

Introduction: armed conflict and the environment

1 Introduction: armed conflict and the environment

Safeguarding the environment is one of the foundations of peace and security.

Kofi Annan, Secretary-General of the United Nations (UNHCR 2001)

Armed conflict is a very serious problem in parts of Africa today, where many countries are at risk of conflict, engaged in conflict, emerging from conflict, or in a long-term recovery phase. These conflicts are devastating. They cause untold suffering and enormous loss of human life; they fragment societies and shatter economies. They also wreak devastating harm on the environment, biodiversity, and the natural resources upon which people depend—impacts that are suffered long after hostilities end.

When a conflict or crisis hits, the immediate priority is to save lives and minimize human suffering. The focus is on immediate, short-term, human-centered needs. Environmental concerns are relegated to secondary importance. But, although it may seem that environmental concerns should remain a low priority during wars and human crises, the high degree of dependency on natural resources of most communities in Africa and in many parts of the developing world makes it essential that the environment remain a high priority. A degraded environment puts people's future livelihood security at risk, setting the stage for further political instability and conflict.

This introduction begins with an overview of the nature of armed conflicts in Africa today, continues with a brief description of their environmental impacts and consequences, and concludes with a short analysis of the political, social, and economic aspects of these conflicts.

1.1 The changing face of modern warfare

During the twentieth century the number of wars taking place worldwide increased. Since the end of World War II, more than 160 wars have been recorded (McNeely 2000). Although this upward trend in conflict may be inflated by the increasing number of independent countries (Gurr *et al.* 2000), armed conflict remains a critical concern in many parts of the world.

It is of particular concern in Africa, which has experienced more than 30 wars since 1970 alone (Myers 1996). Some of these wars—including those in Ethiopia, Sudan, Chad, Angola, and Mozambique—have been prolonged. Africa has also seen more than 200 coups or attempted coups since 1950 (Renner 1999). As of late 2000, 18 countries in sub-Saharan Africa were either experiencing ongoing or sporadic conflict, or were in a tenuous recovery phase (Gurr *et al.* 2000).

Most conflicts today share a few common characteristics. First, the majority of conflicts are fought within national borders, rather than between different nation-states (McNeely 2000). Indeed, of the 25 major armed conflicts taking place in 2000, all but two were internal (Stockholm International Peace Research Institute [SIPRI] 2001). In Africa, only six of the 103 armed conflicts fought between 1989 and 1997 were fought between countries (Renner 1999). It should be noted, however, that the majority of internal conflicts do not in fact remain confined within the borders of a single country (SIPRI 2001), but eventually affect neighboring countries in some way.

“Most of the conflicts reviewed (in 2000) are difficult to resolve. Contemporary rebel movements tend to break apart into factions, all sides have access to income and weapons, the fighting takes place in remote locations, and the belligerents perceive their vital interests to be at stake. Peace is difficult to achieve when combatants have the will and capacity to continue to fight.” (SIPRI 2001)

Second, most of these conflicts are unstructured and difficult to predict. They are often fought by multiple actors with interdependent interests, and the distinction between combatants and civilians is often blurred. Actors in these wars frequently target civilians, including women and children, as tragically witnessed in such places as Sierra Leone (Reno 2001). In these conflicts, a larger percentage of the population has direct experience of atrocities, as victims, perpetrators, or both (Anderson 1999).

Third, today’s conflicts are driven by a variety of motives with a wide range of contributing factors, among them ideology, access to resources, ethnicity, religion, greed, distribution of power among social groups and between countries, weak states, and lack of leadership. Most conflicts in sub-Saharan Africa today are driven by some combination of these factors. Moreover, these conflicts are usually fueled by patronage systems and the hegemonic desire of political elites or military strongmen to control

and exploit valuable natural resources—particularly mineral resources such as gold, oil, and diamonds (Plumptre *et al.* 2001), as well as timber.

War and economic exploitation have always been closely linked. In Africa, however, local elites and transnational corporations increasingly use war as a cover to generate wealth through natural resource extraction (International Famine Centre 2000). Considerable international attention has recently focused on the war economies in such countries as the Democratic Republic of Congo (DRC) (United Nations 2001), Liberia (Global Witness 2001), and Angola (Global Witness 1998 and 1999).

The relationship between these conflicts and their impacts on the environment depends to a large extent on the type, intensity, and duration of the conflict. Conflicts in sub-Saharan Africa range from high intensity and relatively short duration (e.g., Republic of Congo (Brazzaville) and Central African Republic), to low intensity and long duration (Ethiopia, Mozambique, Angola, and Sudan). Even within a single country, the type of conflict may vary, with sometimes two or more distinct phases of conflict (Simon Anstey, pers. comm.). The characteristics of modern African conflicts—complex, unpredictable, and often driven by natural resource extraction—make them particularly damaging to the environment and those who depend on it.

Recognizing the nature of these conflicts is an important first step in understanding their impacts, both on local populations and on the environment that supports them, and in developing mitigation strategies (Anderson 1999). In order to develop such strategies, it is important to first understand the impacts of these conflicts and the consequences they hold both for conservation and for the broader political, social, and economic context.

