BIODIVERSITY CONSERVATION AND CRISIS

KEY ISSUES FOR CONSIDERATION

November 2008

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ACRONYMS

BSP	Biodiversity Support Program
CBNRM	Community-Based Natural Resource Management
IDP	internally displaced person
IUCN	International Union for the Conservation of Nature
NGO	nongovernmental organization

INTRODUCTION

Conflict and post-conflict situations pose a number of critical challenges to biodiversity conservation. In particular, given the enormous issues facing governments and populations as they struggle to rebuild and recover after periods of conflict that may have lasted for decades, environmental considerations often do not receive immediate attention. Natural resources play an important role in rebuilding nations, and access and control of natural resources may have been a driver or sustainer of conflict. They contribute to economic growth, livelihoods, and empowerment, and therefore activities to address rebuilding in post-conflict situations must consider appropriate attention to their care. Without proper attention to conservation, the risks of continued environmental degradation are enormous and probable. Failure to address these issues can contribute to stalled economic recovery and development and greater risk of a return to conflict.

Rebuilding African governments often face hard land-use choices during and at the conclusion of conflict. Return and resettlement of displaced persons, reintegration and employment of ex-combatants, overall employment and economic growth needs, and addressing historic land disputes that may have contributed to the conflict often require land, property and tenure reallocation, in settings where conflict has caused significant environmental damage and land-use patterns have been dramatically altered. In many post-conflict situations, land allocation decisions have had negative and long-term consequences on the nation's natural resource management. Spontaneous or uninformed land-use decisions can have immediate effects on ecological resources and services, as well as long-term effects on associated economic benefit streams. Helping governments understand and model land-use decisions can improve the nature of planned interventions from potentially sustainable uses, including logging, ecotourism, and hydroelectric power generation.

This manual has been prepared under the USAID Biodiversity Analysis and Technical Support project, which is implemented by Chemonics International in partnership with the World Wildlife Fund and the World Conservation Union (IUCN), with support from the U.S. Forest Service Office of International Programs and the Africa Biodiversity Collaborative Group.

The manual is intended to familiarize field practitioners, including USAID missions and their principal partners, with foreseeable and often unintended consequences of conflict on biodiversity conservation. The manual identifies where the risks to natural resources are the greatest during the conflict cycle, and provides suggested areas for measuring risk and mitigation measures. The manual addresses selected topics along the conflict-conservation lifecycle: 1) protected area management issues in conflict-affected areas, 2) conservation capacity after conflict, 3) food security and biodiversity conservation, 4) harnessing the benefits of community based natural resource management in pre- and post-conflict situations, and 5) land tenure and property rights in post-conflict conservation. Case studies are presented throughout to help elucidate experiences and review potential interventions.

Historically, much conflict-related attention on biodiversity loss has focused on national parks and specifically threatened or endangered species and their habitats. Because much of the damage that occurs during pre- and post-conflict is actually an erosion of natural resources

across a variety of public lands — including forest reserves, communal properties, and undeveloped riparian areas — we attempt to involve these other land features in the discussion. It is notable that although the majority of literature and studies has focused most directly on the loss of biological diversity and threatened species habitat during or just after conflict, much of the irrevocable damage to conservation assets, human and physical, may occur before the onset of a recognized conflict. For example, in efforts to reduce tension that may be building prior to conflict, for example, national governments have de-gazetted national parks and wildlife reserves and encouraged settlement, which in turn can have secondary effects of altered migration and grazing patterns, sometimes across borders.

Frequently such settlements are poorly planned, inequitable and land productivity inadequately considered during redistribution efforts, resulting in further land fragmentation and inappropriate and non-sustainable agriculture, hunting, or resource management/extraction practices. In several cases, forest reserves adjacent to key national parks have been surrendered, ultimately increasing the pressure on the park itself and doing little to provide sustainable income for new communities. Forest reserves in many places have turned into under-managed buffer zones against the boundaries of what were previously well protected parks. When hostilities break out, the defensible reserves are gone, buffer zones can be quickly penetrated by refugees or internally displaced persons (IDPs), with government forces or guerrilla movements exposing the core conservation areas to immediate degradation. On occasion, governments in Africa and elsewhere have cleared forests simply to reduce anti-government forces refuge well in advance of a declared conflict. In addition, organizing movements (e.g., Obote in Uganda, RENAMO in Mozambique) may have lived off the land for months ahead of their military operations, causing vast damage from which it can be nearly impossible to recover. Finally, in other cases, deposed politicians and members of ousted military regimes have been banished to forests adjacent to protected areas, as was the case in Guinea, Côte d'Ivoire, and Sierra Leone. These areas became the havens for their political movements and devastated the resource base prior to declaring war on the capitals.

Overview Resources

"Armed Conflict and Biodiversity in Sub-Saharan Africa: The Case of the Democratic Republic of Congo," Biodiversity Support Program (BSP), 2001. In African countries, where poor rural populations are the majority, and the wealthy minority not only depends on resource extraction, but also holds the political power, nature conservation is not a domestic priority. Needed 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. Authors: Terese Hart and Robert Mwinyihali.
http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=143

"Biodiversity, Conflict and Tropical Forests," IUCN, 2002. "Poor management of forest resources and the absence of an established set of equitable sharing principles among contending parties lead to shifts in resource access and control. Resulting tensions and grievances can lead to armed conflict and even war…While these conflicts have frequently, even invariably, caused negative impacts on biodiversity, peace is often even worse, as it enables forest exploitation to operate with impunity. Because many of the remaining tropical forests are along international borders, international cooperation is required for their conservation; as a response, the concept of

international "peace parks" is being promoted in many parts of the world as a way of linking biodiversity conservation with national security." Author: Jeffrey A. McNeely. http://www.iisd.org/pdf/2002/envsec_conserving_overview.pdf

"Civil Conflict and the Environment in the Upper Guinea Forests of West Africa," BSP, 2001. This report aims to catalyze action on the part of conservation, relief, development, donor, and government agencies to alleviate the negative impact of civil conflict on West Africa's environment. The countries addressed are Guinea, Sierra Leone, Liberia, and Cote d'Ivoire. Although there are many ways (direct and indirect) in which the environment is affected by civil conflict, this report concentrates on the impact of population displacement, unsustainable resource extraction, and funding priorities on the environment. Authors: Timothy Bishop and Tommy Garnett. http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=131

The Environmental Consequences of War, **2000.** This book examines the legal, political, economic, and scientific implications of wartime damage to the natural environment and public health. Author: Jay E. Austin.

"History of Armed Conflict and Its Impact on Biodiversity in the Central African Republic," BSP, 2001. Recent armed conflicts in the Central African Republic have had a devastating impact on the country's biodiversity. Deforestation from slash-and-burn agriculture and firewood collection by IDPs fleeing conflict from 1996-1997 in the capital city of Bangui has had significant impact on biodiversity. Conflict in the continually insecure northern part of the country has led to a drop in the elephant population and extinction of an estimated 10,000 rhinoceros. The greatest impact on biodiversity conservation opportunities is the withdrawal of foreign assistance and funding. A poor economic situation led to conflict in the country. Ecotourism could play an important role in economic development. Therefore, it is essential to maintain biodiversity conservation support to limit fragility in the future. Authors: Allard Blom and Jean Yamindou. http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=141

"Our Planet – Environmental Security," 2005. *Our Planet* is the United Nations Environment Programme magazine for environmentally sustainable development. This issue is themed around environmental security and the role it plays in reducing poverty. These articles are related to biodiversity and conflict. UNEP. http://www.ourplanet.com/imgversn/154/content.html
- **"Planting Security."** "Wangari Maathai tells Geoffrey Lean how trees make peace and how deforestation and degradation of the land lead to conflict… she concludes that environmental degradation in Africa and elsewhere is beginning to lead to international tensions. 'The migration from South to North is partly because the migrants are leaving behind a degraded environment because they have had very poor governance and a very poor distribution of resources. There can be no peace without equitable development, and there can be no development without sustainable management of the environment in a democratic and peaceful space. I hope that this prize will help many people see the link between these three things.'"

"Overview of Armed Conflict and Biodiversity in Sub-Saharan Africa: Impacts, Mechanisms, and Responses," BSP, 2001. This study provides an overview of the impact of armed conflict on the environment. To make the issues more readily understandable, the author

first describes the various effects and the mechanisms behind them, and outlines a variety of responses to reduce or prevent these effects. Author: Jose Kalpers.
http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=140

"The Trampled Grass: Mitigating the Impacts of Armed Conflict on the Environment," BSP, 2001. Armed conflict creates complex challenges for conservation in many areas of sub-Saharan Africa and has radically altered economic, political, and social conditions, with a profound impact on the environment, natural resources, and biodiversity. Experience has shown that actions can be taken to mitigate the impact of armed conflict on the environment. Authors: James Shambaugh, Judy Oglethorpe, and Rebecca Ham, with contributions from Sylvia Tognetti. http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=139

"Volcanoes under Siege: Impacts of a Decade of Armed Conflict in the Virungas," BSP, 2001. This case study examines events between 1990 and 2000 in the Virunga Volcanoes region, which straddles Rwanda, Uganda and the Democratic Republic of Congo, and each country's impact on the region's biodiversity. This document describes and analyzes the responses to the crises observed during different phases of this 10-year period, with emphasis on the collaboration among the conservation, emergency-response, and development sectors. Author: Jose Kalpers.
http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=144

"Conserving Forest Biodiversity in Times of Violent Conflict," IUCN, 2003. Conflict has negative effects on forest biodiversity because in times of conflict, forests become shelter for civilians and combatants. This article discusses the concept of Peace Parks to link biodiversity conservation to national security. Jeffrey A. McNeely.
http://journals.cambridge.org/article_S0030605303000334

"Night Time Spinach: Conservation and livelihood implications of wild meat use in refugee situations in north-western Tanzania," Jambiya, G., Milledge, S.A.H. and Mtango, N., TRAFFIC East/Southern Africa
2007. http://assets.panda.org/downloads/traffic_pub_gen16_1_.pdf

TOPIC 1. PROTECTED AREA MANAGEMENT ISSUES IN CONFLICT-AFFECTED AREAS

Natural resources, renewable and non-renewable, can often be the focal point of conflict, or a key revenue base for governments and insurgents in the conflict. Even when conflict begins for non-resource reasons, there is a strong risk that resource depletion, land settlement, environmental degradation, and the presence of valuable natural resources (timber, wildlife, minerals) will draw a region back into a cycle of poverty, political instability, renewed armed conflict, and greater environmental degradation. In a post-conflict period, the management of protected area natural resources can be seen as an important element of government and donor efforts to manage national capital for development, peace, and recovery. If managed effectively, these resources can contribute to conservation, assist local communities in recovery, and provide income to the population and the national economy, while still maintaining biodiversity. From the government's perspective, the rehabilitation of protected areas creates a productive asset and provides ecosystem services such as water catchment that extend beyond the protected area, and as such the rehabilitation can be an opportunity to restore the country's international image, in turn encouraging foreign investment and revenue generation, such as through tourism. From the international community's viewpoint, the return to peace is an opportunity to take a fresh look at natural resources, avoid replication of unsuccessful models, and develop innovative approaches for conservation and investment.

