established. There was a lack of clarity on ownership of the plantation, which was under claim by a politically powerful family and contested by surrounding communities. Further, the plantation is far from the capital, on roads that are impassable during the rainy season. Additionally, local government corruption also presented a serious obstacle to asserting rule of law. However, a temporary reprieve from these problems occurred when ex- combatants ultimately left the plantation on their own, due to a steep drop in rubber prices in the fall of 2006 that reduced the profitability of rubber tapping and rubber crime. Some ex-combatants chose to enter alternative livelihood programs in construction, others simply drifted away to

the illegal mining in nearby Sapo National Park or illegal small scale logging.

In the end, the Task Force was a model for a flexible, conflict-sensitive, and coordinated cross-sectoral approach to addressing the urgent short-term security issues in two of the rubber plantations. But unresolved issues of corruption meant the RPTF failed to establish security on one of the plantations and ultimately failed to deliver on its potential to facilitate long term reforms of the sector that would have contributed to durable peace as well as improved livelihoods, and sound and equitable management of the resource. In so doing, the Task Force dealt with the symptoms but not the root causes, which it viewed as falling outside its narrowly defined security mandate. With rubber prices now recovered, pressure has begun to increase again on the sector. Gaps in reform, such as those in the now expired Executive Order and the lack of funding to the dysfunctional management and oversight body, continue to pose significant obstacles to revenue and product tracking, the sustainability of the sector, and to security at large.

Source: Harwell 2010

Post Conflict Effects on Forest Livelihoods

In addition to the negative impacts on rural forest livelihoods from a disproportionate law enforcement focus, **post conflict governments, sometimes with support from the donor community, tend to prioritize natural resource extraction through industrial concessions, including logging, as a means to jump start the economic recovery, at times to the detriment of smallholder access and health of forests important for local livelihoods.**¹²⁶ A rush to allocate large concessions can result in a **resource grab by political elite due to access to economic and political assets.** In the absence of specific safeguards, post-conflict further entrenches these inequities.

For example in Mozambique, Hatton et al (2001) report that in the initial post-war economic rush to increase investment, concessions were granted at different levels of government and without coordination between sectors. Further, “the process of granting concessions was not consultative, especially with regard to local communities living in the areas concerned. Consequently, the same area of land was sometimes granted to different concession seekers, and often there was conflict with local communities. In some cases, (displaced) local communities returning to their places of origin discovered that tracts of land had been requested or given over to outsiders...Concessions were even allocated in protected areas, at a time when management had not yet been re-established in most protected

¹²⁶ World Bank Inspection reports for Cambodia (2006) and DRC (2007a). “The was created in September 1993 by the Board of Executive Directors of the World Bank to serve as an independent mechanism to ensure accountability in Bank operations with respect to its policies and procedures. The Inspection Panel is an instrument for groups of two or more private citizens who believe that they or their interests have been or could be harmed by Bank-financed activities to present their concerns through a Request for Inspection. In short, the Panel provides a link between the Bank and the people who are likely to be affected by the projects it finances. Members of the Panel are selected on the basis of their ability to deal thoroughly and fairly with the request brought to them, their integrity and their independence from the Bank’s Management, and their exposure to developmental issues and to living conditions in developing countries. The three-member Panel is empowered, subject to Board approval, to investigate problems that are alleged to have arisen as a result of the Bank having ignored its own operating policies and procedures.”

areas.”¹²⁷ Hatton et al also further report that, due the dearth in information and weakened state institutions before the war, land use zones including boundaries to protected areas were not well known, resulting in frequent overlap with concessions. Finally, in somewhat of an understatement, Hatton et al note that, “with the transition to peace and associated shifts in power, corruption in some cases became a factor in the allocation, control and use of land and natural resources.”¹²⁸

Post conflict emphasis on industrial logging has many causes. In part, planners may overestimate the potential contribution of industrial concessions (and even the forestry sector generally) because of **sparse and flawed data about the size of the industry under conflict conditions and the potential of the forest**. In addition, an **overly optimistic view of the capacity in the private sector coupled with political pressure to jump start the economy and employment (as well as to reward political favors or neutralize opposition) have also led to reliance on the concession-forestry model, where harvesting has outpaced regulatory reform and enforcement capacity and action**. As a result, failure to meet revenue projections can **undermine reconstruction efforts and poverty reduction strategies**.¹²⁹ More perniciously, in practice, emphasis on the industrial concession model can **disadvantage local communities by reducing their access to forests**,¹³⁰ and **failure to deliver on the PRS can erode trust in the governments’ ability to deliver the promised ‘peace dividend’**. Most troubling, **if concessions are allocated ahead of adequate oversight capacities, a return to ‘business as usual’ could precipitate a return to loggers fueling conflict**.¹³¹

War and Post War Impacts on Forest Livelihoods in Cambodia

In Cambodia, as in many developing countries, forests play an essential role for the rural poor as a source of nutrition and to diversify seasonal subsistence strategies, both as insurance against the risks of rain-fed agriculture and to generate income from forest products. However, since the late 1980s, various political elite have conspired to cooperate in the widespread destruction of the forest resources that are central to rural livelihood.