1.2 Impacts and consequences

The negative impacts of armed conflict on the environment are becoming increasingly well documented in a growing body of literature (e.g., Austin and Bruch 2000; Blom *et al.* 2000; Blom and Yamindou 2001; Ham, in prep.; Hart and Mwinyihali 2001; Hatton *et al.* 2001; Jacobs and Schloeder 2001; Kalpers 2001a, 2001b; Matthew *et al.* 2001; Plumptre *et al.* 2001; Price, in press; Squire 2001). This guide will therefore provide only a brief overview of these impacts, with references indicating where to find additional information.

During and following armed conflict, an armed and lawless society can have both direct and indirect impacts on the environment. These impacts occur for subsistence, strategic, or commercial reasons, and often have political, social, and economic root causes. The main impacts of armed conflict on the environment occur through habitat destruction and loss of wildlife, over-exploitation and degradation of natural resources, and pollution, and each of these categories is described briefly below.

1.2.1 Habitat destruction and impacts on wildlife

Habitat destruction and the accompanying loss of wildlife are among the most common and far-reaching impacts of conflict on the environment, and occur for subsistence, strategic, or commercial reasons. Habitats are sometimes directly affected during armed conflict. For example, vegetation may be cut, burned, or defoliated to improve mobility or visibility for troops. In Rwanda in 1991, the Rwandan army cut a swath 50 to 100 meters wide through the bamboo forest connecting the Virunga Volcanoes in order to reduce the possibility of ambush along a key trail (Kalpers 2001b).

When large numbers of displaced people are temporarily resettled, they often clear away vegetation, to farm and to obtain firewood—practices that swiftly lead to deforestation and erosion. Since refugees and internally displaced people are often located in ecologically marginal and vulnerable areas, the ability of the environment to subsequently recover may be limited. Protected areas may be affected if displaced people settle inside or near them, as occurred in and around Virunga National Park in 1994 (Kalpers 2001a) (see Boxes 1.1 and 1.2). Vegetation may also be destroyed during and immediately following periods of conflict, for example when valuable minerals such as diamonds and gold are extracted, often in the absence of environmental controls (Austin and Bruch 2000).

With habitat destruction, certain plant and animal species may become locally threatened, or even extinct. In Rwanda, two-thirds of the original area of Akagera National Park was removed from protected status, and numerous refugees and their livestock were resettled there. The result was the virtual local extinction of some species of ungulates, including the roan antelope (*Hippotragus equinus*) and the eland (*Taurotragus oryx*) (Kalpers 2001b). Individual animals may also be killed or injured by land mines, as happened to elephants (*Loxodonta africana*) in Mozambique.

Box 1.1 Case Study: Volcanoes under Siege: Impact of a Decade of Armed Conflict in the Virungas

Author: José Kalpers

Key points: This case study examined events that took place between 1990 and 2000 in the Virunga Volcanoes region straddling Rwanda, Uganda, and DRC, and the impacts these events had on the region's biodiversity. Montane forests in three adjacent protected areas in Rwanda, Uganda, and DRC are home to the endangered mountain gorilla (*Gorilla gorilla beringei*), which ranges freely across the borders of the three countries. This study described and analyzed responses to the crises observed during different phases of this 10-year period, with particular emphasis on the collaboration among the conservation, emergency-response, and development sectors.

To access the complete study, go to: www.BSPonline.org/publications.

Box 1.2 Habitat destruction in Rwanda

In northwestern Rwanda, the Gishwati Forest Reserve was divided up to provide land to returning refugees and, simultaneously, was exploited as pastureland by absentee ranchers. The law enforcement mechanisms that protected this area were not as strong as the survival interests of substantial numbers of refugees or the economic interests of large-scale producers.

Source: Human Rights Watch (2001).

1.2.2 Over-exploitation of natural resources

Over-exploitation of natural resources is often directly linked to armed conflict, and occurs for both subsistence and commercial reasons. One immediate result of political instability during war is that local people often cannot grow basic crops. For their survival, they are increasingly forced to depend on wild foods such as bushmeat and wild food plants. At the same time, displaced people usually collect firewood, food plants, and other natural resources in the areas they have moved to. Such exploitation on a large scale may be unsustainable even in the short term. The situation may be made worse if these people lack local knowledge of optimal resource management practices. When displaced people return to their homelands, moreover, they are often forced to rely heavily on natural resources until they can re-establish their normal livelihoods, including agriculture. In addition, humanitarian organizations themselves often use excessive amounts of local wood for construction (Marion Pratt, pers. comm.). All of these factors can result in resource scarcity or degradation, and may seriously affect long-term livelihoods of the indigenous residents.

In all cases, the breakdown of law enforcement and traditional local controls makes sustainable resource management even more challenging. It is important to understand that incentives for local communities to conserve resources and species decrease when economic benefits from them decline. This is true even in areas that are not directly affected by armed conflict. In Zimbabwe, for example, recent political instability has severely undercut tourism revenues, leading to widespread illegal hunting on certain communal lands where people once benefited from the Communal Areas Management Programme for Indigenous Resources (CAMPFIRE) program (Ben Campbell, pers. comm.). Incentives for local communities to conserve natural resources are also far greater in places where they were allowed to participate in the planning and management of protected areas. For example, the survival of Awash National Park in Ethiopia during extended periods of instability is largely attributed to the participation of local communities in the park's management (Jacobs and Schloeder 2001 and Box 1.3). Uncertainty over future access rights encourages unsustainable resource use for short-term gain.