The post-conflict period, however, also poses many challenges to such efforts, not only given competing priorities, but partly because conservation staff members are often forced to flee during conflict. It is critical to find approaches to protect natural resource areas in the near-term that do not exist in isolation from broader humanitarian, recovery, and security activities. Approaches must integrate conservation considerations into humanitarian assistance and take into account the capacity that exists on the ground.

Reintegration and resettlement. Most post-conflict environments are characterized by large movements of people and increased competition for scarce economic resources in the search for sustainable livelihoods. Ex-combatants represent a critical category of actors who have a significant effect, either directly or indirectly, on the natural environment. During and after war they can participate in illegal poaching, fishing, logging, and mineral extraction for subsistence or business purposes. To facilitate access to these resources and avoid attack during conflict, combatants often occupy formerly protected areas, placing a significant burden on key ecosystems. By enforcing forms of martial law in such occupied areas, they often control other groups' access to and use of natural resources.

In the post-conflict period, as large numbers of citizens struggle for economic self-sufficiency, where economic and infrastructure devastation has resulted in limited opportunities, finding alternative employment for ex-combatants can be a difficult challenge, but one that is vital to avoiding criminality and even renewed conflict. Ex-combatants often fear returning home if they have committed atrocities in their own communities during times of conflict. Even if they have the will; and, after years serving as armed combatants, they may lack skills and social orientation needed to earn more legitimate livelihoods in either urban or agricultural sectors. Acceptance of ex-combatants is made more difficult at the community level when opportunities for employment

are scarce even for those who did not fight. Even when ex-combatants can and want to return to their former rural communities, a lack of available land for agriculture can make this difficult. There are many approaches used to address the issue of employment for ex-combatants, depending on the context. These can include: employment with private security companies who recruit ex-combatants to provide services in unstable post-war environments; integration into national militaries and police forces; temporary employment in short-term reconstruction projects, sometimes supported by USAID or other donors specifically for this purpose; and provision of tools, seeds, or other initial support that can be used to re-establish livelihoods when returning to a former life. These initiatives can be perceived positively or negatively. Positive perceptions come from employing ex-combatants, removing them from the pool of post-war unemployed and marginalized, and reducing vulnerability for members of this element of society to engage in armed 'social banditry.' Negative perceptions come as initiatives bring ex-combatants into positions of authority, possibly interacting with the same populations affected during conflict. The issue is complex and requires careful management regardless of the intervention; there is no easy solution.

Restoration of conservation areas represents another opportunity to provide employment for ex-combatants who can be used within a civil conservation corps, put to work to initially help rebuild park infrastructure and demarcate boundaries, using their intimate knowledge of the area

Case Study: Gorongosa National Park, Mozambique

The 12-year conflict (1980-1992) between RENAMO and FRELIMO, forces that followed Mozambique's independence, severely depleted the natural resource base. The flagship Gorongosa National Park suffered massive declines in large mammal populations, including elephants (from 3,000 pre-conflict to 108 in 1994), buffalo, hippo, wildebeest, and waterbuck. These losses can be attributed to hunting and poaching by armed groups and civilians who occupied the area after park officials were forced to flee in 1981.

By the mid-1990s, donor agencies started to fund natural resource management projects, and in 1996, an 18-month project was initiated to rehabilitate the boundaries and infrastructure of the park. The first step was to build up emergency teams under the leadership of a former park warden. The team consisted of Wildlife Service staff who had experience before the war, demobilized soldiers, and recruits from local communities.

The involvement of ex-combatants was seen as a valuable way to prevent further conflict. As well, the ex-soldiers were viewed as an important resource for controlling illegal hunting, because they were trained in tracking and handling firearms, and were self-sufficient in the bush. Under a separate contract, ex-combatants were hired for demining processes because of their field self-sufficiency and first-hand knowledge of where land mines had been laid and moved. Special attention was taken to ensure each patrol team had ex-combatants from both RENAMO and FRELIMO forces to prevent possible conflict between teams and to promote reconciliation.

Initially, teams were established in the old park headquarters, where they patrolled unarmed, in part due to tight weapon controls, and to promote a more "people-friendly" image, compared with the previous management encounter with local communities. In exchange for not hunting in the park and assisting in controlling illegal resource use, communities were allowed to extract certain products. The park also provided some employment, and local communities took part in a food-for-work program reopening park infrastructure. By the end of 18 months, the park was under regular management, illegal activities were greatly reduced, and positive relationships were established between communities and ex-combatants and between park officials and former park residents.

to identify enforcement problems and poaching, and eventually providing training for conversion to park interpretation specialists.

Recommendations

The utility of ex-combatants as game guards, park enforcement personnel, and in anti-poaching units can be seen in a similar context as their inclusion in reformed military, police, and security units — dependent on local political and security priorities. While contributing to the relatively quick effect of preservation of high-value biodiversity areas and resources, such employment also lends itself to rapid, defined funding/project approaches by donors. And although not intended to make anything other than a minimal contribution to a national disarmament, demobilization, and reintegration efforts, the value of the approach is that it can be paired with the larger effort, while influencing biodiversity conservation. Although there are some risks to employing ex-combatants as guards and rangers, these must be weighed against other opportunities for enforcement of high-value natural resource assets, alternative employment opportunities for ex-combatants, and what the former fighters will be doing if not employed. It can be a challenge to supervise ex-combatants, particularly if they are patrolling rural areas, but various peace processes employ training and supervisory frameworks for reintegrating rural police and military units. As such, the approach to supervision of ex-combatants in post-conflict enforcement roles is not new. In addition, it must be realized that the employment, supervision, training, enforcement of laws, and relationships to local communities will by necessity be more roughshod and unsystematic than such an endeavor would be in peaceful settings. The real comparison is not between such employment in conflict versus peaceful settings, but between employment of ex-combatants and non-employment of ex-combatants (and ensuing social banditry) in post-conflict circumstances. Care must be taken in this context regarding the design and kind of enforcement to be pursued.

Resources for Protected Area Management Issues in Conflict-Affected Areas

"The Impact of Civil War on the Conservation of Protected Areas in Rwanda," BSP, 2001. The genocide 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. Although recent surveys show that large mammal populations have been reduced in number in Rwanda's three major protected areas, there have been conservation successes, which include protection of most of the mountain gorillas in the Virunga Volcanoes and maintenance 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. Author: Andy Plumptre. http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=145

"Biodiversity Conservation in Regions of Armed Conflict: Protecting World Heritage in the Democratic Republic of the Congo," UNESCO. This article discusses the United Nation's Foundation "Biodiversity Conservation in Regions of Armed Conflict: Conserving World Heritage sites in the Democratic Republic of Congo" pilot project. The aim of the project "is [to] ensure the conservation of World Heritage Sites in the DRC both during periods of civil unrest and the long term, by mobilizing financial, logistical, technical and diplomatic support at the

regional and international levels, to strengthen the conservation of the sites and ICCN (*Institut Congolais de la Conservation de la Nature*) as a whole."
http://whc.unesco.org/en/activities/83/

War and Tropical Forests: Conservation in Areas of Armed Conflict, The Hayworth Press, 2003. This book is a compilation of works by various authors on conservation of tropical forests in times of conflict. Author: Steven V. Price

"Impacts of Conflict on Biodiversity and Protected Areas in Ethiopia," BSP, 2001. In Ethiopia, government and nongovernment institutional politics have hindered establishment of conservation and protected-area programs. The authors think community involvement in conservation must be used. Community involvement could take the form of participation in the development of a park-management plan. In 1991 during a brief period of conflict, community-based intervention measures were attributed to conservation of Awash National Park. Authors: Michael Jacobs and Catherine Schloeder.
http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=147

TOPIC 2. CONSERVATION CAPACITY: AFTER CONFLICT

The absence of a broad range of mid-level administrative and technical management capacity is almost always what needs most attention after conflict (generally, not only in conservation) and where donor support is often initially focused. Common in post-conflict and other crisis scenarios is the large gap in administrative and technical capacity between small numbers of qualified senior government officials and technical experts, and the majority of the population. In addition, limited government capacity or pervasive corruption are problems that, in some cases, may have pre-dated the conflict and can linger or even have been exacerbated in the conflict and post-conflict periods. In many countries plagued by conflict, overall technical capacity within and outside of government in virtually all sectors has been negatively affected by the flight of critical intellectual capital needed for sound policy-making and effective implementation.

An accelerated 'brain drain' occurs during crisis, when skilled individuals in the conservation field pursue out-of-country opportunities and family security and do not return. Meanwhile, remaining staff may find themselves forced to flee field sites to refugee camps and urban centers where they might be protected from armed conflict. This often means new conservation employees are unable to obtain the training and practical field experience necessary in the post-conflict period. Often after prolonged conflicts, senior officials and technical experts may return from internal displacement or exile. When this happens, there can be an opportunity, with the return of some of the needed human technical capability, for appropriate conservation efforts. This can be combined with biodiversity conservation capacity building efforts that emphasizes locating and seeking to attract ex-personnel who once worked in ministries of forestry, natural resources, and wildlife, and training new personnel to take on these mid-level responsibilities.

