

Goma: If we don't do anything and wait until the war is over, there won't be any more forests and animals to conserve. [3](#)

Sudan: Refugees need many natural resources to help them reconstruct a life, albeit a temporary one, in their hosting area. [5](#)

Feature: High levels of violence in forested areas are no coincidence. They don't call it 'jungle warfare' for nothing. [9](#)

Chiapas: Mediation is a prerequisite where conservation and indigenous rights clash. [15](#)



Fleeing violent clashes outside Goma, DRC

Forests and conflict

Contents:

2 Editorial | 3 Livelihoods and Landscapes: DRC | 4-5 Refugees and forests: Burundi and Sudan | 6-7 Does conflict help or hinder conservation? | 8-9 Feature: Jungle warfare: what comes next? | 10-11 Managing forest conflict: Asia and Africa | 12-15 Forest conflict cases: Brazil, Thailand, Ecuador, Mexico | 16 The interview: Ashok Khosla, President of IUCN

This *arborvitae* is also available in French and Spanish on our website at www.iucn.org/forest/av

If you have a comment on something you have read in a recent issue of *arborvitae*, we'd love to hear from you. You can send a message to: jennifer.rietbergen@wanadoo.fr



“Voting on REDD”: The essential ingredients needed for a successful REDD recipe

IUCN has just published the results from a “Cast your Vote Live” workshop held at the World Conservation Congress in Barcelona, October 2008, in which participants were asked several questions relating to REDD. Although it was acknowledged that one REDD recipe does not fit all situations and that different approaches are needed in different contexts, participants were very clear on what must be included and planned for at the local, national and international levels if REDD is to become a viable option by 2012. The responses also highlighted that the ingredients considered most important by participants are already the focus of IUCN’s work. Read opinions from the international panelists and about the steps some countries are taking to prepare themselves for REDD. (www.iucn.org/about/work/programmes/forest/?2609/Voting-on-REDD)



DGIS is the Development Agency of the Ministry of Foreign Affairs of the Netherlands

Editorial

If diamonds are a guerrilla’s best friend (as Paul Collier says in his book *The Bottom Billion*), then forests must come a close second. Forests have long provided armed groups with hiding places and lucrative funding sources, and ‘conflict’ timber has helped support many war machines worldwide. However, in this issue of *arborvitae*, we look at forest conflict from a broader angle, exploring those situations that, while causing real disruption to local livelihoods and threatening biodiversity, rarely make the headlines. We will look at the impact and implications of forest-based conflicts between resident communities and refugees, between different forest-dependent groups, and between local people and powerful outside actors.

We also touch on the question of how conflict interacts with the sustainable management of forest resources. Given that conflict is such an effective ‘poverty-creating’ mechanism, forests become even

more vital for the livelihoods and well-being of forest communities, providing timber for temporary housing, bushmeat and other non-timber forest products for basic rations. However, these forest resources may often be exposed to severe overexploitation as day-to-day survival takes priority over a longer-term view, and the social cohesion necessary for sustainable resource use is lost in the conflict. Turning this situation around will require close collaboration with locally-respected and non-partisan organizations capable of understanding the historical antecedents of the problems at hand to ensure that the sustainable use of forest resources is seen as part of the solution, and not as an added constraint or unaffordable luxury. These partners will be even more important once peace returns, as post-conflict situations can bring a whole new set of challenges.

Stewart Maginnis
Head of IUCN’s Forest Conservation Programme

news in brief

Certification 101. TRACER, a company specialized in traceable certified forest products has launched the ‘Rough Guide to Traceable Certified Forest Products’. This booklet provides succinct and useful guidance for those who need to get a grasp of the terminologies and processes relating to the procurement of certified forest products. It can be ordered or downloaded from www.tra-cer.com.

Gorilla numbers rise in Virunga. The mountain gorilla population in Virunga National Park is showing signs of increase, despite the conflict that has been raging in the area. The first census since park rangers were forced to flee the Mikeno sector of the park in September 2007, was conducted by the ICCN, the DRC government institution in charge of protected area management, and covered six groups of habituated mountain gorillas (i.e. groups that have become used to humans). To the rangers’ surprise, the number of gorillas in these groups had increased to 81, from 72 in 2007. “This astonishingly good news about the mountain gorillas is possible thanks to the courageous efforts of ICCN rangers who worked tirelessly to gain access to the gorillas despite on-going violence,” said Dr. Susan Lieberman, Director of WWF International’s Species Programme.

Source: www.panda.org, 27 January, 2009.
See the article on the Virunga gorillas on page 6 of this issue of *arborvitae*.

Protests against Indian tiger reserve. More than 15,000 people protested in southern India in December against plans to extend a new tiger reserve, fearing that they would lose their homes. The state government of Tamil Nadu declared this reserve earlier in 2008 as part of India’s ‘Project Tiger’, aimed at boosting the country’s dwindling tiger population. According to Rajeev Srivastava, a field director for Project Tiger, the protests were not against the declaration of a 321 sq km core area but against the creation of a buffer zone. Around 350 families living in the core area have been given a 1 million rupee (\$20,800) payout, but those in the buffer areas fear they will be evicted, Srivastava said. “We have no intention to dislodge anyone from the buffer zone. In fact, people in this zone will be involved in the project as trackers and guides for eco-tourists to enhance their means of livelihood.”

Source: www.planetark.com, 31 December 2008.

Conflict in Goma: what's happening to conservation?



© Panos Pictures/Sven Torfinn.

Women cook in the rain at the Kibati IDP camp outside Goma

Agni Boedhiartono and **Mtangala Lumpu** bring news from a Livelihoods and Landscapes site in the midst of the conflict in DRC.

In the Democratic Republic of Congo (DRC), IUCN's Livelihoods and Landscapes initiative is supporting the work of a local NGO, Amis de la Forêt et de l'Environnement pour le Développement (AFED), which is based in the war-torn North Kivu Province. AFED is implementing projects on forest restoration, sustainable forest management and environmental awareness – work that has been badly affected by the recent resurgence of conflict in the region.

These projects include, for example, the development of nurseries for fruit tree and medicinal plant propagation, and an initiative to train local people to make and use fuel efficient stoves to reduce the need for firewood. AFED has a stove-making workshop in Kiwanja, a town northeast of

Goma, and some 800 families in Kiwanja are now using these stoves. This is in the heart of the area where conflict has raged for the past few months and where people from many different ethnic groups have been thrown together. Kiwanja hit the headlines in November when tens of thousands of internally displaced people (IDPs) fled its transit camps, fearing an attack by the militia. Mtangala, the coordinator of AFED, reports, "Displacement of people during a war causes a massive destruction of the environment. Forests are invaded, trees cut for firewood, animals hunted for food and even the tree nursery and plantations in Kiwanja have been damaged. Our seedlings have been stolen and our materials for making fuel efficient stoves have been destroyed."

In spite of the difficult conflict situation in the region, AFED continues to promote forest restoration and conservation. However, the takeover of the area around Goma by militias has created very uncertain conditions and disrupted AFED attempts to help these people build a more secure future. In fact, AFED staff members have had to put short-term survival ahead of the longer term conservation and development needs of the communities. Nonetheless, AFED has been working through networks and local committees to try and organize the distribution of food and firewood for families of displaced people in the region, drawing on its contacts with international humanitarian organizations and IUCN in these difficult times. Mtangala says, "We are used to living under this pressure in our daily lives for so many years – we have to continue doing what we believe in if we are to conserve our environment for our children, because if we don't do anything and wait until the war is over, there won't be any more forests and animals to conserve. And that means we will be very unfortunate and unhappy, because we are very dependent on our environment."

