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Background document

Sustainable Forest Management for Peace Building

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1. Introduction

Armed conflicts in (tropical) forests have in recent years attracted increased attention among policy makers and academics around the world. The claim that "three-quarters of Asian forests, two-thirds of African forests and one-third of Latin American forests have been affected by violent conflict (Donovan et al 2007: 1)", while likely over-estimated, suggests that the problem is significant with major consequences for forest dependent peoples and biodiversity. The problem seems to have been most severe during the 1990's with full scale civil war raging in the forests of Cambodia, Myanmar, Liberia, Sierra Leone and the DRC. While these conflicts have greatly reduced or ended, violent confrontations between government forces and opposition groups continue in forests in countries like Ivory Coast, Colombia and the Philippines. Of lesser intensity but widespread are incidents of public protest, inter-communal conflict, and human rights violations in forest areas in many different countries, including also more developed countries on the northern hemisphere.

Armed conflicts have direct and indirect impacts on forest and on the people relying on them. Direct effects of war include the destruction of forest to drive out or expose enemy troops. But most effects on forests are indirect. In war, but also in conflicts of lower intensity, both customary and statutory systems of resource management and law enforcement seize to be exercised effectively or crumble altogether. Local populations are often alienated from their land and state administrations and control agencies are non-operational. The lack of governance as a consequence of conflict situations often allows armed factions, clandestine enterprises and local entrepreneurs to exploit resources rampantly without taking notice of regulations concerning the protection of biodiversity and local populations' interests. Exploitation of natural resources by armed groups and militarily allied commercial ventures often occurs in association with the expropriation of land, the looting of properties and stockpiles, and the ruining of basic infrastructure.

As a result of such war-time livelihood disruptions, local populations often increasingly rely on forest resources for food, fuel, building materials and income. The same goes for refugees who are driven into forested safe havens. Conflict situations may also suspend conservation activities. In many cases protected area authorities and conservation organizations have been forced to abandon parks and reserves as violence and the subsequent suspension of have made their continued presence untenable. Finally, during post conflict reconstruction natural resources tend to be exploited faster to boost up the national economy. Renewed extractive activity in such cases frequently outstrips the capacity of weakened governments and communities to revive viable resource management institutions, whereby enhancing corruption and criminalization of forestry and other natural resource sectors.

A variety of stakeholders have in recent years started to formulate policy responses to natural resource related conflicts, including forest conflicts, and their negative effects on biodiversity and forest dependent peoples. Conservation organisations have started to integrate peace as an objective in (cross-border) park management; the UN Security Council succeeded in pushing through a number of sanctions to prevent warring parties to access timber and revenues; and governments increasingly decentralise forest management in order to increase benefits for communities and thus reduce tensions between them and state authorities and logging companies. Also in academic circles the forest-conflict link has been recognised in recent years with a number of global studies and comparative research projects focused on different aspects of this phenomenon.

Through the above mentioned national and international forest policies, the problem of forest related conflict is targeted. However policy intentions do not always translate to effective actions. Even if they do, the conflict soothing effect of activities undertaken is not self-evidently clear and neither are the prospects for sustainable forest use as a result. Despite a growing understanding of the issue, many relationships between forest and conflict have not yet been sufficiently clarified. For example the question of forest scarcity or abundance as root cause of forest related conflict and the embeddedness of forest conflict in wider economic, social and political conflict relations remain unclear.

This chapter responds to the above described situation of knowledge deficit and insufficient policy formulation and implementation. First, this chapter systematically explores the link between forest and conflict, paying attention to forest related factors contributing to conflict as well as the impact of conflicts on forests. There will be no preoccupation with any specific type of conflict. The issues considered range from sustained and organized severe crises and wars occurring in forest areas, to more localized, sporadic crises and non-violent conflicts, *inter alia,* caused by forest exploitation, transformation but also conservation. Second, it identifies and critically analyses a variety of legal and forest policy options which may mitigate the effect of conflicts on forest and/or help in conflict preventions and in peace building. These analyses intend to guide state members and other partners of the United Nation Forum on Forests (UNFF) to formulate policies and take action to prevent forest

based conflicts and mitigate their negative effects on people and nature before, during and after conflict.

The chapter consists of six sections. Following the introduction, section two defines the scope of the study in terms of the types of conflict dealt with and lists the countries in which conflicts are somehow related to forest. Section three describes the various theoretical perspectives on the ways in which natural resources and the environment can cause or contribute to conflict. The fourth section specifically elaborates on the forest factors in conflict by first looking at the statistical correlation between forested areas/countries and conflict occurrences, and the strategic importance of forests in the history of warfare, colonialism, and nation building. It also elaborates the different roles forests have played in contemporary conflicts of different levels, paying attention to misuse of timber by warring factions, local resistance to logging industries, conflicts surrounding forest protected areas and the use of forest as hideout by belligerent groups. The fifth section deals with the consequences of various forest/conflict aspects described earlier, both from a humanitarian and environmental perspective. A compilation and analysis of existing information on forest policy related to conflict prevention and peace building is presented in the sixth section. Key questions concern whether, how and under what circumstances forest related policies can assure Sustainable Forest Management in situations where the threat of violent conflict is imminent or already occurs or has occurred. Finally section seven draws conclusions and looks ahead at the future to identify the major challenges in terms of forest related policy in conflict sensitive and conflict affected forest areas.

2. Defining conflict and the geographic scope of the study

2.1. Conflict typology and trends

In elaborating the role of forest activities and sustainable forest management in conflict situations, a brief exploration of the term 'conflict' is mandatory to define the scope of the study. A general division can be made between violent and non-violent conflicts. In the former the threshold to violence is passed when parties go beyond seeking to attain their goals peacefully, and try to dominate or destroy the opposing parties' ability to pursue their own interests. Within the category of non-violent conflicts, there may be different degrees of visibility along a latent-manifest continuum. In latent conflicts incompatibilities in interests between conflict parties are either not yet perceived as such[1], or have not led to any action by one party that would impair another. Conflicts become manifest when contrary interests become voiced in ways that are meant to pursue the interest of one party at the expense of the other. This concerns for example verbal pressure, non-violent protest, threatening publicly with violence, market competition or imposition of economic sanctions.

Non-violent conflicts can also be categorised according to the level of objective and perceived compromise. Burton and Dukes (1990) distinguish between (1) management problems, i.e. disagreement concerning the choice of alternatives, (2) disputes, i.e. usually negotiable although issues of gain or loss might be involved, and (3) conflict, i.e. positions often have become less flexible and resolution more challenging.

Conflicts become a special area of attention when they result in violence, i.e. the display of physical force intended to hurt, damage or kill adversaries. War is the gravest form of violent conflict. Usually a conflict is considered as war when there is a minimum number of 1000 battle related casualties per year (Gleditsch et. al. 2002), of which at least 5 percent must be incurred on each side (Singer and Small 1993) and when there is some kind of regular army and central organisation on one side of the conflict (Miall et. al. 1999). Violent conflicts that do not fulfil these criteria are often referred to as "armed conflicts". The definition of armed conflict usually has a lower threshold of 25 battle related victims and includes a wider variety of conflict, i.e. (1) state based conflicts, i.e. armed disputes in which control over government and/or territory is contested, in which at least one of the warring parties is a state; (2) Non-state conflicts between two groups, such as violent clashes between warlords or violent inter communal strife; and (3) One-sided violence by states or organized groups against civilians, such as massacres, terrorism and genocide (Human Security Report 2005: 63). In addition to war, genocide and terrorism, "political violence" covers a wider range of state repression forms, encompassing torture, extrajudicial, arbitrary and summary executions, the "disappearance" of dissidents, the use of death squads, and incarceration without trial (Ibid: 64).

[1] In relation to this Galtung (1969) refers to 'structural violence' to describe situations where unequal, unjust and unrepresentative political, legal, economic or cultural structures prevent humans from realising their full potential. Such violence is almost always invisible and is normalized by stable institutions and regular practices.

Box 1: Conflict trends

Incidents of armed inter- and intra-state conflict remarkably declined since 1992, after a steady increase since 1965. The 2005 Human Security Report indicates that while in 1992, more than 50 state-based armed conflicts were being waged worldwide; by 2003 that number had dropped to 29. It also finds that battle-related casualties decreased even more since the 1953 Korean War. This leads to the conclusion that contemporary armed conflicts are in fact less deadly than those during the Cold War years. Africa forms a sad exception to this trend. Between 1992 and 2001, the number of armed conflicts outside Africa dropped by half; yet in Africa the number of armed conflicts stayed roughly the same (Ross 2003). The continent witnessed seven civil wars in the 1970's, eight in the 1980's and fourteen in the 1990's. With regard to the nature of contemporary armed conflicts, observers have noted a shift from interstate wars fought by national armies to internal and internationalised[2] internal conflicts that involve a wide range of non-state armed groups like private militia and security firms, and paramilitary forces. These players usually avoid major military confrontations with other military forces but frequently target civilians. Of the 59 ongoing armed conflicts in 2003, only two were interstate (the fighting between India and Pakistan and the US-led invasion of Iraq). In about half of the violent conflicts that were ongoing in 2002 and 2003 the state was not even a player in conflict. Instead these "non-state" conflicts included violent clashes between warlords or inter-communal conflicts between religious or ethnic groups.

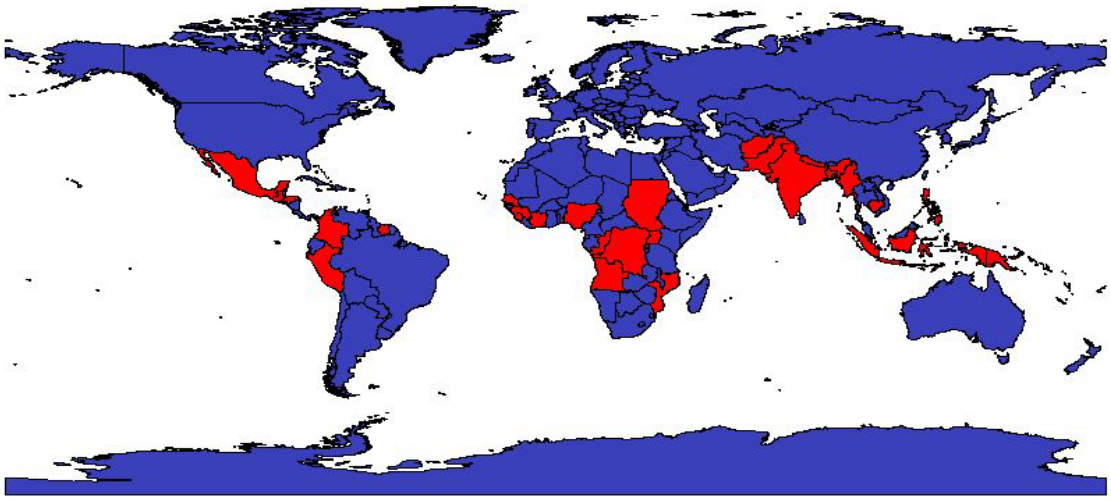
Another way to characterise violent conflicts is by describing the regularity of violence. The Conflict Barometer of the Heidelberg University distinguishes between crisis, severe crisis and war . While a crisis describes a tense situation in which at least one of the parties uses violent force in single incidents, a severe crisis demonstrates the repeated use of violent force in an organised way. The term war applies when violence is applied in a systematic way and destructions are vast and of long duration. The value of such distinction above those that uphold a certain nature of violence—i.e. political, or ethnic—or a threshold of casualties is that it includes incidental or regular violent confrontations between non-state parties that do not translate in large amounts of fatal casualties.

2.2. Countries dealing with forest related conflicts

Of the 92 countries affected by internal armed conflict since 1970 up to 2004 (Gleditsch et. al 2002) at least a third experienced fighting in forested areas (Kaimowitz 2005).

Figure 1: Some countries with armed conflicts in forested regions in the past twenty years

Angola, Bangladesh, Cambodia, Colombia, Democratic Republic of Congo, Cote D'Ivoire, Guatemala, Guinea, Honduras, India, Indonesia, Liberia, Mozambique, Mexico, Myanmar, Nepal, Nicaragua, Nigeria, Pakistan, Papua New Guinea, Peru, Philippines, Republic of Congo, Rwanda, Senegal, Sierra Leone, Solomon Islands, Sudan, Surinam, and Uganda.



[2] This type of conflict is essentially an intrastate conflict in which the government, the opposition, or both, receive military support from another government or governments, and where the foreign troops actively participate in the conflict

In line with the general decrease in armed conflicts in recent years, many of the most severe forest-based armed conflicts have reduced in intensity or ended, e.g. Liberia, Sierra Leone, Rwanda, Angola, Cambodia, Nepal, and Myanmar. However in many of the listed countries conflicts are simmering and occasionally violence flares up, as is the case in the Phillippines, Colombia, and Ivory Coast.

To geographically map forest related conflicts of lower intensity is much more difficult. One might expect that non-violent conflicts and incidents of violence concerning incompatible interests in forests will occur in all countries with significant forest cover. A 1996 FAO e-mail conference on conflict resolution in community forests generated reports of contemporary conflict incidences from 53 countries.[3] The disputes were characterised as those "based in power relations and the use to which a given segment of society would put the forest", including diverging views and colliding interests of men and women; elders and youths; state and community based institutions; and private enterprises and local communities. The 53 responding countries that experienced such disputes included almost half of the countries listed above, but also a number of countries outside the tropical (poor) forest zone, e.g. Australia, Canada, Finland, France, Germany, Hungary, Japan, the US and the UK. Seemingly forest resources are contested around the world as any other scarce resource.

While in the case of armed conflicts, violence usually spills over into the forest, conflicts of lesser intensity more directly evolve around forest resources and their management. However it is also possible that such low intensity conflicts feed a bigger conflict or even escalates into one. Likewise a context of armed violence in or near forest areas, and the accompanied lawlessness that often endures when armed conflicts have ended, can trigger or intensify more local level conflicts around forest resource access. These observations suggest a holistic treatment of these conflicts. In most cases the issue is not "a conflict" but a complex and multi-layered "conflict system" in which a number of conflicts interact. Violent conflict often arises from site-specific phenomena rooted in local histories and social relations that become connected to larger economic and social systems and power relations (Peluso and Watts 2001: 29, 30). This implies that the role of the forest and the forestry sector in conflict should be analysed in relation to the wider context of instability and other objects of struggle like identity, values and status.

3. Theoretical background

3.1. Conflict causes

In conflict studies there is general consensus that conflicts can generally not be reduced to one single cause or explanation. Conflicts are hardly ever mono-causal, which would make it in most cases incorrect to speak of, for example, an ethnic, ideological, religious or economic conflict. Instead, a number of factors usually interconnect. Factors that explain and escalate a conflict are often divided into pivotal or direct factors and additional, more indirect factors, such as mobilising factors, aggravating factors, and conflict triggers

Box 2: Causal factors in conflict (adapted from Douma 1999; 2000)

Pivotal factors lay at the root of the conflict and should be addressed and eradicated to eventually solve it. They are embedded in political, cultural and economic systems that are inevitably confrontational in nature. Pivotal factors relate to the lack of legitimacy, effectiveness and inclusiveness of state governance as well as explicit discriminatory policies and practices towards certain classes, or minority groups, and patterns of socio-economic exclusion and cultural deprivation.
Mobilising factors concern issues that are used by political leaders to rally support for a certain cause, or shape a community around a shared grievance. Ethnic identity and language are important mobilising factors in conflict, often used and manipulated by political power brokers to initiate civil strive in which the real stakes are more materialistic, such as land, economic resources, or other forms of control. The power of ethnicity is that it is easy to ascribe to, touches upon fundamental values and seems to indicate an uncompromising status-quo.

[3] Countries included Australia, Austria, Belgium, Benin, Bolivia, Burkina Faso, Cameroon, Canada, China, Colombia, Costa Rica, Ecuador, Ethiopia, Finland, France, Germany, Ghana, Guatemala, Honk Kong, Hungary, Indonesia, India, Italy, Japan, Kenya, Mali, Mexico, Mozambique, Myanmar, Namibia, Nepal, Netherlands, New Zealand, Nicaragua, Niger, Norway, Peru, Philippines, Russian Federation, Senegal, Singapore, South Africa, Spain, Sweden, Switzerland, Taiwan, Tanzania, Thailand, Uganda, United Kingdom, United States, Venezuela, and Vietnam.

Aggravating factors do not feed conflicts in themselves but act upon conflict, either in an escalating or deescalating manner. The ready availability of firearms and presence of valuable commodities in a conflict zone give impetus to a conflict that is already started.
Conflict triggers are events that enflame a conflict, the first act of violence that is responded to after which a cycle of violence often takes over. The assassination of an important political leader or member of the royal family has proven to have often triggered wide scale violence.

In theories dealing with internal conflicts—encompassing violent and non-violent protest, rebellion and civil war—much of the debate evolved around the relative importance and nature of pivotal factors. Much of the early studies explain internal war by revealing grievances and frustrations caused by lack of fair and equal access to political decision making and economic resources. Authors like Gurr (1970) and Davies (1962) argued that people's willingness to rebel against the political system would increase if the gap between their expectations and actual achievements would grow, calling this relative deprivation.

These early grievance-based theories could not explain why some societies with severe inequality and deprivation went to war while others did not. Another problem grievance theory could not come to terms with, was the collective action problem: why join a resistance and risk your life if the struggle can also be accomplished without you. To handle these deficiencies, several elements were added which gradually relegated the importance of initial grievances born out of deprivation. While grievances are still considered to be at the base of civil unrest they have to be mobilised, led, and targeted in a certain way in order to have an effect in the form of organised armed struggle. To mobilise grievances Tayor (1988) stresses the importance of common collective identities and tight social networks. De Nardo (1985) argues that, amongst other things, effective strategies are essential to create confidence amongst participants and invite new recruits. In relation to this, authors like Gurr (2002) concentrated on the authority, rhetoric, and capabilities of rebel leadership.