In areas where fighting is occurring, troops often hunt large mammals in great numbers to obtain food. This practice can have a devastating impact on wildlife populations, especially if military action continues in an area for an extended period (Kalpers 2001b). Larger species with slow reproductive rates are particularly vulnerable, and tend to disappear first. In a side effect of the war in Sudan, wildlife in DRC's Garamba National Park, just across the border, was heavily exploited by marauding poachers who killed park animals, primarily for their meat. Patrol monitoring and maps showed the poaching moved steadily south through the park, killing large mammals—initially buffalo (*Syncerus caffer*), later elephants—from 1991 onward. More than 70 percent of the annual incidents involved Sudan People's Liberation Army (SPLA) "deserters" based on the Sudan side of the border (Hillman Smith and Smith 1997; Hillman Smith *et al.* in press).

When the first war in DRC in 1996-1997 led to the disarming of park guards in Garamba, the poaching escalated for a short time. In that brief period, the elephant population was reduced by half, the buffalo by two-thirds, and the hippo (*Hippopotamus amphibius*) by three-quarters. This latter escalation was not a direct exploitation by the Congolese rebel troops. Rather, it came about because active conservation efforts were blocked, and the general breakdown of law and order was exploited (Hillman Smith and Smith 1997; Hillman Smith *et al.*, in press).

During armed conflict, those in power are often in need of immediate revenue. To fund their military activities, they may turn to commercial-scale extraction of natural resources such as timber, ivory, and diamonds. In some cases, such extraction may be legal, but in other cases those in power may sell extraction rights to which they may have only temporary or in fact no legal rights at all. Large-scale extraction has been documented in the war economies of Liberia and Sierra Leone (Global Witness 2001), Angola (Global Witness 1998 and 1999), and DRC (UN 2001).

Box 1.3 Case Study: Impacts of Conflict on Biodiversity and Protected Areas in Ethiopia

Authors: Michael Jacobs and Catherine Schloeder

Key points: This study looked at the role of Ethiopia's prolonged engagement in various armed conflicts in limiting the effectiveness of the country's conservation and protected-area program. Government institutional politics and adherence to an exclusionary protected-area policy were other key limiting factors addressed by this study. The study assessed the prospects of protecting Ethiopia's remaining biodiversity, as illustrated by the example of Ethiopia's Awash National Park, where community participation in park management played a key role in the park's survival.

To access the complete study, go to: www.BSPonline.org/publications.

Immediately following a conflict, when physical access to natural resource areas opens up again to the general public, private-sector operators often move in and extract resources unsustainably, as occurred in Mozambique (Hatton *et al.* 2001 and Box 1.4) and Liberia (Global Witness 2001). In this phase, peacetime control measures are often still weak or entirely absent. Even when governmental authority is re-established on a firmer footing, governing authorities faced with bankrupt national economies may be forced to kick-start their economies by exploiting renewable resources in an unsustainable way. This requires relatively little long-term investment, compared with the cost of rehabilitating the agriculture and industrial sectors. Finally, if international financial institutions and other creditors demand debt repayment at this time, they may indirectly promote overexploitation of natural resources.

1.2.3 Pollution

Another serious environmental impact of armed conflict is pollution. Pollution can take many forms, and can result directly from actions by military or other armed groups, as well as indirectly from the human and economic crises created by conflict.

In recent conflicts in sub-Saharan Africa, pollution has most often been a serious problem during humanitarian crises. Refugees and internally displaced people often find themselves living in conditions so overcrowded that they become a significant source of potential pollution. In their need to subsist, the displaced may pollute surface water; in their flight, they may bring infectious diseases. The latter concern threatens not just the health of human populations but also that of the indigenous wildlife (Kalpers 2001b). Pollution of rivers and lakes also occurs when human bodies are deposited in them and decompose, as occurred during the Rwanda genocide.

Box 1.4 Case Study: Biodiversity and War: A Case Study from Mozambique

Authors: John Hatton, Mia Couto, and Judy Oglethorpe

Key points: The natural resource base of Mozambique was severely affected by recent armed conflicts. Wildlife resources, especially large mammal species, were decimated inside and outside of protected areas in many parts of the country, and infrastructure in some of the protected areas was destroyed. The immediate post-war period saw largely uncontrolled (and often illegal) harvesting of wildlife and forestry resources that accompanied infrastructure rehabilitation and reconstruction efforts in the absence of adequate enforcement. The management of Mozambique's natural resources and biodiversity is improving in a long-term recovery phase, as better legislation is passed and national institutions gain in strength.

To access the complete study, go to: www.BSPonline.org/publications.

Pollution may sometimes be exacerbated by humanitarian agencies operating in the field during a refugee crisis. Because the primary objective of humanitarian operations is to improve the welfare of refugee or displaced populations, environmental considerations may fall by the wayside. One common consequence is that the facilities and infrastructure in some refugee camps may not meet long-term requirements for protecting the environment (Kalpers 2001b). Poorly placed or badly designed latrines or medical facilities may contaminate water or soil. In some cases, the environmental impacts of these practices do not become apparent until well after the camps are dismantled (Kalpers 2001b).