In the late 1980s, the country's forest cover was more than 60 percent, but as the Khmer Rouge gained control of forested territory near the Thai border, timber became an easily looted asset to fund conflict and enrich commanders, and was widely logged with the help of the Thai military and authorities. In the early 1990s, with political instability that followed the Paris Peace Agreement, members of the Cambodian military, government, and political parties made deals with international logging companies to secure financial resources to sustain their positions, institutions, and to build broader networks of power and influence. With power-sharing arrangements

¹²⁷ Hatton et al 2003, p64

¹²⁸ Ibid p 65.

¹²⁹ In Liberia, *e.g.*, in 2007, the FDA projected \$16 million in government revenue from forestry by 2008/9, the 2008 Poverty Reduction Strategy (PRS) was even more optimistic, projecting \$24 million. In reality, the government received \$0. The failure was not in missing the projections, but in setting unrealistic projections in the first place. Whatever the cause, the PRS remains with a dramatic shortfall that must be recovered from other sectors.

¹³⁰ World Bank Inspection Panel reports on Cambodia (2006) and DRC (2007)

¹³¹ Blundell 2010

that resulted from elections in the mid 1990s, forest resources were used as bargaining chips, with opposition political groups agreeing to share access to logging revenues. These dynamics all contributed to driving the pace of destructive logging.

However, the scale of corruption in the sector meant that very little of the proceeds of this large harvest went to public coffers to benefit the Cambodian people. Officially, the government received approximately \$120 million between 1989 and 1999 on timber exports of valued at \$2.4 billion (or 5% of the total value). Meanwhile, Cambodia's human development ranking slipped from 121 in 2001 to 137 in 2009 and 40 percent of the population still live under \$1.25 per day.

For their part, international donors, heavily involved in rebuilding Cambodia since the Paris Accords, favored an agenda of sustainable development and environmental protection but proved incapable of bringing rule of law

"The Panel finds that in the Project's focus on concessions, other aspects that were important to the Bank program in Cambodia and the Government were largely ignored or at least marginalized throughout the planning phase of the Project. In this regard, the Panel finds that the Project did not give adequate attention to the vital interests of local communities and indigenous peoples in forest resources, and to the contested nature of the forest domain."

Not only were communities not consulted nor paid adequate compensation, the Panel found, they also saw their resource-base destroyed and along with it, long-term livelihoods options. This was especially evident in the loss of resin trees used in the production of torches, paints and varnishes, and for medicinal use. Many resin tappers earn monthly income of between USD 36 and USD 50 from resin sale, during ten months of the year and rational management to the sector. A 2006 internal review by the World Bank Inspection Panel reported:

(except those devoted to rice planting and harvest). However, resin trees were logged at high rates. In one village, families who claimed 500 to 700 resin trees were reportedly left with just 50 trees within three years. Apart from impact on livelihood options, longer-term damage to the forest ecology and thus for agricultural productivity has resulted in erosion, reduced water tables in the uplands and increased flooding in the lowlands.

The continued use of forests for patronage and personal enrichment has produced little appetite for forest reform in post conflict Cambodia. Although a concession review was undertaken, no licenses found in violation were revoked. This failure to reform forest governance institutions has meant the continued destruction of both forests and forest livelihoods.

Sources: World Bank Inspection Report 2006; Global Witness 1995, 2002, and 2005; Lebillion 2002; McKenney and Tola 2002.

8. Addressing fragility in conflict-affected forest sectors

We have seen that characteristics of fragile states that lead to forests playing a role in conflict include: opaque financial flows, the use of forests for patronage, corruption and partnership with criminal networks and predatory states, incapable state management institutions, unaccountable security forces in the employ of logging companies, a general lack of rule of law, and a lack of accountability and a social contract with local communities.

We have also seen that over-emphasis on industrial concession models without fundamental reforms to address these weaknesses has not effectively protected forests nor produced revenues for poverty reduction, especially when this model disenfranchises the rural poor who depend on access to forest resources or undermines their own management institutions. Therefore, a **two pronged approach is needed that both supports sustainable and equitable community use as well as reforms for larger operations.**

Best Practices in Forest Governance

The **governance capabilities needed to address weaknesses in fragile and conflict-affected states in order to protect forests and forest dependent people include:**

- **Clear tenure, based on law**
 - **Concession review process** to assess legality of prior allocations,
 - **Land reform** to address inequities in legal recognition of customary and women's land rights, and a specialized institutional mechanism to mediate conflicts;
- **Participation**, especially of forest-dependent communities, in forest management decision making;
 - Support and empowerment of **community forest management institutions**;
 - Capacity building and protections for a **strong civil society**;
- **Anti Corruption** mechanisms
 - Regulations, transparency for **concession allocation** involving competitive bidding to avoid the use of concessions as patronage;
 - Robust mechanisms of **reporting and transparency, including chain of custody** for timber and **revenue tracking** systems;
- Penalties and functional **enforcement of forest and finance regulations**;
- **Cooperative regional approaches** to forest management, forest product trade regulation, and enforcement.

These reforms in fact are needed in most fragile states with a significant forest sector, and are not unique to post conflict situations. Indeed, in recent years these reforms have been widely discussed in policy circles as pillars of sound forest management, especially with the myriad Forest Law Enforcement, Governance, and Trade (FLEGT) initiatives and emerging REDD+ debates around how to protect forest

carbon.¹³² Therefore, an in-depth discussion of the rationale for each is beyond the scope of this paper. **However, the post conflict environment brings unique pressures and opportunities in relation to these reforms that** should be carefully borne in mind. Rather than replacing one template for another, this paper argues for a more flexible and politically sensitive analysis of which programs are most urgent to pursue and how to build constituencies and momentum for reform to improve ownership and chances for successful implementation. The following sections focus on the issues surrounding these governance capabilities in post conflict situations.