One of the most poignant conclusions of this tragic situation is that even in such times of conflict, local people continue to collaborate and their civil society organizations such as AFED become even more important. Agni says, "International organizations tend to leave at the first sign of trouble but it is now that their contributions are most valuable and it is a source of satisfaction that Livelihoods and Landscapes has managed to continue to channel some support to AFED throughout this period. What is happening in this region is not unique – civil and military conflicts are frighteningly common in many of the areas where environmental decline and poverty co-exist. We have to accept this reality and not abdicate our responsibilities in these situations."

Contact: Mtangala Lumpu, mtangala@yahoo.fr
Agni Boedhiartono works with IUCN's Forest Conservation Programme, and Mtangala Lumpu is the coordinator of AFED, the focal point in Goma for Livelihoods and Landscapes' activities in the eastern DRC. AFED has been a member of IUCN since 2005.

Burundi refugees: coming home to forest conflict

Cléto Ndikumagenge, Salvator Ndabirorere and **Etienne Kayengeyenge** look at the challenges of accommodating huge numbers of returning refugees in Burundi.



Burundian refugees board a lorry in Tanzania to return home

The central African state of Burundi is one of the smallest, most densely populated countries in sub-Saharan Africa (averaging 300 inhabitants per km²) and has one of the highest poverty levels in the world. This puts heavy pressures on the country's natural resource base, pressures made all the worse by the impacts of war and social conflicts. The terrible mass killings in 1972 led to a huge exodus of 300,000 people who fled into neighbouring Tanzania; the outbreak of civil war in 1993 then displaced hundreds of thousands more people. Now, with the return of peace, these refugees have been returning and looking for land – a scarce commodity in a country where 90 percent of the population lives in rural areas and where the average size of household plots is only 0.5 hectares.

...the refugee population has practically doubled during its forty-odd years in exile.

It is estimated that between 2000 and 2008, some 45,000 returning refugees entered Burundi. More than 75 percent of those returning have attempted to settle in the Imbo plain, regardless of whether they were originally from this area. Not only does the plain offer fertile soil for agriculture (notably palm oil production), but it is also close to Lake Tanganyika, which is rich in fish. Movements towards this area also bring the returnees close to three important forest reserves – Bururi, Rumonge and Kigwena – which are where many of the internally displaced peoples (IDPs) from the

1993 war sought refuge. These reserves are now under serious threat from encroachment and overexploitation of forest resources, and are likely to disappear if urgent action is not taken.

It should be stressed that many of these people left the country before these reserves and other protected areas were created, which took place in the 1980s. In effect, the creation of more than 1,100 ha of nature reserves in the commune of Rumonge and about 5,000 ha of pine plantations in the commune of Vyanda, has greatly reduced the amount of farming and grazing land available in the south of the country. Another important factor is the fact that the size of the refugee population has practically doubled during its forty-odd years in exile.

Thus, Burundi faces a seemingly unsolvable problem of too many people and too little space, with one victim being the natural resources on which many of its inhabitants depend. This situation has also led to violent conflict between those searching for land and those currently occupying the land.

In the face of this massive influx of people, the local administration can do very little. In fact, they often see the forested areas and reserves as 'free space' on which to settle the returning refugees. Overall, there is a lack of a common vision between the different government departments about how to handle the pressures that the returning refugee population is posing on the country's natural resources.

In an attempt to tackle the degradation of the forest reserves in this area, the Netherlands Committee of IUCN and IUCN's Livelihoods and Landscapes Initiative are supporting a local NGO (ENVIRO-PROTEC) which is working in the Bururi and Kigwena reserves to promote sustainable use of the forest resources, offer alternative income-generating activities, and reforest the degraded areas. Ecotourism may offer some potential here, as there is a thermal source in the area.

These activities, while small in comparison to the huge problem at hand, are vitally important as they involve both the 'local people' and newcomers in the search for solutions. The success of these projects will depend on an appropriate and timely response, not only from the government of Burundi but also from the international community. Their support is crucial now, as tomorrow may be too late.

Contact: Cléto Ndikumagenge, cleto.ndikumagenge@iucn.org
Cléto Ndikumagenge works with IUCN's West and Central African Programme, Salvator Ndabirorere works with the Burundian Ministry of Land Management and Forest, and Etienne Kayengeyenge is an independent consultant who works for Livelihoods and Landscapes in Burundi.

Refugees in eastern Sudan: moving from emergency aid to sustainable development



A family and their homestead tree planting in an eastern Sudan refugee camp

Edmund Barrow of IUCN reports on an initiative to help both refugee populations and their host communities plan for their future.

For nearly 40 years, Sudan has hosted refugees. Large numbers of people fled conflict in neighbouring countries, especially in Ethiopia and Eritrea, and settled in eastern Sudan. At its peak in 1985, the incoming refugee population numbered 1.1 million, and today there are still some 100,000 refugees in eastern Sudan. Settling so many people in a fragile ecological setting has led to considerable problems – not only in terms of their impact on the physical environment, but also on the region's social and economic fabric.

Refugees need many natural resources to help them reconstruct a life, albeit a temporary one, in their hosting area. Providing fuelwood, timber for housing, and access to land for agriculture can come at a large environmental cost – including the erosion, forest degradation, and

pollution seen in eastern Sudan. The actual conflicts have serious impacts on the environment, but the impact on refugee hosting areas as a result of conflict can be much longer term, incremental and often more damaging.

The government of Sudan's Forest National Corporation (FNC) and the Sudan Commissioner for Refugees (COR), together with UNHCR, and IUCN (with additional leverage support from IUCN's Livelihoods and Landscapes Initiative), have been piloting and mainstreaming innovative environmental restoration work in the refugee hosting areas. The approach focuses on the engagement of refugees and local communities in defining their needs through Community Environment Management Plans (CEMP) and land-use planning. This process helps make the

transition from humanitarian and emergency assistance to one of longer term sustainable development.

IUCN initiated this CEMP process in 2005, with UNHCR, FNC and COR, and nine community areas which host refugees in eastern Sudan. For each community area, community facilitators are selected from the refugee camp area and the local community, ensuring that both women and men are represented. They are supported by FNC staff and receive basic training in how to facilitate the CEMP process. The communities then make maps of their environment and produce a vision of their desired future. This then leads to a discussion on how best to achieve their vision by solving identified problems and implementing both short-term and long-term activities. While the CEMP approach is mainly focused on environmental issues, many other issues are raised, and this can be a basis for other work to be carried out, for example with respect to infrastructure, health care, and water management.

The CEMP process has complemented other more formal restoration activities. FNC has supported the reforestation of over 22,000 ha of dryland forest, as well as promoting agroforestry and distributing large numbers of improved cooking stoves. This has all been achieved with significant funding support from UNHCR. As a result of the CEMP process, this has shifted focus to community action and restoration, with an emphasis on community forests and local ownership. This is a slower process, but ultimately more sustainable in the long term.