1.2.4 Consequences for the conservation and natural resource sector

Conservation activities can suffer severe consequences in times of armed conflict. Armed units and local people may target buildings, vehicles, and equipment (Kalpers 2001b, Hillman Smith and Smith 1999). Park headquarters buildings, patrol outposts, field equipment, ranger vehicles, and fuel may all be pillaged or systematically destroyed. This destruction contributes to a general weakening of the organizations, as well as vastly impeding management and surveillance programs in protected areas (Kalpers 2001b).

When the situation grows too unstable, conservation activities may have to stop altogether. Conservation staff may have to abandon their posts and flee. Tragically, some of them may even be killed. When it becomes necessary to abandon an area, senior staff often are the first to go. Senior staffers may have access to project funds or vehicles, and thus may be targeted by thieves. Senior staff may be of an ethnic or religious group targeted by political rivals (Plumptre *et al.* 2001). The evacuation of these senior staff means that relatively inexperienced local or lower-level staff can be left in very difficult situations filling positions of high responsibility for which they have had little or no training (see Box 1.5).

Armed conflicts may also lead to “brain-drain,” when nationals with higher education in environmental fields flee the country and do not return. This can leave relatively few well-educated people in the environmental sector, weakening post-conflict attempts at reconstruction and conservation (Plumptre *et al.* 2001).

Faced with such difficult conditions, many conservation organizations withdraw from their field sites when conflicts get under way, often with devastating results for conservation activities. By leaving, organizations lose their ability to protect existing investments, to sustain their capacity, to maintain relationships and the respect of their partners, and to influence the management of natural resources following the war.

Sometimes the intensity and duration of the conflict make it impossible to stay. But in other cases, conservation workers may be able to find a way to stay on despite the

Box 1.5 Case Study: The Impact of Civil War on the Conservation of Protected Areas in Rwanda

Authors: Andy Plumtre, Michel Masozera, and Amy Vedder

Key points: The genocide that took place in Rwanda in 1994 and the insecurity in the years before and after has created many difficulties in protecting areas of conservation importance in Rwanda. Despite these difficulties, there have been conservation successes, among them the protection of most of the mountain gorillas in the Virunga Volcanoes, and the preservation of the Nyungwe Forest intact. The lessons learned from operating in Rwanda during this time highlight the importance of maintaining a presence during periods of insecurity, as well as the importance of junior staff in enabling conservation efforts to take place.

To access the complete study, go to: www.BSPonline.org/publications.

conflict. Protected areas where conservation organizations have maintained a presence (such as Garamba National Park, Okapi Faunal Reserve, and Kahuzi Biega National Park in DRC, and the Virunga Volcanoes national parks in DRC, Rwanda, and Uganda) have fared relatively well despite the conflicts (Hillman Smith and Mafuko 2000).

Even if more conservation organizations could remain on site during times of conflict, their effectiveness is often constrained by a policy and decision-making climate that does not prioritize conservation. Throughout the 1980s in Mozambique, for example, defense expenditures averaged 38 percent of total government spending, one of the highest rates in the world (Ham, in prep.). While this is an extreme example, during and following times of conflict, the environment often falls to the bottom of the agenda compared to such sectors as agriculture, transport, and commerce. Sustainable use of natural resources, adequate access to land and resources by rural communities, and biodiversity conservation may be overlooked in the haste to set policies that promote immediate post-war economic development.

Although there may be enthusiasm for policy reform in some areas, capacity for formulating and implementing such reforms during this time, including ensuring adequate environmental coverage, is often low. The post-war phase can also be a time of confusion and poor communication within and between government ministries and technical sectors. In addition, communication and collaboration between central, district, and local governments may be poor, further hampering conservation efforts.

Finally, a major obstacle for those trying to work in conservation during or immediately following armed conflict is financial difficulty. In unstable times, donors often scale back or withdraw their support, and it becomes very hard for conservationists to obtain funding. Funding falls off for a variety of reasons. Some donors may pull

out of a country for political reasons. For instance, bilateral donor countries may cut off monies to a recipient country with a different political philosophy. Bilateral and multilateral donors may cut off funding to activities that benefit geographical areas taken by rebels, or they may reprioritize their support to fund other, non-conservation activities exclusively, such as humanitarian aid or efforts to promote good democracy and governance.

Furthermore, many donors are target-driven, and all donors want to see specific results for their investments; they are often unwilling to take risks in case results are not obtained in times of uncertainty. Donors feel most comfortable working with existing partners whom they trust to implement projects and use their funds appropriately. If these partners withdraw, donors may cease funding rather than invest in unknown partners. If conflicts last a long time, donors may pull out completely as donor fatigue sets in.

All of these factors combine to reduce the capacity of the conservation sector during and following times of armed conflict. Beyond these direct impacts and consequences, armed conflicts can also lead to broader consequences that have potentially serious impacts on the environment and those who depend on it.

1.2.5 Vicious circle of conflict, environmental degradation, and poverty

Depletion of biodiversity and the natural resource base because of armed conflict can weaken the chances of lasting peace and sustainable livelihoods for a region's long-term residents. Although conflicts may start for other reasons, there is a risk that resource depletion and environmental degradation can drag a region into a vicious circle: poverty, further political instability, more armed conflict, greater environmental degradation, and even greater poverty.