Triage and Avoiding Pitfalls of “Quick Wins”

Post-conflict is a marked transition with a sense of urgency and high expectations from citizens as well as from the donor community. This expectations lead to an expansive agenda, often overly ambitious. Capacity is lowest when expectations are highest. So while there is often potential for change not found in other fragile contexts, citizens are also easily disappointed and impatient. Political opposition to the transitional government may use this frustration to bolster a spoiler movement that threatens the peace. The stakes are high— some 40% of post conflict countries return to armed violence within ten years of a peace agreement.¹³³ This number does not include violence that morphs into new forms such as gang, ethnic or political violence.

The tenuous nature of the transition period makes the temptation to make short term trade offs in the interest of security that might wind up undercutting long term reforms and sustainable management, and can ultimately undermine objectives of poverty reduction and conflict prevention. However, the nature of a full agenda with a sense of urgency necessitates a triage approach. Although there is an unavoidable tension between short term and long term goals, decision makers should be mindful that short term stability does not facilitate an ironic return to the status quo, undercutting longer term peace and sustainability. Fortunately, the presence of peacekeepers should aid in neutralizing the threat posed by ‘spoilers’. Therefore, peacekeepers should think about how to take a more deliberate role in resource management and coordinate with forest planners in areas relevant to security.

¹³² See, among others, the program on forest governance under PROFOR of World Bank (<http://www.profor.info/profor/node/32>), especially World Bank. 2009. “Roots for Good Forest Outcomes: An Analytical Framework for Governance Reforms.” This World Bank report expands on the building blocks of good governance and includes specific recognition of the stability of forest institutions and conflict management; the quality of forest administration; coherence of forest legislation; economic efficiency, equity and incentives. Also see Governance of Forests Initiative (<http://www.wri.org/project/governance-of-forests-initiative>) and Access Initiative (<http://www.wri.org/project/access-initiative>) at the World Resources Institute, and the Forests and Governance program at the Center for International Forestry Research

¹³³ Collier 2004, 2006

Some elements of a triage approach include looking for 'quick wins' for immediate, visible impacts. These might include paying forest officials' salaries on time and logging permits for small scale operators to help meet specific reconstruction needs. Decision makers should assess which steps have the most potential to build confidence and ownership, and thus paving the way for further reform, for example concession review, rather than springing immediately into devoting a large proportions of resources to achieving longer term, more contentious and time consuming tasks like rewriting forest laws.

Another important element in the momentum for change is that post conflict brings high levels of donor attention and aid in the first 3-5 years after a peace agreement, which then begins to taper off just when institutional capacity has had time to improve. It has become a mantra in conflict development papers, but bears repeating, that **the donor community should be better prepared for a longer term commitment** (on the order of 10 years rather 3-5).

Land Tenure Conflicts

Displacement and legacies of use of land and forest for patronage create a multitude of land/resource disputes. Tenure is likely to be even more complicated in post conflict environment as the displaced return to find squatters and other usurpers on their lands. These disputes are highly charged and contentious because they figure centrally to urgently needed livelihoods and local idioms of rootedness and justice and frequently boil over into violence especially if the occupants have made investments they wish to protect. To complicate matters, even if records were properly processed, during conflict, registry offices are often targeted for looting by spoilers in order to throw uncertainty into land ownership. If the war itself was over disputes regarding land distribution, then the bitterness over competing claims on land ownership can fester for decades, even creating conflict between groups seen to be privileged or discriminated against based on ethnicity, religion or political affiliation.

Also, as discussed above, violence often breaks out in forested regions far from capital cities and state control, populated by ethnic minorities whose rights to forest are often tenuously recognized in law, if at all. This lack of recognition of customary rights can often be a source of grievance that fuels violence as industrial logging concessions, revenues from which are sometimes used to fund conflict, are established on land claimed as indigenous territory.

Legal tenure reform will require **regular communication and consultation with stakeholders** that cannot be rushed or it risks creating misunderstandings, instability or being co-opted by powerful elite. Careful attention must be paid to developing **strong institutions for adjudicating ownership and mediating disputes.**

Even among forest companies, there are often disputed claims to the rights to log particular areas. Forest concessions constitute a key source of government revenue through the collection of taxes and fees. In addition, concession holders are obligated by the terms of their concessions to provide certain social benefits to those communities near their licensed forest areas. Concessions also contain regulations restricting over-harvesting and other destructive practices, and to maximize sustainable

yields. However, the use of concessions for patronage and in order to fund conflict has undermined these goals. Further, overlapping claims as a result of this arbitrary licensing often makes it impossible to determine who has the legal right to log in the post conflict environment. For this reason a **forest concession review** of what companies were not in compliance with existing requirements when concessions were issued is essential to revitalization of the sector with robust rule of law rather than patronage.

Targeting Conflict-Affected Populations

Another aspect of post conflict is the **high vulnerability of conflict-affected** populations who, already impoverished, have suffered loss of homes, assets, family members, personal injury and psychological trauma, all of which contribute to further poverty. In pursuit of poverty reduction objectives, it is critical to target first the most vulnerable and consult them to identify their most urgent needs relevant to the forest sector, rather than following a generic reform agenda.