Environmental issues stretch far beyond environmental restoration. For example, the restoration of nearby forest resources reduces the likelihood of gender-based violence, which is an important security concern. In a similar manner, depletion of critical natural forest resources in refugee hosting areas can lead to conflicts between refugees and host communities. The CEMPs are part of a much longer term process to build the capacity of communities (refugee and hosting) to be able to plan for, and manage their environmental assets, and improve and secure their livelihoods – critical in such dry and risk-prone environments. Such tools and approaches can then be used when the refugees eventually return home, and can be one component of peace-building processes.

Contact: Edmund Barrow, Edmund.Barrow@iucn.org

Gorilla conservation and conflict resolution: a good mix?

Jamie Gordon of IUCN's Forest Conservation Programme talks with **Anne Hammill** of IISD about the findings of an IISD study on the conflict-related impacts of the International Gorilla Conservation Programme.

Your analysis is informed by work in one of the most conflicted areas on earth – the Virunga/Bwindi region of DRC, Uganda, Burundi and Uganda. Were you ever tempted to conclude that conservation in such a region is simply too difficult, that resources might be better spent elsewhere?

Our fieldwork in the Virungas certainly helped us to appreciate the magnitude and complexity of problems in the region, but I can't say we ever felt that conservation was a lost cause. There were certainly times where we felt like our own work barely scratched the surface of what is needed to affect real, sustainable change in Virungas – and this is probably the case! – but we also reminded ourselves that we were part of a much larger effort. No one project, organization or approach is going to be enough.

Peacemaking and biodiversity conservation are attractive bedfellows – who could be against either? But it occurs to me that we are already asking a lot from our forested landscapes – biodiversity conservation, securing revenue for local people, maintaining water supplies, sequestering and storing carbon. Is delivering peace one ecosystem service too many for the complex pursuit of forest conservation?

I don't think so because the potential is inherent and in some cases already being realized. All of those ecosystem services you cite as coming from forested landscapes have a role to play in peacebuilding, whether it is at the local, national or regional level. We're not expecting conservationists to singlehandedly broker or secure peace, particularly in situations as complex and intractable as those that we see in the Virungas. In the work that IISD is doing, we're asking conservationists to recognize that they can have a role to play in peacebuilding, and that ignoring this role can actually undermine their work. Whether conservationists see it or not, their work is already about conflict management, as it's all about who accesses which resources for what interests. In conflict zones, this dynamic has the potential to destabilize or consolidate peace – we've seen it go both ways through our own work in the Albertine Rift. Conservationists should build on their existing capacities as *de facto* conflict managers so that – at the very least – any conflict-exacerbating impacts of their work are minimized, and conflict prevention and resolution opportunities are maximized. The thing to remember is that it's just as much



A gorilla troupe in the transboundary Virunga/Bwindi region

about achieving the conservation-oriented objectives as it is about contributing to broader peacebuilding.

Does the killing of seven gorillas in DRC's Virunga national park in 2007 illustrate a danger of attempting conservation work in conflict situations – that the value conservation attaches to the target species means that these animals can become bargaining chips in a complex political game?

I think it is a given in life, that as soon as you assign a value to something, whether it is in economic, cultural, conservation (or other) terms, there is a risk that somebody will assign a counter value to it, or use your valuation to profit from it in ways contrary to your intention. This is not a problem limited to conservation. However, while it is theoretically possible that assigning a peacebuilding value to a resource could make it even more vulnerable to exploitation, I don't think this was the case with the Virunga gorillas. The gorillas were not in any more danger of being killed because they were linked to conflict resolution *per se* (i.e. seen as a mechanism for transboundary cooperation and peace-building). They were in danger because they lived in a conflict zone, ultimately becoming pawns in a dispute over how to manage Virunga's resources.

Contact: Anne Hammill, ahammill@iisd.ca. The report on this study can be downloaded at: www.iisd.org/pdf/2008/gorillas_in_the_midst.pdf

The tangled roots of forest conflict

Wil de Jong of Kyoto University's Center for Integrated Area Studies considers the causes and impacts of violent conflict in forest areas.

Forests have played a role in violent conflicts for as long as people have waged wars. Rulers used timber to build ships or smelt iron to make arms. Armies battled or hid from enemies inside forests. The role of forests in civil wars has not diminished since then. Armies still use timber, as in Cambodia during the 1990s when government forces and the Khmer Rouge bought arms with timber revenues to fight each other.¹ When Charles Taylor seized power in Liberia and took control of the timber industry, the sector soared in 1999 to a 50 percent contribution to the country's export earnings. Opposition groups took their share when they extorted money from timber shipments.²

Forests are still a place where warring factions stage their fighting and hide from persecution. They are also a place where people flee from war itself. In Colombia, Peru, Myanmar and several African countries, insurgents locate their camps and organize their operations in forest fringes. While there, they build close links with the production of illicit crops, coca and poppy, as they extort money from the growers and traffickers and in return protect them from the police and military.

A more unfortunate lot are the millions of refugees who flee either civil wars or persecution. One million Hutus fled from Rwanda during the turmoil years into eastern Zaire and settled in sparsely habited forest lands, putting great pressure on flora and fauna. Some of the victims were the mountain gorillas in the Virunga National Park. Park protection was more than a challenge during the successive conflicts. It was only in October this year that the park headquarters were taken over by insurgent forces, forcing over 50 wardens to flee into the forest.

Some commentators have argued that violent conflict actually protects forests from exploitation. Zaire, Mozambique, Peru and Central America support this argument, as

Forests are still a place where warring factions stage their fighting and hide from persecution. They are also a place where people flee from war itself.

in all these cases the timber sector was largely non-existent during civil wars. However, the final balance of these conflicts is largely negative. Pressure on forests is often relocated, when refugees leave their lands to increase natural resource pressure elsewhere. After civil wars end, warring factions are rewarded with land for their members, often in forest-rich areas. And an institutional vacuum follows, in which forests become a free-for-all resource, while forest regulatory legislation and enforcement take a long time to recuperate.

Pressure on forests is often relocated, when refugees leave their lands to increase natural resource pressure elsewhere.

A contentious debate goes on among security experts about what are the primary drivers of violent conflicts, especially since the 1990s. One position holds that greed explains the majority of the civil wars since the late 20th century, because a strong correlation between civil wars and abundant natural resources is observed. The opposing argument is that grievance is the primary driver behind contemporary civil wars. The debate is of high importance, because a greed explanation criminalizes insurgents, and takes attention away from political or social needs.