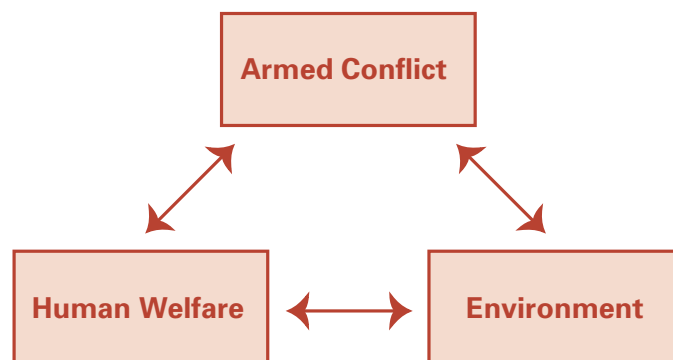


Diagram: Homer-Dixon (1994).

The relationship between natural resource scarcity, environmental degradation, and armed conflict is rarely so clear, however. While links between resource scarcity and conflict may exist, these links may be circumstantial and may not directly follow from the scarcity itself. In many cases, natural resource scarcity and environmental degradation may be more accurately understood as symptoms of larger societal problems, rather than as direct causes of conflict itself (Uvin 1998). Indeed, armed conflicts often exacerbate existing problems as much as they create new ones.

In addition to understanding the impacts of armed conflict on the environment, it is critical to appreciate the broader political, social, and economic context within which conservation is taking place, and how this influences the distribution and use of natural resources and affects the ability of conservation organizations to work effectively in an area.

For more information:

Schwartz *et al.* (2000); Uvin (1998). For an extensive list of works in the field of environmental change and security, see the bibliographical guide to the literature published in the Woodrow Wilson Center's annual *Environmental Change and Security Project Report*, available online at <http://ecsp.si.edu>.

1.2.6 Further political, social, and economic aspects

Armed conflict can radically alter the political, social, and economic context in which conservation takes place—changing the balance of political power, eroding law and order, destroying local and national economies, and fostering the development of alternative economies that favor elites. At the same time, armed conflicts often fragment societies, disrupt traditional natural resource management systems, divert resources away from development and conservation, and lower the priority of conservation in general.

The conservation sector has relatively little experience in dealing with social, economic, and political issues in armed conflict situations. If conservation is to remain effective during and following times of conflict, however, conservation organizations must understand the broader context in which they are working, assess how this context hampers their effectiveness, and apply this knowledge to the design, implementation, and management of their activities.

During armed conflict, economic strategies are often determined by basic survival needs at all levels, from households to nation-states. At the household level, a shift to greater reliance on subsistence activities and to different kinds of subsistence activities may take place. Agriculture may become impossible, and people may have to live

hand-to-mouth. In such circumstances, natural resources occupy a larger share of livelihood strategies. Shifts in economic strategies often necessitate a shift in social organization, a critical issue given that even subtle disruptions in subsistence activities can result in famine (Theodore Trefon, pers. comm.).

On a larger scale, national economies can collapse for a wide range of reasons, including disruption of trade, loss of outside investment, and loss of tourism revenue. This economic vacuum may swiftly be filled by new illicit trade networks, as various actors exploit natural resources to boost the economy and, often, to finance conflict. In sum, armed conflict often reduces access to resources for many, increases access (often illegal) for a few, and creates a new array of winners and losers.

This section briefly introduces several key political, social, and economic issues that can affect conservation during and following times of armed conflict, including:

- Governance issues
- Illicit trade networks
- Proliferation of arms
- Wartime and post-war rush for resources
- Post-war policy opportunities
- International conventions, legal and policy issues
- Spread of HIV/AIDS.

Recommendations for actions on these issues are found in Chapter 2.

Governance issues

The sustainable management of natural resources depends on good governance—that is, governance that is accountable, transparent, inclusive, participatory, respected, and effective in enforcing law and order. Good governance implies accountability to all local stakeholders, and it implies consideration of and responsiveness to their livelihood interests. In peacetime, good governance is indicated by an ability to reconcile diverse interests, the consideration of local interests in national-level decision-making processes, and a distribution of the obligations and benefits that is accepted by stakeholders and regarded as equitable (Winterbottom and Neme 1997).

During and following times of armed conflict, however, governance structures are often weakened and find themselves unable to control or effectively manage these resources. A common underlying factor in conflict situations is a weak state system, which reduces the ability to maintain territorial integrity, and thus the authority to control access to resources (Theodore Trefon, pers. comm.). Weaknesses in key institutions foster the breakdown of law and order. This, in turn, reduces legitimate,

effective government control and management of natural resources, leading to increased exploitation of those resources. Breakdowns in services and communication exacerbate this loss of control. At the same time, rival factions may be jostling for power, and perhaps even exploiting conservation resources in their power struggles, creating even further disarray. One of the difficulties conservation workers in such circumstances face is knowing whom to deal with in trying to keep conservation efforts going.

Such situations often lead to a power vacuum—one that is usually filled by predatory military and commercial interests. Their ascendancy stresses the economy even more, increases a country's susceptibility to resource exploitation, and may preempt opportunities for positive change in the post-war reconstruction period, thus weakening the state even further. Natural resource benefits are very often captured by elites in the state apparatus, to the detriment of the local people. This is a particularly difficult problem in Africa, where many recent conflicts have been fought over its rich natural resources, and have been perpetuated by inadequate governance of these resources. Improving environmental governance under these circumstances requires building governance capacity, as well as changing political processes and governance relationships among civil society, private sector, and the state.