Women in particular, a higher number of whom are widowed heads of household due to wartime combat deaths, are often disadvantaged by the majority of **“quick impact” employment projects that focus on male dominated sectors** such as construction or resource extraction jobs such as logging and mining. Indeed, male dominated logging and mining projects may in fact undermine female dominated sectors such as agriculture. Further, **land tenure reforms may perpetuate the lack of women’s land rights (especially important given the proportion of female headed households in post conflict) in the name of recognizing “tradition”**.

Targeting the economic needs of conflict-affected populations may involve an assessment of the potential and risks in **formalizing informal artisanal uses of the forest such as small scale logging and charcoal production**, which many conflict-affected populations depend on for livelihood as well as essential fuel and construction materials.¹³⁴ Construction booms due to reconstruction may be at least partially met by local sources while regulating to avoid destructive harvesting. However, such initiatives must include careful consideration of the supply chain and incentive structures, who benefits from the trade (including gendered impacts), the role of middlemen, the limitations to markets, and how to balance the needs for management planning and oversight with the administrative demands and capacities on small operators. Any such efforts to formalize informal extraction and trade should be accompanied by capacity building support, credit and cooperative programs, as well as training and support for value-added sectors (also based on adequate market research).¹³⁵

¹³⁴ See for example Blackett et al 2009.

¹³⁵ For examples of post conflict formalization programs for artisanal miners see for example Communities and Small Scale Mining www.artisanalmining.org; Garrett 2008.

In an effort to better use revenues from timber extraction to deliver services local communities and mitigate environmental damage in logging sites, as well as to fund forest management institutions, some governments have chosen to **earmark a portion of timber revenues to special forest funds**. Earmarking for development has been done for oil and gas revenues in some places (Chad¹³⁶ and Ghana), diamonds (Sierra Leone), and forestry (Liberia, Ghana). In addition to addressing equity concerns, forest funds can provide a long-term management that helps address the longer time horizons associated with forest reform and the up-front capital investments required for sustainability. Overall, the **keys to a successful forest fund are that it covers operating expenses, provides stable funds, is accountable and transparent, encourages local participation, and ensures environmental sustainability**.¹³⁷

But it is important to note that **where such earmarking is intended to circumvent an opaque, inefficient and unaccountable general budget process, it begs the question whether it makes sense to instead hive off a separate fund that is also likely in the absence of safeguards and political will to itself be even more opaque, inefficient, and unaccountable. This is especially problematic with increasing state fragility**. One example is Indonesia's failed Reforestation Fund, which an independent audit commissioned by the World Bank found lost some \$5 billion to misappropriation and corruption between 1994-1997, mainly through the provision of subsidies and interest free loans to well-connected companies, while only a small fraction of reforestation was actually done.¹³⁸ Even in Ghana, which is not post conflict and generally viewed as having relatively good state capacity, the Forest Plantation Development Fund was established in 2000 to provide financial support for reforesting by encouraging private and public sector agencies to increase their involvement in establishing and managing forest plantations. However, because of the high transactions costs of the loan application and corruption by chiefs and government officials, only about 2% of project beneficiaries, many of them the wealthiest farmers, have managed to obtain loans.¹³⁹

Anti Corruption

Some analysis has found that, among resource-dependent countries (where resource rents comprise more than 8% of GDP), the economies of democracies grow faster than autocracies—provided that

¹³⁶ In Chad, the World Bank used its leverage to develop an oil fund earmarked for development; however, the fund failed because there was nothing to prevent Chadian politicians from reneging on the agreement. The use of petroleum revenue by the Chadian government was monitored by a petroleum oversight committee, and the government's spending program for "priority poverty reduction sectors" needs to be approved by the oversight committee before funds are released from the special account. The government did not allocate adequate resources critical for poverty reduction in – education, health, infrastructure, rural development, and governance. Eventually, the Bank concluded it could not support the project and withdrew.

¹³⁷ Rosenbaum and Lindsay 2001

¹³⁸ Barr et al (2010) report that between 1990 and 1999, only some 60% of land funded for reforestation was actually planted and less than half of these planted areas are "performing well" due to large losses from lack of maintenance, poor productivity, fires, and community disputes. (p 15-18).

¹³⁹ Boni 2006

sufficient restraint on political power exists. Where ‘checks and balances’ are absent, democracies actually lag behind in growth.¹⁴⁰ But corruption control and oversight mechanisms are an even more important cross cutting issue for many countries emerging from conflict, where states have long established practices and networks for patronage and personal gain as well as supporting criminal organizations, generating grievance and forest destruction, and revenues to finance conflict.

As a start, **forestry (and indeed all resource sectors in countries where these have played a critical role in conflict) should be more explicitly incorporated into anti-corruption frameworks**, for example the Bank’s Governance and Anticorruption strategy (GAC)¹⁴¹ and **consideration given to raising accountability issues in peace negotiations where power sharing of resource ministries is discussed.**¹⁴²

However, the persistently thorny problem of anticorruption efforts is the dearth of political will to establish anti-corruption mechanisms that undercut the economic interests of the powerful, who in past conflict contexts may act as spoilers of the peace if they view it as contrary to their economic interests. Therefore, **building momentum and constituencies for change can be initially more effectively accomplished outside of the state through capacity building with civil society, community civic education and mechanisms for public participation and transparency.** But expecting the least empowered to conduct oversight over the most empowered requires **safeguards and whistleblower protections**, including support from international diplomatic core, UN missions, and donor community, to avoid retaliation and intimidation.