A fundamentally different way of understanding how opposition movements overcome the problem of collective action is to concentrate on selective incentives to followers (Lichbach 1994). These can be defined in terms of honor, reputation, and agency (Wood 2003). However other authors stressed that the short term promise of economic assents play a crucial role in today's rebel mobilizations. In other words, rents, either derived from the extraction and export of natural resources or through external patrons, are used to finance the start-up costs of rebellion (Keen 1998; Collier and Hoeffler 2001; Ross 2003), and can even come to constitute the principal motivation for some groups to engage in violent conflict.

While early explanations of internal conflicts focussed on the pivotal causal factors, more recent theories shift attention to mobilising and aggravating factors. These are considered of equal importance in explaining conflict eruption. This point of view is reflected in a three factor model of Ellingsen (2000) which conceives the eruption of protest and rebellion to rely on a mixture of motive, opportunity and identity.

- *Motive*, i.e. the negative motivations of frustration and grievance that can be rooted in limited or unequal access to either material or political resources; or positive motivations like the desire to attain wealth, power and security (Keen 1998).
- *Opportunity*, i.e. the possibility for opposition groups to articulate their motives and achieve their goals. These possibilities rely on internal capacities of the rebel leadership and the opposition groups' access to assets needed to distribute selective benefits to followers, as well as external conditions such as the level of state repression and territorial control.
- *Identity*, i.e. the recognition of a shared geographic, generational, cultural, religious and economic background of a group among which grievances are concentrated is needed in order to voice and direct grievances and organise civil strive.

The role of natural resources and environment in emergence and continuation of internal conflicts has received widespread academic attention. This has partly been stimulated by the collapse of the Soviet Union and the end of the Cold War. This historical fact called for new perspectives to analyse both ongoing and emerging conflicts which had little to do with the ideological differences that were previously used as a frame of reference in the analysis of interstate as well as internal conflicts. Two schools of thought emerged independently of one another to identify the environment-related drivers of conflict. The first stresses increasing environmental scarcities and related rural peoples grievances as a major motivation for people to engage in conflict. The second focuses on the presence and abundance of high value natural resources, which is claimed to invite violent capture by political elites and opposition groups that are principally driven by economic greed.

3.2. Environmental scarcity as conflict factor

An exponent of the environmental scarcity position is Homer-Dixon (1994) who argues that, "decreases in the quality and quantity of renewable resources, population growth, and unequal resources access act singly or in various combinations to increase the scarcity, for certain population groups, of cropland, water, forest and fish". Social conflict is generated by the scarcity of natural resources in two ways. First, resource scarcity leads to resource capture by dominant groups whereby certain groups are marginalized, feel resented and are inclined to challenge existing power relations. This can take the form of insurgency or rural rebellion. Alternatively environmental scarcities are likely to generate population movements to ecologically fragile areas where inter-communal conflicts of an ethnic nature are likely to arise with local inhabitants (Homer Dixon 1999: 93-96).

A second way in which scarcity causes conflict is through its destabilising effect on political social and economic innovation. This is referred to as the *ingenuity gap*. As scarcity becomes worse, some poor societies will face a widening gap between their supply and demand of ingenuity. Ingenuity is understood as society's capacity to deal with scarcity, and is embodied in human capital, institutions and technologies. Scarcities can overwhelm efforts to produce constructive change and can actually reduce a country's ability to deliver reform. In the face of scarcity a weakened state loses its moral and coercive authority, leaving room for anti-state grievances and rebel groups and elites challenging authority, boosting the probability of serious turmoil and violence (Homer Dixon, 1999: 5-7)

Above arguments tie a number of explanations of civil conflict together, such as state failure, income disparity, refugee flows and ethnic heterogeneity. All are generated by a declining and/or unevenly distributed natural resource base. Homer-Dixon's arguments have set the tone of popular debate during the 1990's. Citing Homer-Dixon, Robert Kaplan (1994) perceived West African insurgence movements in Sierra Leone as cohorts of frustrated masses of impoverished rural youth and city dwellers that have proven unable to cope with environmental destruction and degradation. In less popular writing but equally pessimistic Fukuyama (1992) argues that it will be impossible for less developed countries to overcome poverty, cultural dysfunction and ethnic strife when there is no water to drink, soil to till, and space to survive in.

3.3. Natural resource abundance as conflict factor

In contrast with the environmental scarcity perspective, studies headed by a World Bank research team consistently found that the presence of abundant primary commodities, especially in low-income countries, exacerbates the risk of violent conflict (Bannon and Collier 2003). Although there is nothing new about armies using natural resources to sustain their fighting capacity, authors have carried the economic argument one step further by claiming that many of today's civil wars have become principally driven by natural resource based wealth accumulation. For example Reno (2000: 4) argues that warfare is to be understood as "an instrument of enterprise and violence as a mode of accumulation." So whereas the availability of resources used to be perceived as creating an opportunity to engage in conflict, the struggle for these resources is now argued to have become a principle object, or motive for armed conflict.

Recent cases of civil war in Africa like the DRC, Liberia, Angola and Sierra Leone witnessed intensive looting, predatory resource capture by armed groups and ingenious trade networks of illegally harvested natural resource products. From such cases authors concluded that not the impoverished or marginalised, but criminal and opportunist rent seekers who are able to orchestrate rebellion, are inclined towards violence. In this manner the distinction between crime and rebellion gradually dissolves. In this new type of war, there are no well distinguished parties with defined interests who aim to destroy each other and build a more just society. Instead of winning a war for a higher cause, military groups have more interest in keeping the war going (Keen 1998).

3.4. Political-ecology and geographical conflict factors

In addition to the two camps dominating the debate on the role of natural resources in the emergence and perseverance of internal conflicts, two other theories gained prominence in recent years. The first can be labelled as the political-ecology camp which stresses that physical state of the environment, like the abundance and scarcity of natural resources, is mediated by political institutions and processes; these eventually determine whether conflict erupts and deteriorates into violence. In other words there is no direct relationship between natural resources, or the environment, and conflict (Hildyard 1999; Hartmann 2001). Consequently political ecologists argue that proclaiming conflict to be "environmental" or "natural resource based", obscures the real roots of the conflict that are located in issues of distribution and discrimination, and global political and economic processes (Fairhead 2001; Peluso and Watts 2001; Richards 1996). Both strands of

analyses increasingly recognised the significance of governance parameters in their models of understanding the natural resource-conflict link.

The geographical school of thought says that geographical factors play a critical role in shaping the motivations for internal conflict as well as in influencing the way in which the conflicts are fought, and who will prevail (Buhaug and Gates 2002). Geographical factors refer to the distance of a conflict area to the capital, the presence of natural resources and whether or not the conflict area is located along international boundaries. The underlying hypothesis is that remote border zones with high value natural resources are susceptible to prolonged armed conflicts. In addition some authors stressed the rough terrain factor (Collier et. al. 2004, Fearon and Laitin 2003), i.e. areas that are difficult to penetrate, like dense forests or mountainous areas, offer an advantageous environment for rebel parties over conventional government troops.

3.5. Greed and grievance in natural resource conflict

Elements of greed and grievance, scarcity and abundance are not necessarily contradictory but often point to problems in different natural resource domains. The problem of scarcity presents itself mainly with regards to renewable resources, which are important to local people's livelihoods, such as water, fish, forests and agricultural land. The problem of resource looting, instead, presents itself in relation to high value non-renewable resources, like oil, timber and diamonds. In this sense forests can link to conflicts in both ways, i.e. timber can be exploited for its revenues to perpetuate conflict, whereas at the same time the exploitation of timber might create scarcity problems due to overexploitation (Renner, 2002: 9).

In some cases one phenomenon triggers the other. War time resource looting may cause negative reactions of local populations that may, in turn, feed into the overall conflict situation. The other way around, justice-seeking opposition groups that are initially mobilised to redress grievances related to economic and political marginalisation and externally induced natural resource exploitation, may loose track of their agenda as conflict progresses. According to Weinstein (2004) opposition movements that arise in resource rich environments, such as forests, easily succumb to the satisfaction of more immediate desires of acquiring properties and rents, whereby failing to achieve their long-term aim of overthrowing and rebuilding the state.[4]

4. Forest and conflict links

4.1. The forest as an environment susceptible to conflict?

Hypothesis
In an attempt to encompass a wide range of environmental and related socio-economic and cultural factors which can make an area favourable to the emergence of internal conflict, Kaimowitz (2005a: 116, drawing on Goodhand 2003, LeBillon 2001, and Starr 2002) suggests that (violent) conflict is more frequent in areas that:

- are remote and inaccessible
- have valuable resources combined with uncertain or disputed property rights
- have a high proportion of poor households
- are poorly integrated into national democratic institutions
- receive few public services
- have several ethnic groups and religions

These characteristics reflect the motives—both greed and grievance based—enabling opportunities, and shaping identities that interact to make the eruption of conflict likely. A second step in Kaimowitz' argument is that forested regions in poor countries in the tropics usually have many of the characteristics associated with locations in which internal conflicts occur (Ibid: 117). First of all forest areas self-evidently contain timber but also many other precious resources that are interesting for armed parties to exploit. Secondly, remaining dense natural forests are likely to be located along international boundaries remote from national centres of political and economic power. The remoteness of forest areas in such countries is likely to translate into limited government presence, low social investment and poverty. These preconditions create a favouring environment for conflict in two ways. Firstly limited economic power and political rights of forest dwellers will make it difficult for them to demand an equitable share in the wealth accruing from proliferating commercial

[4] Drawing on contrasting cases of Uganda, Ethiopia and Eritrea – that emerged in resource poor areas – and Liberia, Sierra Leone, and DRC – that emerged in resource rich areas – Weinstein (2004) argues that the former cases have been more successful than the latter in achieving their initial aims of overthrowing the state and establishing a new government, just because in the latter cases rebel movements operated from resource rich forest areas.

activities such as industrial mining and logging. Secondly, limited state presence may draw insurgent groups to forested areas, which can, in turn, mobilise local resentments into their violent struggles. Considering this hypothesised overlap of factors, forests areas, particularly in poor tropical countries, would experience more conflicts than non-forest areas.

Statistical correlation

A number of studies have attempted to statistically examine whether or not forested countries or forested regions in countries have an increased risk of harbouring violent conflict. The first statistical studies regarded the relationship between countries' forest surface and the outbreak and duration of armed conflict (Collier and Hoeffler 2001, DeRouen and Sobek 2004, Fearon and Laitin 2003, Rustad 2005). These did not yield any consistent results and, moreover, tended towards negative correlations. These results however lacked significance because they were based on country level analysis while it is obvious that only a part of the country is experiencing violence. So could for example the war in Chechnya, where there is hardly any forest, feed the correlation between forest and conflict positively because of the high forest cover of the Russian Federation. For this reason authors tested a more appropriate hypothesis—based on disaggregated data on conflict location and the forest cover in those locations—whether conflict occurrences in countries would be biased to forested (and mountainous) areas (Buhaug et. al. 2005: 410). But again no convincing and even contradicting results derived from these statistical tests—"the conflict zones are, contrary to general belief, less mountainous and forested than the countries in which they occur" (Ibid.). A final attempt to retrieve a positive correlation between forest and conflict was attempted by Rod and Rustad (2006) who tested whether forest based conflicts within African and Asian countries would last longer than conflicts that were not located in the forest. Again forest resources did not seem to affect the duration of conflict—this was even the case when interacting the forest cover variable with variables indicating remoteness and inaccessibility, i.e. closeness to international border, distance to capital, and length of concurrent international border.

Significant forest related variables

Whereas forests as such do not statistically increase the risk of conflict nor affect their duration, forests areas that suffer from deforestation do tend to have this effect according to some studies. According to Haughe and Ellingsen (2001: 48), deforestation correlates with small scale conflicts and human rights violations but not with (civil) war. Rustad (2005: 91) found that average annual deforestation in the 1990s is positively related to armed conflict, but that this relation is negative during the 1980's. According to the same author the way in which deforestation relates to conflict during the 1990's has much to do with the level of corruption. Under corrupt regimes benefits from deforestation, through logging and the development of plantations, are not likely to flow to local groups whose livelihoods are affected causing local grievances.

Another way in which scientists searched for a positive correlation between forest and conflict is by proving the opposite, i.e. countries where reforestation and conservation take place have a lesser risk of conflict than those that are continuously deforested. The rationale behind the reforestation argument is that reforestation indicates economic innovation, and increasing incomes, both factors being negatively related to the outbreak of conflict. When deforestation is a product of a resource dependant rural economy, reforestation results from a transition to an advanced more diversified economy relying on modern industries and increased service provision, a transition usually accompanied with economic growth (Rustand 2005: 30-31). Using data on forest cover from FAO (2000) Rudel et al. (2005) find that countries that gained forest during the 1990's had an average GNP per capita of $8453 compared with $1614 among nations that lost forest cover. Thus reforestation is an indicator of a country's wealth, which is likely to be the reason for a lower conflict probability. The rationale behind the conservation argument is that countries, which are concerned with the environment, will also be socially more responsible and therefore more active in conflict prevention. There is slight, although not significant, statistical evidence for the negative effect of protected areas on conflict (Rustad 2005: 83).

Synthesis

Though inconclusive and sometimes contradicting, statistical studies on forest related causal factor of armed conflict are helpful to bring the forest factor of violent conflict into the right perspective. They suggest that:

(1) Neither (tropical) forest countries nor forested regions within countries are more prone conflict than any other areas.

(2) Countries with high deforestation rates have a higher risk of (low intensity) conflict, although this is more due to corruption than livelihood destruction as such,

(3) Reforestation negatively relates to conflict since it is an indicator for a country's economic welfare.

Although there is poor statistical evidence for the thesis that forests or tropical forests are more susceptible to conflict than other areas, still a causal relation, and aggravating role of the forest and timber in persisting internal conflicts is possible. Neither does it nullify the fact that a large number

of severe conflicts have been waged in forest areas, creating widespread humanitarian and environmental crises.

4.2. Forest and timber in the history of war and conquest

The forest as a strategic resource

Gleick (1991, quoted in LeBillon 2005: 218) argues that "natural resources have been used in the past and will be used in the future, as tools and targets of war and as strategic goals to be fought for". The forest as a natural resource forms no exception to this statement. From the earliest times on, forests have played a key role in struggles for power. Forests provided raw materials for construction of defensive walls and battering rams, charcoal to produce metal, and subsequently munitions (Perlin 1991, in Donovan et. al. 2007: 3). In addition forests have been allocated by groups engaged in warfare and societies under siege to provide food and shelter, thereby sustaining fighting capacities, and prolonging warfare. Apart from the instrumental use during conflicts, forest resources and forest exploitation rights have functioned as incentives for those willing to make or maintain peace with political competitors, and as reward for followers' loyalty. While many of the functions of the forest and forest resources in war and peace continue to be valid, the role of forest has undergone significant changes during the grand historical eras of colonialism, post-independence nation building and, more recently, the tendency of pluralist, decentralised, and, in some cases, weakened governance systems.

The colonial resource agenda

Colonial explorations in the 15th century increased the importance of timber, as it became an essential resource for coastal European nations to build their navies (Perlin 1991, in Donovan et. al. 2007: 3). Moreover timber became one of the most important global marketable goods, alongside precious metals, revenues of which were often directly invested in expanding the military capacities and operations of seafaring nations. In the late 15th century, European countries started their scramble for natural resources by occupying territories in Asia—and later in Africa and Latin America—to gain control over forests that contained timber, but also other valuable goods such as spices and incense (Donovan et. al. 2007: 4) and to open up large tracts of forest for plantations, forestry and mining activities. 18th century industrialisation and the depletion of domestic resources in European countries, in particular of forests, intensified the global quest for primary commodities. The way through which colonial governments organised the pursuit of natural resources was in close alliance with private enterprises that were granted concessions, usually in outlying territories. According to Hardin (2002: 10) concession refers to "the territorial units allocated to actors for the extraction of wealth in the form of raw materials." Through colonial concessionary politics the power of the state was extended over the colony through the presence and commercial activities of mediating business enterprises, merchants, and labourers.

The British conquest of Burma (1824-1885) forms a clear example of the overseas pursuit of timber. According to Buckrell (2002, in Jarvie et. al. 2003) it was at least in part motivated by the desire to seize control over the country's rich natural teak reserves in the absence of any significant standing volumes of timber in England by that time. The ethnic insurgence movements that still operate in the country today are claimed to have arisen as a result of colonial inequitable exploitation of local resources dating back to the mid-19th century (Global Witness 2003).

Territorial politics in nation building

The colonial agenda to turn forests into productive areas was largely adopted by governments in newly independent states. First in the America's and later in Asia and Africa, it served nation building. Forest exploitation and conversion contributed to national economic development and helped to consolidate the power of new governments and their armies, much the same way as it had during several hundred years of colonial conquest. In many countries the colonisation of the forest frontier also played an important role in population politics, i.e. to distribute citizens evenly over the national territory in order to relieve overpopulated areas from land pressure and environmental degradation, and to contribute to constructing national identity. For instance in the Philippines and Indonesia transmigration policies during the 1960's and 70's were aimed at moving hundreds of thousands of people from intensively cultivated parts of the country to remote and scarcely populated islands in order to stimulate agro-forest enterprises, logging and farming. Also several African governments initiated programs to integrate remote forest areas in the national economy, mainly by establishing and expanding coffee, oil palm and cocoa plantations to which people were attracted from dryer but more densely populated areas. In North and Latin America, where independence came almost a century and a half earlier, population movements into interior forest were largely driven by European and Métis settlers in search of business opportunities, such as ranching and farming.