Forest and violent conflict cases provide important empirical evidence for the debate. The evidence in most cases is hard to

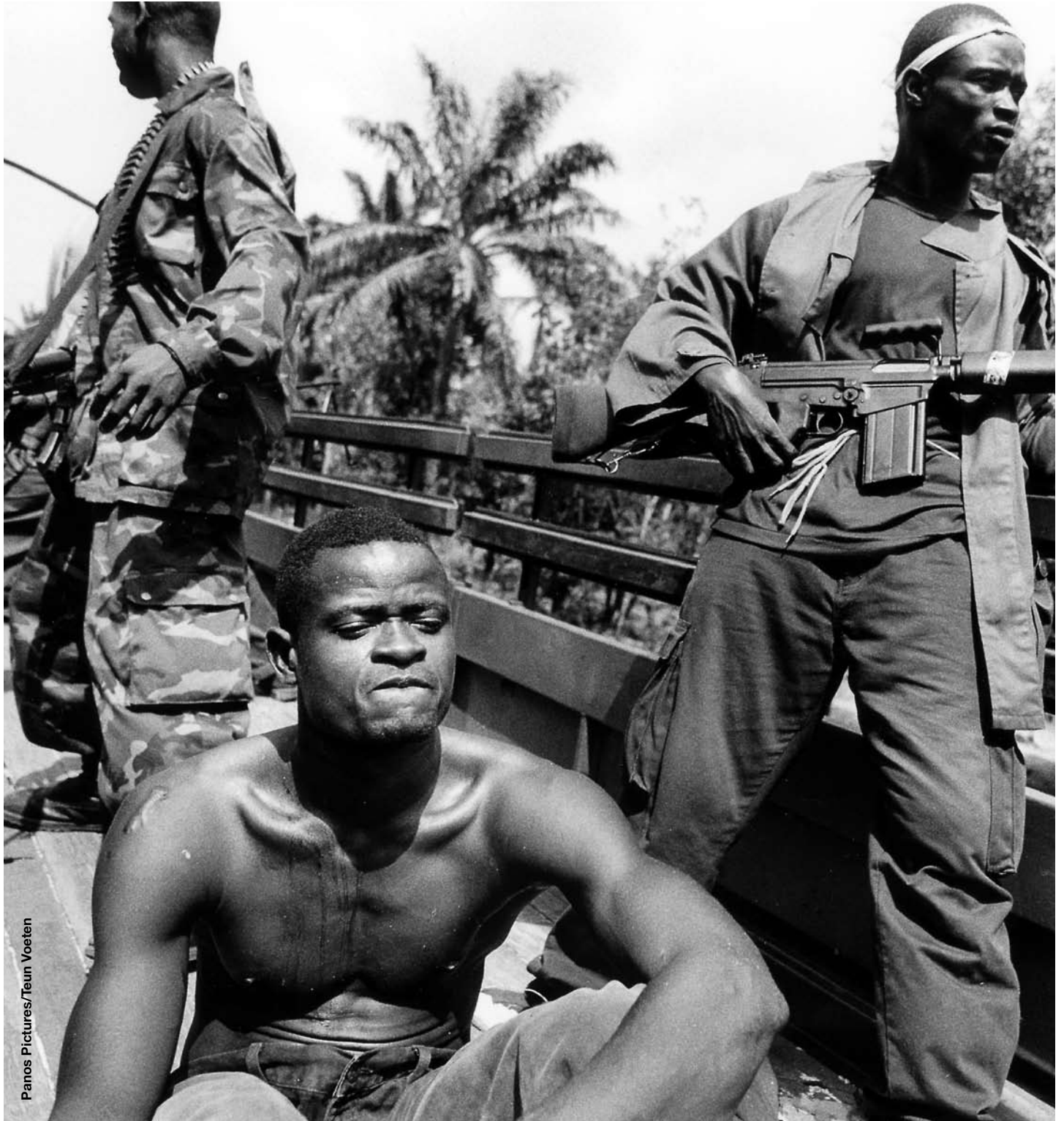
disentangle. Warring factions need funds to sustain their cause, and in forest settings will turn to diamonds, timber, gorillas, coca or poppy. However, careful analysis of violent forest-related conflict cases, as in Liberia, Sierra Leone, Myanmar, Central America and Peru, shows that the conflicts are the outcomes of decades of misappropriation and abuse by the political elite, ruling classes or ethnic groups.

While several of the forest wars referred to here have been resolved, others continue or may re-emerge. It is not merely hypothetical to expect that in coming decades a new struggle for the control over forest and forest lands will occur, now that they are being assigned an increased role in climate change mitigation. Violent conflicts in forest settings will continue, and lessons learned from already old conflicts may become valuable when looking for solutions in the future.

Contact: Wil de Jong, wdejong@cias.kyoto-u.ac.jp.
¹Price, S., D. Donovan, W. De Jong. 2007. Confronting conflict timber. pp117-133, de Jong, W et al. Extreme conflict and tropical forests. Dordrecht, Springer.
²De Koning, R. 2007. Greed or grievance in West Africa's forest wars? pp 37-56, de Jong, W et al. Extreme conflict and tropical forests. Dordrecht, Springer.

Jungle warfare: what comes next?

David Kaimowitz of the Ford Foundation reflects on recent forest conflicts and the problems that peace can bring.



Panos Pictures/Teun Voeten

Soldiers in Sierra Leone transport a rebel prisoner to jail, watching for other rebels hiding in the forest

They don't call it "jungle warfare" for nothing.

When the forces of former Army General Laurent Nkunda moved into the Virunga National Park in the eastern Congo in October this year, the park's 53 rangers were forced to flee, leaving the 200 mountain gorillas unprotected. The incident provided a stark reminder of the endemic violence and lawlessness that has plagued much of the world's forests and the need for environmentalists to address those problems head on.

Literally dozens of countries experienced armed conflict in their forest regions in the 1990s. The list is rather overwhelming: Angola, Bangladesh, Bosnia, both Congos, Cambodia, Central African Republic, Colombia, Guatemala, India, Indonesia, Liberia, Mexico, Myanmar, Nepal, Nicaragua, Pakistan, Peru, Sierra Leone, Senegal, Sri Lanka, Solomon Islands, and Sudan – among others.

Each conflict has its own story, *raison d'être*, and causes, which often have little to do with forests. Even so, the disproportionately high levels of violence in forested areas are no coincidence. They don't call it "jungle warfare" for nothing. Going back well before Robin Hood roamed the hills of Sherwood Forest, bandits and insurgents have always found forests a good place to hide. Conflict timber and minerals from forested regions have been used to finance military operations in Cambodia, Liberia, and the DRC. From the Burmese triangle to Pakistan's Northwest Frontier province and Central America's Misquito Coast, forested regions provide some of the last remaining refuges for indigenous peoples and tribal groups, who have more than their fair share of legitimate complaints and long-standing resentments.

Governments have always found it very difficult to extend their reach into the forest. There are few public services there and no one pays much attention to the official laws about who owns what. The only real law is the law of the jungle. Wealthy farmers and ranchers, mining companies, peasants, loggers, indigenous peoples, and conservation groups all want a piece of the action, and the more fire power they have the more likely they are to succeed.

Nevertheless, recent years have witnessed the end to a remarkable number of these armed conflicts. Military victories brought an uneasy peace to Angola, Cambodia, Liberia, and Peru, while peace negotiations helped pacify Aceh, the Casamance region of Senegal, Guatemala, Mindanao, Myanmar, Nepal, and Southern Sudan. While armed conflicts continue in the forests of Colombia, parts of rural India, Pakistan's border with Afghanistan, and elsewhere, they are notably less common than only a short while ago.

Peace has been good for people and the economy, but its impact on forests has been decidedly mixed. Armed conflicts clearly had a number of negative effects on forests. They made it harder to implement environmental projects in forested regions. Many wild animals were eaten by combatants. Armies built roads and cleared forests. Concentrating refugees and displaced people near forests put great pressure on nearby natural resources. But it is also true that armed conflicts kept many farmers, loggers, and miners out of the forest, and in many cases these groups abandoned entire regions and allowed the forests to grow back.