Sound management and oversight to prevent corruption is impossible without **good data collection and transparent reporting.** Yet, a review of UNEP experience in post conflict countries found that “monitoring, data collection, reporting, and information sharing are themselves casualties of war.”¹⁴³ This can be from loss of staff and resources due to flight, intimidation, and direct attacks and looting, from insecurity that makes field monitoring impossible, redirection of funding to other areas, as well as from the general disruption of state institutions already with poor capacity prior to conflict. Improving capacity for data collection and timely, accurate and transparent reporting are not minor technical issues but essential pillars of forest management and prevention of a return to conflict financing.

One critical aspect of data collection and reporting is the implementation of a **chain of custody system for timber and timber revenues.** Timber sectors, particularly in countries emerging from conflict and perceived to be risky investments, are often characterized by cost cutting by companies expecting high return for their high risk investment. Cost cutting often produces temptation for corruption to allow overharvesting and avoid costly requirements for environmental management and community

¹⁴⁰ Collier 2007

¹⁴¹ World Bank 2007c

¹⁴² Bolongiata 2005

¹⁴³ Conca and Wallace 2009: 493

payments. This temptation is fostered in part by a simple lack of transparency and accountability regarding tax revenue; shortcomings that the chain of custody and revenue transparency mechanisms are designed to overcome.

A **chain of custody system** (COCS) can allow for the traceability of forest products from their origin in the forest to the point of sale and/or export and verify their legality. The COCS authority is the sole issuer of export permits and provides invoicing and monitoring of tax payments to ensure all payments are current before any export permit is granted. Coupled with a forest **revenue reporting system similar to EITI**, chain of custody and public revenue reporting can serve a vital role in combating illegally sourced logs and financial mismanagement, as well as bolstering public oversight. These measures can therefore strengthen accountability overall, and thereby reduce poverty and ameliorate the grievances and lack of social contract that can lead to violent conflict. Although EITI is designed to provide transparency for revenues from oil gas and mining sectors, there is no reason in principle that forestry could not also be included in a similar reporting scheme. Indeed, Liberia has included forestry as well and can serve as a useful pilot for similar initiatives.¹⁴⁴

The expectations of the private sector should be carefully managed in post conflict, especially in sectors that have historically contributed to conflict. The private sector also has a role to play in reconstruction and reform, but with the clear message that there will be no return to business as usual. In addition to early adoption of chain of custody and revenue transparency mechanisms, one means of sending this message is through **early implementation of a forest concession review and competitive allocation system. If undertaken in a principled manner, this can be a clear demonstration of the new government's commitment to reform, transparency, oversight, accountability, removal of conflicts of interest.** However, the government must be careful to ensure that the review is not perceived to be merely an opportunity for capricious punishment; establishing the review criteria prior to assessing any companies and including the international community on the review panel should help avoid such a perception.¹⁴⁵

Although establishing procedures for vetting those with credible allegations of criminal behavior and rights abuse from the armed services and police forces are a central part of security sector reform in post conflict interventions, similar efforts are absent from natural resource sectors that often act as lucrative attractions to ex combatants from conflicts where resources played a central role. **Clearly defined vetting procedures** for concession bidding that would debar individuals and legal persons who are in arrears on their taxes, or who are credibly alleged to have participated in or aided and abetted the conflict or other criminal behavior (for example through the trafficking of weapons or materiel, or the employment of security militia who have participated in the conflict). Forest companies winning concessions should also be prohibited from employing individuals or legal persons as security who have credible allegations against them of criminal behavior. As an example, the criteria might be based on

¹⁴⁴ Blundell 2008

¹⁴⁵ Government of Liberia 2005.

those used by the UN Civilian Police's consultative process for vetting the national police and army. The vetting process is likely face strong political resistance from powerful elite and so should include transparency and oversight mechanisms, with an ombudsman to mediate disputes and build awareness around the issue to build momentum for success.

In addition to enforcement of forest regulations for bad actors, **incentives for good actors** should also be explored. For example, chain of custody systems can track all timber from stump to sale, and can segregate illicit timber from the legal supply chain, thereby verifying legal operators and **weeding out illegal operators that undercut production prices**. Market incentives should be accompanied by education about **current international market requirements for legality**, especially in US under Lacey Act (and likely EU due diligence regulation) requiring certification of legality of wood imports, which have in many countries been powerful motivators for change as a means to improve brand and thereby market share. In many European countries, public procurement policies require government agencies to purchase only verifiably legal timber.

Conflict-Sensitive Enforcement

An emphasis on **raising capacity for and oversight of law enforcement and forest management is important to send the clear message that the age of impunity has ended**. At the same time, enforcement should have a conflict-sensitive focus. That is, enforcement forest regulations should not just be a crackdown on all offenders regardless of the size of violation, but a **proportional analysis of who is in violation and why**, with the focus on those who benefit the most and who are most responsible, not necessarily on those holding the chainsaw. There are numerous cases (Aceh, Colombia, Ethiopia) where **recognition of local communities as rightsholders and empowering them as forest monitors have produced positive incentives and results for forest conservation**. As noted above, careful attention should be given to the question of whether and how some aspects of the informal sector could be formalized, without sacrificing long term sustainability. Where formalization is not advisable **alternative livelihood programs** are critical to moving conflict affected people out of illegal sectors.