Subsequent to conflict, given that many of the most qualified senior staff members are likely to have fled first and returned last, junior personnel in place in the immediate post-conflict period often face challenges that do not exist in peaceful settings and for which they have not been adequately trained. Infrastructure and equipment is either non-existent or severely damaged, displaced people and armed ex-combatants are present in large numbers in rural areas, and enforcement is even more difficult as a result, particularly if conservation efforts and policy have not been prioritized at the most senior levels. The result can be unsustainable and uncontrolled levels of resource extraction, inappropriate resource management and land-use decisions, and the expected negative impact on biodiversity that accompanies these factors.

Training a critical mass of new conservation employees after conflict and providing them with experience is costly and time-consuming. Although training can produce long-term results, it does not usually address immediate needs. While training is underway, the biodiversity and resource base of a country can significantly decline because of continuing low capacity in enforcement and conservation area management. If not managed appropriately and given the necessary backbone at the national government level, there can be continued natural resource extraction activities and unsustainable practices in local communities, as well as national and international interests in the income generated by timber, wildlife, and minerals that will result in unabated depletion of natural resources and biodiversity. The post-conflict period also presents a window of opportunity for the conservation sector to track and provide inputs to national policy

— including policies of other sectors and economic policy — as those can have big positive or negative environmental impacts.

Another key feature of conservation capacity erosion during conflict is the loss of critical management systems and data, as well as any capacity to update the information that does exist. Forest inventory information, maps of critical habitat and threatened species, coordinates of protected area boundaries, information on conservation staff and expertise on national biodiversity, and budgets for infrastructure rehabilitation and maintenance are often lost or become outdated during conflict, making it more difficult to jumpstart management programs after conflict. Much technical information concerning management interventions for communities around protected areas — agroforestry and soil conservation systems, information on agronomic interventions to improve incomes, historic documents regarding relationships between protected areas and local communities — must be saved. In Rwanda, a comprehensive USAID natural resource library was lost during the war. Several key donors supporting natural resource management also lost generations of documentation and knowledge. Ensuring that park management systems are able to back up such information and do so on a regular basis is key to developing the platform for rehabilitation. Organizations supporting protected area management should ensure that all such information is archived on a regular basis, even in times of prosperity and stability.

Effective Training Options in Post-Conflict Situations

Training in this critical stage of development can take many forms.

- Mentorship programs, whereby experienced officials supervise teams in the field and mentor junior staff

- Field training exercises led by ex-military personnel (depending on the political and security situation)

- Quickly devised, appropriate and focused short-term courses at technical colleges and universities, provided that these institutions can be re-opened rapidly

- Support provided by conservation professionals from other African countries that have faced similar circumstances to conduct short-term placements, advise operations, or develop training materials

Recommendations

Before conflict, it is useful to ensure that junior staff members have a well-rounded training — they may have to take over in times of crisis. During conflict, it is challenging, but critical, to maintain organizational capacity to ensure preparedness for the rehabilitation stage. Training initiatives should not solely be implemented in the event of peace, but also can be undertaken during times of crisis. When conservation personnel can no longer perform their duties due to conflict, funds can be directed toward providing training within more stable parts of the country or abroad. Providing professional placements in peaceful areas or neighboring countries allows personnel to continue working and continue gaining experience, and helps reduce brain drain. This strategy is particularly valuable if there are trans-boundary protected areas between two or more countries and one of them is in conflict. Staff from a conflict country can be transferred to assist staff from the neighboring country trying to maintain conservation operations, thus increasing conservation capacity of these areas that they are border to and, therefore, also vulnerable to conflict.

Routine and systematic support must help protected area management agencies and natural resource management organizations archive valuable land and natural resource information. This includes providing training and material support to such agencies and making sure this information is carefully stored as part of enhanced management systems. Ensuring that international nongovernmental organizations (NGOs) involved in conservation are properly doing this is incumbent upon USAID officers and grant managers alike, particularly in situations where the NGOs are mobilizing to zones faster than governments are able to respond. In those cases, NGOs can play a key role in providing technical assistance and supporting government, both in policy and in the field. .

Another option is to provide short study tours to neighboring countries, to keep staff members engaged, and allow them to learn about developments and advances that can later be used to influence policy and practice in the post-conflict period. These options might include short courses in technical colleges, including African wildlife colleges in South Africa and Tanzania. Other possibilities include distance education with foreign technical schools and universities, and enrollment into universities abroad. These initiatives not only provide trained personnel in the post-conflict period, but also keep staff members involved and engaged in conservation initiatives during conflict.

Post-conflict, the challenges change. There are often huge post-conflict policy opportunities – for example, Uganda and Mozambique both adopted much broader policies on community management of natural resources. It is essential to have the capacity available to take advantage of these opportunities, which can set the conservation agenda for decades to come. An important subsequent issue to be addressed is the fate of most mid-level employees in the ministries, as it is difficult to locate those remaining in-country when offices and records have been destroyed. When there is a change in government as a result of conflict, former government staff may be replaced, and institutional memory and capacity may be lost. At the beginning of a peace

Case Study: Mozambique

At independence, only 19 Mozambicans in the country had university degrees, and only four Portuguese nationals (mid-level) chose to remain in the wildlife services. The Mozambican Wildlife Service established a Portuguese-language wildlife training school in Gorongosa National Park for wardens and rangers.

The school was forced to close in 1981, when RENAMO forces attacked the park headquarters. Of the 28 medium-level personnel trained between 1977 and 1981, 16 remained in service at the end of the RENAMO–FRELIMO war.

During the war, however, various wildlife personnel, including some graduates from the Gorongosa Training School, completed certificate and diploma courses at Mweka Wildlife College in Tanzania.

Donor funding for capacity building and other conservation directives did not get reinstated until the mid- to late-1990s, delaying conservation initiatives in the post-conflict period. When these efforts began, the few mid- and junior-level employees that remained played vital roles by implementing projects and heading teams to rehabilitate protected areas.

Recently, external funding financed 15 candidates to enroll in a one-year diploma level course at the Southern Africa Wildlife College in South Africa and the Mweka Wildlife School in Tanzania.

process, technical personnel previously attached to ministries and technical units who remained during the conflict frequently circulate between former locations of employment to observe how events proceed with the government and international community. Locating such individuals quickly provides a shortcut to capacity-building after a war. Other personnel who could participate in donor-funded training can be drawn from a number of sectors, including university students whose studies were terminated by conflict and former officers or mid- to low-level leaders from militaries/militias. With a group of candidates, training can begin to attend to issues of biodiversity protection, use, and management innovation. To attract qualified personnel into the conservation sector, provision of performance bonuses for teams in charge of sensitive missions can be an effective strategy.

Restoring archived documentation so management can resume is critical to long-term conservation. Supporting NGOs and management consultancies that are able to help retrain returning staff and build capacity in new staff is equally important and should be supported as a first line of defense for protected area systems and forest reserves.

Resources for Conservation Capacity in a Crisis Context

"Biodiversity and War: A Case Study from Mozambique," BSP, 2001. The natural resource base of Mozambique was severely affected by recent armed conflicts, with wildlife resources decimated and infrastructure within the protected areas destroyed. Nevertheless, management of Mozambique's biodiversity is gradually improving because of the passing of more adequate legislation, institutional strengthening, and growth of a vibrant and vocal civil society. Authors: John Hatton, Mia Couto, and Judy Oglethorpe.
http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=146

"Sierra Leone's Biodiversity and the Civil War," BSP, 2001. Forestry conservation efforts have focused on remedying the traditional causes of biodiversity loss, shifting conservation, lumbering, and wildfires. In addition to traditional causes, civil war has become a serious threat to biodiversity in Sierra Leone. To date, minimal attention has been focused on the impact of civil war on biodiversity. Using information from various sources, this study considers the impact of civil war on the country's biodiversity loss. The author discusses the need for detailed on-site assessments after conflict and the need to formulate strategies for mitigating negative impacts of war. Author: Chris B. Squire.
http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=176

"Nature, Wealth and Power: Emerging Best Practice for Revitalizing Rural Africa: Governance Section," USAID, 2002. Mismanagement of natural resources contributes to conflict. Conflict can be mitigated by addressing the wealth and power aspects of natural resources. The wealth and power aspects of natural resources can be addressed by including all stakeholders in decision-making about natural resource management. Local forums and processes and mechanisms for conflict management are essential to positively influencing pluralism in the decision-making process. However, other approaches are needed when a consensus cannot be reached among stakeholders.
http://www.frameweb.org/ev.php?ID=12186_201&ID2=DO_TOPIC

TOPIC 3. FOOD SECURITY AND BIODIVERSITY CONSERVATION

In crisis situations, food security is linked to livelihoods and biodiversity in two ways: a reduction in the national seed stock of agricultural staples and livestock, and an increased reliance on natural resources. Stocks are reduced as the seed is eaten instead of used in cultivation, fields are inaccessible or unsafe, crops are stolen or burned, and herds are stolen or moved across borders to keep them safe. As a result, populations turn to an increased reliance on natural resources (e.g., hunting wildlife, fishing, consumption of wild plant species, sale of firewood and charcoal, and intensified cropping into forests of staple crops) rather than cultivation of cash crops, as markets for cash crops are lost because of increasing staple food prices. The two are interrelated, and the effect on agricultural and natural systems can be prolonged, given the time required to rebuild a national seed stock and livestock herds/flocks for staple foods and, therefore, the period in which naturally occurring foods (biodiversity) are relied upon by the population. It is critical to examine the possibilities of aligning post-conflict food aid and agricultural assistance (timing of onset, duration, quantity, equitability, and access) with populations who rely most on natural resources during and after conflict.