Correspondingly, in many countries the recent decline in violence has re-opened forest areas for agricultural colonization, land speculation, and unsustainable logging. Governments have resettled former combatants and displaced people in forests they consider "uninhabited". These groups have taken up illegal logging and poaching to survive. And international agencies have inadvertently funded or otherwise favoured activities that increase the pressure on forests.

Some of the stories may have happy endings. Liberia has taken important steps to ensure timber profits are no longer used to finance military aggression and authoritarian rule, and the country's new Community Rights Law should give rural communities a greater stake in the economy. Peace negotiations between Nicaragua's

Sandinista government and Miskitu insurgents in the 1980s led to landmark regional autonomy laws in that country's Atlantic Coast. Nepal's new government seems seriously committed to addressing the historical grievances of remote forest communities.

But in too many cases, things are not going nearly as well. And unless international agencies, national governments, and civil society organizations seriously address poor governance and the concerns of local people in forested regions, the result may not only be disastrous for forests, but also sow the seeds for future conflict. Unless we are careful we could see a lot more eastern Congos.

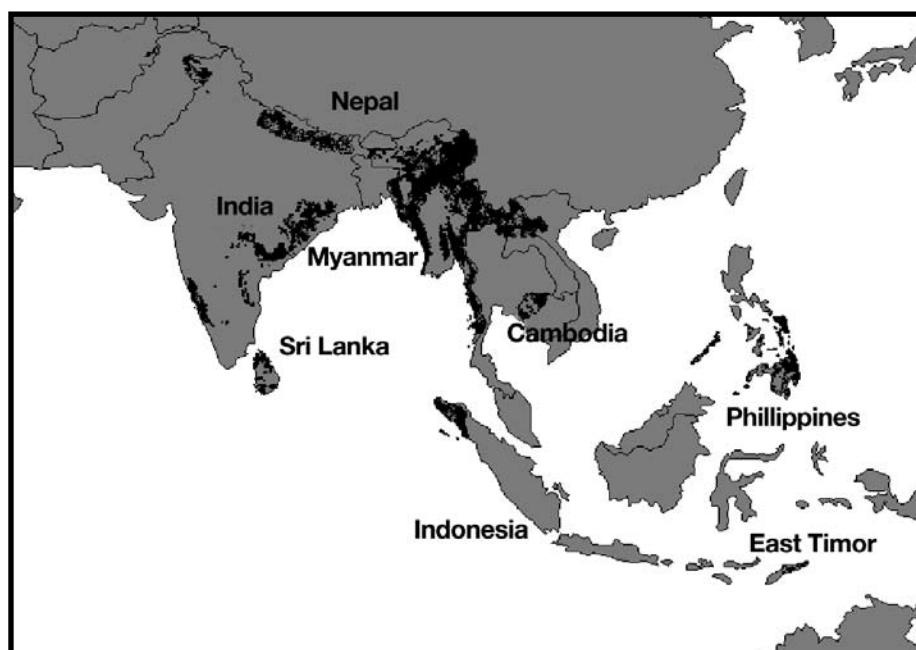
Greater economic, social, and cultural rights for indigenous and tribal peoples in forested regions could go a long way towards a more stable peace in many tropical countries. It could also provide a solid foundation for conservation efforts and more sustainable forms of forest management. For post-conflict efforts to live up to their name they will have to address the conflicts' underlying causes, including the unequal and unjust distribution of access to natural resources. Re-opening conflict areas for logging, mining, and large-scale agriculture may seem like a good way to jump start war-torn economies; however, it can just as easily re-open wounds that have barely started to heal. Similarly, rushing to create new parks and putting in new restrictions without widespread local support could further destabilize already unstable situations.

The terms "jungle" and "warfare" have been inextricably linked for decades. What happens over the next five or ten years will partially determine whether that remains the case. Environmentalists must help others realize that natural resource rights and management can play key roles in building a lasting peace in these regions and they must work harder to find creative ways to ensure ending jungle warfare doesn't bring an end to the jungle.

Contact: David Kaimowitz, D.Kaimowitz@fordfound.org

Wealthy farmers and ranchers, mining companies, peasants, loggers, indigenous peoples, and conservation groups all want a piece of the action, and the more fire power they have the more likely they are to succeed.

Managing forest-related conflicts



Forest conflict areas in Asia, 1990–2004 (Source: De Koning et al. 2008¹)

Ruben de Koning of UNDP looks at what makes forest conflict management effective.

Since 1990, about a fifth of the world's tropical forest has been located in zones of armed conflict spread out over thirty countries. Countries such as DRC, Colombia, Myanmar and India contribute most to the overlap between forest and armed conflict areas. Forest in countries like Brazil, Indonesia, and Mexico are rife with inter-communal struggles and popular protests but are not classified as armed conflicts according to most definitions.

While forest-based conflicts do not necessarily relate to the forest or its management, in most cases they do. Often they are the product of deep poverty and the denial of rights to local resources, characteristic of areas remote from government power and social investment. Logging is often unregulated and destructive to local livelihoods and at times finances armed groups' military struggles.

Forest policies have a crucial role to play in mitigating conflicts and promoting sustainable and equitable management by clarifying, brokering, documenting, enshrining and enforcing rights and responsibilities of different parties and

reducing the control of the central state over locally used resources. Decentralization of forest management to local authorities and community-based natural resource management (CBNRM) are considered crucial to mitigating local conflicts and reducing the risk of violence.

Forestry practitioners and researchers have in recent years attempted to monitor and improve the conflict mitigation potential of decentralization/CBNRM policies. But in most cases decentralization appears to be as much part of the cause of local conflicts as the solution. Boundary issues between governing entities suddenly become salient and powerful local stakeholders often capture the process, especially when timber extraction rights and associated revenue management are decentralized.

Strategies for forest conflict management are many, and must depend on nationally and locally specific circumstances. Action research and capacity-building interventions experimented with in recent years do reveal some elements of success that appear replicable in similar settings. Three such elements are mentioned here.

First, rather than *neutral mediation*, aimed at settling the issue by forging an agreement between competing interest groups, *social negotiation* proves more fruitful in the long run as it focuses on strengthening processes of collaboration, information exchange, and communication among stakeholders through which they can together identify opportunities and learn about the impacts of their actions.²

Second, in addition to improving policies and legislative frameworks for decentralized resource management, there is also a need to strengthen the capacities of stakeholders (i.e. conflicting parties) and clarify their respective duties and responsibilities – *before* rights are devolved. This way they are able to cope with conflicts adequately once the situation arises.³

Third, realizing the uneven distribution of institutional, social and socio-economic resources among conflict actors, conflict management should help level the playing field by building the capacity of the more disadvantaged groups to effectively mobilize and deploy key resources. It is here that assets such as knowledge, credibility, information on potential allies and communication skills are crucial. Empowerment will also entail, among other things, strengthening capacity to facilitate multi-actor dialogue, use the media effectively, and establish *prima facie* case.⁴

¹ De Koning, R.G., Yasmi, Y, Capistrano, D and Cerutti, P. (2008) *Forest related conflict: impacts, links and measures to mitigate*. Rights and Resources Initiative (RRI) and Center for International Forestry Research (CIFOR), http://www.rightsandresources.org/documents/files/doc_822.pdf

² See De Koning, R.G. 2008 'Multi-stakeholder negotiation: when to apply and what role to assume?' In Diaw, M.C., P.H. Oyono, and R.Prabhu, (Eds.), *In Search for Common Grounds: Adaptation, Collaboration and Equity in Local Forest Policies and Management in Cameroon*, Earthscan, Washington DC.