Governance is exercised by various kinds of authorities, which can be roughly categorized into traditional and modern (the modern authority is the state, with its legal structure), although in many countries in sub-Saharan Africa these overlap. State authority is often diminished in an armed conflict, sometimes leaving only traditional authorities. In such circumstances, it becomes important to establish, maintain, and reinforce relations with traditional authorities (e.g., local chiefs with traditional control over local resource allocation), and to engage them in dealing with conflict-related threats to natural resources in areas under their control. However, it is also important not to accept or legitimize traditional authorities uncritically, because they are not necessarily accountable to populations in their jurisdictions. Always find out to whom—if anyone—the authority is accountable, regardless of the identity of that authority, and ask whether all parties regard the allocation of rights and responsibilities as equitable.

Illicit trade networks

Weak or failed states, lawlessness, collapsed local or national economies, and increased reliance on natural resources during times of armed conflict all provide fertile ground for the development of illicit trade networks (de Merode 1998). The development of these networks—which can include everything from peddling bushmeat at local markets to selling timber and diamonds at the international level—is a logical outcome in contexts where natural resources with immediately redeemable values become the only credible tender (Hart and Mwinyihali 2001 and Box 1.6).

Box 1.6 Case Study: Armed Conflict and Biodiversity in Sub-Saharan Africa: The Case of the Democratic Republic of Congo (DRC)

Authors: Terese Hart and Robert Mwinyihali

Key points: This case study examined the impacts of recent armed conflicts on biodiversity conservation in DRC, focusing primarily on the country's system of reserves, national parks, and other protected areas. Although conservation in DRC faces enormous challenges, this study asserts that a major international effort adequately supported by both national and international conservation organizations, as well as individual conservationists, can achieve conservation goals. Vital to such efforts are long-term guarantees of support and training for national conservationists and long-term maintenance funding for protected areas deemed to be of international conservation value.

To access the complete study, go to: www.BSPonline.org/publications.

Since illicit trade occurs largely through informal networks, it can be very difficult to measure and control. The advocacy section of this guide highlights a number of ways that conservation organizations can use their knowledge of conditions at the site level to raise international awareness and inform policy makers of ways to combat these networks. Other strategies to combat illicit trade networks, discussed later in this guide, include certifying natural resources (among them, timber and diamonds), imposing international sanctions, and applying international conventions.

Any discussion of illicit trade networks must also include a discussion of the proliferation of arms, to which these networks are often closely linked.

Proliferation of arms

The availability of arms, and the illegal exploitation of diamonds, timber, ivory, and other natural resources, is part of a vicious cycle in which these resources are used to purchase or barter for arms. These weapons, in turn, enable armed groups to maintain control over source areas for valuable resources and to develop and control illegal trade networks. Proliferation of arms from conflicts is also a major cause of increased illegal hunting in many countries, not just for those countries directly engaged in conflict, but also for neighboring countries into which these arms are brought (e.g., from Somalia to Kenya).

Governing authorities can also use natural resources to finance conflict. This can be done, for example, by using sales revenues from commercial resource extraction to finance wartime activities; collecting taxes for mineral extraction in controlled territory; collecting payments from businesses for army protection; and allowing direct

payoffs to soldiers instead of paying them regular salaries. These war economies feed a vicious circle from violence to economic exploitation of natural resources (such as diamonds or gold) and back to violence (International Famine Centre 2000). The recent civil war in Sierra Leone provides an example of such a war economy (Squire 2001).

Financing conflict using natural resources would be difficult without a market for those resources, including international companies eager to buy them. Nor could arms proliferation occur without the complicity of international arms dealers, suppliers in arms-manufacturing countries, and other trade organizations—a critical point to consider when developing potential response strategies.

The advocacy section of this guide (Section 2.2.6) highlights a number of ways that conservation organizations can use their knowledge of conditions at the site level to raise international awareness, inform policy makers about the proliferation of arms, and galvanize broader efforts to combat this problem.

Post-conflict rush for resources

The environment is often most vulnerable during the transition period between the cessation of hostilities and the re-establishment of effective control and management of natural resources. This is the time when the most severe environmental impacts may occur. Immediately following conflict, governing authorities are starved for cash—they urgently need to kick-start the economy and pay off war debts. But both state and traditional controls are weak, and the interests of local communities are often low on the political agenda. At this critical moment, the private sector often stands poised to move in as soon as possible. Governments may grant private firms very favorable concessions—on terms that may be perfectly legal but are not always in the country's best long-term interests. In addition, unscrupulous elements of the private sector may take advantage of the situation and extract resources illegally.

Box 1.7 Case Study: Sierra Leone's Biodiversity and the Civil War

Author: Chris Squire

Key points: Civil war has become a serious threat to biodiversity in Sierra Leone in recent years, both by virtue of its inherent destructive capacity, and its domino effect on other related causes of biodiversity loss. Yet to date, little attention has been focused on the impacts of the recent civil war on the country's biodiversity. This qualitative study considered that significant civil war-related biodiversity loss had occurred, and underscored the need for detailed on-site assessments of these impacts as soon as normality returns and areas are accessible. Finally, the study highlighted a number of potential strategies for mitigating these impacts.

To access the complete study, go to: www.BSPonline.org/publications.