Capitalizing on Opportunities for Cooperation and Cross-Sector Coordination

We have seen that a combination of dynamics from many sectors in post conflict sectors inflict high pressure on forests. There is an especially high demand for wood and revenue for reconstruction. But following capital flight due to the conflict and the persisting high risk for investment, there is often a lack of employment opportunity, precisely at a time when conflict-affected communities and ex combatants alike are in need of jobs. Farmland may be unavailable for use due to unexploded ordinances or land mines. These pressures all combine to place the easy and low cost extraction of forests ahead of important reforms and adequate management safeguards, an economically and politically attractive but short sighted option.

Forest sector experts from the donor community should **take advantage of the available coordinating forums** for the various donor agencies, NGOs and government institutions (such as the Humanitarian Information Center) to raise awareness among about the variety of impacts from other sectors on forest resources (see for example the previous box on Liberian rubber plantations). In addition, a **Natural Resource Working Group** bringing together a variety of sectors and stakeholders might be a useful mechanism for communication of different goals, priorities, expertise and approaches of different players in order to make reform most effective and avoid counter-productive measures. Among the possible areas of focus are support and coordination for

- UNHCR’s monitoring and mitigation of environmental impacts of displaced people and their return;
- UN DPKO’s “Second Generation DDR” hotspot monitoring of ex-combatant involvement in extraction of forest products and forest plantation and UNDP’s ex-combatant reintegration programs;
- Wood sourcing issues for reconstruction and donor projects;
- Exploring issues around sustainable and equitable possibilities for formalizing the informal logging sector;
- Tenure reform and institutional mechanisms for reviewing land conflicts.

Cooperation is especially important in **border regions vulnerable to cross-border traffic** of commodities (such as timber, charcoal and bushmeat), labor, displaced people, capital, and weapons—as well as wildlife populations. Therefore, a regional approach to pressures on forests and wildlife is essential, including regional approaches to weapons and demobilization programs, to timber trade agreements and law enforcement against commodity trafficking, and cooperation in the formation and management of peace parks.

One method for cross border cooperation is through **peace parks** in ecological regions straddling the national boundaries. They improve forest management through cooperation, while creating conservation-oriented jobs demarcating boundaries, building park infrastructure, and providing monitoring. Peace parks also have provided a suitable ‘compromise’ to diffuse competing land claims, such as the disputed border between Ecuador and Peru that has now become the shared Condor-Kutuku conservation corridor. Moreover, markets for environmental services, especially carbon, are increasingly generating income for new protected areas. While commercial logging is often seen as an expedient way to create both jobs and revenue pin post conflict, conservation through peace parks are a viable alternative that deserves consideration.¹⁴⁶

¹⁴⁶ Ali 2007

Regional Management for Conservation and Control of Commodity Trade in Rwanda

Rwanda is one of the most densely populated regions of Africa, with heavy demand for natural resources that were significantly heavily impacted by waves conflict both within and across borders. In addition, both the new government and conflict-affected communities are in need of revenue to recover from the conflict.

In the late 1990s, the Rwandan government embarked on the reform and rehabilitation of the National Parks Management Authority, and the development of high-value mountain gorilla tourism.

Today, tourists pay \$500 for a visitor's permit, in addition to a similar daily amount on luxury accommodation, meals and transportation--funds that are used for park management and local community development. Further, in 2005, recognizing that the gorilla population spans boundaries with DRC and Uganda, the three countries signed a cooperative management agreement for joint patrols, information exchange, and revenue sharing. The agreement represents an important achievement in transboundary management and demonstrates that environmental cooperation can be a useful mechanism for confidence and constituency building.

Rwanda, however, also provides an important lesson on regional coordination not only for conservation but for control of commodity trade and the need for cross-sectoral coordination. In

2006, due to widespread deforestation, the government issued a complete ban on charcoal production. Although the policy was effectively implemented in Rwanda, the production of charcoal simply shifted to neighboring DRC, creating a shadow economy of illegal charcoal smuggled into Rwanda, further increasing extractive pressures on Virunga National Park, with negative effects on the gorilla habitat upon which local communities in Rwanda now depend for tourism revenue.