For countries in crisis, food availability generally declines significantly due to displacement of farmers from combat zones into areas where they have no land and where natural, socio-political, and ethnic conditions differ, making it difficult to continue agricultural practices. The diversion of labor from agriculture and into survival leads to a decline in food production and prevents many investments and commercial ventures from taking place. In the aftermath of conflict, mass movements of people disrupt production systems and further diminish local food supply. There is also a tendency is to de-gazette protected areas and community wildlife areas and convert them to agriculture, though they may have low agriculture potential. This means that unsustainable ranching and conversion of bush land and forests to inappropriate crops is a long-term and debilitating problem, as was done in the Akagera Basin in Rwanda along the Tanzanian border.

An important element of armed conflict is the use of hunger as a weapon. Combatants have been shown to systematically pillage crops and engage in activities that burn and destroy land used for agriculture. This, coupled with the use of land mines in rural areas, significantly reduces the possibility of continuing farming during and immediately after conflict. Ultimately, these factors increase the concentration of people on less land, which means that even when food is available, access can be limited. Conflict results in increased unemployment, and as a result, many people cannot afford to purchase food supplies. Such a situation is magnified by very high prices for staple commodities (maize, rice, cassava, millet). Access is made still more difficult by a lack of transportation and the destruction of roads and market infrastructure, which makes it difficult for food to enter remote, recovering, and still warring areas, even interior urban centers.

The relationship between conflict and food security significantly affects natural ecosystems and biodiversity. The migration and temporary settlement of food-starved populations through natural areas can disrupt fragile ecosystems and cause resource depletion. Farmers can take advantage of the disorder during conflict and cultivate either inside or on the fringes of protected areas where resources are better. In some cases, even park employees partake in such activities. If conflict continues for a long period, these areas are often over-cultivated, causing soil erosion, habitat destruction, and reduced yields.

Many IDPs also move to natural areas for security and to exploit wild flora and fauna for subsistence and commercial purposes. Deforestation and hunting cause the most destruction to the environment during times of crisis. Armed groups, civilians, IDPs, and refugees participate in for commercial hunting for survival reasons. For many groups, wild meat or "bush meat" represents the only source of protein available because militaries and militias typically kill and consume livestock in the early stages of conflict. Bush meat requires little or no capital investment, making it affordable, even with the labor transaction cost. For suppliers, returns from sales are immediate, because bush meat is one of the few goods found in remote areas that can provide income that outweighs transportation costs. Similar advantages weigh on the exploitation of diamonds, coltan, and fish. This means that the bush meat trade not only occurs at the village level, but also at the national level, with supplies being transported to urban centers. Besides the biodiversity concern, the depletion of naturally occurring foods can incite further conflict between local communities and refugees/IDPs. As people move deeper into the forest to escape conflict, and as they stop farming and turn to bush meat, there is greater contact between wildlife and people, bringing increased risk of emerging diseases, such as Ebola, monkey pox, and HIV. Some humanitarian organizations have implemented environmental education programs and tree-planting initiatives to lessen tensions between refugees and host communities.

Food insecurity leads at-risk populations to seek other means to acquire food. During conflict, IDPs who no longer have access to land for agriculture often enter into other types of livelihoods, including extractive industries. In Sierra Leone, Liberia, and Côte d'Ivoire, many IDPs turned to diamond and gold mining. In Rwanda and the eastern Congo, timber extraction and mining for coltan takes place in several national parks and pristine forest areas, with direct effects on riparian areas and forest cover and more deleterious, long-term impact from mining infrastructure and associated settlements. This erosion of the natural resource base and ecosystem services during and after conflict affects long-term livelihoods and wellbeing of local residents after conflict. If long-term prospects are seriously compromised by depletion or degradation, seemingly post-conflict situations may revert back to conflict if people can't meet their basic needs. Action to avoid long-term damage is crucial for ensuring lasting peace.

There are a number of ways in which food aid and agricultural assistance could support the recovery process and biodiversity concerns. These include the provision of resettlement packages (tools, seed, food bundles) for IDPs and refugees, food aid programs (food-for-work, food-for-agriculture, food-for- training), seed rehabilitation initiatives, and market-based approaches. Food aid is particularly important for the first year or two, while IDPs and refugees are rebuilding houses and reestablishing agriculture, so that the population does not turn to natural resources for food and income during that transition period. Activities can be targeted to populations residing in or near areas of biodiversity concern, to reduce dependence on natural resources. Agricultural resettlement packages for IDPs and refugees can provide immediate relief, but are challenging in situations where there is a lack of available land. Evidence has shown that the disparity in income between these groups and local residents is not as great as commonly thought, and as a result, resettlement packages could incite conflict between beneficiaries and local residents. Food-for-work programs can provide labor to rebuild protected area infrastructure, such as roads and bridges necessary to open markets for agricultural trade. They can also be combined with natural resource regeneration programs, such as tree-planting initiatives. Food-for-agriculture programs help reduce dependency on natural resources and food

aid by supporting agricultural production. Food-for-work and food-for-agriculture programs can reduce shocks in the food supply in areas of biodiversity concern that also receive large numbers of returnees. Food-for-training programs can promote alternative income-generating activities instead of natural resource extraction, while providing immediate food relief.

Providing seed packages can improve food production but, in some instances, have been incompatible and even destructive to local ecosystems. Increasingly, joint programs that coordinate the distribution of seed aid and food aid have been introduced, to prevent farmers from consuming the seed and relying on natural resources, while waiting for crops to mature. The market-based approach has also become more popular. This puts resources (cash or vouchers) in the hands of beneficiaries in the hope that they will become clients and even

Case Study: Liberia

Liberia's long civil war (1987-1999) resulted in mass displacement of rural populations and a significant decline in agricultural production. Today, 40 percent of the population is highly vulnerable to food insecurity. In an attempt to support livelihoods rather than simply providing short-term relief, the Integrated Pest-Management-Farmer Field School format has been implemented in Nimba County.

The project's objective is two-pronged, focusing on agricultural development and conservation. The first component involves short- and long-term initiatives. The second component aims to reduce unsustainable use of forest resources by providing two alternative sources of income for smallholder households. These include beekeeping and the domestication of indigenous African land snails.

Results from the project show that pest management practices such as multi-cropping, intercropping, trap-and-decoy, and use of neem oil were widely adopted because they addressed people's primary concern — crop loss from pests. Soil fertility practices (composting, slash-and-mulch, and farmyard manure) experienced lower levels of adoption because of perceived labor demands, lack of manure, and unfamiliarity with practices. Finally, productive conservation practices were adopted the least, because they required greater financial inputs.

From these initiatives, it was concluded that development relief will not succeed in the aftermath of conflict unless there is a commitment to initiating projects with low-cost inputs. Notably, when faced with chronic poverty and insecurity, small-scale farmers were more willing to participate in activities that address present needs and medium-term objectives, rather than long-term objectives.

customers of emerging private service providers. This approach has expanded through a number of pilot efforts to include income-generating programs such as microfinance, insurance, and livestock loan schemes, all of which can result in decreased reliance on local ecosystems for survival. Markets in the post-conflict period fluctuate and are unreliable, however, thus complicating these initiatives. Furthermore, the promotion of market-based modalities may give legitimacy to a hasty withdrawal of the state from rural service provision without due attention to whether other actors are filling the gap.

Recommendations

An investigation into the co-location of food insecurity and environmental degradation can provide a starting point for locations where food aid initiatives could be implemented that will simultaneously address pressure on natural resources and ecosystem services. This can be done by using secondary resources, mainly maps and key informants, to determine areas that are

potentially rich in biodiversity, including protected areas, forests, and areas with high vegetation or close to inland water sources. An analysis of these areas can also establish soil type, climate, water resources, and vegetation, which can provide insight into options for obtaining food and for possible agricultural and conservation initiatives. Such an analysis can be overlaid with a map that indicates locations of IDPs to determine which areas valuable in biodiversity also suffer from high population densities. These analyses should be developed in collaboration with other agencies, such as the UN Refugee Agency, bearing in mind that this type of analysis can be extremely political and the results can be very sensitive. Areas where IDPs are expected to return should be investigated in similar fashion.

After determining co-locations, a socioeconomic breakdown of the population within these zones can determine the level of food security, as well as how local households are exploiting local (natural resource-based) food and income options. This can be done by holding group meetings and discussions with community representatives. After determining the level of need, and identifying user groups, assistance initiatives can be devised.

Food assistance approaches should build on local capabilities. For example, many returnees have been able to quickly rehabilitate agricultural production by planting short cycle crops such as groundnuts, sweet potatoes, peppers, and other vegetables. These types of farming activities can be promoted and extended to those who rely solely on natural resources. Special attention should also be paid to re-establishing alternative sources of protein to bush meat to deter local consumption. In fact, natural resource-based community organizations in southern Africa that are essential building blocks for return to normalcy after catastrophic natural events (cyclones, drought) are also now recognized as important elements for rehabilitating after civil unrest. If these organizations do not exist, they need to be built — for example, in post-conflict Democratic Republic of the Congo, development of community governance structures is key to re-establishing livelihoods and taking pressure off bush meat. Some segments of Zimbabwe's CAMPFIRE program has helped maintain incomes and access to food during the current political crisis, and will certainly be an important organizational and income source for reconstruction support. Similarly, community organizations have been important in redevelopment activities in Mozambique and they are proving to be important elements to emerging reconstruction efforts in Liberia, southern Sudan, and northern Uganda.