While much of the population movements into remote forest frontiers were facilitated by national governments, clear legislative and regulating principles defining "how properties get to be owned" often were lacking (Rose 1994, cited in Staver et al 2007: 60). As a result, de facto ownership and

appropriation of natural resources tended to rely not simply on statutory government imposed law but on other elements of power such as the financial and physical strength of a claiming party. This seemingly chaotic and conflict-generating state of affairs would not appear to promote overall economic development. However economists suggested that pre-imposing the rules of a remote government on a developing frontier tends to hamper the profitability of the frontier (Schneider 1995, in Staver et al. 2007). Therefore governments may not give priority to development of strong government institutions in inhospitable forest areas only because of costs, but also because it may slow down economic progress in the early stages of frontier formation (Alston and Mueller 2003) [this sounds like finding a lofty "deliberate" excuse for the sheer impossibility to impose government rules beyond the means and limits that governments have in reality]. However the social costs of such *laisser faire* policy have become increasingly visible in areas where conflicting interest over natural resources at the forest frontier have fallen beyond the control of state authorities and legal institutions.

Box 3: Social conflict related to the colonisation of forest frontiers

Recent episodes of inter-communal violence in Kalimantan illustrate the effects of state facilitated immigration into remote forest zones. As a result of transmigration policies in Indonesia, designed to reduce overpopulation mainly in Java and Madura, half of the population of the Island of Kalimantan came to be made up of immigrants. New immigrants operated in a number of sectors that induced intense deforestation, such as logging, plantation industries, and cattle farming. In addition immigrants transformed forest lands into farmlands for subsistence purposes. Local Dayak communities took little part in the economic development that these activities generated and even suffered from declining livelihood security as a result of habitat destruction. Confrontations between Dayak and Madurese immigrants in the late 1990, claiming over a 1000 victims, are often explained as a degenerated struggle over scarce forest resources and depending livelihoods (Klare 2001). However, additional cultural grievances and failing governance played equally important roles. Johnston (2001) argues that if resource related processes were the cause of violence other immigrant groups, that were equally, if not more, involved in extractive industries, like the Malays, should have been the targets of attacks a well. According to Johnson the fact that this was not the case, has to do with a culture clash between Madurese and Dayak communities, instead of forest management. He argues that Madurese immigrants were target of Dayak attacks because of their alleged dishonour for Dayak culture and identity, and their lack of internal control of defiant behaviour. In addition commentators have stressed failure of state law enforcement agencies to react quickly to prevent isolated clashes between individuals to degenerate into widespread inter-communal violence (ICG 2001). The Kalimantan case demonstrated that forest relates resentments on their own are usually not sufficient causes of violence. The intersection of such grievances with inter-ethnic animosity in a context of limited administrative control proves detrimental.

Alongside policies aiming at increased production capacities of forests and consolidating state power, nature conservation policies date back to the 19th century. The first National Parks were mainly created in the formerly British parts of world; the United States, Canada, Australia, New Zealand Kenya and South Africa. The enclosure of forest into protected areas would continue in northern and southern forest-rich countries during the 20th century and is likely to increase in the near future as a result of global and national concerns of deforestation and climate change. According to FAO's 2000 Global Forest Resources Assessment, the total extent of forests in protected areas is estimated at 479 million hectares, which is equivalent to 12.4 percent of the world's forest area. Particularly in the past 25 years, many countries have allocated portions of their forests for nature conservation. Protected areas policies generally imply the nationalisation of forest tenure (although some privately held forest estates and sanctuaries have been established in recent decades) which is usually accompanied by restrictions of local controls over the environment. Since the 1970's, however, the climate in which protected areas are established and managed has become less top-down with more space for participation of and negotiated access for local communities. But again, some commentators have observed a recent move, back to classical models of "fortress" conservation, exclusively to serve nature protection (Newmark and Hough, 2000).

Decline of central state control

While states still formally administer more than three quarters of the world's forests, in many countries effective government control over forest areas located far from capital centres of power and along international boundaries has greatly reduced in recent decades. In some countries this situation has given way to anti-state rebel movement in remote forest territories, and to illegal exploitation of natural resources, including timber, by these groups. Forest based rebel movements in Sierra Leone, DRC, Cambodia and Myanmar are often referred to in this respect. Analysts have pointed to a number of interlinking factors that have significantly reduced the coercive power and territorial control of states in these and other natural resource dependant developing countries. While resource rents had provided many governments in developing countries with the means to maintain relative political stability, global economic downturn in the late 80's led to decreased government revenues from primary commodity exports. This created a situation of economic

downturn, which was aggravated by structural adjustment (Reno 1998, Richards 1996). In addition, the end of the Cold War for many governments in developing countries implied the end of budgetary and military support from one of the superpowers and increasing domestic demands for democratic reform. As a result of these geopolitical and economic changes, commentators (Herbst 2000, Taylor and Flint 2000) observed "state failure" where central governments lost their capacity to improve the lives of their citizens and hold power over remote territories. The governments failed to construct a viable political and geographical support base and limited their public functions to merely concentrate on extracting revenues from the few remaining profitable economic sectors that require little economic investment, such as mineral and timber (LeBillon 2005: 222).

The decline of relative authority of central governments has led to rebel mobilisation and consolidation in so called 'non-state' forest spaces in some extreme conflict cases. More common forms of resistance and social commotion mounting in forest areas are those directly related to distributional and livelihood issues arising as a result of forest exploitation and transformation. Improvements in communication technology and transport, in combination with processes of democratisation and decentralisation, has increased the ability of local communities to hold local authorities accountable, confront their discontent with entrenched economic interests, and mobilise (international) support for their cause (White et. al. 2007: 5). However, despite increased political manoeuvring space in many countries, low-level forms of resistance such as peaceful demonstrations and land and forest occupations are frequently put down by private and public security forces aligned to business interests. In turn, aggrieved local population may perceive armed conflict as a viable and even justifiable alternative.

Box 4: Forest-related grievances and anti-state rebellion

Mexico's Zapatista movement in Ciapas, Mexico and Moro separatist on the Island of Mindanao in the Philippines agitate against foreign/ external interference in local natural resource sectors. In Ciapas, the Zapatista movement came up in the 1980's. It reacted to decades of political and economical marginalisation, state sponsored forest exploitation and forest transition to farming and ranching by outsider groups. When the national government in conjunction with international environmental agencies established a series of protected areas during the 1990's, this created local frustration because these projects largely denied peoples user rights of forest and agricultural settlement. Other state protection measures, like closing saw mills, and suspending timber exploitation licenses equally gave rise to strong local resistance.

Local forest resources on the Island of Mindanao came under pressure as a result of migration policies during the 1960's and 70's when people from northern Catholic regions were moved to southern Muslim areas. Immigrants got rights and means to log and transform forests into farm land and plantations. As a result, indigenous groups clashed with immigrants over control of land and trees on the land they first considered as their own (Jarvie et al. 2003). Slack (2003) argues that "economic disparity, resulting from the imbalance in ownership of natural resources, has provoked the Bangsamoro to separatism." While this may be a valid claim for the beginning stages of the rebellion during Marcos' regime (1964-86), the environmental factor has lost its importance in the rebels' agenda. Moro separatists have adopted a religious discourse, and the movement penetrated in extractive industries, benefiting from it rather than agitating against it.

While anti-state opposition in Ciapas still has local forest management high on its political agenda, the matter has been relegated to the background as in the separatist Moro movement.

4.3. Conflict timber

Definition and occurrences

International institutions have launched and defined the term "conflict timber" to describe the close relation between timber extraction and conflict. In 2002 Global witness (2002a) defined conflict timber in a report on the Liberian Timber industry and its role in supporting rebel-president Charles Taylor: "timber that has been traded at some point in the chain of custody by armed groups, be they rebel factions or regular soldiers or by a civilian administration involved in armed conflict – either to perpetuate conflict or take advantage of conflict situations for personal gain."

The conflict timber phenomenon was already observed in Myanmar and Cambodia during the 1980's and 90's. However the role of timber in perpetuating conflict, began to receive international attention fairly recently, when similar cases occurred in Liberia and in the DRC during the late 1990's. Besides these four main countries with existing evidence for conflict timber, some minor occurrences of conflict timber were reported in the Philippines, Sierra Leone, Guinea (Thomson and Kanaan 2003) and Ivory Coast (Carius et. al. 2005). Insurgent groups have used the forest also for financing war in other ways. In Nepal Maoist rebels exploited non-timber forest resources and medicinal plants while in Colombia, Peru, Bolivia Laos and Myanmar forest have been felled to allow for growing illicit crops. Revenues accruing from this activity are used to finance conflicts (Donovan et al. 2007: 2).

The use of timber as conflict commodity for rebel groups has been analysed in relation to other high value, non-renewable natural resource products, such as oil, gold and diamonds. It has also been compared with other, renewable, resources, such as agricultural commodities, cropland and illicit crops (Le Billon 2001, 2005, Lujala 2003, Ross 2004, Thomson and Kanaan 2003). Such comparative analyses reveal a number of particular characteristics of conflict timber. Firstly, the capture of timber resources has not been a driver of armed conflict in the same way as oil resources and croplands.[5] Timber trade usually offers a viable fallback for opposition parties that have not been able to attain their goal of state capture, regional autonomy or secession, i.e. Philippines, Myanmar, and Cambodia.[6] The same goes for gemstones, i.e. Angola (National Union for the Total Independence of Angola, UNITA), DRC, and Sierra Leone (following Le Billon 2005: 227). Secondly, although belligerent groups in some sporadic cases were engaged in timber exploitation, other more profitable and easily extractible resources, such as coltan, gold, diamonds and other gemstones, are more commonly exploited under armed conflict conditions, at least when they are available.

Box 5: timber as a 'lootable' resource

To assess the likelihood of timber being used as conflict commodity by rebel groups, analyses have focussed on a few resource-specific characteristics that determine the 'lootability' of a resource.

The first characteristic favouring timber as conflict commodity is that timber extraction does not require much capital and technology input compared to for example oil, bauxite and other sub soil minerals. As a result, political turmoil, which is often accompanied with the departure of international companies, does not prevent combatants to extract timber themselves or profit from ongoing anarchic logging operations.

Secondly timber resources are diffuse (spread out over vast territories) and therefore more difficult to control by the central state compared to concentrated or so called 'point' resources (Lujala 2003: 13).

Thirdly, Le Billion (2005: 224-5) mentions that timber resources are usually located far away from the capital, in remote territories along porous borders, adding to the limited control function of the state.

On the other hand, there are several other characteristics that discourage the use of timber as conflict commodity in situations where more attractive alternatives exist. The bulkiness of timber makes it difficult to transport and conceal, relative to for example diamonds and coltan. While it can be easily extracted, getting it to a port, across a border or to an end market often implies that insurgent groups need to control the commodity chain that is geographically spread. Moreover the visibility of timber makes it comparatively easy to monitor, and intercept by competing groups or by the government. Also the value-to-weight ratio of timber is fairly low, compared to for example gemstones and drugs. A final characteristic of timber trade that has an ambivalent effect on its 'lootability' is the structure of the end market. On the one had timber can be used in several types of end market products. A small group of rebels can therefore easily enter a big market without being tracked down (Thomason and Kanaan 2003). However, international timber markets are often well established and do not operate in secrecy. Timber transactions thus usually do leave some paper trail, which may be monitored.

Facilitating conditions for conflict timber trade

1. State involvement

Contrary to other resources, rebels usually do not profit from timber operations through direct engagement in logging, but through extortion and illegal taxing, granting informal concessions, and looting of stockpiles. In the cases where rebels do profit from logging operations, these often occur under the authority and with the complicity or direct involvement of state actors (Price at al. 2007). For instance during the 1990's in Cambodia, Thai logging companies got concessions from the national government that were located in Khmer Rouge occupied territories in the north of the country. The Khmer set up a parallel taxation system which yielded $ 10-20 million per month[7] according to Global Witness (2002b). The involvement of military groups in various phases of the timber chain is risky, since it keeps the military *status quo* in-tact and postpones conflict settlement.

[5] Oil resources tend to play an important role in the onset of conflicts aimed at state capture and secession, i.e. Colombia, Angola (Cabinda), Sudan Nigeria, Indonesia (Aceh/ Timor), Papua New Guinea, and the Republic of Congo. Peasant rebellions tend to feature the control over croplands and agricultural commodities as an important driving force for engaging in armed conflict, i.e. Mexico (Ciapas) and Guatemala

[6] An anomalous case here is Liberia where Charles Taylor's effective state capture in Liberia in 1997 and subsequent cross border wars in Sierra Leone and Ivory Coast were financed with timber export revenues.

[7] Despite the fact that the Khmer Rouge clearly profited from logging and the US threatened to cease support to Thailand if it continued to facilitate cross-border trade, the Cambodian government in 1996 reopened its border with Thailand for timber exports. This was in violation of the 1992 UN Resolution 792, declared by UN Transitional Authority in Cambodia (UNTAC).

Since timber extraction during armed conflict often benefit state associated companies, security forces and government administrators, plugging into the business in different phases of the commodity chain, it is difficult to earmark all timber production in a country as conflict timber. In Liberia under Charles Taylor (1997-2003) there is substantial evidenced that much of the unofficial revenues accruing to the state, were invested in war efforts, with timber companies sometimes even actively involved in supplying weaponry (Global Witness 2001, 2002a; Richards 2005).[8] For the governments of Myanmar and Cambodia who during the 1990's annually received estimated revenues of $ 125 and $112 million respectively (Renner 2002), it remains unclear how much, if any, of this money was allocated to finance war. Evidence gathered from these countries does suggest that illicit timber revenues and exploitation rights were used by national administrations to reward military players for their support and loyalty to the government (Global Witness 2004b, Baker et al. 2003, Eberhardt 2002).

2. International business accomplices

Extraction of conflict timber in war zones in most cases is not directly executed by armed forces but by international business accomplices of those controlling the area. Despite the disturbing effects of armed conflict, logging companies in many cases seek to maintain operations and accommodate with whatever military party effectively controls the extraction areas. In the cases where international enterprises do pull out, they are often easily replaced by national entrepreneurs who know the terrain and conflict conditions and are willing to take the risk of investment. Mostly a mutually beneficial situation arises in which logging enterprises bring in the necessary equipment, skills and labour while military players and authorities ensure that logging sites are secured and timber arrives at the market.

The involvement of foreign timber businesses in war is not limited to extraction, transportation and marketing capacities. For instance in Liberia timber enterprises have been directly involved in arms delivery to the national army, special units, and state aligned rebel factions fighting in Ivory Coast (Global Witness 2004a). In addition security forces owned by logging company are reported to have provided security services to the Liberian government; they even participated in civil war (Global Witness 2002a).

After largely bypassing public accounts conflict timber revenues enter private banking domains, in which traces of origin are often wiped out, making legal prosecution of state perpetrators difficult. In Liberia and the DRC, national banks and money transfer agencies are largely uncontrolled by the government. This implies that they do not require identifying beneficial owners of accounts and do not record transfers being made. The national financial institutions are linked to offshore banking centres that may not be able or willing to trace origin and ownership of money. This means that illicit money is whitewashed through a chain of cooperating banks.

3 Relative political stability

Whereas the trade in coltan, diamond and gold appears to increase at the same speed as the conflict escalates, logging usually occurs when relative peace has been established. In Myanmar logging started after the signing of several ceasefire agreements between government and rebels. In many instances timber exploitation rights were offered by the government to rebel groups as an incentive to lay down their arms. In Cambodia timber trade fully stopped during two decades (70s and 80's) of intense fighting, and recommenced only after the peace agreement was settled between the Vietnamese installed coalition government of Hun Sen and the Khmer Rouge (in 1991). In Liberia, Charles Taylor had to capture state power and establish relative stability in the country before timber exploitation could take off.

This necessity of relative stability is also evident in the DRC. Despite enormous timber wealth in military occupied territories, most regular timber industries had to shut down as a result of war-inflicted destructions of basic infrastructures and materials. War also caused the departure of foreign logging companies and the closure of the Congo River for all transport of goods.[9] In the DRC

[8] The largest quantity of conflict timber trade from Liberia took place in the years 2000-2002. As to the international value of timber—and related profits pouring into the hands of Taylor and his entourage—estimations differentiate greatly. The Forest Development Authority (FDA) in Liberia estimates the value of timber exports at $ 83 Million, with a FOB price of $ 106 per m3 (cited in Global Witness 2002a). According to ITTO statistics this would be incorrect (ITTO 2002). It puts the FOB price of Liberian timber at $ 250 for 2001, which would give exported timber a total value of $ 235 million. The consequences for the possible revenues accruing to logging companies and Taylor's regime are large. At a production cost of $ 86, estimated by Global Witness (2001), timber revenues for 2001 could vary between $149 million and $ 16.7 million.

[9] By 2002, there were only about one dozen industrial logging companies active in the DRC, and reported timber production had, according to the Eurostat World Trade Atlas statistics, fallen to less than 100.000

intense forest exploitation is more likely to occur during the post conflict phase. Already in 2002, the DRC government allocated logging concessions for 36 % of its forests (White and Martin 2002). However poor security and infrastructure still hamper production to take-off as expected. Production levels of logs and sawn wood since 2002 barely reach beyond 100.000 m3 per year and do not seem to augment over the years (ITTO 2005a).[10] Under the difficult conditions, only the extraction of a few high value species close to roads and rivers is lucrative (Debroux et. al 2007).