Sources: Ali 2007; McNeely 2007; UNEP 2005

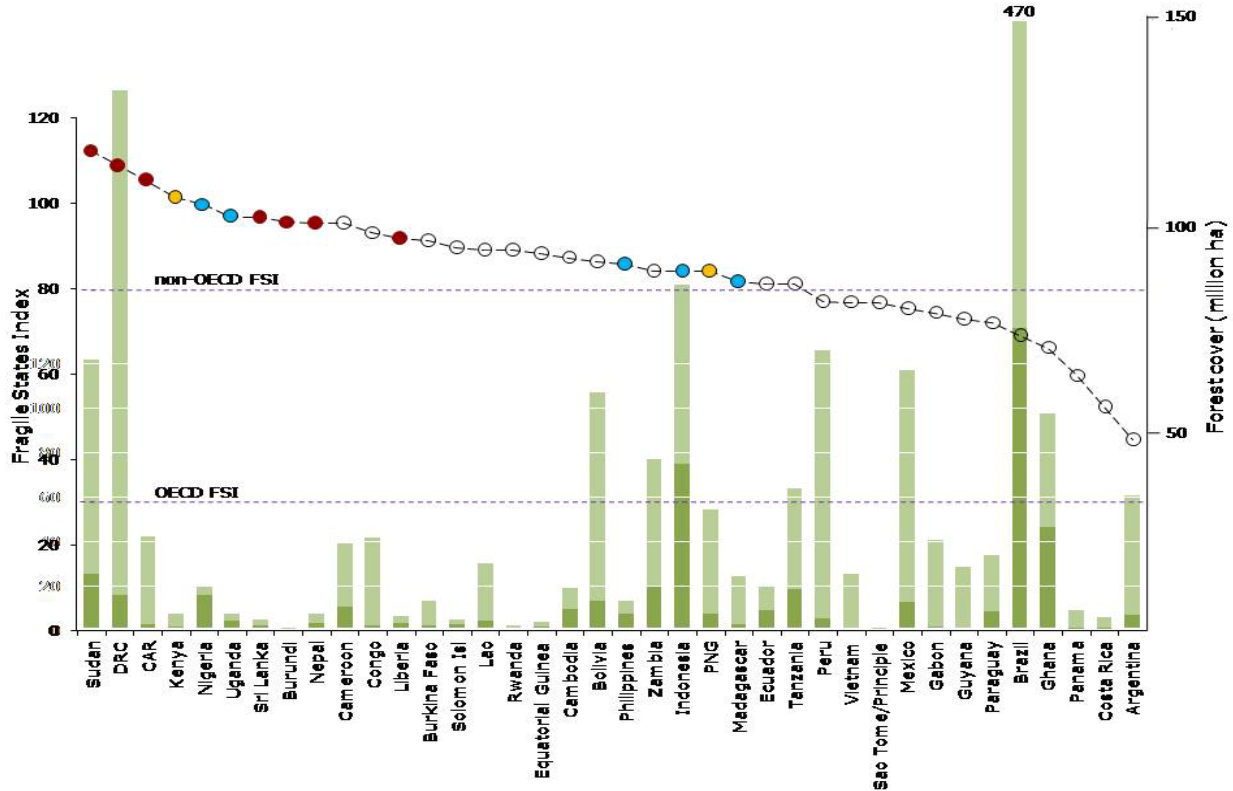
Generating Revenues from REDD+ in Fragile and Conflict Affected States

Many developing countries, including post conflict countries, are turning to burgeoning global forest carbon markets as a means of generating revenue. Indeed, as mentioned in the introduction to this paper, much of the world's global forest cover lies in fragile states. Yet if we look at the data for forest cover, deforestation rates, and state fragility (Figure 4) for some of the countries currently involved in REDD initiatives, we can see that state fragility has serious implications for implementing REDD schemes. The circles in this figure represent the values of the US Fund for Peace Fragile State Index (FSI), which combines a number of social and political components including demographic pressures, movement of people, and respect for human rights. Using this metric, **more than half of the countries currently involved in some REDD initiatives are more fragile than even the non-OECD average.**

Further, many countries engaged in some form of REDD programming are experiencing various forms of conflict: the red circles are those with peacekeeping operations within the last five years, the yellow

are those with major internal ethnic conflicts in the last five years, and the blue are those with ongoing insurgencies or political conflicts.

Figure 4: Fragile States Index and Forest Cover/Loss for Select REDD Countries



Sources: FAO 2007, US Fund for Peace Fragile States Index 2009

It is clear that fragility is a concern for REDD-targeted countries and **the donor community engaged in REDD programs should explicitly consider the specific benefits and challenges of implementing REDD in different contexts.** For example, the light green bars in Figure 4 show total forest cover in each country and the dark green the proportion of that cover that will be lost over the next 25 years if current deforestation rates stay the same. Therefore, while some countries have significant areas of forest but are not under immediate threat of loss, which makes them of questionable value in terms of REDD “additionality.”¹⁴⁷ But more importantly, some of these countries also have high rates of fragility, which will make the implementation of REDD very challenging. These risk factors are likely to have an impact on the price buyers are willing to pay for carbon credits in the countries on the open market, and

¹⁴⁷ Additionality refers to the requirement that to be considered a “reduction” in carbon emissions from deforestation or degradation, in absence of the REDD protections, the forest must be under direct threat of being logged, converted, or otherwise degraded. That is, protecting a forest that is not in danger of being cut cannot be considered “additional” protection.

therefore, transitional government may have an over-inflated expectation of what they may potentially gain in revenues from such schemes.

Lack of capacity or lack of political will?

A significant challenge for post conflict governments is the lack of capacity, with flight of expertise and financial capital during the war, and institutions eroded by lack of funds and corruption. **In addition to traditional capacity building measures, experience shows that essential services can be effectively outsourced if capacity is still lacking.¹⁴⁸ Outsourcing should be accompanied by training and mentorship, and a plan for transfer back to government and building adequate oversight mechanisms.**

However, recalling the distinction between states that are incapable and those that are unwilling to perform certain functions, it is also critical that donors should not mistake a **lack of political will for a lack of capacity**. **Transitions are often incomplete in post conflict countries**, with many of the old players still in positions of power, either officially or informally. Donors should not shy away from **analysis of what interests are at play in different institutional functions**. In absence of this analysis, reforms “on paper” are unlikely to be implemented if there are conflicts of interest that obstruct them.