Resources for Food Security

Famine Early Warning Systems Network Web site. "The goal of the Famine Early Warning Systems Network (FEWS NET) is to strengthen the abilities of African countries and regional organizations to manage risk of food insecurity through the provision of timely and analytical early warning and vulnerability information. FEWS NET is a USAID-funded activity that collaborates with international, national, and regional partners to provide timely and rigorous early warning and vulnerability information on emerging or evolving food security issues." www.fews.net

Livelihoods and Conflict: A Toolkit for Intervention, USAID, 2005. This toolkit shows how violent conflict can affect individual and community access to essential resources and how an approach that focuses on strengthening that can help people survive and recover from conflict. It comments that if livelihood support is offered early enough, conflict may be avoided.

http://www.usaid.gov/our_work/cross-cutting_programs/conflict/publications/docs/CMM_Livelihoods_and_Conflict_Dec_2005.pdf

Conserving the Peace: Resources, Livelihoods and Security, International Institute of Sustainable Development, 2002. The aim of this book is to answer the following question: "Could investment in environmental conservation — more sustainable and equitable management and use of natural resources — offset funds now spent on peacekeeping and humanitarian relief by attacking the roots of conflict and violence, rather than waiting to address their consequences?" The authors conclude that conservation can reduce the possibility of conflict when it is linked to the provision of sustainable livelihoods. Authors: Richard Matthew, Mark Halle, and Jason Switzer, http://www.iisd.org/pdf/2002/envsec_conserving_peace.pdf

TOPIC 4. HARNESSING THE BENEFITS OF CBNRM IN PRE- AND POST-CONFLICT SITUATIONS

A post-conflict period is characterized by heightened levels of resource extraction as local residents, IDPs, and ex-combatants pursue self-sufficiency in areas rich in natural resources. Community-based natural resource management (CBNRM) and other approaches such as benefit sharing have become popular approaches for dealing with tension between local livelihoods and the presence of protected areas. It is now acknowledged that for the goals of conservation to be met, local communities must participate and support conservation initiatives. To have an incentive do this, these communities must derive financial and other benefits from conservation. Importantly, governments must be able and willing to engage these communities through transparent collaborative planning processes and establishment of clear expectations for respective roles in conservation and extraction activities.

A number of projects have been implemented in post-conflict regions of sub-Saharan Africa. Projects have engaged communities, or at least appeased resentment towards protected areas, through "product agreements," wherein communities are involved in revenue-sharing activities from tourism and sport hunting or, at a minimum, they receive some compensation for loss of crops due to animal damage. These do not necessarily devolve management operations to communities, but instead grant individuals and groups licenses to access natural resources within and around protected areas. What is required for these types of arrangements is an analysis of user groups and competing interests towards natural resources. Increasingly, the trend in sub-Saharan Africa has been to engage communities more substantially through "collaborative management agreements." Such agreements require a community to define its membership and territorial limits to help protect areas under national law as an association, trust, or conservancy. A simplified typology of management agreements includes contractual partnerships, where community roles are dictated by government officials; co-signed management, where a community has all operational powers, but ultimate authority lies with government officials; and community-based management, where communities have full jurisdiction and sometimes full ownership of a set of resources. Although it is currently rare for communities to manage natural resources completely autonomously from the state, this trend is slowly changing, with some states granting private corporate ownership of natural areas to communities.

The major question that arises when looking at countries in crisis is how CBNRM approaches can be altered to account for current circumstances. The presence of IDPs and returning refugees leads to a situation where communities are in a state of flux. The movement of large populations also destabilizes informal (everyday practices) and formal institutions (organized groups) responsible for natural resource management. Children of displaced peoples can be brought up away from their family's traditional natural environment, and may be unaware of indigenous practices that foster environmental sustainability. Traditional leadership is weakened by the presence of armed personnel during conflict, who take on positions of authority and sometimes force traditional leaders to flee to parts of a country where they do not have jurisdiction. In the post-conflict stage, even if traditional leaders return to their area of origin, their prime motive might not be governance, but survival. This is an impediment to resource management, because traditional leaders typically regulate use and access of scarce natural resources. The absence of traditional leadership at the local level is often not replaced by government support. This occurs

as institutions responsible for conservation as well as municipal and district level government structures are weakened by conflict and are often overstretched in terms of their mandate and financial resources. On the other hand, traditional or community based management structures can be the structures that survive when government is not present. For example, in Nepal, in some areas the Community Forest Conservation Committees and their member Community Forest User Groups were the structures that survived when government was forced to abandon remote rural areas badly affected by the Maoist insurgency. The World Wildlife Fund worked with the Community Forest Conservation Committees/Community Forest User Groups and was able to work with them to promote sustainable livelihoods, community wellbeing and forest management, a foundation for long-term peace. The movement now provides inputs to the new national constitution to ensure that equitable rights and community forest management continue.

It can be difficult to engage local communities in CBNRM in a post-conflict setting. This is due in part to their immediate need to survive, which may work against natural resource management initiatives as it forces individuals and groups to extract resources unsustainably versus sustainable use enforced by good governance regimes. In peaceful settings, rural dwellers have been shown to be risk-averse, and communities living adjacent to protected areas and forest reserves are often on the margins of economic societies. As such, they have often developed more complex and involved coping mechanisms that sustain them during periods of political unrest and environmental change. After periods of crisis and uncertainty, the focus of these communities remains on coping and risk-aversion, making it difficult to encourage individuals to invest time and finances into CBNRM projects unless they also contribute to short-term survival.

Notwithstanding these challenges, the post-war setting also offers potential opportunities for CBNRM initiatives. First, new governments may make it possible for CBNRM approaches to become institutionalized in national policies and legislation. Even the declaration or demarcation of a natural area can help initiate community-driven enforcement, removing some of the ills associated with open-access intensified by influxes of IDPs and refugees. Second, CBNRM projects have the potential to contribute to stability by providing livelihoods strategies for disenfranchised communities and organizing them around certain resources and resource management approaches. Importantly, CBNRM projects can be designed and implemented in a cross-sectoral approach through collaboration with relief efforts that aim to reestablish sustainable livelihoods in rural areas. Third, CBNRM projects can also assist in a democratization or decentralization process, because they typically involve establishment of a community-based institution, which can provide an avenue for meaningful interaction with local government structures, and equitable sharing of natural resource benefits. As well, having communities manage and monitor resources relieves some of the burden on personnel in the conservation sector, because resource management responsibilities are shared.

The key challenge in the post-conflict period is to design projects that are easy to implement and can be adjusted over time. Initially, projects might have to focus more on the extractive use of resources, rather than conservation, to have a quick impact on local welfare. These types of projects might not be acceptable in peaceful settings or desirable in the long-term, but might be necessary in the post-conflict environment when humanitarian assistance is needed most. They can be adjusted with the intention of providing livelihood options as peace and stability return, to

account for conservation objectives. In this context, consideration must be given to the following:

- Are there any existing or former CBNRM projects that can be strengthened/built on?
- Can a CBNRM project implemented just after a war that focuses on extraction, hunting (specific species), and quick-impact efforts then be altered as a peace and stability mature?
- Can CBNRM projects mimic crisis livelihood strategies, but in ways that build options over time?
- How can specific efforts facilitate transitioning from purely extractive, highly degrading use of resources, to an approach that is initially also extractive and lightly degrading (although it matters what is degraded, such as high- or low-biodiversity value species) via a form of 'crisis CBNRM project' that has livelihood enhancement and building subsequent options as a priority?
- Are community governance structures in place for this?

Case Study: Guinea

During the last 10 years, Guinea has hosted nearly 1 million refugees from Sierra Leone and Liberia. In addition, the country continues to cope with IDPs, following rebel attacks in 2000 and 2001, as well as additional refugees and returnees from the 2002 conflict in Côte d'Ivoire. In Guinea's forested areas, there are estimated to be as many as 78,000 refugees and 82,000 IDPs. Hosting refugees damaged social infrastructure, strained natural resources, and disrupted the food supply for local communities. In an effort to control natural resource use, the Guinea Forest Department began in the early 1990s to devolve management responsibilities to local villages. Military-trained forest guards were grouped with forest agents trained in participatory methods. Through the Forestry Code, provisions were made for these agents to work with elected forestry committees or "groupements" who manage village forests on behalf of the communities they represent. To gain approval of the national forestry director for these arrangements, each forest must be mapped and inventoried, and a management plan devised that shows zones for priority areas — typically for tree plantation, tree rehabilitation, timber exploitation, and water protection. In addition, the village must formulate a development plan into which revenues from forest resources feed. Once an application is approved, trees become the property of the groupement. Although the groupement makes all decisions on forest resources, the local forestry service must approve decisions to fell. Groupements deal directly with timber contractors. To ensure that communities are given fair deals, forestry field personnel conduct felling demonstrations and education seminars on forest resources.

Proponents of the forestry groupement initiative argue that the government is better able to monitor a greater area of forests, because inventories and management plans are a prerequisite. Similarly, it is argued that the management structure allows communities to take on many roles and responsibilities of forestry agents. This has reduced incidents of illegal logging and incursion into forested areas by outsiders. There is a sustainability argument, which contends that resources are more likely to be used in a sustainable fashion, because communities are engaged with forestry agents who provide technical advice and educational services. The initiative has also attracted large amounts of donor funding and significant support from local NGOs. These NGOs have provided training programs for community committees, covered travel expenses for stakeholders, and assisted in developing infrastructure (schools, bridges, and wells). More recently, a donor has begun to expand on a pilot project for IDPs, refugees, and members of host communities to reduce tensions between refugees and IDPs with host communities. Community-based production centers have been constructed that act as education centers and small-scale village industry workshops for non-farm activities. The project has developed training programs and manuals for basic entrepreneurial skills, functional literacy, carpentry and metalwork, maintenance and repair of rural machinery, and traditional textile production. In all, the pilot project benefited 750 individuals, mainly refugees, and trained 20 local trainers and facilitators. It will be expanded to assist 5,000 individuals in other areas of Guinea.

Recommendations

An analysis of biodiversity will enable the identification of which areas should be protected and which can be used by communities for extractive purposes. Options to engage communities in conservation initiatives in and around areas of high-biodiversity importance include involving these communities in rehabilitation of protected areas and infrastructure through employment opportunities (game guards, wardens, construction workers, even food-for-work) with park services. In addition, community members can serve as key informants for mapping exercises and developing zones within natural areas. Regions of a protected area that are not as biodiverse as others can be zoned in a way that neighboring communities can gain access to natural resources within these areas. These arrangements might not necessarily be sustainable in the long-term, but can be used to control resource degradation to a degree in the immediate aftermath of conflict. Projects in buffer zones can be developed to rehabilitate livelihoods and provide alternative sources of income other than natural resource extraction. A number of possibilities exist for these types of projects, such as beekeeping, agriculture rehabilitation initiatives, carpentry, livestock raising, and on-farm tree planting projects. These projects might require a high degree of donor funding initially, but self-sustaining, subsidies can be stepped down over time. As livelihoods become established, arrangements can be reviewed to ensure that resource extraction is being done at a sustainable level.