Complicating matters further, the post-war phase is often a time of confusion and poor communication within and between government ministries and technical sectors. Central, district, and local governments may find it very difficult to achieve the most basic communications. The environment is often low on the agenda and not adequately taken into account in sectors such as agriculture, transport, and commerce. In their haste to set policies that promote economic development and boost the national economy, governments may overlook the need for sustainable use of natural resources, conservation of biodiversity, and the granting of adequate access to land and resources to rural communities. This combination can have potentially dire consequences for the environment. In the case of Liberia, the passage of a Strategic Commodities Act, legislation that places the country's natural resources under the president's direct control, has effectively accelerated natural resource extraction in the country (Global Witness 2001).

Despite the tremendous challenges for conservation during the immediate post-conflict period, however, there are also opportunities for post-war policy reform, which can help mitigate this rush for resources and the devastating environmental impacts it causes.

Post-conflict policy opportunities

The post-war period may also offer excellent opportunities for policy reforms that, if well planned, can help to promote sustainable rural livelihoods and conservation. However, new policies can also be detrimental, making it very important that the environmental sector participate in policy reform. In DRC following the 1996-1997 war, the Institut Congolais pour la Conservation de la Nature (Congolese Institute for the Conservation of Nature, or ICCN) and its long-term partners jointly collaborated to approach the new government—a major step in ensuring that environmental issues were high on the redevelopment agenda and that policy decisions could be promoted (Kes Hillman Smith, pers. comm.).

Sweeping new policy reforms are often put in place in the post-war era—reforms that may have large impacts on biodiversity, natural resources, and rural people's livelihoods for years to come. Often, the post-war period brings a new willingness to adopt different systems and policy models. There is often a window of opportunity for countries to update old, out-of-date, or inappropriate policies in a new climate of openness. These include natural resource, conservation, and environmental policies, as well as policies covering other sectors that may impact, directly or indirectly, on the environment.

For example, the Mozambican government showed much greater openness to community-based natural resource management after the recent war, and incorporated this into revised land and natural resource policy and legislation. At the same time, the land policy provided for increased private sector concession activities in support of economic development (Hatton *et al.* 2001).

However, even where there is enthusiasm for policy reform in the post-war period, capacity for formulating and implementing reform may be low. At this time the government may be run by a new group of political decision makers and policy planners who may have little technical training or experience in government processes, good governance, and policy making. Moreover, in many countries, capacity is often inherently low in the natural resource and environment sector, even during peacetime. Nevertheless, it remains very important that natural resource/environment technical staff in government play an active role in policy reform, both in their own sector and in other sectors that affect the environment. The latter is very important if governments are to ensure that adequate attention is paid to natural resource and environmental considerations in policies covering agriculture, transport, and mining. Networking between sectors plays an important role. A government's environment staff need to develop good working relationships across sectors and need to keep abreast of current developments as it sets its agenda and prioritizes its efforts. Structures such as inter-ministerial environment committees may be a useful forum, if they exist. Government staff can also influence the policy-making process to promote participation by all levels and avoid an exclusively top-down approach.

NGOs, religious groups, and community-based organizations can provide information as a basis for policy (e.g., information on biodiversity, natural resources, and community use of resources). They can help to build capacity for policy formulation (e.g., by arranging short training courses and study tours to other countries so policy makers can see different policies in action). If policy making is participatory, these groups can help formulate and review policy. Their knowledge may enable the prediction of likely short- and long-term consequences of proposed policies. If necessary, they can act as watchdogs on policy development and lobby for changes to process and content before new policies are finalized.

Donors can provide funding for policy reform and may be able to encourage a fair and open process. Many countries create new ministry-level, donor-funded expatriate natural resource and environment policy planning positions during post-war periods. New policies demonstrate to donors at this critical time that strategies are being developed for the future, and often help to attract funding.

Legal and policy issues: the role of international conventions

In theory, armed conflict is governed by an international legal framework that restrains the conduct of soldiers toward civilians and noncombatants, the natural environment, and any other nonmilitary targets, including wildlife. In practice, these laws are often ineffective, particularly during civil wars and other internal conflicts. Yet there has been increasing awareness of international conventions that protect the environment, and the need to improve their enforceability. Even in the absence of a controlling legal authority, the very existence of international conventions may provide moral justification and financial means (e.g., by helping to attract donor funds) for continuing conservation work during conflict (Jay Austin, pers. comm.).

Box 1.8 IUCN Draft Convention on the Prohibition of Hostile Military Activities in Protected Areas

Seeking to fill the gaps left by both the law of war and international environmental law, the World Conservation Union (IUCN) has recently proposed a Draft Convention on the Prohibition of Hostile Military Activities in Protected Areas. If adopted, this treaty would provide special protection during armed conflict for “natural or cultural area[s] of outstanding international significance” designated by the UN Security Council. The designations would draw upon existing designations, such as World Heritage Sites or Biosphere Reserves, but also could be extended to include national parks and other areas that currently might not enjoy international status. Additional treaty provisions could be drafted to provide a special protected status for conservation workers, though the current IUCN Draft Convention does not include this concept. The draft also needs to be amended to strengthen its enforcement provisions, and to ensure that it will apply to all armed conflicts, internal as well as international.