³ See Yasmi, Y, and Guernier, J. 2008 *Managing conflict under decentralized forest governance: Lessons from Indonesia and Vietnam*, paper presented at the 12th Biennial Conference of the International Association for the Study of the Commons (IASC), University of Gloucestershire, Cheltenham, United Kingdom.

⁴ See Marfo, E. 2008 'Governing conflicts over the exploitation of the commons: lessons from forest-mining conflicts in West Africa', paper presented at the 12th Biennial Conference of the International Association for the Study of the Commons (IASC), University of Gloucestershire, Cheltenham, United Kingdom.

Tools to resolve forest conflict

Mary Melnyk and **Cynthia Brady** of USAID report on efforts to resolve forest conflict in Asia and Africa.

Like conflict diamonds, forest resources have been used in many countries in Asia and Africa to finance warfare and other forms of violent conflict. In addition, competition for timber and other forest products is also common among various groups, including the political elite, military, and forest-dependent communities. In Cambodia alone, approximately 1.7 million people have been displaced by resource extraction and have been victims of violence between 1994 and 2004. These numbers are increasing and similar situations are prevalent throughout the world's tropical forests. If no action is taken, unsustainable and contentious forest practices will continue to place millions at greater risk of poverty and violence.

In 2002, the United States Agency for International Development (USAID) began analyzing forest conflict and produced the report *Conflict Timber: Dimensions of the Problem in Asia and Africa*. USAID has just completed its final report, *Forest Conflict in Asia: Causes, Impacts and Management*, summarizing case studies and information from five countries in Asia: Cambodia, Indonesia, Nepal, the Philippines and Sri Lanka.

In Asia, USAID is working to resolve conflicts by helping poor communities gain recognition of their forest rights and by supporting conflict resolution trainings to bring together representatives from civil society, government and the private sector. In the Philippines for example, efforts to mitigate conflict and show respect for local religious and traditional beliefs in the Autonomous Region in Muslim Mindanao resulted in the Regional Sustainable Forest Management Act (RSFMA). Informed by extensive local consultations, the RSFMA incorporates principles found in Islamic and customary laws, as well as multi-sectoral, participatory and community-based approaches to sustainable forest management. Furthermore, a sourcebook on environmental protection and conservation from the perspective of Islam, entitled *Al Khalifa (The Steward)*, was developed. These activities have reinforced local sources of social and institutional resilience, improved local governance and united previously fractious groups around the benefits of good environmental governance through stakeholder participation in environmental and resource management decisions.

In Africa, USAID is addressing land and resource-use related conflicts in a number of conflict hotspots including the Democratic Republic of Congo (DRC), Sudan, Rwanda and Kenya. For example, within the Virunga



USAID supports communities in mapping their forest areas as a step in resolving forest conflicts

In Cambodia alone, approximately 1.7 million people have been displaced by resource extraction and have been victims of violence between 1994 and 2004.

National Park, in the midst of the volatile eastern DRC, USAID is helping stakeholders confront the complex challenges arising from issues such as environmental degradation, poaching, encroachment, over-fishing and competing land claims. As DRC strives for peace and stability, USAID/CARPE (Central African Regional Program for the Environment) is bridging environment, security and governance goals by supporting the Wildlife Conservation Society's Virunga Conservation Project which has brought together military, police and customs officials to work toward conflict reduction and to improve conservation. On the basis of this work, USAID has expanded the knowledge of and tools for conflict resolution to additional vulnerable areas, such as the Kahuzi Biega National Park and the Itombwe Community Reserve.

The challenge now is to gain recognition of the significance of forest conflict and its impact on human security. It is not just physical violence that harms rural communities but also the denial of access to their livelihoods when they are pushed off their forestlands or when the forests are destroyed. Furthermore, forest conflict is not an issue to be boxed into environmental movements; it spans the disciplines of governance, trade and security. Therefore, approaches to stem conflict should be cross-sectoral and approaches to natural resource management must also be conflict-sensitive.

Contact: Mary Melnyk, MMelnyk@usaid.gov or for more information visit www.forestconflict.com.

Isolated indians flee contact and conflict



A group of isolated Indians photographed during an overflight in April

José Carlos dos Reis Meirelles Jr. and **Marcelo Piedrafita Iglesias** report on how illegal logging and conflict in the Peruvian Amazon is forcing uncontacted peoples to flee across the border to Brazil.

Under the Ecological-Economic Zoning programme of the Brazilian State of Acre, a continuous conservation corridor formed by nine indigenous territories together with Chandless State Park serves as a permanent territory for isolated indigenous peoples to live in and/or use. This vast area, covering a little over two million hectares, is situated along the border with Peru and is home to probably the largest population of uncontacted peoples in the Brazilian Amazon.

The policy of Brazil's National Indian Foundation has been to protect these isolated groups from outside contact by demarcating and protecting their territories. For two decades, the Envira River Ethno-environmental Protection Front (FPERE) has supported this protection policy by monitoring the location of four isolated peoples in part of this border region. Headed by *sertanista* or indian specialist José Carlos do Reis Meirelles, the FPERE

operates from two permanent monitoring stations and carries out regular land expeditions and overflights to map the spatial distribution and movements of the isolated indians and to estimate their population growth. Systematic inspections of the borders of the indigenous territories and awareness raising efforts among those living in the surrounding area are also undertaken to help prevent intrusion by hunters or fishermen.

An overflight at the end of April this year, established that three of these groups are distributed over three different village clusters composed of 75 huts, that they have large clearings of diversified cultivation and use extensive areas of forest for hunting and gathering.

In the past three years, a new situation has been developing on the Peruvian side, with major implications for the survival of

isolated groups on both sides of the border. Illegal logging activities have been intensifying in parts of three isolated indigenous peoples' reservations in Peru as well as in the Alto Purús National Park and the Purús Communal Reservation, totalling a diverse area of about 4.2 million hectares. The increase in illegal logging has arisen from the forest concession policy initiated by the Peruvian government in 2001, and in the last few years from the setting up of the logging company Forestal Venaó SRL. The impacts on the isolated indians living in these reserved areas have included raids, forced contact, territorial restrictions, diseases, conflicts with indigenous communities and even forced labour. In the past two years, the migration of an isolated tribe to the territory of Acre is directly related to this illegal logging problem and the conflicts associated with it. In September, hunting arrows discovered near an FPERE monitoring post were found to be different to those used by the uncontacted groups on the Brazilian side, providing more evidence of the flight of Peruvian groups.

The imminent launch of oil and gas prospecting on the Peruvian side, under a concession to Petrobras Energia Peru S.A., is bound to bring new threats to the territories and ways of life of the isolated indians, and possibly new migrations to indigenous territories on the Brazilian side. This in turn could reignite armed confrontations between the fleeing indians and the resident groups on the Brazilian side, confrontations that were common towards the end of the 1980s.