Please refer to the Resources section of this report for additional resources pertaining to harnessing the benefits of CBNRM in pre- and post-conflict situations.

Resources for Community-Based Natural Resource Management — Biodiversity as an Economic Commodity

CBNRM Network Web site. CBNRM Net "provides a powerful set of broad, robust and useful networking tools aimed at linking stakeholders. As a complete, integrated, and adaptable knowledge management tool, CBNRM Net is presented as a service to the global CBNRM community of practice." http://cbnrm.net/

Chapter 3: "Community Based Natural Resource Management," Environmental Guidelines for Small Scale Activities in Africa, USAID 2003. This chapter provides examples of CBNRM models in Zimbabwe, Botswana, Namibia, Madagascar, Malawi, Tanzania, and Zambia. Strengths and weaknesses of each model are discussed, as well as conditions and elements that contribute to successful CBNRM programs and challenges facing existing programs. http://www.cbnrm.net/pdf/usaid_008_eggsa_draft2ch3.pdf

"Assessing the Need to Manage Conflict in Community-Based Natural Resource Projects," Overseas Development Institute, 1998. "This paper considers the role of 'conflict management assessment' in community-based natural resource projects. The importance of conducting an assessment of the potential for conflict and its management in relation to a project intervention is stressed, and an assessment framework described. Within this framework the advantages of managing conflict through a consensual 'win-win' process of stakeholder negotiation are discussed." Authors: Michael Warner and Philip Jones. http://www.odi.org.uk/nrp/35.html

"The Intersection of Decentralization and Conflict in Natural Resource Management: Cases from Southeast Asia," International Development Research Centre, 2005. This study seeks to contribute to the analysis of decentralisation reforms by examining the role of decentralisation in generating, exacerbating, or otherwise influencing conflict. With conflict deeply embedded in processes of decentralisation, a better approach is to predict and constructively manage tensions. http://www.idrc.ca/en/ev-82098-201-1-DO_TOPIC.html

"Deegaan, Politics and War in Somalia," a chapter from *Scarcity and Surfeit*, Institute for Security Studies, 2002. "This chapter shows that deegaan, or a land base and its resources, is significant to understand the conflict in Somalia. The Somali conflict involves many clans and sub-clans. Shifting alliances were formed between different clans and sub-clans to gain leverage in the conflict and to stake stronger claims to particular deegaan. In particular, the ecological conditions of the Jubbaland region in southern Somalia are rich compared with the rest of the country, and provide a major source of income and sustenance to Somalis. Thus, control of these resources is a major source of the conflict in
Jubbaland, as this study shows." Authors: Ibrahim Farah, Abdirashid Hussein, and Jeremy Lind. http://www.issafrica.org/pubs/Books/ScarcitySurfeit/Main.html

TOPIC 5. LAND TENURE AND PROPERTY RIGHTS IN POST-CONFLICT CONSERVATION

Reconstruction priorities increasingly include land tenure and property rights reform as key elements to address the causes of conflicts, build durable peace, and facilitate economic opportunities. Recent conflicts in Liberia, Sierra Leone, Southern Sudan, and northern Uganda have all accentuated the need to deal with land disputes and reform in post-conflict situations. A pervasive problem, however, is that post-war laws are extremely difficult to implement with informal on-the-ground developments regarding land rights, as populations pursue livelihoods, grievances, and aspirations. There are stark differences between traditional land tenure and property rights systems likely to be in force around protected areas and those more modern systems that are considered in urban environments within a post-conflict setting. Some more common issues include: land and property restitution; a "time dilemma," whereby the speed with which legislative reform occurs is slow, compared to the speed with which informal land rights issues are pursued by a population; conflicting interactions between informal, customary land rights, and new laws; and weak implementation and enforcement capacity.

IDPs and rural dwellers after a war will need to occupy land in some fashion. If they do not quickly reintegrate into areas of origin, and are not provided with temporary but secure access to land resources to meet near-term needs, they may migrate to areas considered to have more "open access," which can include national parks, wilderness, and conservation areas. Often occupation of such land occurs in an extractive way that allows rent-seeking by refugees or economic actors capable of organizing IDPs' labor.

Restitution issues are complex, and significantly important to solidifying peace. Issues related to land ownership patterns and historic ownership of public lands can create enormous challenges. Among the most difficult to handle are large-scale reintegration of people with little or no documentary evidence for their claims; laws regarding adverse possession (ownership rights after squatting for a specified period for those that occupied land for long periods during the absence of the original inhabitants); restitution claims pursued by foreign and domestic commercial scale farmers; wholesale loss of land titles and cadastre information during civil unrest, and attempts by potentially both (in some cases, several) sides in the war to purposefully relocate people for the purpose of claiming land for a particular group. In a post-conflict environment, it must be appreciated that there exists a tension between the need and desire for restitution on the part of those who feel it is due and the much-reduced capacity of the state to effectively deal with the issue within formal law. A new restitution law may be required, necessitating a quick and effective legislative capacity that may not exist. The result may be that restitution efforts are pursued outside the formal structures and systems by those who think that justice is due them; therein lies an important potential flashpoint for a return to conflict, or to significantly affect the progress of the peace process.

Legislative reform in post-conflict settings can be overlaid onto traditional rights and obligations that are already in existence, binding, and often much stronger than new or revised laws. In a land tenure context, this means informal relationships and rules created and maintained before and during a war to facilitate property, land, and territorial needs and aspirations will predate and can be significantly stronger than new laws connected to a fragile peace and a war-weakened

state. The effect can be particularly pronounced, as mechanisms for disseminating and enforcing new laws (especially with agrarian, semi-literate, war-weary populations) will also be weak or nonexistent. Hence, the objective of changing social arrangements in certain ways with legislation may fail or be deflected in a peace process.

The time dilemma in post-conflict land tenure sees many aspects of informal tenure moving quickly, compared to the much slower reconstruction of the state tenure apparatus for lands. In many instances, a form of land rush can occur after a conflict, which quickly outruns the management capacity of formal tenure structures that are just starting to re-establish systems and resources, and the best intentions of government and donors. This can take community and household claims, resettlement, eviction, restitution, and disputes in directions largely outside the control of a slowly reformulating formal tenure system. Some of the more time-consuming activities of rehabilitating a statutory tenure system include: training; (re)constituting cadastre and registry systems; locating lost records (deeds, titles) and deciding how to proceed with regard to missing or fraudulent records; re-construction of the political and organizational aspects of government that are responsible for the lands system (especially courts); reconstituting physical aspects of a lands administration (vehicles, maps, surveying equip, computers); researching, drafting, and passing new laws; (re)establishing enforcement powers for land tenure decisions; and deriving and implementing approaches to specific, highly sensitive land issues involving elites and foreign companies and governments, including the important issue of transparency. Meanwhile, informal approaches to land needs can involve quicker activities: squatting, encroachments, resource extraction, and evictions in informal and, at times violent, ways. At times, aspects of the formal tenure system can outrun the overall reform or recovery, as when returnees find their traditional lands have been allocated to concessions in their absence.

The overall result of the differences in the speed at which change occurs in the various tenure sectors means that local authorities (traditional, war-related, or emerging) will have much-increased relative power in the post-conflict tenure setting. Such a situation provides for large variation in how land issues are handled. How the re-established formal tenure institutions and laws deal with such effects will be important if the ultimate objective is to use formal law for improvements in tenure arrangements in the customary sector and for the relationship between the statutory and customary tenure systems.

Implementation of new land policy after a war is always difficult and will be more successful in some locations than others. Certain groups are more able to take advantage of new legislation, other groups are targeted by NGOs for advocacy attention, and some areas will be too remote, sparsely populated, or otherwise less willing or less penetrated by the state to experience the benefits of new legislation at the same time as other locations.

Recommendations

Land policy reform in post-conflict settings is an opportunity to take into account needs of local people for access to land and natural resources, in a way that contributes to long-term stability. Getting land policy right so as to contribute to durable peace and improved economic opportunity for the wider population is a significant challenge, but an important first step. Experience has demonstrated that it is more difficult to deliver something such as broad as tenure

security or a new land law to a population, than it is to implement a smaller more precise element of a law that attends to a specific form of tenure security for a specific population.

What is needed in a biodiversity context and in land policy reform after a war, are efforts at providing specific forms of security of tenure for specific populations — including those that reside in or near biodiversity areas of concern. Such a specific delivery can then stimulate an easier delivery of other forms of tenure security (and law) to other segments of the population. Capacity-building in governments, communities, and often in NGOs, is a priority, particularly as there will be both many professional vacancies after a war, and a growing need for land registration and demarcation exercises. Local populations can be encouraged to enter into the process, for example, through participation in demarcation and clearing of boundaries to protected areas and reserves. Attention should also focus on shoring-up traditional or modern land tenure systems around protected areas, and developing rapid methods to deal with land disputes that might affect conservation issues. Notably, governments need to understand the value of open space and protected areas in terms of future income, ecosystem services and their true land value to inform their decisions about degazetting and redistributing (geographic information system land valuation, cost-benefit analysis) options for working with cadastre and land registration staff to improve their appreciation of conservation activities and riparian zones, high-conservation value forests, and areas with high intrinsic tourism value. A longer-term activity should focus on land titling, including title insurance products.

Case Study: Sierra Leone

Post-war Sierra Leone has faced food insecurity, significant rural unemployment, and a high demand for land access by youth, women, IDPs, ex-combatants, and refugees. Reintegration into communities of origin is a problem for many ex-combatants and disenfranchised youth, due to the forced atrocities associated with militia recruitment and retribution during the war. Meanwhile, large areas of previously cultivated land remain uncultivated and unallocated. Land is tightly held by 'land-owning lineages' reluctant to grant secure access to tenants, and who use quick, capricious eviction of non-lineage members to deny secure temporary access. Strangers granted access to lands face strong prohibitions against improvements — planting economic trees, irrigation, terracing. In this case, the question becomes why land-owning lineages are reluctant to grant secure land access to non-lineage occupants in economic arrangements of rental, sharecropping, leasing, or lending.