4 Lack of international action

Thriving conflict timber trade relies on indifference or unawareness of governments and consumers in the countries importing timber. Imports from Liberia to the European Union, France and Italy notably, continued up to 2003 despite international outcry since 2000. The UN imposed export ban only came into effect in 2003, when the greatest damage already incurred and most timber companies had already pulled out because of insecurity. Concerning timber trade from Myanmar, China for almost a decade was reluctant to stop this trade, and only in March 2006 formally closed its borders.[11] China's southern provinces came to rely on Myanmar sourced timber when the government of China imposed a logging ban on natural forests in approximately two-thirds of its national territory.[12] As a result trading volumes from Myanmar tripled between 1997 and 2002 (Sun et al 2004, in Kahrl et al. 2005). Also Thailand and Cambodia have failed to enforce the closure of their border for the trade in round logs, which was declared in 1992 under the UN Transitional Authority in Cambodia (UNTAC) (Res.792.). International pressure from the IMF and the US, to suspend loans and development support to Thailand, were needed to convince the country to close their borders in 1998.

4.4. Resistance to logging operations

Sources of discontent

In conflict affected or politically unstable countries logging activities often are minimally regulated. This leads to situations in which economic gain takes precedence over the welfare of local communities and the integrity of forest ecosystems. To attract foreign investment, governments often demand little management requirements over the concessions they grant to private companies. Hardly ever local communities are consulted before hand. In response, these local communities do not recognize the government's right to exploit the forests, and grant temporary territorial rights to third parties. Local resentment vis-à-vis outside actors may further arise when logging operations harm the livelihood systems of forest dependent people by disturbing ecosystem balance, and restricting access to crucial resources such as non timber forest products and wildlife. Also timber that often is extracted illegally on a small scale by local actors and the way benefits are distributed may lead to social commotion, which can contribute to increased political, social and economic instability.

Conflict expressions

Forest-dwelling communities use several means to directly or indirectly impede industrial resource exploitation, for instance by blocking access roads, destroying equipment and physical harassment of workers. These are aimed at either stopping extraction or put pressure on implicated companies to devolve greater benefits accruing from exploitation to the local community. Most tropical timber exporting countries have been encountered with such instances of conflict or rather challenges to ongoing operations. These may sometimes escalate into violence.

For example in Indonesia local protests often escalate because private companies are able to pay security forces to suppress opposition. Associated human rights violations are even tolerated by local government administrations, military and policy units (Harwell et al. 2003). In other countries public protest leads to more positive outcomes. In Mexico the monopoly of state authorized logging concessionaires has in many forest regions been successfully challenged by local communities' social movements (Bray and Merino-Péres 2002). Through small acts of rebellion—destroying equipment, blocking roads and burning office buildings—the government was forced to change the corrupted system of resource allocation. At present community based enterprises occupy the market niche

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m3, which is only a fraction of the wood exported from timber exporting countries in Africa like Cameroon and Ivory Coast.

[10] As a comparison, Cameroon produced almost 2.5 Million m3 of logs and sawn wood in the years 2004 and 2005 (ITTO 2005a).

[11] The order was issued by the Provincial Government of Yunnan, China. It included the trade in timber and minerals and referred to Chinese logging and mining workers.
Source: Xinhua, 'Yunnan Public Security Border Defense Brigade takes actions to ensure the Yunnan-Burma timber and mineral trading cooperation'; 27 March 2006

[12] Chinese import data show 513,574 m3 of timber exports from Myanmar in 2001 and 978,221 m3 in 2004 (ITTO 2002, 2005). Myanmar declares only to have exported a fraction of its total timber exports to China, i.e. 3,237m3 in 2001 and 54,937 in 2004.

formerly filled by private and parastatal companies[13]. But while this has reduced local resentment vis-à-vis external forest enterprises, greater community involvement in forestry activities has in some areas given rise to intercommunity disputes over boundaries, which risk running out of control because they are insufficiently responded to by federal government (Fonseca 2005).

Conflict, a matter of illegality?
Local conflicts related to logging are often exacerbated by the illegal nature of these operations and the lack of transparent local administration. These factors inhibit local communities to voice their discontent and claim compensation, leading to long-standing resentment. In many Central African timber exporting countries such as Cameroon and Gabon part of the logging often takes place outside the legal limits of concessions. In such cases direct compensation arrangements are made with local villagers, which usually consist of an exchange of money or the promise of social and infrastructural projects. In cases where promises are not kept, villagers turn against logging companies to claim their benefits. Their possibilities for compensation are limited since agreements usually are made orally and off the record. But also when logging taxes have been paid to local administrations, revenues often fail to trickle down and be invested in community projects. Local resentment over forest taxes however barely ever been carried forward to responsible administrations due to a lack of local means of holding administrations accountable.

But also in areas where timber extraction follows legal requirements conflicts are not inevitable. These may arise as a result of inherent tensions between different types of land use applied by different groups of people. In Finland, as well as in other Nordic countries, disputes are ongoing between reindeer herding and state forestry (Lawrence and Raito 2006). While indigenous Sámi populations received legal assurance that their husbandry activities on state owned land should not be hindered, Sámi organizations have criticized the government for allowing forestry activities that have adverse impacts on the amount and the availability of reindeer nutrition.

Forest exploitation triggers livelihood and distributional conflicts particularly in rich forest areas which are home to significant groups of people that depend on the forest for their daily subsistence, and small-scale commercial activities. However, logging operations do not just stir local conflicts in these forest settings. As a result of increasing environmental awareness mainly in Europe, Australia and North America, environmentalist action groups have in recent years engaged in several actions to halt illegal but mostly legal logging operations, ranging from lawsuits to physical obstruction of logging operations.

4.5. Forest as hide-out and battle terrain

Apart from conflict timber, the forest is a well suited terrain as hideout for rebel groups. They can stay, mobilise, and gain strength in the forest, without knowing or at least without disturbance from government troops. In addition the forest enables rebels to counteract the numeric advantage and better equipment of government forces. Already in Roman times opposition groups, like Germanic tribes, used the forest to withstand the “modern” army. Below, more recent cases are categorised according to continent in which they occur.

Asia
Vietnam is the most well-known case of forest being used as hideout and battle tactic. Goro (2007) argues that the chances of survival of American soldiers in the Vietnamese jungle were very low even without having to confront the enemy in battle. Vietnamese guerrillas on the other hand survived on local foods and were able to prevent and cure sicknesses. In battle they appeared invisible to American soldiers by hiding in tunnels and swiftly moving locations. US failure to neutralise the Vietcong can largely be attributed to the rough terrain factor.

Other, contemporary examples of forest shelters are in Indonesia and in the Philippines. In Aceh secessionist rebels withstood Indonesian government since 1953 in and around Leuser National Park. Although a peace agreement was signed in 2005 and weapons officially were handed in, the Government alleges that rebels still have significant weaponry hidden in the forest. On Mindanao Island the Muslim opposition group Abu-Sayaf uses the dense jungle to hide tourists taken hostage.

Latin America
In Colombia left-wing guerrilla forces are based in mountainous forest areas. The most powerful group is the *Fuerzas Armadas Revolucionarias de Colombia* (FARC) followed by the *Ejército de Liberación Nacional* (ELN). The roots of the FARC can be traced to the 1964 resistance to government attacks on Marquetalia in the Columbian Amazon forest. Government opponents that

[13] As many as 7,000 indigenous and non-indigenous communities collectively manage common-property forests, with many also controlling the wood transformation process (Bray and Merino-Péres 2002).

took part in this act of resistance united under the FARC in the 1980's to become a nationwide opposition movement with bases across the country (Becerra 2005). FARC still controls several patches of mountainous forest areas on the slopes of the Andes Mountains, in lowland Amazon forests and in the Macarena mountain range. The ELN is a smaller guerrilla group and established in the San Lucas mountain range, at the northern tip of the Colombian Central Andes. It retreated to this location in 1965 after a failed attack on the town of Simacota; a petroleum extraction centre. Oil installations have ever since been the main targets of ELN incursions in the low lands (Davalos 2001). Both rebel organisations rely on the growing, processing and trade of illicit crops and other contraband activities that take place under the disguise of the forest.

Africa

In Africa, contemporary rebellions in the DRC, Angola and Western Africa illustrate the role of the forest as hideout. Eastern DRC falls completely beyond the centralistic military and administrative control of Kinshasa. As a result of the economic collapse under Mobutu, the roads crossing the forested central and northern regions became impassable, and insurgent groups as well as foreign armies could mobilise or enter and stay in this area (Kaimowitz 2005) without any consequences. In Angola opponent factions under Savimbi's National Union for the Total Independence of Angola (UNITA) retreated to the forest areas along the border with Zaire after their defeat in the firs post-independence elections in 1975. With support from the US and drawing on diamond revenues, UNITA could sustain its rebellion until 2003, when their leader was killed in combat by government troops.

In western Africa the Gola forest belt straddling the boundary between Liberia and Sierra Leone offered shelter to the Revolutionary United Front of Fodah Sankoh. The region was cut off from the rest of the country when an important railway line reaching the Gola region was closed in 1968. German projects to tar roads to the area were never realised (Richards 1996: 42-44). As a consequence the RUF gained control over diamond digger camps and aligned many of their workers. While the RUF did not prove strong enough to seize state power, its option to retreat to its forest bases after military battles kept the organisation alive for more than a decade (de Koning 2007).

In Liberia and Ivory Coast rebel factions found similar militarily strategic forest domains along the forest boundary of the two countries. In a small town named Dadane at 20 km from the Liberian border, rebels mobilised in 1989, i.e. the National Patriotic Front of Liberia under Charles Taylor (NPFL), as well as in 2002, i.e. *Mouvement Populaire du Grand Ouest* (MPIGO).[14] During the Liberian civil war Taylor's Anti Terrorist Units controlled the area to allow uncontrolled passage of weaponry to NTFP forces and aligned rebel parties like MPIGO.

While most rebel held forest strongholds have now been dismantled, some West African forest areas remain vulnerable. Rebel groups mobilised against Charles Taylor continue to occupy parts of Sapo National Park in the east of the country and have managed to avoid disarmament and repatriation efforts (Suter 2005). Guinea's South-eastern forest along the Liberian and Ivorian boundary have become home to a variety of unaligned ex-combatants from Liberia in search of economic and military opportunities.

4.6. Conservation and conflict

Protected areas in tropical forests, as well as in other environments, have been the object of struggle from the time most of them were created during the late 19th and 20th century. Protected areas policies usually restrict local controls over the natural resources that are located in these areas. Many of the protected areas that have been gazetted, particularly in the south, served and continue to serve basic livelihood functions for local communities, in the sense of habitation, hunting and gathering plants. Although progress has been made to accommodate local interests and needs, the ideology and practice of "fortress conservation" (see Brockington 2002; Hulme and Murphee 2001) still works its way through contemporary conservation policies, resulting in drastic, sometimes violent measures to relocate local populations and fence off access through the use of armed guards and army personnel. Drawing on cases from Africa Geisler and de Sousa (2000) brand a new type of "conservation refugees" as a result of the establishment of national parks and conservation projects.

[14] MPIGO fights the central government Ivory Coast under the *Forces Nouvelles* Alliance.

Box 6: Conservation refugees in Central Africa

The number of 'conservation refugees' world wide is hard to estimate and depends on the definition of this term. i.e. whether it refers to forceful resettlement or more softer forms of dissuasion and whether it refers to inhabitants of protected areas or also people frequently using these areas. World estimates offered by the UN, IUCN, and a few anthropologists range from five million to tens of millions (Dowie 2006). Although figures remain unclear, ranging from 900.000 to 14.4 million people (Geisler 2002), Africa is believed to count the highest number of conservation refugees. This can be explained by the recent boom in protected areas on the continent. Since 1985 the total land area classified as protected roughly doubled (Geisler 2002: 80). In a study of twelve parks studied in the Congo Basin Cernea and Schmidt-Soltau (2003: 44) arrive at a figure between 40,000 and 45,000 individuals that have been displaced, physically or economically. In addition they estimate that an additional 25,000 to 50,000 people living outside the parks have been negatively affected as a result of an increasing pressure on their lands as a result of expulsion. Considering the continuous drive for increasing forest conservation—the Heads of State in the Central African sub-region aim to have no less than 30 % of their landmass protected—these numbers are likely to double within the next ten years (Ibid).

In most cases of forced resettlement and access restrictions local communities have little option than to comply with law enforcers. In Uganda's Mt Elgon resettlement schemes for indigenous communities that lived inside the Reserve were not fully executed and relocated at least 6000 people in an area that would in 1992 be declared to be part of the park. Ensuing evictions of these remaining populations was in several instance carried out at gunpoint by park rangers (Himmelfarb 2006). Tensions between resettled populations and park staff continued all through the 1990's because of continued human activities inside the park like gathering firewood and grazing cattle. According to representatives of displaced villages park rangers have over the years physically harassed a number of herds' boys and women caught trespassing (Pers. comm.). In recent years some resource use rights have been granted to local populations at the fringes of the park, dampening some of the conflicts. However these are claimed not benefit all ethnic groups equally (Himmelfarb 2006).

Even in cases where more participatory efforts are taken to design acceptable resettlement plans, failed or insufficient implementation risks to aggravate the situation of tension. In the Korup National Park in Cameroon, a well designed resettlement scheme collapsed because promises of management authorities to communities were not kept and village members were divided over the destiny of their village. Peoples' dissatisfaction over the resettlement process, ultimately led to several violent incidents between rangers and hunters.

In cases where local opposition groups struggle for autonomy, protected areas policies can even become part of the struggle. In the Ciapas region unpopular state protection measures, including the resettlement of people from parks and the closing down of sawmills, feed local resentment and consequent allegiance to the Zapatista Army for National Liberation. The impending removal of local communities from the Montes Azules region could, according to Dowie (2006), easily spark violent confrontations in the near future.

5. Consequences of conflicts in forested regions

5.1. Humanitarian consequences of uncontrolled logging

Human rights crises and abuses are not only related to war in general but form an intrinsic part of forest exploitation and transition in countries that experienced civil war, such as Cambodia and Liberia, but also in forest zones not affected by civil war in countries such as Indonesia, and Brazil and India. Recently international attention has focussed on Papua New Guinea, where industrial logging is allegedly associated with human rights abuses against indigenous populations and women and the maltreatment of workers (ACF/ CELCOR 2006).

Liberia stands out in terms of human rights abuse surrounding forest exploitation. A recent field study report by a Liberian NGO, Search for Common Ground (2005), sketches a dramatic picture. In six out of seven logging sites, companies made use of private militia and special government forces to control the local population. These allegedly carried out widespread abuse of local peoples rights including harassment, intimidation, torture, detention and in some cases murder. Another report also makes reference to the destruction and theft of goods and expropriation of farms and forest land (SAMFU 2002). The gravest abuses of torture and murder were reported to have occurred in Sinoe Counties and in Grand Bassa, including Buchanan. Logging company militias also reportedly played a broader security role for the Liberian government, through securing forest areas from and engaging in combat with anti-Taylor insurgents (Global Witness 2002).

Similar cases of human rights abuses are reported in Cambodia. Here concessionaires used armed guards, including police and military personnel to guard the concession and to keep people out of the concession, resulting in intimidation of local peoples (Schweithelm and Chanty 2005). Other negative effects on human populations are related to the decline in local livelihood opportunities and increased land pressure and inter-communal conflict as a result of in-migration. The number of people affected by forest conflict in Cambodia from the early 1990's to 2005 is estimated to total 825839 people (USAID/ARD 2006). These estimations are based on the aggregate population of villages located in the vicinity of concessions and protected areas known to have experienced conflict.

Often human rights abuses are executed by the police or military and are neither neither reported nor investigated (Magin et. al. 2001). Exact data therefore are difficult to obtain. The most serious efforts to measure forest related human rights abuses have been undertaken in Indonesia and Brazil. In Indonesia a media review group carried out a press review on forest related conflict and violence, during a one year publishing period preceding February 2003. The surveillance took place in parts of Java, Sumatra and Kalimantan (Jarvie et.al. 2003). Newspapers reported a total of 18 light injuries, 33 serious injuries, 8 deaths, and 110 arrests, mainly as a result of conflicts between communities either state policy/ military and/or logging and pulp mill enterprises (Ibid.). In Brazil the Pastoral Land Commission is a national organisation that works alongside rural workers and small-scale farmers to support rural communities. This commission documents conflicts over land between farmers and land speculators, which often take place along the forest frontier. In 2004 the number of casualties increased to 1,801—nearly twice the 925 recorded in 2002 before President Lula da Silva took office (Magin et. al. 2001).

5.2. Environmental consequences of uncontrolled logging

The lack of control on timber extraction and processing industries affects people also indirectly through environmental disruptions. In situations of war and limited law enforcement, management plans for concessions and processing factories are virtually non-existent or not effectively applied. Environmental disruptions may include immediate issues such as air and water pollution, and gas explosions (often associated with pulp mill industries). Longer term effects of pollution include health problems, reduction in agricultural output and diminishing biodiversity richness. On the island of Sumatra a combination of such immediate health hazards and longer term damages formed the principal motivations for community protests that led to the closure of a pulp mill in 1999 (Happe 2001).

Environmental damages associated with logging operations relate to soil degradation, watershed disruptions and biodiversity loss. The latter may be directly the result of the logging of specific timber species and damage to the undergrowth, but also results from the opening up of roads which invites wildlife hunting and possibly other forms of unsustainable resource extraction. Besides environmental damages incurred by timber industries, local communities and entrepreneurs sometimes try to demonstrate property rights over land in (future) concession areas by setting fire and clearing forest beyond their needs.