If on the Brazilian side, the protection of the isolated peoples' territories has brought good results for both forest conservation and the safety of these tribes, the timber and oil concession policies on the Peruvian side are posing serious risks to the survival of these peoples. Attention to these issues must take greater priority in the 'regional integration' agendas of both governments – agendas which for now are mainly focused on infrastructure, energy connection and trade promotion projects.

Contact: José Carlos dos Reis Meirelles, isolado-meirelles@hotmail.com, or Marcelo Piedrafita Iglesias, marcelo@piedrafita.eti.br

José Carlos dos Reis Meirelles is a *sertanista* and Coordinator of the Envira River Ethno-environmental Protection Front (General Office of Isolated Indians – National Indian Foundation). Marcelo Piedrafita Iglesias is an anthropologist with the Pro-Indian Commission of Acre.

Thailand: insurgency halts award-winning conservation group



The Kalor people stopped their conservation activities when it became unsafe for them to enter the forest

Somsak Sukwong, former Director of the Regional Community Forestry Training Center (RECOFTC) in Bangkok, describes how conflict has hit a community conservation effort.

Today, if one enters Pattani Province in southern Thailand, coils of barbed wire and armed military and police officers can be spotted all the way down to the provinces of Yala and Narathiwat on the border with Malaysia. The checkpoints are not only troublesome to those who want to spend life peacefully, but are also a sign of the conflict which has halted community conservation work.

For many years, the Kalor Forest Conservation group in Pattani has been a famous example of community conservation efforts. In 1999 the group received one of the first Green Globe Awards for the conservation of 4,500 ha of community forest in the Saiburi River Basin. These awards were initiated by the Petroleum Authority of Thailand to honour and support communities, individuals and youth groups who have shown dedication to

conserving and rehabilitating environment and natural resources. The centuries-old Kalor community forest is vital to village life as a source of water for rice farming and the production of parkia fruit pods, cardamom and other year-round forest products. To manage the forest the community had set up a voluntary forest patrol group, and agreed on village rules to control forest use.

A year or so ago it was suggested that the group be nominated for a 'Five Years of Sustainability Award' for previous Green Globe Award winners who have continued their efforts for five years. However the group refused to accept the nomination because the traditional community forest and other conservation activities ended in 2005. Asae Ebuham, the former leader of the Forest Conservation Group explained that the forest conservation activity in the village ended as a result of the insurgency in

this area. The group members had discussed the situation amongst themselves and concluded that their activities should be stopped because they risked being targeted by unknown people in the forest. So the forest patrol and forest inventory activities no longer take place.

Nowadays, due to the absence of the forest watch, some parts of Kalor forest are at risk from encroachment, because of the widespread promotion of oil palm plantation in southern Thailand.

Even though the Kalor people are unsure of their future, they still occasionally discuss conservation in the coffee shop in the village, thinking that one day, when the conflict is resolved, they may be able to start again.

Contact: Somsak Sukwong, somsak.s@ku.ac.th
RECOFTC has been a member of IUCN since 1995.

The Shuar and mining: two conflicting logics



A shuar man weaving a basket for carrying cassava

Santiago Kingman of Fundación Natura looks at how a mining-related conflict is brewing in the Ecuadorian Amazon.

East of the Andes rises the Cónдор mountain range, a small fragmented succession of hills covered by more than 1,500,000 hectares of Amazonian montage forest. These mountains are shared by Ecuador and Peru as a result of the 1998 Peace Accord which set the international border along the heights of the Cónдор range. At the same time, this demarcation also sustained the disconnected manner in which this ecosystem is managed and the division of the Shuar people whose territory and family ties span both sides of the border.

In the twentieth century, the Shuar people saw their original territory diminish as a result of the Ecuadorian government's resettlement of mestizo farmers from the overpopulated highlands. In 2002, 45 Shuar *centros* (or communities) in the Northern Cónдор region decided to protect and integrate their territory. Thus, 200,000 hectares, 186,000 of which are forest lands, were placed under the protection of a political body called the Shuar Arutam People.

With technical support from Fundación Natura, this organization has worked to develop rules for natural resource use (including timber harvesting) and social coexistence, based on the traditions and customs of the Shuar. Some 160,000 hectares were set aside for forest conservation and the rest of the area was assigned to traditional orchards, settlements and small grazing and

The Shuar consider the forest as the basis of their culture and survival. Indeed, Shuar livelihoods are based on more than 240 species of flora and fauna.

agroforestry areas that were divided among the one thousand families located in the area. The Shuar consider the forest as the basis of their culture and survival. Indeed, Shuar livelihoods are based on more than 240 species of flora and fauna. The Shuar do not see themselves as poor, but rather as a proudly autonomous people who do not want to be a burden to the state. However, in 2002, foreign interests shattered their dreams and way of life.

Mineral deposits were found in the area and the Ecuadorian government passed legislation that was extremely lenient towards mining companies, thereby putting the country's revenues, mineral deposits and impact management at great risk and concentrating mineral concessions in the hands of a few Canadian companies (currently Kingross and Ecuacorriente). The Shuar protested, occupying four exploration camps in 2006-2007, and put forward a proposal requesting the government to ban all mining activities from their territory (concessions cover 30% of their land), but all dialogue attempts failed.

Now working on a new mining law, the government has not consulted with either the affected communities or the Shuar Arutam People. The new government's primary focus is to increase revenues for development activities, believing that money will solve all their problems. The government feels that concerns over the impacts and risks associated with mining are no longer valid, given the corporate social responsibility policies of the companies engaged in the mining. The new legislation does not provide for prior consultations with the indigenous populations; concessions are granted on the basis of a simple administrative action (rather than on public tender), and there are no provisions for the appointment of an entity outside of the Ministry of Mines to monitor compliance with the environmental plan. Local tension is rising so steadily that by next year it may well lead the Shuar people to civil disorder, thus ignoring their logic and their traditional forest conservation principles.

Contact: Santiago Kingman, chispok@hotmail.com
Fundación Natura is an Ecuadorian conservation NGO and a member organization of IUCN.

Conservation and conflict: what have we learned from Chiapas?



IUCN Photo library / © Michelle Laurie

Conservation in a conflict zone creates particular challenges

Rosa Ma. Vidal and **Romeo Domínguez Barradas** of Pronatura Sur look at some of the lessons for conservation in conflict areas.

The state of Chiapas in southern Mexico is renowned for its high biological and cultural diversity, and for the Zapatista uprising in the 1990s. Historically, the state's indigenous peoples have had little control over the natural resources on which they depend, as much of the land has been owned by a few wealthy landowners, and forests have been exploited by foreign companies or used to settle colonizers from other parts of the country.

The support base for the Zapatista guerillas came largely from indigenous communities, who were expressing their rejection of the politics that had kept them marginalized. Other supporters had more political motives and some were mobilized by local elites who hoped to take control of the land and then parcel it up for sale.

The uprising put into sharp focus the apparent contradictions between conservation and indigenous rights. Protected areas in Chiapas were established towards the end of the 1970s and during the 1980s, at a time when the politics of conservation did not recognize the importance of reconciling the needs of local communities with those of biological conservation. Against this background was a situation of legal impunity and injustice, and a failure on the part of government to support human rights. The result was an ungovernable state and a whole series of land disputes, as the protesting groups occupied large farms, suburban areas and protected areas.