A diagnostic has shown that lineages fear if they engage in these arrangements with prospective tenants, they will not get the land back at the end of the agreed-on term, and that instead, a permanent claim will be made to the land, particularly if improvements such as tree crops are made. This fear is aggravated by a peace process that seeks greater empowerment for IDPs, women's groups, disenfranchised youth and ex-combatants.

The right of reversion, however, is a common part of many laws dealing with land rental and leasing, including in post-war Sierra Leone. This specific right is more precise, and arguably of more utility, than a general notion of tenure security. The land-owning lineages seek to operationalize this "right of reversion" on their own, without formal law, to pre-empt any claims. The issue is not that they practice a right of reversion, but rather how. The question is whether such a specific right, quickly, easily, and effectively implemented with a subset of people (lineage chiefs, elders), is more appropriate than expecting that a new law will provide a broad increase in general tenure security for all. If the right of reversion is delivered in a project format to lineage chiefs and elders, and they are convinced they can rely on it, they would be more willing to allow tenants on their land.

Resources for Post-War Land Policy Implementation

Land and Conflict: A Toolkit for Intervention, USAID, 2004. The purpose of this toolkit is to provide practitioners with an introduction to the relationship between land and conflict. A rapid appraisal guide is included to assist practitioners in determining which land issues are most relevant to conflict within a particular locale. http://www.usaid.gov/our_work/cross-cutting_programs/conflict/publications/docs/CMM_Land_and_Conflict_2004.pdf

Africa Center for Technology Studies Web site. This Web site for the Biodiversity and Environmental Governance Programme has a country database entitled "Ecological Sources of Conflict" for the DRC, Rwanda, Ethiopia, Burundi, Kenya, Somalia, Sudan, and Eritrea. Two projects the center is implementing are 1) Preventing Conflict through Improved Policies on Land Tenure, Natural Resource Rights, and Migration in the Great Lakes Region: An Applied Research, Networking and Advocacy Project and 2) Developing a Strategy for the Consolidation of the Pan-African Programme on Land and Resource Rights Network. http://www.acts.or.ke/

"Land Scarcity, Distribution and Conflict in Rwanda," a chapter from *Scarcity and Surfeit*, Institute for Security Studies, 2002. This chapter examines the relationship between land scarcity and conflict in Rwanda. Cultivation is encroaching into wetlands, national parks, and forest reserve areas to satisfy unmet demands for land by predominately underprivileged groups. Large numbers of IDPs have worsened stress in some ecologically sensitive areas, such as forests, resulting in localized degradation of forest resources. The authors assess the power dynamics in Rwanda insofar as power through control of the state is essential to control land. Additionally the authors think less attention has been focused on the role of land scarcity in the Rwanda conflict. Authors: Jean Bigagaza, Carolyne Abong, and Cecile Mukarubuga. http://www.issafrica.org/pubs/Books/ScarcitySurfeit/Main.html

Project to Build Independent Research Capacity and Enhance National Awareness of Land Tenure and Local Governance in Mozambique, University of Wisconsin and USAID, 2000. "Coordinated with USAID/Mozambique and Eduardo Mondlane University, the project has addressed land and natural resource tenure issues through applied research and policy dialogue with the Mozambican government and civil society. The project addressed state farm divestiture, land access for refugees in the post-war period, land conflict and resolution, land law reform, and institution building at national, provincial, and local levels." http://www.ies.wisc.edu/ltc/mozpfl.html

International Office of Cadastre and Land Records Web site. This Web site contains articles and papers on legal, administrative, organizational, and institutional matters concerning cadastre and land administration. Articles concerning land and conflict can be found by entering the keyword "conflict." http://www.oicrf.org/

Land and Conflict: A Toolkit for Intervention, USAID, 2005. This toolkit provides a practical introduction to the relationship between land and violent conflict. For example, the toolkit discusses how land issues function as causal or aggravating factors in conflict and about land issues that arise in post-conflict settings. http://www.usaid.gov/our_work/cross-cutting_programs/conflict/publications/docs/CMM_Land_and_Conflict_Toolkit_April_2005.pdf

Woodrow Wilson Center Environmental Change and Security Program Topic: Environment and Security. The center examines issues surrounding environmental security. The event summaries provide links to video clips of Wilson Center events on conflict and the environment.
http://wilsoncenter.org/index.cfm?topic_id=1413&fuseaction=topics.categoryview&categoryid=A82CCAEE-65BF-E7DC-46B3B37D0A3A575F

RESOURCES

Overview

"Armed Conflict and Biodiversity in Sub-Saharan Africa: The Case of the Democratic Republic of Congo," Biodiversity Support Program (BSP), 2001. In African countries, where poor rural populations are the majority, and the wealthy minority not only depends on resource extraction, but also holds the political power, nature conservation is not a domestic priority. Needed 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. Authors: Terese Hart and Robert Mwinyihali. http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=143

"Biodiversity, Conflict and Tropical Forests," IUCN, 2002. "Poor management of forest resources and the absence of an established set of equitable sharing principles among contending parties lead to shifts in resource access and control. Resulting tensions and grievances can lead to armed conflict and even war…While these conflicts have frequently, even invariably, caused negative impacts on biodiversity, peace is often even worse, as it enables forest exploitation to operate with impunity. Because many of the remaining tropical forests are along international borders, international cooperation is required for their conservation; as a response, the concept of international "peace parks" is being promoted in many parts of the world as a way of linking biodiversity conservation with national security." Author: Jeffrey A. McNeely. http://www.iisd.org/pdf/2002/envsec_conserving_overview.pdf

"Civil Conflict and the Environment in the Upper Guinea Forests of West Africa," BSP, 2001. This report aims to catalyze action on the part of conservation, relief, development, donor, and government agencies to alleviate the negative impact of civil conflict on West Africa's environment. The countries addressed are Guinea, Sierra Leone, Liberia, and Cote d'Ivoire. Although there are many ways (direct and indirect) in which the environment is affected by civil conflict, this report concentrates on the impact of population displacement, unsustainable resource extraction, and funding priorities on the environment. Authors: Timothy Bishop and Tommy Garnett. http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=131

The Environmental Consequences of War, **2000.** This book examines the legal, political, economic, and scientific implications of wartime damage to the natural environment and public health. Author: Jay E. Austin.

"History of Armed Conflict and Its Impact on Biodiversity in the Central African Republic," BSP, 2001. Recent armed conflicts in the Central African Republic have had a devastating impact on the country's biodiversity. Deforestation from slash-and-burn agriculture and firewood collection by IDPs fleeing conflict from 1996-1997 in the capital city of Bangui has had significant impact on biodiversity. Conflict in the continually insecure northern part of the country has led to a drop in the elephant population and extinction of an estimated 10,000 rhinoceros. The greatest impact on biodiversity conservation opportunities is the withdrawal of foreign assistance and funding. A poor economic situation led to conflict in the country. Ecotourism could play an important role in economic development. Therefore, it is essential to

maintain biodiversity conservation support to limit fragility in the future. Authors: Allard Blom and Jean Yamindou. http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=141

"Our Planet – Environmental Security," 2005. *Our Planet* is the United Nations Environment Programme magazine for environmentally sustainable development. This issue is themed around environmental security and the role it plays in reducing poverty. These articles are related to biodiversity and conflict. UNEP. http://www.ourplanet.com/imgversn/154/content.html

- **"Planting Security."** "Wangari Maathai tells Geoffrey Lean how trees make peace and how deforestation and degradation of the land lead to conflict… she concludes that environmental degradation in Africa and elsewhere is beginning to lead to international tensions. 'The migration from South to North is partly because the migrants are leaving behind a degraded environment because they have had very poor governance and a very poor distribution of resources. There can be no peace without equitable development, and there can be no development without sustainable management of the environment in a democratic and peaceful space. I hope that this prize will help many people see the link between these three things.'"

"Overview of Armed Conflict and Biodiversity in Sub-Saharan Africa: Impacts, Mechanisms, and Responses," BSP, 2001. This study provides an overview of the impact of armed conflict on the environment. To make the issues more readily understandable, the author first describes the various effects and the mechanisms behind them, and outlines a variety of responses to reduce or prevent these effects. Author: Jose Kalpers. http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=140

"The Trampled Grass: Mitigating the Impacts of Armed Conflict on the Environment," BSP, 2001. Armed conflict creates complex challenges for conservation in many areas of sub-Saharan Africa and has radically altered economic, political, and social conditions, with a profound impact on the environment, natural resources, and biodiversity. Experience has shown that actions can be taken to mitigate the impact of armed conflict on the environment. Authors: James Shambaugh, Judy Oglethorpe, and Rebecca Ham, with contributions from Sylvia Tognetti. http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=139

"Volcanoes under Siege: Impacts of a Decade of Armed Conflict in the Virungas," BSP, 2001. This case study examines events between 1990 and 2000 in the Virunga Volcanoes region, which straddles Rwanda, Uganda and the Democratic Republic of Congo, and each country's impact on the region's biodiversity. This document describes and analyzes the responses to the crises observed during different phases of this 10-year period, with emphasis on the collaboration among the conservation, emergency-response, and development sectors. Author: Jose Kalpers. http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=144

"Conserving Forest Biodiversity in Times of Violent Conflict," IUCN, 2003. Conflict has negative effects on forest biodiversity because in times of conflict, forests become shelter for civilians and combatants. This article discusses the concept of Peace Parks to link biodiversity conservation to national security. Jeffrey A. McNeely. http://journals.cambridge.org/article_S0030605303000334

"Night Time Spinach: Conservation and livelihood implications of wild meat use in refugee situations in north-western Tanzania," Jambiya, G., Milledge, S.A.H. and Mtango, N., TRAFFIC East/Southern Africa
2007. http://assets.panda.org/downloads/traffic_pub_gen16_1_.pdf

Protected Area Management Issues in Conflict-Affected Areas

"The Impact of Civil War on the Conservation of Protected Areas in Rwanda," BSP, 2001. The genocide 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. Although recent surveys show that large mammal populations have been reduced in number in Rwanda's three major protected areas, there have been conservation successes, which include protection of most of the mountain gorillas in the Virunga Volcanoes and maintenance 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. Author: Andy Plumptre.
http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=145