Box 7: Environmental damage in main conflict timber countries

Evidence on environmental damage of timber exploitation during civil war in Liberia, Myanmar and Cambodia, usually rests on isolated observations or general statements. To quantify the damage on the environment we could look at the volume of timber trade during the civil war period, the intensity of logging and the total area affected by logging as a percentage of the forest domain.

Figure 2: Timber harvesting during periods of armed conflict in major cases[15]

	Period	*Harvest in million m³/year*	*Average take-out in m³/ha*	*Logged area in ha/ year*	*Production forest in million ha*	**Annual deforestation rate 1990-2000**
Liberia	1997-2003	0.5	75	20.000	1.3	- 1.6
Cambodia	1990-1997	2.5	40-50	56.000	3.5	- 1.3
Myanmar	1999-2006	3	NA	411.000	10.4	- 1.2

In Liberia only a small part of the forest domain seems to have been logged, but at a very high intensity; over seven times the Annual Allowed Cut (AAC) of 10 m3/ha/year in comparable managed concessions. As a result of severe over-cutting Hardcastle (2001) points to the likelihood of severe damage to the forest hydrology in intensively exploited wet forest areas. In Cambodia five times as much timber was produced on an annual basis than in Liberia, evidently affecting a larger area. Over-cutting however has been less in the areas affected: 4-5 times the AAC, which is also set at an average of 10 m3/ha/year. It must further be noted that Cambodia's improved technology allowed a conversion factor of 0.6 compared to 0.33 in Liberia, implying nearly half of the 'collateral damage' assumed for Liberia. Myanmar's annual timber production outstrips that of Cambodia, but takes place over a larger area per year at a presumably lower rate, implying less environmental damage. Contrary to the former, countries much Myanmar's forest is managed and some even in a sustainable manner. According to ITTO (2005b: 168), 52 % of the 9.7 million ha production forest falls under management plans or harvesting schemes, and 291.000 ha of semi natural teak forest can be considered to be managed in a sustainable way. However, intense over-cutting in uncontrolled border areas has been the cause of deforestation, soil erosion, and land slides. According to Global Witness (2003) Kachin province, which at the time supplied China with around 500.000 m3 softwoods and hardwoods a year, has been most devastated.

5.3. Refugees and the forest environment

Humanitarian crises in forested regions have had disastrous effects on the environment, jeopardising local livelihoods and thereby future stability. Environmental damages caused by refugees in the Great Lakes and Mano River region have received international attention in recent years. Less well known examples are the influx of refugees from Guatemala into Mexico's forested Ciapas Region in 1989, and recent settlement of Internally Displaced Persons (IDPs) in Nepalese forest estate lands.

In most cases refugees and IDP's increase the burden on forests resources because these are badly needed to supply shelter, fuel and food. These burning needs usually override goals of sustainable resource management. The fact that many groups turn to their immediate natural environment for survival can be regarded as something negative; however in most cases it is a dire necessity and saves human life (Kalpers 2001). According to Anstey (1994) human reliance on nature during crisis situations may, despite the tragedy of the moment, have long term benefits in the sense that people come to appreciate the true value of natural resources.

The negative environmental impact of refugees is not only a consequence of violent conflict; it can also spark conflicts when local populations feel disaffected because of increasing pressure on their natural environment. This was already observed in Zaire during the middle 1990's (Biswas and Tortajada-Quiroz 1996). It has also become apparent in Eastern Chad where Sudanese Refugees from Darfur entered *en masse* in a zone known for its periodic draughts and limited sources of wood. "Competition for water, firewood and grazing lands led to increased tensions between the refugees and host communities. But very little funding is available to assist the host communities,"

[15] Data derive from the following sources: annual deforestation rates, FAO (2003*) State of the World's Forest*; Production forest area, ITTO (2005) *Sustainable Forest Management in the tropics*; Liberia harvest quantity and intensity estimates are taken from Hardcastle, P.D. (2001) *Proposed sanctions on Liberian timber*. Cambodia harvest quantity is taken from US Embassy (1999) *Report to the Congress on Illegal Logging in Cambodia*; Cambodia logging intensity is taken from ITTO (2005*) Sustainable Forest Management in the tropics*; Myanmar harvest quantity calculated from ITTO (1999, 2004, and 2006) *Annual Review and Assessment of the World Timber Situation*; Myanmar annual harvest area is taken from ITTO (2005) *Sustainable Forest Management* in the tropics. Annual harvest areas for Cambodia and Liberia are calculated from available figures on harvest quantity and intensity.

Jan Egeland, the UN's Emergency Relief Co-ordinator, said in a briefing to the Security Council (IRIN 2006).

Although environmental problems and local tensions are a common phenomenon in forest areas where refugees and IDP are settled, experiences around the world differ greatly. In areas where refugees move at once into alien territories and are settled in large camps, environmental pressure and conflicts with local populations are more likely to occur than when refugees are accommodated by local populations in the area of refuge. In some exceptional circumstances the settlement of refugees in rich forest may reduce environmental damage. This was for example observed when Karen refugees from Thailand found refuge in wildlife sanctuaries in Myanmar and consequently inhibited illegal loggers to enter the areas (Global Witness 2003).

Box 8: Refugees and environmental damage: contrasting experiences

The Virunga volcanoes are in the eastern DRC and the southwest corner of Guinea-Conakry form two drastically contrasting cases of refugee settlement. In the Virunga area around 750.000 people took refuge after the Rwandan Genocide in 2004. Pearce (1994) estimated that in total 300 sq km. of forest in the park was partly or completely deforested and up to 40.000 people entered the park every day, taking out between 410 and 770 tons of forest products, denuding large forest areas. In West Africa population flows from war torn Liberia and Sierra Leone were directed to Guinea-Conakry. Since 1989, a total of 630.000 refugees settled in the south-eastern corner of the country. Environmental impacts of refugee streams on the forest have not been assessed in a systematic way like in DRC. Information is based on isolated field observations that indicate a decrease of wood available for building and domestic energy, a decline in plant and animal species, and a general degradation of the forest habitat (Barry et. al., 1999). However the refugee settlement pattern—not in isolated massive camps but evenly distributed in existing villages of friend and relatives—does suggest that refugees had a much lower adverse impact on the local environment than in the Virunga case (Bishop and Garnett 2000; UNEP 2000).

5.4. Environmental consequences of rebels using the forest as hideout

Forests used as hideouts by rebel groups, are subject to degradation from mineral exploitation hunting, and collection of fuel wood of these groups. When firearms become widely available in times of warfare this often leads to an eruption of wildlife hunting by armed factions but also by individual poachers that have acquired arms of war. Mineral exploitation activities have proven destructive there where chemicals are used to separate precious stones from rocks and dirt. In some cases, however rebels take efforts to protect the forest, and therewith their cover, from large scale exploitation. In Colombia guerrilla groups use landmines and the threat of violence to prevent outsider penetration into forest areas (Alvares 2003).

Direct environmental damage is likely as a result of combat related activities. Armies store and abandon ammunition in natural settings which risks water contamination (Westing 1992). By defending forest strongholds with land mines, local population and domestic and wild animals are in continuous life threatening danger even for many years after the conflict.

A more serious threat is when forests are destructed as a counterinsurgency measure. In many of the countries where the forest has been used as a sanctuary for rebel groups, forest destruction has been a deliberate strategy of state armies, paramilitary groups and rebel opposing villagers to destroy rebel fighting capacities. Several means have been deployed towards this end. In Myanmar the government has supported timber operations to open up deep forested mountainous areas where rebel forces sheltered. In Sierra Leone and Liberia villagers in some areas cut away tracks of forest along roads and around villages to protect themselves against ambush and village intrusion of rebels and criminals.

Most negative damages to forest ecosystems are inflicted through chemical spraying campaigns. In Cambodia, defoliation chemicals are reported to have been used during the days of Khmer Rouge government (ITTO 2005b). In Colombia under the multimillion dollar project “Plan Colombia” the US government funds and supports the Colombian governments to fumigate fields of illicit crops rebel factions thrive on. Spraying chemicals allegedly causes health problems, loss of productive non-illicit-crop areas, ecosystem damage in spraying areas and - interrelated to these - economic impoverishment and migration of farmers (Sum-Ping 2006). In Mexico Zapatista rebels in 2001 suspected the army to use pesticide spaying programs to control the Mediterranean fruit fly as a disguised attempt to destroy the food security of farming communities suspected of harbouring rebel sympathisers. The government, however, maintained that spraying had purely phytosanitary reasons (Pimiento-Chamorro and Hammond 2001).

5.5. War protecting the forest

While the effects of war on forest ecosystems are largely negative, at times war helps to protect forest landscapes. McNeely (2007: 165) shows that among pre-industrial forest societies in the America's Polynesia New Guinea and Africa warfare creates dynamic boundaries between settlement areas of different tribal groups. These boundaries or buffer zone often offer great diversity of species because they are considered too dangerous to venture in for food gathering and hunting and are therefore left alone.

Modern Warfare has in several cases equally rendered large tracks of land 'off limit' to hunting, logging and mining activities and restricted agricultural expansion, settlement and resource trading opportunities, whereby minimising human pressure on the environments. One well known example is the empty starch of no-mans land between north and South Korea which turned into a natural sanctuary, ready for protection. Another frequently cited example is the DRC where the war shut down logging industries in the northeast of the country, preventing an logging operations.

The positive effects of war on biodiversity are accidental side effects of war and not deliberately planned. Furthermore these positive effects in some places or periods in time are quickly nullified when taking into account the negative effect in others. While war may depopulate some areas and allow regeneration of nature there, at the same time large numbers of people are likely to be pushed into ecologically fragile zones where they are forced to rely on natural environments. And while logging may be suspended during war, the real onslaught can usually be expected right afterwards.

6. Policy options to promote sustainable forest management in conflict situations

From the above descriptions we can conclude that forests are linked to conflict in two ways that are quite different. First, violent conflicts can spill over to forests, when refugees and combatants seek sanctuary in forested areas and exploit local resources for provisions and marketable commodities. By providing hideout and resources to armed groups, forests can aggravate and prolong violent conflict. Secondly, forest resources or forest management can also be at the root of conflict. While countries do not generally go to war over forest resources, low intensity, localized conflicts can emerge from local peoples' restricted and unequal access to forest resources and related benefits.

However, these categories in reality easily blend together, or follow up on each-other. Local discontent over forest exploitation and transformation processes can, when widely experienced and mobilised, feed into different forms of civil strife aimed at greater political autonomy, independence, secession or state capture. Furthermore, war-time patterns of natural resource abuse often continue when violent confrontations have ceased, in turn sparking localised conflicts as a result of livelihood threats and limited benefit sharing.

Where violent conflicts spill over to the forest, better forest management will not solve the conflict. However by addressing conflict timber and integrating forest management in international humanitarian operations the negative effect of conflicts on forest may be reduced. Also the application of International Humanitarian Law and other national law can have positive effects through addressing war-time environmental destruction and the looting of properties. Furthermore, forest based commercial activities can help in post-conflict reconstruction and the reintegration of ex-combatants.

In areas with low intensity conflicts around forest exploitation and transformation, improved forest policies have a crucial role in preventing and mitigating conflicts and promoting more sustainable management, *inter alia*, by clarifying, brokering, documenting, enshrining and enforcing rights and responsibilities of different parties involved. Secure access to forests can enhance forest-based livelihoods and provide local communities better bargaining positions *vis a vis* outside interest groups. This can dampen local resentment and prevent the escalation of conflict born out of forest peoples' deprivation.

Finally the conservation sector can contribute to both mitigating the effects of conflict and preventing the outbreak of conflict over forest areas.

6.1. Addressing conflict timber

It is clear that the problem of conflict timber requires a mix of national law enforcement to prevent military engagement in timber operations and international initiatives to prevent such timber to enter consumer countries. This section considers some of the legal and policy options developed in recent years, demonstrating that they are insufficiently capable of halting timber trade from conflict affected countries. Consequently it pays attention to more rigorous forms of control exercised through sanction regimes and military interventions.

International legal and policy instruments

At present there is no international convention or treaty specifically intended to control the trade in illegal and/ or conflict timber, nor is there a permanent international body charged with regulating the trade in conflict commodities, including timber (Price 2007). Tackling conflict timber relies on the application of a patchwork of international mechanisms, schemes and agreements which include company certification schemes, bilateral and international trade agreements, and international environmental treaties and conventions. These legal and policy instruments largely address illegal logging and unsustainable exploitation, but could be useful to tackle the problem of conflict timber trade, considering that it is often illegal and passes through the same networks of buyers, uses the same transport routes and ends up in the same markets. However, these mechanisms, neither alone nor together, offer a tracking regime for monitoring all flows of timber from all countries in the world (Cossin et al. 2003: 150). In practice most of the instruments are not geared to deal with the particular political and logistical realities of war, and are therefore minimally implemented in warring countries or countries emerging from war.

Presently the Convention on International Trade in Endangered Species of Fauna and Flora (CITES) comes closest to implementing a global timber tracking and licensing regime, with almost all countries member.[16] Its ability to ban conflict timber is, however, limited for two main reasons. First CITES has no operator focus and focuses solely on consignment by state parties (Brown and Swails 2006). Consequently it assumes that governments control the trade occurring from their territory, are legitimate sovereign states and operate in the best interests of their countries. This assumption does not hold for many states plagued by armed conflict (Price et al. 2007). Secondly, CITES is designed to uncover the trade in a few threatened species and therefore includes only some commercially interesting timber species. As a result CITES is not designed to identify trade in most high value timbers logged in remote regions beyond state control.

In the absence of a global timber treaty several alternative private and bilateral schemes have been designed and implemented to label and track wood. The Forest Stewardship Council (FSC) is the only voluntary certification scheme that covers tropical countries. However the conditions set by the FSC are usually not attainable for companies operating in tropical forest countries where government oversight has been historically low or absent. As a result only 13 % of 80 million ha of certified forests are in tropical Africa, Asia and Latin America.

Mandatory certification schemes, negotiated between governments that wish to make all timber trade from one country to another legal, are presently being negotiated between the members of the EU and some producers in Africa and Asia. Processes are most advanced in Cameroon, Ghana and Indonesia but have not yet touched down in conflict-ridden countries.

Box 9: A Kimberly process for conflict timber?

More than timber, the role of diamonds in perpetuating war is widely recognised. To control the flow of so called 'blood-diamonds', concerned governments, enterprises and NGO's developed the Kimberly process, a series of meetings which in 2003 led to the adoption of an international certification scheme for diamonds. The Kimberly process has in recent years elevated the issue of conflict resources and succeeded to bring the lion share of the world's diamond trade within its purview. Instead of having an independent monitor and law enforcing body, the Kimberly scheme rests on an innovative system of peer-reviewing whereby participating countries are scrutinized by teams composed of representatives of three other governments and one each from NGO's and industry. Using the threat of expulsion from the scheme, peer reviewers have been successful in forcing countries to comply with Kimberly standards. The success of the Kimberly process generated calls to develop a similar scheme for conflict timber. The attainability of a similar scheme is, however, doubtful. Although timber is more bulky than diamonds, facilitating monitoring functions, its business players are more diverse and end markets more diffuse, severely inhibiting chain of custody tracking. Presently the only scheme for timber that comes close to that of the Kimberly certificate is the Timber Legal Assurance System (TLAS) proposed under the European Union's Forest Law Enforcement, Governance and Trade (FLEGT) initiative, which aims at halting the trade of both illegal and conflict timber. TLAS is negotiated separately for each timber producing country trading with the EU and consists of five components: a legality definition based on national legislation, chain of custody control, certification system and issuing of licences, and independent monitoring (van Midwoud and van Bodegom 2006). So far negotiation processes have only begun in Ghana and Cameroon, making it too early to comment on the effectiveness of the FLEGT/TLAS process. However some critical points can already be raised, using the Kimberly process as comparison. First, the element of independent monitoring could give participating governments the

[16] Until it ratified CITES in 1986, Singapore functioned as a major entrepôt for the wildlife trade, and on-selling from there made it difficult to control the trade.

perception of something being imposed on them, while the scheme in essence was meant to be tailored to the conditions in exporting countries. Second, the scheme's bilateral orientation risks to dissuade countries to participate as they would prize themselves out of the market as a result of an extra financial burden put on the forestry sector. In turn, enterprises may easily migrate to countries that are not included in a comparable scheme, where transaction costs are lower (Brown 2006: 9). Third its inter-governmental character may marginalise other players. So far neither the business sector, nor NGO's have been actively involved in the negotiations on TLAS (van Midwoud and van Bodegom 2006). Their involvement will be critical in raising consumer interests in the label for certified wood produced under the scheme.

A final international, and more *ad hoc*, instrument that has become popular in recent years to improve forest law enforcement is Independent Forest Monitoring (IFM) of forestry activities and state controlling agencies, by third party non- or semi-governmental organisations. There are several forms of Monitoring. The most well known example is the Independent Observer status Global Witness fulfilled as part of donor aid conditionality in Cameroon and Cambodia. Its role in both countries is considered to have been highly successful in raising international awareness about the issue of illegal logging and conflict timber (in Cambodia). However, in both countries the advocacy role and external imposition generated quite some 'bureaucratic' resistance, in turn limiting the observer to institutionalise its role and really bring about change within forestry administrations (Brown 2005). Alternatively in Indonesia forestry administrations solicit for information gathered by two national environmental NGO's who have over time and without any formal agreement with the government taken on the role of Independent Monitor. Another alternative form of monitoring is the system of Multi-sectoral Forest Protection Committees (MFPC) in the Philippines, which consist of members from various government organizations, and the civil society. The committees are the monitoring arm or the Ministry but tap into the independent networks of its civil society members to gather information about forest crimes.