The IUCN Draft Convention is still a work in progress, and even the creation of paper protections and faraway legal institutions will be no guarantee that atrocities will not continue to occur in the field. In the interim, or where the rule of law has broken down, existing international conventions still can serve as tools of moral persuasion, hooks for publicity and awareness raising, and vehicles for financial and technical assistance.

Source: Jay Austin.

International environmental law provides specific protections for the natural environment and wildlife that may extend to times of armed conflict. For example, the 1972 United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Convention establishes a clear framework for protection of designated World Heritage Sites, and its language suggests that it is meant to apply during wartime. By itself, this convention does not automatically have an effect on the ground, and it must be recognized that the World Heritage Convention has not always fulfilled the role expected of it at the international level. Key personnel at relevant sites must be made aware of the convention’s potential, and then use it to support site conservation. The UNESCO/United Nations Foundation program for the conservation of the five World Heritage Sites in DRC is a classic example (see Box 1.9). Committed NGO partners and ICCN formed a coalition to use financial support from UNF, political support from UNESCO, and the strength of their own collaboration to develop a program that is already proving how conservation in armed conflict can not only continue, but be improved (Jay Austin, pers. comm.; Kalpers 2001b).

The Convention on International Trade in Endangered Species (CITES) restricts cross-border traffic in endangered animal and plant species at all times, as well as providing monitoring and enforcement mechanisms. However, the CITES treaty is primarily targeted at the problems caused by “business as usual,” rather than the extreme emergency situations created by armed conflict (Jay Austin, pers. comm.).

Box 1.9 World Heritage status as a conservation tool: the UNF/UNESCO project

Working in collaboration with a variety of locally active conservation NGOs, technical cooperation agencies, and national institutions, UNESCO is working with UNF (a private foundation) to support a massive intervention in the five World Heritage sites in DRC: Virunga National Park, Garamba National Park, Salonga National Park, Kahuzi-Biega National Park, and Okapi Faunal Reserve. This intervention, scheduled to last four years, will provide a short-term lifeline to these five seriously threatened protected areas. Apart from providing emergency funds on numerous levels—for instance, staff salaries, equipment purchases, capacity building, and improving relations with local communities—the program also has a diplomatic component that strives to raise the awareness of all warring factions about the importance of conservation in the region.

Source: Kalpers (2001b); Hart and Mwinyihali (2001).

Finally, in the aftermath of armed conflict, there have been increasing calls for ad-hoc legal mechanisms that could hold governing authorities and individuals financially accountable for damages to natural resources and wildlife. One existing model is the United Nations Compensation Commission, created to assess civil liability against the government of Iraq for its actions during the Persian Gulf War. The recent UN Panel of Experts report on DRC calls for a similar commission to investigate and adjudicate damage claims by the Congolese government (United Nations 2001). Another suggestion proposes that funds be set aside to create an international environmental emergency task force that would assess and mitigate environmental damage even before lengthy civil claims procedures are put into place (Austin and Bruch, in press).

Such legal mechanisms would require clear evidence proving the responsible parties' culpability, including proof of who the responsible actors are. Conservation organizations can play an important role in gathering this information (see also Sections 2.1.8, 2.2.2, and 2.2.6).

For more information on legal and policy issues:

Austin and Bruch (2000); Austin and Bruch (in press); and Tarasofsky (2000).

Spread of HIV/AIDS

In regions of armed conflict, people are more at risk of HIV infection than in peacetime, through the presence of armed forces and from social dislocation and insecurity. The breakdown of social structure and legal protection results in more transitory sexual relationships, involving more partners. Rape is often used as a weapon of war. Women and children may be forced to turn to prostitution when normal livelihood activities become impossible during conflict. HIV education and preventive means during sex are often lacking for both the general population and the armed forces.

HIV infection rates in military and peacekeeping forces tend to be up to five times higher than in the general population, and much higher during conflict. All this contributes to a greater spread of HIV during conflict. It may also serve to prolong conflict as it places new strains on health and economic infrastructures, and destabilizes family and social structures (Kristoffersson 2000).

The increased spread of HIV due to conflict can have serious consequences for the environment. Conservation organizations in Africa are already tragically losing valuable staff to AIDS in peacetime, including trained and experienced senior staff. This is seriously affecting their capacity to undertake conservation programs in many countries, including South Africa (Trevor Sandwith, pers. comm.). An increase in the spread of HIV during conflict would make staff even more vulnerable. Maintaining and building organizational capacity is critical for mitigating the impacts of conflict on the environment during and immediately after conflict (Section 2.1). Loss of staff to AIDS at this time could have a very serious impact on the environment.

The relationship between AIDS, rural economies, and natural resources is poorly understood. The most economically active members of households are most likely to die of AIDS. This, for example, reduces households' capacity for heavy agricultural labor. Does this result in a switch to less labor-intensive production techniques and crops? What impact does this have on the size of area cultivated and other environmental aspects? Is there a greater reliance on natural resources? Little is known to date, but it is very possible that an increase in the spread of HIV during conflict will have long-term repercussions for the environment in many indirect ways.

Summary

In sum, a solid understanding of the broader political, social, and economic context is essential for effective conservation in areas of armed conflict. While this section highlighted many of the challenges and difficulties confronting conservation, it also pointed to a number of opportunities that may exist for preparing for, coping with, and recovering from periods of armed conflict. Assessing these challenges and opportunities is essential for developing an appropriate and effective conservation strategy—the subject of the next chapter.