"Biodiversity Conservation in Regions of Armed Conflict: Protecting World Heritage in the Democratic Republic of the Congo," UNESCO. This article discusses the United Nation's Foundation "Biodiversity Conservation in Regions of Armed Conflict: Conserving World Heritage sites in the Democratic Republic of Congo" pilot project. The aim of the project "is [to] ensure the conservation of World Heritage Sites in the DRC both during periods of civil unrest and the long term, by mobilizing financial, logistical, technical and diplomatic support at the regional and international levels, to strengthen the conservation of the sites and ICCN (*Institut Congolais de la Conservation de la Nature*) as a whole."
http://whc.unesco.org/en/activities/83/

War and Tropical Forests: Conservation in Areas of Armed Conflict, The Hayworth Press, 2003. This book is a compilation of works by various authors on conservation of tropical forests in times of conflict. Author: Steven V. Price

"Impacts of Conflict on Biodiversity and Protected Areas in Ethiopia," BSP, 2001. In Ethiopia, government and nongovernment institutional politics have hindered establishment of conservation and protected-area programs. The authors think community involvement in conservation must be used. Community involvement could take the form of participation in the development of a park-management plan. In 1991 during a brief period of conflict, community-based intervention measures were attributed to conservation of Awash National Park. Authors: Michael Jacobs and Catherine Schloeder.
http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=147

Conservation Capacity in a Crisis Context

"Biodiversity and War: A Case Study from Mozambique," BSP, 2001. The natural resource base of Mozambique was severely affected by recent armed conflicts, with wildlife resources decimated and infrastructure within the protected areas destroyed. Nevertheless, management of Mozambique's biodiversity is gradually improving because of the passing of more adequate

legislation, institutional strengthening, and growth of a vibrant and vocal civil society. Authors: John Hatton, Mia Couto, and Judy Oglethorpe.
http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=146

"Sierra Leone's Biodiversity and the Civil War," BSP, 2001. Forestry conservation efforts have focused on remedying the traditional causes of biodiversity loss, shifting conservation, lumbering, and wildfires. In addition to traditional causes, civil war has become a serious threat to biodiversity in Sierra Leone. To date, minimal attention has been focused on the impact of civil war on biodiversity. Using information from various sources, this study considers the impact of civil war on the country's biodiversity loss. The author discusses the need for detailed on-site assessments after conflict and the need to formulate strategies for mitigating negative impacts of war. Author: Chris B. Squire.
http://www.worldwildlife.org/bsp/publications/search.cfm?pubno=176

"Nature, Wealth and Power: Emerging Best Practice for Revitalizing Rural Africa: Governance Section," USAID, 2002. Mismanagement of natural resources contributes to conflict. Conflict can be mitigated by addressing the wealth and power aspects of natural resources. The wealth and power aspects of natural resources can be addressed by including all stakeholders in decision-making about natural resource management. Local forums and processes and mechanisms for conflict management are essential to positively influencing pluralism in the decision-making process. However, other approaches are needed when a consensus cannot be reached among stakeholders.
http://www.frameweb.org/ev.php?ID=12186_201&ID2=DO_TOPIC

Food Security

Famine Early Warning Systems Network Web site. "The goal of the Famine Early Warning Systems Network (FEWS NET) is to strengthen the abilities of African countries and regional organizations to manage risk of food insecurity through the provision of timely and analytical early warning and vulnerability information. FEWS NET is a USAID-funded activity that collaborates with international, national, and regional partners to provide timely and rigorous early warning and vulnerability information on emerging or evolving food security issues."
www.fews.net

Livelihoods and Conflict: A Toolkit for Intervention, USAID, 2005. This toolkit shows how violent conflict can affect individual and community access to essential resources and how an approach that focuses on strengthening that can help people survive and recover from conflict. It comments that if livelihood support is offered early enough, conflict may be avoided.
http://www.usaid.gov/our_work/cross-cutting_programs/conflict/publications/docs/CMM_Livelihoods_and_Conflict_Dec_2005.pdf

Conserving the Peace: Resources, Livelihoods and Security, International Institute of Sustainable Development, 2002. The aim of this book is to answer the following question: "Could investment in environmental conservation — more sustainable and equitable management and use of natural resources — offset funds now spent on peacekeeping and humanitarian relief by attacking the roots of conflict and violence, rather than waiting to address their consequences?" The authors conclude that conservation can reduce the possibility of

conflict when it is linked to the provision of sustainable livelihoods. Authors: Richard Matthew, Mark Halle, and Jason Switzer, http://www.iisd.org/pdf/2002/envsec_conserving_peace.pdf

Community-Based Natural Resource Management — Biodiversity as an Economic Commodity

CBNRM Network Web site. CBNRM Net "provides a powerful set of broad, robust and useful networking tools aimed at linking stakeholders. As a complete, integrated, and adaptable knowledge management tool, CBNRM Net is presented as a service to the global CBNRM community of practice." http://cbnrm.net/

Chapter 3: "Community Based Natural Resource Management," Environmental Guidelines for Small Scale Activities in Africa, USAID 2003. This chapter provides examples of CBNRM models in Zimbabwe, Botswana, Namibia, Madagascar, Malawi, Tanzania, and Zambia. Strengths and weaknesses of each model are discussed, as well as conditions and elements that contribute to successful CBNRM programs and challenges facing existing programs. http://www.cbnrm.net/pdf/usaid_008_eggsa_draft2ch3.pdf

"Assessing the Need to Manage Conflict in Community-Based Natural Resource Projects," Overseas Development Institute, 1998. "This paper considers the role of 'conflict management assessment' in community-based natural resource projects. The importance of conducting an assessment of the potential for conflict and its management in relation to a project intervention is stressed, and an assessment framework described. Within this framework the advantages of managing conflict through a consensual 'win-win' process of stakeholder negotiation are discussed." Authors: Michael Warner and Philip Jones. http://www.odi.org.uk/nrp/35.html

"The Intersection of Decentralization and Conflict in Natural Resource Management: Cases from Southeast Asia," International Development Research Centre, 2005. This study seeks to contribute to the analysis of decentralisation reforms by examining the role of decentralisation in generating, exacerbating, or otherwise influencing conflict. With conflict deeply embedded in processes of decentralisation, a better approach is to predict and constructively manage tensions. http://www.idrc.ca/en/ev-82098-201-1-DO_TOPIC.html

"Deegaan, Politics and War in Somalia," a chapter from *Scarcity and Surfeit*, Institute for Security Studies, 2002. "This chapter shows that deegaan, or a land base and its resources, is significant to understand the conflict in Somalia. The Somali conflict involves many clans and sub-clans. Shifting alliances were formed between different clans and sub-clans to gain leverage in the conflict and to stake stronger claims to particular deegaan. In particular, the ecological conditions of the Jubbaland region in southern Somalia are rich compared with the rest of the country, and provide a major source of income and sustenance to Somalis. Thus, control of these resources is a major source of the conflict in
Jubbaland, as this study shows." Authors: Ibrahim Farah, Abdirashid Hussein, and Jeremy Lind. http://www.issafrica.org/pubs/Books/ScarcitySurfeit/Main.html

Post-War Land Policy Implementation

Land and Conflict: A Toolkit for Intervention, USAID, 2004. The purpose of this toolkit is to provide practitioners with an introduction to the relationship between land and conflict. A rapid appraisal guide is included to assist practitioners in determining which land issues are most relevant to conflict within a particular locale. http://www.usaid.gov/our_work/cross-cutting_programs/conflict/publications/docs/CMM_Land_and_Conflict_2004.pdf

Africa Center for Technology Studies Web site. This Web site for the Biodiversity and Environmental Governance Programme has a country database entitled "Ecological Sources of Conflict" for the DRC, Rwanda, Ethiopia, Burundi, Kenya, Somalia, Sudan, and Eritrea. Two projects the center is implementing are 1) Preventing Conflict through Improved Policies on Land Tenure, Natural Resource Rights, and Migration in the Great Lakes Region: An Applied Research, Networking and Advocacy Project and 2) Developing a Strategy for the Consolidation of the Pan-African Programme on Land and Resource Rights Network. http://www.acts.or.ke/

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http://wilsoncenter.org/index.cfm?topic_id=1413&fuseaction=topics.categoryview&categoryid=A82CCAEE-65BF-E7DC-46B3B37D0A3A575F

Additional Resources

USAID Web site on environment. This Web site discusses USAID's environmental program activities. These activities include natural resource management and biodiversity conservation such as protected-area management and community-based natural resource management.
http://www.usaid.gov/our_work/environment/biodiversity/commun_nrm.html

Central African Regional Program for the Environment Web site. CARPE is a USAID initiative aimed at promoting sustainable natural resource management in the Congo Basin. CARPE is working within the following African countries to reduce the rate of forest degradation and loss of biodiversity in the Congo Basin by increasing local, national, and regional natural resource management capacity: Burundi, Cameroon, Central African Republic, Democratic Republic of the Congo, Equatorial Guinea, Gabon, Republic of Congo, Rwanda, and Sao Tome & Principe. http://carpe.umd.edu/

FRAMEweb. This Web site has links to documents and Web sites related to conflict management and the impact of conflict on the environment.
http://www.frameweb.org/ev_en.php?ID=1144_201&ID2=DO_TOPIC

ENCAP Web site. ENCAP's purpose is to strengthen the environmental review, management, and monitoring capacity of USAID missions, contractors, grantees, and host-country collaborators in Africa. The Web site has a tools and resources section that provides information on compliance with USAID environmental procedures and laws, environmental guidelines for small-scale activities in Africa, and the environmental implication of sectors such as agriculture, trade, and forestry. http://www.encapafrica.org

USAID Development Experience Clearinghouse Web site. This site contains technical and program documentation for USAID-funded activities. http://dec.usaid.gov

Foundation for Environmental Security and Sustainability Web site. The foundation focuses on studies and programs designed to provide analysis and indicators to assist U.S. officials in determining how to identify destabilizing factors and diffuse or resolve conflicts exacerbated by environmental issues. www.fess-global.org