Among the lessons that Pronatura learnt from working in this environment were the following:

- There is no substitute for first-hand information on conflicts, their origins and the actors involved. Even where general characteristics can be identified, such as a guerilla uprising, land conflicts are specific with many localized historical antecedents.
- Direct, transparent and continuous communication with the full range of actors involved in a conflict is necessary. These actors include those who may not share conservation objectives and may include armed groups.
- Mediation is a prerequisite where conservation and indigenous rights clash. When there is shared political will to succeed, success is usually possible.
- Local needs, and the motivations of civil or armed groups, must always be borne in mind.
- Whilst it is accepted that biodiversity is a 'common good', there needs to be clear definitions of access rights and benefit distribution.

Currently, many communities in Chiapas are managing forests well and have established conservation areas. Despite the continuation of the Zapatista conflict and ongoing forest degradation, the prospects for community advancement and nature conservation are better than ever.

Contact: Rosa Ma. Vidal, rosavidal@pronatura-sur.org
Pronatura is a Mexican NGO and has been a member of IUCN since 2006.

arborvitae

The next issue of *arborvitae* will be produced in April 2009 (copy deadline early-March) and will focus on forest partnerships; the following issue will be produced in September 2009 (copy deadline end-July), focusing on climate change. If you have any material to send or comments please contact:

Jennifer Rietbergen-McCracken
85 chemin de la ferme du château
74520 Vulbens
France
jennifer.rietbergen@wanadoo.fr

Communications regarding the *arborvitae* mailing list (subscription requests, address changes etc.) should be sent to Sizakele Noko, sizakele.noko@iucn.org

Back issues of *arborvitae* can be found on: www.iucn.org/forest/av

This newsletter has been edited by Jennifer Rietbergen-McCracken. Managing editor Liz Schmid, IUCN. *arborvitae* is funded by DGIS. Design by millerdesign.co.uk.



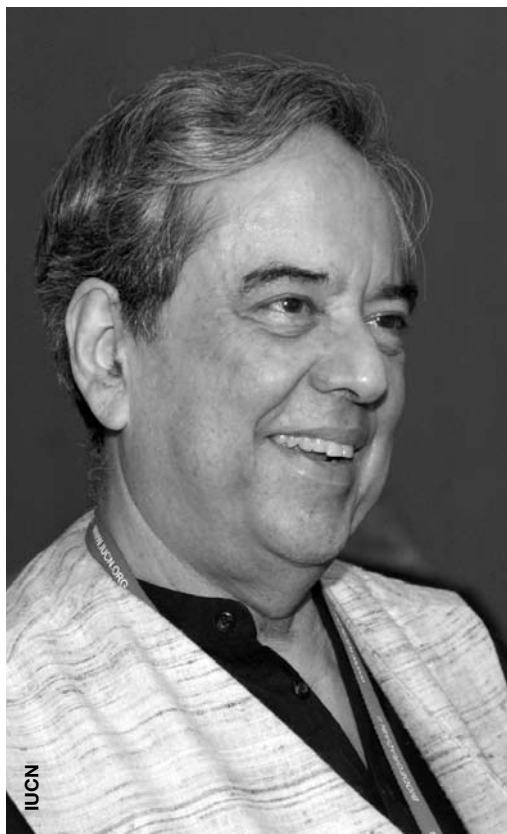
DGIS is the Development Agency of the Ministry of Foreign Affairs of the Netherlands



Acknowledgements

Marcelo Arguelles (Brazil); Romeo Dominguez Barradas (Mexico); Edmund Barrow (Kenya); Agni Boedihartono (Switzerland); Cynthia Brady (US); Doris Cordero (Ecuador); Robert Fisher (Australia); Jamie Gordon (Switzerland); Anne Hammill (Switzerland); Marcelo Piedrafita Iglesias (Brazil); Wil de Jong (Japan); David Kaimowitz (Mexico); Etienne Kayengeyenge (Burundi); Ashok Khosla (India); Santiago Kingman (Ecuador); Ruben de Koning (Norway); Mtangala Lumpu (DRC); Stewart Maginnis (Switzerland); José Carlos dos Reis Meirelles Jr. (Brazil); Mary Melnyk (US); Salvator Ndabirorere (Burundi); Cleto Ndikumage (Burkina Faso); Liliana Pires (Brazil); Jeffrey Sayer (Switzerland); Liz Schmid (Switzerland); Somsak Sukwong (Thailand); Rosa Ma. Vidal (Mexico).

The editors and authors are responsible for their own articles. Their opinions do not necessarily represent the views of IUCN.



Ashok Khosla, IUCN's new President, talks with Liz Schmid of IUCN's Forest Conservation Programme about conservation and conflict.

Under what situations do you think conservation efforts can actually exacerbate conflict?

Conservation efforts generally require changes of behaviour or cause loss of homes, land and livelihoods. Sometimes these impacts can be quite substantial and can create difficulties for local populations who often end up paying the bulk of the costs while others (including society at large) get the bulk of the benefits. It is only natural that such circumstances would lead to conflict. If the work of conservationists tends to deprive the local people of their lives and resource-dependent livelihoods, it is their responsibility to provide adequate substitutes to replace them.

What do you see as the role of a conservation organization such as IUCN when violent conflict erupts? Should we continue, or stop our work until the conflict is over? Do you see any risk that we are perceived as 'taking sides' if we continue to work in these areas?

First and foremost, any development or conservation agency has to be mindful of the

safety of its staff, and in the short term it may be necessary for it to pull its people out of a conflict area. In the medium/long term however, we need to find ways to influence governments, the local people and others involved in the conflict to resolve the issues that are causing it. Experience has shown that where such conflict arises from resource scarcity issues, conservation is an excellent way to create benefits for all sides involved. With a clear understanding of the relationships between ecosystem health and social processes, sensitive conservationists can communicate these possibilities to the parties concerned and help them take advantage of what is really a win-win situation.

My organization, Development Alternatives, is a member of IUCN and has sometimes been involved in difficult conflict-ridden and sometimes even violence-prone situations in the field. Interestingly, we have often found that if local people involved in conflict can see that we as an NGO are doing constructive work, they leave us in peace to get on with the work. Still, we have to be very careful as there is always a risk that something goes wrong. My impression though is that in many rural conflict situations, local people are often driven to protest or even to take up arms because they have been deprived of the environmental resources which their ancestors have managed responsibly for hundreds of years. If we as conservationists can demonstrate that we are on their side, the so-called extremists can work constructively with us. Are we taking sides then? Well, yes, we're taking their side as it is the side of conservation.

Deep-rooted social and political issues are behind most forest conflicts. How do you think IUCN member organizations can best respond?

Environment-related conflicts are mostly the result of some people trying to take and others being asked to give. Most societies react adversely to being exploited or to losing to others what they consider legitimately to be theirs. Such issues are inherently 'social' and 'political', involving transactions, power structures and institutional decisions. Solutions based purely on what is good for the health of the ecosystem are not likely to stick. The root causes being deep, the interventions also have to be deep. However, a good conservation organization understands that it is not just the trees or the animals that have to be sustained but that these are a part of the whole life-support system. Resolving forest conflicts needs as good an understanding of societal processes as of ecosystem processes. This is one of the strengths of IUCN, that it is sensitive to the need to bring together different stakeholders, to mobilize the right mix of knowledge and skills – social, environmental, economic and political – to find lasting solutions to these complex problems.