It is impossible to suggest what form of monitoring is more effective, as security and governance conditions differ greatly between countries. A more cooperative model may be preferred in situations where the government shows increasing political will to clean-up its forestry sector. However in countries where armed conflicts rage and where the military and state agencies benefit from illegal logging operations too close cooperation with the government may prevent the monitor to detect crimes and bring out the information.

International policing of conflict timber trade

Trade and transparency initiatives mentioned above demand a certain level of goodwill on the side of timber producing countries to either engage collaborative schemes, or permit external interference in forestry and financial sectors. Such initiatives risk not to be adopted in countries where war is waging. Here governments are often fragmented or absent. In some extreme cases governments will denounce any international regulatory systems. In such cases back-stop measures, such as trade boycotts, the freezing of bank accounts and criminal prosecution are needed to block conflict timber trade and traders.

UN agencies have in recent years effectively intervened to halt the trade of conflict timber through a mixture of commodity sanctions[17] and 'smart sanctions'. Total export bans have been imposed twice, one on Liberian timber in 2003, and one on Cambodian timber in 1992. These intend to stop all international trade of round logs from these countries. The Cambodian ban has often been evaded through exports of processed wood but is held to have contributed significantly to the collapse of the Khmer Rouge (Kaimowitz 2005). In Liberia the timber ban was put into effect the same year that Charles Taylor was forced to step down, making it hard to assess its effectiveness (Ibid.).

Besides overall bans on trade in certain goods, the UN has experimented with so called smart sanctions, including travel bans and asset freezing of specific companies and individuals that are identified as party to illicit resource extraction and trade. The advantage of smart sanctions is that they are targeted to those actors most deeply involved in conflict resource trade, rather than putting whole industries out of operation, hence also suppressing legitimate activities. For Liberia, for instance, four offenders in the timber and arms trade business are on the UN travel ban list for

[17] Under Article 41, Chapter VII, of the UN Charter, the Security Council may impose restrictions on economic
relations by UN members with targeted countries or groups "to maintain or restore international peace and security." Once this decision has been taken according to the voting rules of the Security Council, UN member states are obliged to accept and carry it out in accordance with the UN Charter (Article 25, Chapter V).

providing financial and military support to the Revolutionary United Front (RUF) in Sierra Leone's civil war (Blondel 2004).

Although UN sanctions are an important tool for addressing the trade of conflict commodities, the UN process still faces a number of challenges. The effectiveness of sanctions can be eroded by systematic violation by smugglers and ineffective enforcement. Another obstacle is a lack of political will of countries within the UN to install and enforce sanctions. Vested business interests of western nations in Liberia's timber industry explain why it has taken more than two years to agree on sanction while evidence of conflict timber was already abundantly available in 2001.

The slowness of action through the UN can further be explained by the fact that policy responses are initiated on an *ad hoc* basis through UNSC panels of experts that deal with each commodity and instance of misuse separately. To make the UN system operate more effectively it has often been recommended that its members should adopt a common definition of conflict resources, to be incorporated into a UN Security Council or General Assembly resolution (Alley 2006, Price et al 2007, and British Commission for Africa 2005). International sanction measures can then kick into action as soon as convincing evidence is available. To support this, the UN could explore the establishment of a permanent and better funded office with standing capacity to investigate and sanction cases of conflict commodities and the illicit resource exploitation in the context of armed conflict.

Besides the UN, regional and unilateral sanctions have been imposed to curb the trade in conflict commodities. The following are relevant to timber trade: ECOWAS economic sanctions on areas controlled by Charles Taylor in 1993; US import sanctions against products from Myanmar imposed in 1997; Thai border closure for Cambodian timber in 1997; and China's border closure for Myanmar timber resources in 2006.

Although bans, border closures and sanctions can significantly reduce the trade in conflict timber, on the ground control is often necessary to enforce implementation. International and regional peacekeeping forces are often the only operating law enforcement agencies in countries devastated by civil war, such as DRC, Liberia and Sierra Leone. They can be effective in halting the trade in conflict resources if units have sufficient capacity and broad enough mandates to penetrate interior border regions and control other shipping points from where resources leave the country.

Unfortunately this is often not the case. Military observers from the UN Transitional Authority in Cambodia were deployed at key cross-border points to monitor a ban on log exports. However it proved unable to control timber exports to Thailand in 1996, as a result of difficult access to closed frontier forest. Also ECOMOG troops in Liberia encountered problems when trying to block the port of Buchanan from which the NPFL exported many resources, including timber. These were related to the weakness of regional state institutions to perform their regulatory functions, and political divisions among ECOWAS member states on what course of action to take (Aning 2002). These sporadic cases of attempts to control the trade in conflict resources learn that natural resource monitoring should be considered a key task of peacekeeping missions, with sufficient means and manpower allocated to carry out missions in difficult terrain.

6.2. Addressing environmental damage though international (humanitarian) law

International humanitarian Law and the environment

Besides environment specific agreements, treaties and conventions International Humanitarian Law can help to mitigate the negative environmental effects of armed conflict on forests, by offering guidelines to armed forces, being applied in post-conflict legal cases, and setting universal/ moral codes of conduct. IHL is based on country ratified treaties and conventions developed within the UN system and under the Geneva "Red Cross" Convention revisions. These all fall under the term "soft law", which does not impose binding obligations on states.

There are two major international legal instruments in IHL that make explicit reference to the environment:

- *Environmental Modification Convention (1976)* or ENMOD[18] which obliges parties to the convention not to "engage in military or any other hostile use of environmental modification techniques having widespread, long-lasting or severe effects as the means of destruction, damage or injury to any other State Party"(Art 2).
- *Additional protocol I and II to the Geneva Convention (1977)*, which stipulate that: "It is prohibited to employ methods or means of warfare which are intended, or may be

[18] Convention on the Prohibition of Military or Any Other hostile Use of Environmental Modification Techniques.

expected, to cause widespread, long-term and severe damage to the natural environment" (Art. 55), and that "care shall be taken in warfare to protect the natural environment against widespread, long-term, and damage" (Art 35).

A first shared problem in both conventions is the difficulty of establishing or knowing long-term damage of an attack during military operations. Scientists let alone those that launch an attack cannot always foresee the long-term effect on the environment (Sambeek 2001). Schmitt (2003) further comments that also the criteria of widespread and severe damage are not uniformly defined in both conventions, leaving room for auto-interpretation for those engaged in the battlefield. A final difficulty that presents itself in ENMOD convention—but not in Additional Protocol I which establishes an absolute ceiling of permissible destruction—is that of proportionality which invites problems of interpretation as it relies on the value assigned to the environment in relation to military necessity. At the same time the lack of proportionality in Additional Protocol 1, art 35, has likewise been criticized. Richards and Schmitt (2002) argue that it could allow environmental concerns to prevail over humanitarian ones in cases of defensive/ humanitarian military action. The question whether or not and how to define proportionality of nature destruction in relation to anthropocentric values of military necessity and human health and protection, is one yet to be clarified.

A second set of legal instruments that intends to mitigate the effect of warfare on the environment are those referring to weapons of war.

- *Convention on Conventional Weapons (1980)* [19], which states that states that: "It is prohibited to make forests or other kinds of plant cover the object of attack by incendiary weapons except when such natural elements are used to cover, conceal or camouflage combatants or other military objectives, or are themselves military objectives" (Art. 2).
- *The Chemical Weapons Convention* (1993)[20] bans the use of various chemical substances but excludes herbicides.[21]

Although referring to nature protection and forests in particular, the Weapons Convention has limited significance because in reality forest are attacked precisely when they are being used as cover or camouflage (Dinstein 2001).

A last category of international law does not focus directly on the environment but aims to provide for the protection of civilians and civilian property in times of war.

- *The Hague (IV) Regulations* (1907)[22], disallows the destruction or seizure of the "enemy's property, unless such destruction or seizure be imperatively demanded by the necessities of war" (art. 23). [23] In addition it obliges an occupying power to comply with the rules of usufruct over properties, including public buildings, real estate, forests, and agricultural estates (art 55).
- *The Fourth Geneva Convention* (1949)[24] prohibit pillage, which can generally be defined as the act of taking property or money in war situations by the use or threat of use of violence (art. 33).

The right of usufruct means that an occupying power may reasonably exploit natural resources in occupied territory, but may not waste, destroy, or permanently alter them. It is a matter of debate over which resources reasonable usufruct can be exercised. Agriculture for instance does not seriously alter the existing resource base as it concerns renewable resources, but the extraction oil, diamond and arguably also timber does.

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[19] Convention on Prohibitions or Restrictions of the Use of Certain Conventional Weapons Which May Be Deemed to Be Excessive Injurious or to Have Indiscriminate Effects.
[20] Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction.
[21] The US could not agree a herbicide ban because it would provide ammunition to those who argue that its massive defoliation programme in Vietnam breached international law; and, secondly, because herbicides continued to be necessary to provide clear areas around defensive perimeters http://www.isisuk.demon.co.uk/0811/isis/uk/regpapers/no75.html. The United states have formally renounced the (Annotated Supplement to the Commander's Handbook on the Law of Operations) the first use of herbicides in time of armed conflict.
[22] Hague Convention (IV) Respecting the Laws and Customs of War on Land.
[23] Additional Protocol I goes a step further by outlawing destruction of targets that are indispensable to the survival of civilian populations, like such as food-stuffs, agricultural areas for the production of food-stuffs, crops, livestock, drinking water installations and supplies and irrigation works[23], even if this would bring military gain (art. 54, 2)
[24] Geneva Convention (IV) Relative to the Protection of Civilian Persons in Time of War.

Application of International Humanitarian Law

The ENMOD convention was partly a response to global outrage at the spraying of damaging chemicals during the Vietnam War.[25] However the use of herbicides for defoliation did not come within the purview of the prohibitions of the ENMOD convention. While it was affirmed that the use of herbicides can be equated with environmental modification, it's widespread, long term or severe damage to the eco-system could not be sufficiently established. Minor cases of herbicide use, like the one in Colombia's war on drugs, are unlikely to be responded to by the international community, using ENMOD as legal reference. In fact during the quarter century ENMOD has existed, no state party has been formally accused of a violation.

The same goes for the Additional Protocols to the Geneva Convention. A ruling by the ICJ in 1996 on nuclear weapons[26] reflects the current state of affairs in international customary law, by stating that "the court does not consider that the [environmental protection] treaties in question could have intended to deprive a state of the exercise of its right of self-defence under international law because of its obligations to protect the environment", and that "Respect for the environment is one of the elements that go to assessing whether an action is in conformity with the principles of necessity and proportionality."

In practice none of the environment specific treaties, or any of the weapons conventions, have been applied to legally address environmental destruction as a battle strategy. However on the issue of war time looting of natural resources progress has been made through a 2005 decision of the International Court of Justice that ruled that Uganda violated the sovereignty of the Democratic Republic of Congo, plundered its natural resources and was responsible for human rights abuses when it sent its troops there. The judgement was, *inter alia*, based on treaty law under The Hague (VI) Regulations and the fourth Geneva convention of 1949 (art 33) which prohibit pillage (McGuinness 2006). Besides the ICJ, International Criminal Court (ICC) can potentially pursue individuals who have committed crimes during warfare. The crimes defined in the 1998 *Rome Statute* include seizing "the enemy's property unless such seizure be imperatively demanded by the necessities of war" and "pillaging a town or place."[27] Presently the court is planning to investigate companies suspected of dealing diamonds originating in the Democratic Republic of the Congo that have been used to finance war.[28]

Both international courts have in recent years started to address resource looting. A limitation of both courts is that their jurisdiction is limited to conflicts of an interstate or internationalised character. The ICJ settles legal disputes submitted to it by states, concerning other states. The court is not used by civil society actors to hold the state accountable for breaches of international law. The ICC statute originally intended to target war crimes committed by individuals in both international and non-international armed conflict. However the final statute provides only for international armed conflict (Sambeek 2000: 148). A large share of war-time natural resource abuses can, beforehand, not be considered by the two international courts because they are committed in events of civil war such as conflict timber cases of Myanmar, Cambodia, and Liberia. Another weakness of the ICC is that it does not sufficiently cover corporate liability. Although the Rome Statute does include accomplice liability of economic actors, such as registered businesses, facilitating others to commit crimes, it requires that such complicity should be intentional (art 25 c, d). This requirement makes it unlikely that the article will be adopted in cases of corporate complicity in conflict commodity trade.

National Legislation

The scope of international legislation and judiciary systems is still rather limited when in comes to legally prosecuting natural resource abusers during armed conflict. National legislation on subjects of criminal activities and human rights abuses—often associated with the trade in conflict commodities—offer additional prospects, particularly in terms of addressing individual and corporate crimes committed by national actors overseas. Indonesia's inclusion of forest crime as a predicate offence under anti-money laundering legislating, for example, offers a significant opportunity to freeze financial transactions that are behind illegal timber operations. In a number of European

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[25] In South Vietnam alone, herbicide applications, bulldozing, and intensive conventional and incendiary bombing stripped perhaps 5,700 square kilometres entirely of their forest cover and heavily damaged an additional 56,000 square kilometres of forest land. Together, this comes to some 59 per cent of the south's prewar forest cover (Westing 1976: 9).

[26] The Court was asked to examine nuclear weapons vis à vis international law protecting the environment. See: International Court of Justice. 1996. Paragraph 30.

[27] Rome Statute of the International Criminal Court.

[28] The ICC also considers as a war crime "Intentionally launching an attack in the knowledge that such attack will cause incidental loss of life or injury to civilians or damage civilian objects or widespread, long term and severe damage to the natural environment which would be clearly excessive in relation to the concrete and direct overall military advantage anticipated" (art. 37). Considering the difficulty in establishing these conditions in previous cases renders application of this article unlikely.

countries individuals have in recent years been faced with charges of criminal activities committed overseas and in relation to notably diamond trading activities, including money laundering, tax evasion, arms trafficking and forgery. Some countries have adopted specific legislation to be able to file extraterritorial lawsuits against multinational companies operating overseas. For example in the United States the Alien Tort Claims Act allows companies to be sued for acts committed overseas that violate the law of nations or a treaty of the United States (Le Billon 2003).[29]

6.3. Forest management in peace building activities

Forests in peace negotiations

The instrumental role of the forest in conflict for both government and opposition parties calls for their inclusion in peace-negotiations, for the sake of peace-building and for the sake of sustainable forest management. The granting of forests management rights to opposition groups may form an important part of their accommodation in a peace agreement. Forest related considerations have been included in peace talks in the Atlantic Coast of Nicaragua; Aceh and West Papua, Indonesia; Mindanao, the Philippines; the Jaffna peninsula, Sri Lanka; and various regions in Myanmar and Colombia, for example (Kaimowitz 2005: 120-21).

The inclusion of forest management in peace-negotiations is, however, no guarantee for their sustainable management. Where management and exploitation rights are granted to former military leaders and ex-combatants, as has been the case in Myanmar and Nicaragua, the new situation of relative stability led to uncontrolled logging and further deprivation of forest dependent indigenous communities. The challenge in such contexts is to carry considerations related to local livelihoods and nature conservation into early stages of peace negotiations and reconstruction activities. International peacekeeping interventions have over recent years started developing strategies to include such considerations in their dealings with their military counterparts. One example is the Dutch Civil Military Cooperation (CIMIC) strategy that gives Dutch peacekeeping missions a central task to enable non-military aid and development organisation to do their work in the areas of intervention. Dutch peacekeepers negotiate with the local military leadership on behalf of these institutions which are not able to communicate and advance their interests on their own account.

Forests in refugee situations

Following consecutive refugee crises in the Great Lakes region the United Nations High Commission for Refugees (UNHCR) began developing official guidelines to spare the environment as much as possible during its operations. Critical elements in regulating interactions between refugees and returnees and the forests, are according to the UNHCR to (1) assess what can be supplied, and from where; (2) control the level of resources extracted, while at the same time renewing or replanting others; and, (3) to draw up plans in a participatory manner to ensure that the activities being undertaken respond in an appropriate manner to the perceived needs of the affected people, including refugees, IDP's and host communities and administrations (UNHCR 2005).

Box 10: Environmental projects in complex refugee situations

In conjunction with UNHCR interventions, a number of programmes have successfully been carried out by international donor organisations and national administrations and NGO's to mitigate the damage to forest and other environmental resources. The German Technical Development Cooperation Agency (GTZ) can be considered a forerunner in this respect. In 1994 it started the Rational Energy Supply, Conservation, Utilisation and Education, or RESCUE, project in Eastern Kenya to reduce the negative environmental impact of Somali refugees. Due to a lack of refugees' lack of capacity in sustainable resource management, the project embarked on a system of incentives, comprised of different types of wood burning stoves that were provided to refugees in return for their cooperation in tree planting schemes. The project resulted in the planting of 650.000 trees with a 70 % survival rate, to be used for firewood, fodder, fruits and building material (UNHCR 2002).

A good example of a project ran by National forest administration is Ivory Coast where from 1990 to 1994, 325.000 Liberian refugees settled in a 25 km wide strip along the two countries boundary. The Ivôrian forestry department, SODEFOR (Société pour le Développement des Forêts) used refugees to rehabilitate a large part of the degraded Haute Dodo Reserve, by inviting them to cultivate under the '*taungya*' system; an agro-forestry system that permits farming between rows of newly planted trees. In a pilot scheme with UNHCR, SODEFOR 50 ha of land was planted with a local tree species used in construction and rice and maize in between, with another 150 ha planned for within 10 years (Ibid.)