¹⁴⁸ See for example the outsourcing of chain of custody tracking to Liberfor and SGS in Liberia. (Pichet et al 2009)

9. Conclusions and future research needs

The boom in “conflict resource” research in the last decade has focused on oil and diamonds, leaving the role of forests in conflict and post-conflict in need of greater attention. Although detailed case studies are still relatively few, it is clear that in certain circumstances where forests are accessible and there is some authority capable of asserting control, forests can exacerbate armed violence through conflict financing, the legacies of patronage, and the unaccountable behavior of logging companies and their security forces.

The impacts on forests from conflict vary. Forests may benefit from reduced use when insecurity halts extraction and conversion activities. But forests can also suffer from conflict-driven over-exploitation from combatants, civilians, and war profiteers alike. In addition to funding conflict, forests and wildlife play an important role as safety nets for civilians fleeing conflict or whose livelihoods have been disrupted by violence. Forests and wildlife also suffer when management and law enforcement institutions are themselves destroyed by conflict.

Although the impacts of conflict on forests are mixed, the post-conflict period most often exerts a heavy toll, when a lack of cross-sector coordination results in increased forest access ahead of improvement to forest management and law enforcement institutions. However, at the same time, the economic, ecological, and cultural importance of forests makes them fertile ground for cooperation as a form of peacebuilding. Post-conflict is a politically sensitive time, and the danger of spoilers acting to undercut the peace when their economic interests are endangered is significant. Government and donors can isolate spoilers by working to build momentum and broad constituencies for change through interagency and public participation in assessing needs and priorities.

Transparency and safeguards to avoid conflicts of interest and other corruption are essential, with outsourcing if necessary to bridge gaps in capacity in essential areas. Forest sector programs should ensure that the forest livelihoods of conflict-affected populations are not endangered by an industrial forest sector that continues to serve as political patronage and a source of corruption.

Fragile states have complex and wide-ranging needs, which span multiple sectors and institutions. As a consequence, reforms better integrated and coordinated across sectors and agencies. Cooperation will not only improve efficiency and effectiveness, it helps build confidence and ownership of the reform agenda as well as an awareness of the interconnections of sectors.

A post-conflict triage approach aims to make interventions more effective at taking advantage of windows of opportunity without overwhelming the reform agenda. But donors should be prepared for long term commitment to ensure that short term wins do not undercut longer term, more difficult, goals that will help protect both forests and forest livelihoods.

The literature reviewed for this synthesis reveals several **gaps that should be addressed by future work:**

There is a serious dearth in **field documentation of the diversity of impacts to local livelihoods from conflict, post conflict, and a variety of government or donor/multilateral interventions** (such as timber sanctions, community forestry, formalization of forest enterprises such as fuelwood or charcoal production, etc). Given the mandate of donor agencies for poverty reduction, it is especially important to understand the impacts of interventions on the nation's poorest. **Distinguishing between combat, shadow, and coping economies and who benefits from each** should be a key focus. Special attention should be to the **impacts of support for activities such as logging, timber or agricultural plantations, and charcoal production on the incomes and livelihoods of women (especially of female headed households).**

A **broader array of carefully documented case studies** is needed of forested areas that experience various forms of violent conflict, especially in areas where **sub-national pockets of fragility in forested frontiers** are an important dynamic in internal and transborder armed violence (such as Mindanao province of Philippines; Naxalite controlled areas of India; border regions of Afghanistan and Pakistan; Burmese, Chinese and Thai borders; Aceh and West Papua Indonesia; southern Sudan, northern Uganda, southern CAR). Case studies where a key driving factor of conflict-related forest loss is **conversion to agriculture** are also needed, such as in Colombia, Peru, increasingly West Papua Indonesia. It should be noted that these cases are under-documented precisely because they continue to suffer ongoing cycles of violence. However, for this reason these are the areas where people are the most vulnerable and work by (and protections for) local researchers should be therefore especially supported wherever possible.

Quantitative analysis is also severely hampered by a lack of reporting and data collection, which focus on civil and international war, national forest cover and trade, and national metrics of governance and development indicators. For example, **databases using a wider array of 'violent conflict' metrics**, for example ethnic violence, political or electoral violence, criminal violence and homicides, would enable a richer analysis of different forms of fragility than simply civil and international war. To the degree that this data could be **collected by state or province level**, it would facilitate a more fine grained analysis that would illuminate sub-national trends. Likewise, **data on demographics and movement of people, developmental outcomes, and governance indices should be collected on state/province level, if not by district**, to identify "hotspots" that warrant special focus and their correlation with poverty and state fragility indices, and forest cover/trade data to help identify possible causal factors.

In-depth analysis is sorely needed on **whether and how to formalize the informal forestry sectors** such as logging, fuelwood and charcoal production. These sectors could provide revenue, employment, and help satisfy market demand (thereby potentially undercutting illegal extraction). But **careful analysis of the potential impacts and institutions needed for good management** are critical.

Finally, it has become an almost boilerplate recommendation for conflict affected development actors to improve cross sectoral coordination. Yet such coordination remains elusive. Serious analysis is needed to identify the obstacles and possible incentives for coordination—whether between different sectors

within the Bank itself, between the Bank and other donors including the UN missions, or between the donors and different government agencies.

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