From humanitarian intervention to post conflict reconstruction

[29] Calls have been made to create more far-reaching and updated legislation, in particular, the U.S. proposal for a Foreign Human Rights Abuse Act (Saunders 2001, in LeBillon 2003: 239).

Realising that post-conflict situations often accelerate the unsustainable and illegal extraction of timber and other forest product, improved governance of the sector is crucial to assure its contribution post-war reconstruction and long-term sustainable growth.

Improved governance implies that the system of allocating and managing forestry concessions should be drastically reformed in countries emerging from war. Key to such reforms are the implementation of transparent mechanisms for revenue collection, allocation and sharing, and the and implementation of forest management plans that include social and environmental criteria and indicators of sustainability Such management plans may also include companies' contributions to local infrastructures (roads, schools hospitals etc.) and the requirement of creating employment for local populations in the timber exploitation and associated industries like sawing mills, paper factories, furniture making etc.

Box 11: Concessionary reform in Bolivia

In recent years Bolivia has been able to create clarity in tax collection and widely implement forest management plans, whereby demonstrating that countries with limited financial means can push through significant forestry sector reforms while remaining a competitive player on the world market. By setting the concession fee at $ 1 per ha, tax collection and the monitoring of compliance in Bolivia was made easy to execute, which diminished incidences of corruption or arbitrariness in determining concession fees (Contreras-Hermosilla 2002). Bolivia's legal requirement of forest management plans fitted those applied in independent certification schemes. As a result a large number of operators were motivated to bear the cost of reforms that would simultaneously achieve national verification of legality and an international certification label, making Bolivia the certification leader in the developing world with about a million hectares of forests already certified as being under sustainable forest management (Contreras-Hermosilla and Vargas, 2002).

A second aspect of improved governance is law enforcement. In countries emerging from war and those experiencing violent conflicts in forest areas forestry administrations are not likely to have the capacities to carry out controlling functions over remote and vast geographical areas where forestry activities take place and therefore often rely on police and armed forces. Strict law enforcement by in such cases can contribute to halting destructive and irresponsive logging practices, but in many countries it has also proven to harm forest dwellers that rely on forest resources they do not officially own, while favouring bigger operators that have the financial means to comply with legal requirements and to pass controls. Institutional reform of forestry and law enforcement agencies, alternative controlling mechanisms and independent observation of controlling agencies are ways achieve more equity in law enforcement operations. Forest sector reform is high on the reconstruction agenda of many countries emerging from war, including Cambodia, Liberia and the Democratic Republic of Congo.

However it is evident that forestry sector reforms are not designed and implemented over night but that this may take many years, particularly in countries where governance structures have been severely weakened or destroyed. Considering the fact that industrial logging in such contexts easily risks being inconsistent with sustainable forest management and trampling on local people's rights, there is a specific need in these countries to develop non-industrial forest based activities that can deliver immediate benefits, e.g. local income, productive forest lands and rural employment. Such activities may include reforestation programmes, individual tree crop planting, and plantation forestry and forest conservation and rehabilitation projects. In Vietnam for example the international donors invested heavily in post war forest rehabilitation projects, which offered employment for many years to poor rural families and turned devastated forest lands back into productive areas. In addition to helping to revive rural communities at large, forest based activities could also be specifically linked to demobilisation and reintegration programmes for ex combatants. In West Africa, donors increasingly realise the potential of the agro-forestry projects in this respect.

Box 12: Ex-combatants and forestry activities

Alternative employment opportunities for ex-combatants in Liberia and Sierra Leone are considered crucial to prevent them to take up arms again and look for looting opportunities in zones of instability in neighbouring Ivory Coast and Guinea. Extractive industries, of gold, diamonds and timber, may employ some people, but they also risk being infiltrated by former conflict players. On the other hand traditional (largely) subsistence farming is often not a preferred area of occupation because of the rigid customary authority structures that still prevail and inhibit young peoples' access to land (Archibald et al. 2005). Commercially oriented plantation and agro farming enterprises—for palm oil and rubber notably—form an alternative sector though which ex-combatants can gain an income and demonstrate social worth. Richards (2005: 32) mentions how several contingents of former Revolutionary United Front (RUF) fighters have remained together and moved into cooperative agricultural development. One of these groups rehabilitated swampland that was destroyed by alluvial diamond mining.

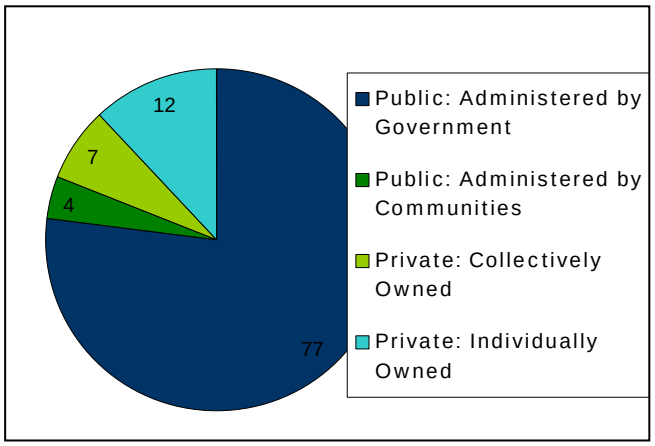
6.4. Mediating conflict through local forest management

Devolution of rights to reduce tensions and enhance sustainability

In response to tensions between formal state and informal community ownership over forests in many countries around the world have been designed and implemented policies to devolve forest management from central state institutions towards local administrations and directly to community groups. At times devolution implies actual transfer of ownership—as a legal status this can be equated with privately property. In most instances, however devolution implies that forests are set aside to be managed and used by local administrations and communities while remaining under formal state ownership.

Presently communities exercise legally recognised control over 11 % of the forest of twenty-four of the top 30 forested countries in the world (White and Martin 2002: 6) and 22% of the forest in developing countries (Contreras-Hermosilla and Fay 2005). Despite a low total forest area under community control it is safe to say that over the last decade and a half community ownership and control of forest lands doubled, and is likely to double again by 2020 (White et al. 2007). Already communities in developing countries own about three times the area owned by private individuals and corporations (Contreras-Hermosilla, and Fay 2005: 16).

Figure 3: Percentages of the world's forest under community ownership and control (drawn from White 2007)



The larger share of community owned forest land is located in Latin America. In Guatemala and Mexico communities legally own 50 % of the total forest area of both countries. Of a more recent date are numerous indigenous reserves established in state reserved and non-owned state forests in South American countries such as Bolivia, Peru, Brazil and Venezuela. In Africa governments have only recently initiated legal reforms that allow communities to officially appropriate forest lands.[30] The same goes for South and Southeast Asian countries, which have strong traditions of state control of forests despite the fact that many communities rely on them. However legal recognition of community claims has advanced in recent years in countries like Nepal, India and Indonesia. In China on the other hand communities have authority over more than 50 % of the forest that is recognised as collective forest (White and Martin 2002). In North America, Europe and Russia very little forest is *de facto* managed as community based property, which translated in low percentages of legally recognised community managed forest.

The clarification and redistribution of rights over forest are important conditions for social stability and sustainable management. Formal recognitions of traditions, customs, rules, laws and policies dealing with issues of access to, and use and management of forest resources can bring order and predictability in situations of competing interests (Nielsen 2003). Local forest management institutions can also provide a platform by which community groups can address natural resource conflicts (Ochieng Odhiambo 1996). Besides these political benefits, community ownership and control over forest is believed to have a positive effect on local economic growth and investment, whereby possibly dampening conflicts born out of deprivation. There is also growing evidence that

[30] One can argue that Tanzania's post colonial and socialist inspired communal production system, or *Ujamaa*, legally recognised common property regimes. However, in reality 'universal' implementation of the system lead to the neglect of actual property relations that appeared to be more complex and overlapping than assumed in the model.

increased local ownership of forest translates into more sustainable use of the forest according to indigenous management institutions (Muam 1999; White and Martin 2002). Furthermore empowered forest dependent local communities may prove better able to fence off forest resources from outside exploiters (Contreras-Hermosilla 2002).

Box 13: Positive experiences of devolving rights over forest

The devolution of rights to local communities has in many parts of the world proved to enhance both sustainable resource use and development and support democratic governance of natural resources. In the Chimanes forest reserve of Bolivia commercial logging opportunities created conflicts between indigenous communities and logging enterprises (Lehm 1994). Through the mediation of the local Catholic Church two indigenous territories were established inside the reserve, without changing its formal protection purpose. Indigenous access to the reserves appears to stay within sustainable limits and it inhibits penetration by loggers, whereby serving state protection measures (Bruce 1999).

In Nusa Tenggara, Indonesia, communities felt resented as a result of logging restrictions that were applied to them while commercial logging of mahogany continued. To solve this conflicts the local forestry administration agreed to allow small land concessions for community members and continuation of agro-forestry activities in the buffer zones of industrial concessions. In exchange for increased tenure security, the community assumed responsibility for protecting the forest from illegal logging (Forest Trends 2006).

In Nepal community forestry is widely recognised to have led to positive outcomes for rural development. Since the early 1990s Community Forest User Groups (CFUG) were set up nationwide, covering a quarter of the National Forest Estate. During the political turmoil of recent years CFUG's proved to be "among the few functioning democratic institutions in Nepal" (Schweithelm et. al. 2006). On an economic level CFUG were able to generate close to four times as much revenue as the national forest department generated the forests it manages. In addition community forestry has a positive impact on the most vulnerable through the delivery of fuel wood, poles, fodder, grass, and leaf litter (Pokharel, B.K. and D. Paudel 2005).

Devolution no panacea for social tranquillity

While in many cases positive outcomes have resulted from the devolution of rights and greater participation of local communities in forest management, other cases show that many difficulties may arise when devolving rights and establishing local management institutions. Literature on decentralisation of natural resource management points to a number of conflicts that may emerge in the process of devolution.

First, there is a risk of vertical conflicts arising between communities and more powerful stakeholders. While forestry and land administrations may prove receptive to forest communities' claims to devolve ownership rights to them, such legal recognition alone is often not sufficient to acquire actual access. Entrenched rights of state authorities and private enterprises often overrule rights granted to local communities. This for example occurs when terrestrial rights are devolved to communities while the rights to subsoil assets remain vested in the hands of the ministry of mining, which in turn can allocate these rights in the form of concessions to mining companies. In such situations where central state authorities keep control of key decisions, there is little chance that a sense of autonomy and responsible management can take root at the community level. White et al (2007) estimate that although there may be significant progress in recognition of local ownership, less progress can be expected on reforms of regulations that control the actual access and use of forest resources.

Second, devolution of rights to communities can be accompanied with inter-community struggles over access to resources, particularly when territorial boundaries are unclear and when communities are diffused. In many countries decentralised forest management unleashes struggles over 'belonging', whereby the implementation of local forest management arouses struggles between different territorial, ethnic and family groups over the community level in which management should be vested.

Third there are intra-community struggles involved in devolution processes. Elite capture is a reoccurring issue in areas where rights to high value resources like timber are decentralised. This means that community forestry schemes are initiated and monopolised by a few local elites that are well connected to the bureaucratic structures through which the process is negotiated, and to business players that extract and trade local resources. Ribot (2002) describes a case in Eastern Senegal where, in contradiction to community interests, local chiefs allow urban based wood-fuel merchants and migrant wood cutters to operate in community forest areas, in return for commercial benefits and social respect this yields them. Villagers resorted to rigorous means of blocking all access roads into the forest to impede wood cutting and trade to continue.

Another type of intra-community conflict arises when the recognition of customary property arrangements imply the denial of basic rights of certain community members. Mclain (1993, in Bruce 1999: 72) argues that local forest management systems often do not include women, youths and former slaves in decision making. The protection of their rights in cases of conflicting interests are often not sufficiently guaranteed under a common property regime and additional (state based) legal protection may be provided to achieve social justice. Illustrative is a case in Sierra Leone where a British funded rural development project in 1999-2000 reinstated despotic chieftaincy systems to the detriment of young farm entrepreneurs. In a report prepared by the International Crisis Group (2004, referring to Fanthrope et. al. 2002) it is written that "according to its own internal evaluations, the result was disastrous and helped to recreate the conditions of injustice that contributed to the war in the first place."

Working a way through conflict

The road to devolution of rights may be lead to conflictual outcomes at times, but in many cases these conflicts are worth going through to achieve a more equitable *status-quo* between states, communities and the private sector. Conflicts are almost inherent to processes of realignment of rights. The question therefore is not so much how such conflicts can be avoided or prevented, but how they can be better anticipated and managed. Conflict management requires establishing conflict capabilities among implicated institutions to address the conflict constructively. Such institutional capabilities are gradually taking root in many countries that have gone through processes of devolution of resource management. In cases where conflict management capabilities are build at state administrative and local community levels the trajectory of conflict may not be as intensive as before, and above defined threats to social stability may be overcome.

The Philippines forms a good example of how conflict management has become integrated in national policies to decentralise natural resource management. In 1992 the government formed a special office tasked with managing and overseeing peace-building components in government policies; the Office of the Presidential Adviser on the Peace Process (OPAPP). This office has in recent years helped the Department of Environment and Natural Resources (DENR) to reduce conflicts accompanying its programme to facilitate legal recognition of territories occupied by indigenous peoples (Rambaldi et al. 2002). Prior to certification it facilitated consultations with local communities in order to identify and trade-off diverging interests. In 11 pilot sites the same office started a programme to support alternative community based dispute resolution processes based on indigenous knowledge, systems and practices.

Incidentally, like in the Philippines case, the central government gives the impetus to devolve conflict management capacities to local community actors. In many more cases such capacities evolve in a more haphazard manner and are driven by a multitude of players, including international donors, national NGO's, churches and research organisations. Although the approaches and outcomes vary from one case to another, these initiatives usually insist on avoiding the formal justice systems that often appears to be costly, slow, and complex, making it difficult for poor people to access. Instead they rely on alternative informal forms of negotiation that are less costly and easily accessible. Conflict facilitation, mediation or arbitration usually occurs by a third party whose presence and authority conflict parties agree to beforehand, and which can draw on combination of statutory law and customary legal principles and ways of settling matters.

Box 14: Third party mediation in forest disputes, the CIFOR's ACM experience

Mediation as an alternative dispute resolution mechanism relies on third party intervention. The third party may be a customary institution operating within a common property regime, but may also be an outside institution like an NGO or government agency. According to many definitions of mediation the third party is supposed to be neutral. However increasingly practitioners have realised that social ties between mediator and disputants can foster positive outcomes by building trust and focussing on improving relations rather than strictly settling 'the issue'. In fact local customary mediation practices and principles are scaled up to inspire and be applied in mediation exercises that involve multiple institutions and social actors. CIFOR's research on Adaptive Collaborative Management (ACM) illustrated such approach to third party mediation. Rather than quickly forging an agreement between competing interest groups, ACM focused on strengthening processes of collaboration, information exchange, and communication among stakeholders and seeking out opportunities to learn collectively about the impacts of their actions (Jum et. al. 2003). In several project sites the approach has proven to deliver practical solutions to burning resource conflicts such as the development of multi-use buffer zones and inter-village land exchange. Moreover, in many of the sites collaborative resource management committees that were created during project implementation are still operational and deal with complex multi-stakeholder conflicts over forest access and benefits.

6.5. Mitigating conflicts and the effects of conflicts through conservation

In recent years conservation agencies have recognised and stressed the multiple ways in which conservation can mitigate the negative effects of conflict on biodiversity and contribute to peace and development in their areas of intervention. A central concept that grasps this potential is that of peace parks. Peace parks are defined by the International Union for the Conservation of Nature (IUCN) as: "trans-boundary protected areas that are formally dedicated to the protection and maintenance of biological diversity and of natural and associated cultural resources, and to the promotion of peace and cooperation". Trans-boundary does not mean that peace parks necessarily straddle international country boundaries. They may also straddle borders between, "sub-national units such as provinces and regions, autonomous areas and or areas beyond the limits of national sovereignty or jurisdiction" (Sandwith et al. 2001).

The ways in which peace parks are believed to be able to contribute to peace and security are numerous. Collaboration between countries in nature conservation is first of all believed to be able to foster harmonious relations between participating countries in general (Shine 1997; Katerere et al. 2001; Hanks 2002).[31] Secondly, peace is foreseen through economic development of the communities living in or around the protected area who are often poor and remote from the capital. This can result from increased incomes derived from tourism. Trans-boundary cooperation may also allow for more open border policies and better and equally accessible markets (Amerom and Büscher 2005), while at the same time it may put a halt to conflict generating illegal/criminal smuggling and resource extraction. Thirdly, conservation initiatives can actively intervene in and mitigate local level conflicts between competing user groups, and promote equitable resource access in and around their areas of operation (van der Linde et al. 2001). It is assumed that international borders have separated and estranged local communities from each other, leading to social conflict. Their joint participation in trans-boundary initiatives can help them to improve their communication, and build mutual trust and commitment needed to solve disputes.

In the context of forest and conflict and the cases included in this report, several conservation activities continued under difficult security circumstances and thus succeeded to mitigate negative impacts of conflict and associated lawlessness on forest environments. Some took place in conjunction with (trans-boundary) protected area management. On the African continent, Gorilla Conservation[32] in the Virunga Volcanoes area continued despite political turmoil of the 1990's and recently triggered international collaboration between the DRC, Rwanda and Uganda to develop plans for a trans-frontier protected area (Lanjouw 2003)[33]. Blom (2005) refers to the work of small conservation projects in Colombia (Fundación Biodiversidad del Trópico) and Myanmar (the Pan Kachin Development Society) that intervened on behalf of forest and forest dependent people during periods of high insecurity, during which the central state Protected Area management system had completely broken down. In Myanmar, conservation activities along the Chinese Border have recently been revived with the support of the Wildlife Conservation Society, despite the ever lingering difficulties with insurgent groups.

Box 15: Maintaining a presence in armed conflict situations

In a publication devoted to the issue of conservation during armed conflict, Slambaugh et al. (2001) define that one of the most important challenges for conservation organizations is maintaining a presence during armed conflict. By maintaining a presence organisations are able to protect investments in nature conservation, build credibility vis-à-vis administrations and local communities, promote better governance (for example, through advocacy, neutral facilitation, or watchdog efforts) and put sustainable natural resource management and nature protection immediately on the political agenda in the post conflict transition phase. Whether conservation organisations can physically remain present does not only rely on how severe the crisis is. In extreme conflict situations in the Eastern DRC and Rwanda the presence of project staff was assured as a result of the dedication of national staff and their experience to work under conflict conditions, alliance with local NGO's and supporting structures in neighbouring countries to facilitate ongoing communication and provide financial and logistic support. A final aspect that proved crucial was the strictly neutral position which permitted organisations to be supported by the national government while operating in rebel

[31] This was one of the principal concerns for linking up Canada's Waterton Lake NP and Glacier NP in the USA in 1932, and current initiatives to turn the disputed Siachen Glacier between India and Pakistan into a trans-boundary park.

[32] Under the Integrated Gorilla Conservation Programme, which is driven by the World Wildlife Foundation (WWF), Flora and Fauna International (FFI) and the African Wildlife foundation (AWF).

[33] On October 14th 2005, the Ministers of DRC, Rwanda and Uganda signed a "Tripartite Declaration on the Transboundary Natural Resources Management of the Transfrontier Protected Area of the Central Albertine Rift", which aims to establish a strategic trans-boundary collaborative management system that enables sustainable conservation of the biodiversity of the Central Albertine Rift, for a long-term socio-economic development

occupied territories.[34] To decrease the vulnerability of remaining staff conservation organisations developed skills in carrying out threat assessments, developing emergency response guidelines and operational/contingency plans.

While there is evidence that (trans-boundary) conservation initiatives have improved their capacity and learning necessary to survive political instability, it is another thing to claim that they can reduce political tension and promote peace (see Shine 1997). While the rhetoric is often highly optimistic, the peace building potential of Peace Parks and trans-boundary conservation areas is rarely assessed Hammil and Besancon 2003). Three critical notes can be considered in this respect.

The first is that experience shows that collaboration between countries on the subject of nature conservation is dependent on peace-building more than that it contributes to this. For example the Chom Ksarn Forest in Cambodia was supposed to be linked to Pha Taem Protected Forests Complex in Thailand. Unfortunately diplomatic ties between Thailand and Cambodia were downgraded and suspended after the sacking of the Thai Embassy in Phnom Penh January 2003, putting the future of Cambodia's involvement in the Trans-boundary Conservation Area in doubt (Trisurat 2003). Along the boundary between Nigeria and Cameroon trans-boundary management of the respective National Parks of Cross River and Korup has repeatedly been suggested and planned for by conservation planners and government officials to regulate cross-border poaching and wildlife trade. Despite all the obvious reasons for collaboration no progress could be made due to a border dispute over the oil rich Bakassi Peninsula just south of the park area. Nature conservation would imply a depopulated border, which was not in the interest of both states' territorial politics.

Box 16: *Cordillera del Condor*, conservation enabling peace

While trans-boundary protected area management usually follows after improved interstate relations, in the case of the Cordillera del Condor Peace Trans-border Reserve between Peru and Ecuador it can be argued that it indeed contributed to the resolution of interstate conflict. The mountainous border between the two countries for several decades had been disputed between the two countries. The Spanish colonial power left without clearly defining whether or not Ecuador's territory extended beyond the Andes mountain range to the Marañon (Amazon) river, including the Amazonian basin. As a response to conservation interests and local peoples' calls for peace and stability, Peruvian President Alberto Fujimori and Ecuadorian President Jamil Mahuad developed an innovative plan to resolve their violent border dispute in 1998 with the help of four mediators, the United States, Argentina, Brazil, and Chile. This plan included creation of two national peace parks near the most contested stretch of the frontier, and included a settlement whereby Ecuador would cede its territorial claims over disputed territories in return for free trade and navigational access to the Amazon River (McNeely 2007: 169).

Secondly, when well established, collaboration in trans-boundary conservation is no guarantee for either improving relations between states, or for local peace. Recent assessments of shared management of park complexes in southern Africa show that expected community benefits and involvement do not seem to come forth, creating local discontent. Tourist revenue increase appeared less than expected and job creation and income generating opportunities for local communities remained minimal (Schoon 2004; Amerom and Büscher 2005). Also public participation proved difficult as states continued to perceive themselves as the only actors with a negotiating mandate where trans-national issues are concerned (Büscher and Dietz 2005). Furthermore, between involved countries tensions have arisen between the regional dominant power South Africa and its neighbouring countries over the loci of and benefits from tourism, the freedom of people's movement, and leadership in trans-boundary initiatives (Halle 2002; Wolmer 2003).

Thirdly, trans-boundary conservation initiatives have insufficiently adopted a concrete and sincere peace and security agenda—the sentence "may contribute to peace and security" often phrased in management plans and cooperative agreements, is not made operational. Considering the history of violence and armed conflict in the Virunga-Bwindi area, it is remarkable that the Trans-boundary Conservation Programme has so far not taken special account of, or dedicated itself to the maintenance or restoration of peace and security (Bronkhorst 2005: 14). In the Sangha River Tri-national Park, which straddles the borders of Cameroon, the Republic of Congo and the Central African Republic, the matter of arms control is systematically evaded by state administrators represented in the initiative.

[34] IGCP and the UNESCO/UNF/DRC program have approached the Environmental Law Commission in Bonn to investigate the potential for defining a purely neutral mandate and legally defining and applying "neutral status" to people working for protected-area authorities and the parks themselves during times of conflict (Lanjouw 2003).

From the above theory and experience it is clear that Trans-boundary nature conservation carries a great potential to affirm and promote peace and security between local and national partners, but that major improvements in conceptualising and implementing protected area management are necessary to serve this cause. Firstly, a sense of political realism is needed before trans-boundary management can kick off. Decent security analysis can help project managers to define what they are up against. It will also help to define what security issues they may be able to respond to. Peace promoting intentions should then be explicitly stated and made operational in the formulation of projects. In relation to this Hammill and Becancon (2003) speak of the need to execute a Peace and Conflict Impact Assessment that must help to maximise the positive and minimise the negative impacts of establishing and managing TBPA in conflict prone areas. This also resonates in IUCN's proposition of a certification process to guide designation, consistent with the definitions and objectives of Parks for Peace, including an explicit purpose to promote peace and cooperation.

Secondly, projects should be in the interest of local communities in and surrounding the park complexes, which implies revenue sharing, creating employment and improving mobility for people in conjunction with wildlife. It also implies allowing communities to retain or regain utilisation and ownership rights over land and access to natural resources (Katerere et al. 2001; Wolmer 2003). Thirdly it must be realised that there are no blueprints for TBPAs and that each needs to be planned, implemented, evaluated and adapted around specific circumstances of each situation (van der Linde et al. 2001). What is clear however is that negotiation and decision making processes need to be devolved to and include local stakeholders in a more participatory manner than has thus far been the case in drafting formal agreements. This should also include the recognition of informal arrangements of trans-boundary natural resource management and tenure, like transhumance (Wolmer 2003).

Box 17: Entrenching conservation in conflict zones through legal innovations

In recent years several draft codes have been designed by the International Union for the Conservation of Nature (IUNC) together with the International Council of Environmental Law (ICEL) to try to legally entrench conservation in conflict zones:

The Draft Code for Trans-boundary Protected Areas in Times of Peace and Armed Conflict[35], which provides states, jurisdictions and other stakeholders guidelines for developing trans-boundary protected areas, demilitarising such protected areas, limiting the impacts of armed conflict on such areas, and restoring their natural and cultural integrity (abstracted from Sandwith et al. 2001). The draft code is not a binding agreement but sets guidelines signatory parties intend to follow.

The Draft Convention on the Prohibition of Hostile Military Activities in Protected Areas[36], which would be the first area based legal instrument aimed at protecting natural or cultural areas of "outstanding international significance" during armed conflict. This convention would require that whenever the UN Security council adopts a resolution under Chapter VII of the Charter—in response to armed conflict—a list of non target areas will be included where all hostile military activities are prohibited (Tarasofsky 1997, Shine 1997).[37] The Draft Convention further provides for sending expert missions, composed of competent UN bodies or non-governmental organizations, to monitor compliance with the Convention.

The first code is unofficially adopted in the sense that it provides guidance to those involved in establishing Trans-boundary protected areas. The second draft convention is distributed among national ministries implicated in natural resource management and protected areas policies, to gather critical support and feedback from experts. Adoption of both legal provisions would import conservation concerns into the international humanitarian law. However they should be linked to a strong enforcement regime and then incorporated into military guidelines (Bruch 2000).

7. Conclusions and way forward

Looking at the world's security situation today and casting an eye on the future there is good news and bad news. The good news is that major armed conflicts are declining. Therefore less armed conflicts are likely to play out in the forest, reducing human misery and forest destruction. The bad news is that incidents of human rights abuses and low intensity violence have not shown any decline and are even argued to be on the increase. Many of these low intensity conflicts are linked to continued rural poverty and insecurity of access to natural resources.

[35] Originally proposed in September 1997 at the International Conference on Transboundary Protected Areas as a Vehicle for International Cooperation in Cape Town, South Africa.

[36] Accepted by the World Conservation Congress in 1997. Because this document is still in draft form, it remains open to discussion, and consultations on the draft convention are still taking place (Shine, 1997).

[37] The criteria for identifying these internationally significant areas will rely on existing instruments, such as the World Heritage Convention, the Ramsar Convention, the network of Biosphere Reserves, and the United Nations list of protected areas.

The worldwide decline of armed conflicts has much to do with the Cold War coming to an end. This historical fact removed international and national ideological divides that had created many interstate and internal wars and stopped the flow of resources to warring parties in the developing world. In addition it opened up possibilities for peace-minded international response to conflict situations that were previously fenced off by the world's two superpowers. In the last 15 years UN agencies have been able to better fulfil their mandates in responding to national and international crises situations. Their conflict prevention and peace-building work has been complemented by other international institutions such as the World Bank and international courts, as well as national donors, regional security organisations and NGO's.

The present increase of international conflict prevention, mitigation and peace building activities offer opportunities for promoting sustainable forest management and limiting environmental damage during and after conflict situations. On-the-ground military and humanitarian interventions, application of international law, international diplomacy, and sanction regimes have in several cases greatly contributed to preventing, punishing and redressing wartime environmental damage and militaries' abuse of natural resources. Experience has shown that the potential of applying international laws, codes, conventions to protect or sustainably use natural resources should not be overstated. States may be reluctant to accept international measures that contravene their economic interests, territorial integrity, and right of self-defence. In such cases multi-stakeholder and inter-governmental policy dialogue (in matters of defence, forestry and environment) and public opinion making may be more effective to convince state parties to change harmful policies and practices and support *ad-hoc* international sanctions.

While the international community has achieved significant progress in responding to the abuse and destruction of natural resources during and after armed conflict, policy responses to more localised incidents of violence and conflict surrounding forest exploitation, transformation and conservation areas are equally if not more urgent. This is because these types of conflict are more widespread and likely to increase in the future, as a result of a growing worldwide demand for natural resource products, a lack of clarity concerning resource ownership and access rights, and pervasive poverty in rural areas in the developing world.

The estimated value of global trade in forest products is $ 150 billion yearly, and is expected to grow in the near future. This growth relies on continuous consumer demand for such products in developed countries and a rapid increase of demand in upcoming economies like India, Brazil and China. Increasing global demand for forest products, as well as other forest based commodities, and agricultural land will lead to more forest conversion.

The increasing value of the forest may positively impact incomes of forest dwelling communities, but the economic benefits are likely to be unevenly distributed and some people's livelihoods may be adversely affected. Clarification of property rights and devolution of rights and decentralisation of forest management may arm local populations against externally induced forest exploitation and appropriation. However, past experience shows that these processes rarely assure democratic decision making and equity in access to forests and related benefits. Poorly conceived and implemented rights reforms, devolution and decentralization can also fuel unsustainable exploitation and conflicts between community groups and between local people and government law enforcement agencies and private security forces.

In such contexts it will be of critical importance to establish transparent governance institutions for negotiation, conflict management and forest-related decision making in place at the same time that (agro) forestry investments are made and management and/or ownership right are devolved to communities and/ or local administrations. This is however more easily said than done, particularly in forest areas that are remote and in countries whose governments may have limited financial means and capacities to carry out reforms and are in desperate need to valorize their rich forest in the short term.

However, national governments are not alone. Growing global concern over climate change and the link to deforestation has refocused international attention on the need to protect the world's forests. And in many forested countries in the south, forest concession holders and conservation agencies play an increasing role in shaping the context for economic, social and political development in rural forest zones.

Multi-stakeholder partnerships for improved governance and sustainable management reflect this new reality and are taking-off in several regions, and countries that are struggling with forest related conflicts and challenges related to post conflict reconstruction. Partnerships such as the Congo Basin Forest Partnership, the Asia forest Partnership, the Liberia Forest Initiative, and Indonesia's Multi-stakeholder Forestry Programme are all relatively recent organisational forms that integrate and draw on the expertise of NGOs, research and education organizations, government agencies, and local specialists and communities. Also at local levels private-public partnerships play an increasingly

important role in the management of forest conservation and extraction areas. Such partnerships and platforms can support knowledge sharing, secure finance, streamline policies and guide implementation of activities and mechanisms that have a potential to sustain forest before, during and after conflicts.

In view of the reduction of governments' centralised control of forests and natural resources, and with increasing global demands for such resources, multi-stakeholder platforms in forestry sectors and forest areas, countries and regions will play increasingly important roles in strengthening overall governance. They can potentially help promote social justice and sustainable forest use. Improved forest management alone will not resolve the violent conflicts that devastate forests. However, by reducing the impact of war on forests, ensuring tenure security and promoting SFM and its capacity to contribute to sustained forest-based livelihoods, it can make an important contribution to peace and stability in forested regions.

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ANNEX

Annex: Priority forest conservation areas for integrating peace

A number of priority (forested) protected areas are identified below, that would require conservation investment with special attention towards peace and security issues. In many of these areas protected areas management has to a large extent collapsed as a result of war and insecurity. Some national and trans-boundary Protected areas to prioritise on when talking forest related conflict.

	TBPA Complex	*Designated PA*	**Security situation past and present**
Burundi		Kibira National Park (NP)	Armed gangs (1993-
Rwanda		Nyungwe Forest Reserve (FR)	2004)
Cameroon	Sangha Park (2000)	Lake Lobelke NP	Arms proliferation
Central African Rep.		Dzangha-Ndoki NP	(continuing)
		Dzanga-Sangha FR	
Republic of Congo		Nouabale Ndoki NP	
Cameroon		Korup NP	Bakassi border conflict
Nigeria		Cross River NP	(1981-2006)
Cote d'Ivoire		Mt Nimba Nature Reserve (NR)	Civil war, Arms
Guinea		Mt Nimbe NR	proliferation, rebel
Liberia		East and West Nimba Natural Forest (NF)	activity (1989 -present)
DRC		Virunga NP	Rebel activity Eastern
Rwanda		Volcanoes NP	DRC (1996 - present)
Uganda		Mgahinga Gorilla NP	
		Bwindi Impenetrable Forest NP	
DRC		Virunga NP	Rebel activity Eastern
Uganda		Queeen Elisabeth NP	DRC (1996 – present)
Cambodia		Preh Vihear Protected Landscape	Khmer Rouge
Thailand		Yot Dom Wildlife Sanctuary (WS)	Occupation, Refugee
		Phanom Dong Rak WS	crises (1975 – 1999)
China	Kanchenjunga	Jingpo Lake NR	Maoist rebel activity
India		Kangchezonga NP	Nepal
Nepal		Kanchanjunga Conservation Area (CA)	(1996 – 2006)
India		Katamiaghat sanctuary	Maoist rebel activity
		Dhudhwa NP	Nepal
		Laggabaggha Protected Corridor	(1996 – 2006)
Nepal		Royal Bardia NP	
		Royal Sukla Phanta WR	
India		Shilli Sanctuary	Maoist rebel activity
		Sohagibarwa Sanctuary	Nepal, refugees
		Udaipur Sanctuary	(1996 – 2006)
Nepal		Royal Chitwan NP	
		Parsa WR	
China		Cha Yu NR	Kachin opposition
		Ba Ji NR	Myanmar (1980's –
		Nu Jiang He NR	present)
Myanamar		Ka Kabo Razi NP (greater Northern Forest Complex)	
Cambodia		Virachey NP	General instability and
Laos		Dong Ampham NR	lawlessness Cambodia
		Nam Kading Nat. biodiv. cons. Ares	(1990's)
		Phou Kathong Nat. biodiv. cons. Area	
Vietnam		Chu Mom Ray – Ngoc Vin NR	
Indonesia (aceh)		Gunung Leuser NP	Rebel hideout (1953 – 2005)
Cambodia		Gardamom Mountains Protection Forest	Military logging (late 90's)
Indonesia (west Kalimantan)		Danau Sentarum National Park	Inter-communal clashes
Mayamar		Myinmoletkat Nature Reserve	Karen opposition (1996)
Mexico		Montez Azules Biosphere Reserve	Zapatista stronghold