Management of spatially extensive natural resources in postwar contexts: working with the peace process

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Abstract

While extensively occurring natural resources play a fundamental role in the survival and recovery of postwar populations, their management is not presently part of the operational priorities in a peace process. Dependence on naturally occurring food, fuel, water, secure locations, and products that can be obtained and sold quickly for dislocated, war-weary populations is a primary approach to postwar livelihoods. The peace process however focuses on the logistical and institutional aspects of security, demobilization, reintegration and humanitarian efforts. The result is profound degradation of the spatially extensive resources necessary for longer-term recovery. The primary reason for the inattention to resource degradation in a peace process is that conventional conservation approaches do not fit with the priorities of a peace process or attend to the immediate needs of a postwar population; designed as they are for stable, peaceful settings. This article focuses on the need to derive postwar natural resource management approaches which can work with the in-place priorities of a peace process. Four such approaches are suggested, with successful examples from specific countries.

Introduction

Despite the importance of natural resources to societies recovering from armed conflict, resource conservation and management are presently not priorities in a peace process. Instead, priority in the initial years subsequent to the cessation of hostilities will continue to be placed on attending to immediate security, logistical, political, humanitarian, and institutional needs in the context of disarmament, demobilization, reintegration, governance, state building, conflict prevention, reconciliation, and poverty reduction (e.g., Timilsina and Dobbins 2007; Timilsina 2007; Anand 2004; Hatton et al 2001; UNEP 2007; McAskie 2007; Colletta et al 1996a; Junne and Verkoren 2005; Stedman et al 2002; Damrosch 1993; Laremont 2002; Cousens and Kumar 2001). Such priorities are defined and pursued first by the military component of a peace process, usually under the UN Department of Peacekeeping Operations (DPKO), who essentially 'run' the operational aspects of a peace process, and second by the civilian affairs agencies of the UN and the relevant international community. Such actors possess the authority, prevailing military presence, mandate, and money to move forward with achieving these priorities, usually under considerable urgency, and with significant national and international repercussions for failure (Holbrooke 1998; UN 1996; Colletta et al 1996; Crocker et al 1996). In this context there is insufficient coordination between DPKO and the UN Environmental Programme (UNEP), the UN Development Programme (UNDP), the UN Food and Agriculture Programme (FAO), UN HABITAT, or the many bilateral agencies and NGOs involved, to allow for broad conservation of resources to be discussed as a priority in peacekeeping (UNEP 2007).The UN Inter-Agency Working Group on Demobilization and Reintegration (which brings together UN agencies and NGOs) has so far failed to include best environmental practice in its activities (UNEP 2007; UNDDRRC 2008).

While certain high value 'lootable' resources (e.g., oil, diamonds and other minerals, specific timber species, etc.) do get attention in a peace process due to their explicit use in funding conflict (Le Billon 2008), the spatially extensive natural resources that provide for environmental services and livelihoods, such as grazing, biodiversity; erosion control; freshwater access; soil fertility; carbon sequestration; and the viability of wildlife populations, national parks, agricultural land, forest land, woodlands, and semi-arid areas, etc. are not viewed the same way in peacebuilding scenarios (e.g. Lehtonen 2008; Bruch 2008a). However such natural resources are critically important to recovering livelihoods and economies for the general population after conflict (e.g. Matthew 2002). This is particularly the case because subsequent to war the lack of food, land tenure security, jobs, markets, and infrastructure result in a much greater proportion of a national population living very close to the land in extractive, and disrupted agricultural formats (Unruh 2003, 2008; Hutchinson 1991; Peluso and Watts 2001; Allen 1996). And while such resources may be viewed as 'low value', they can nevertheless be high value to groups willing to fight for access to them, or desperately need them to sustain livelihoods.

In particular the collapse of food production systems during conflict (Flores 2004; Kalpers 2001; WFP 1999), and the possible decline in food aid after conflict, shifts food procurement activities of affected populations toward heavy reliance on, 1) naturally occurring foods and economically valuable resources, 2) the over cultivation of areas thought to be secure, and 3) new access to areas previously uncultivated (Unruh 2008). But because of the absence of natural resource management efforts early in a peace process, the desperate and aggressive pursuit of personal, food and livelihood security by a war-weary population occurs at the expense of natural resources, as the latter are used in highly extractive, non-renewable, and destructive ways, to achieve the former. This is aggravated by the difficulty of transporting food aid during conflict, the use of hunger and food aid as instruments of war, large-scale movement of internally displaced persons (IDPs) who are suddenly able to move when war ends, the presence of landmines, and importantly the psychological and sociological effects of prolonged armed conflict, which greatly diminishes a 'conserve for tomorrow' perspective and encourages a 'race for resources' scenario (tragedy of the commons) (Dudley et al 2002; Flores 2004; WFP 1999).

The degradation and destruction of spatially extensive natural resources associated with conflict, combined with their low priority in a peace process, creates a significant dilemma for longer-term recovery and development. Nevertheless there is growing awareness by the UN, international actors, and academics of the need to deal more effectively with natural resources during recovery from conflict (e.g., Austin and Bruch 2003; Blom & Yamindou 2001; Hatton et al 2001; Kalpers 2001; Plumptre et al. 2001; Shambaugh et al. 2001; Squire 2001). Indeed the Chair of the UN Peacebuilding Commission has noted recently that natural resources are key to peacebuilding and the prevention of conflict recurrence, and that natural resources need to occupy a larger and more central role in peacebuilding (Takasu 2008). Conca and Dabelko (2002) argue that environmental resources may be a source in peacemaking opportunities. And Bruch (2008) argues for using natural resources explicitly as a tool in peacebuilding. The primary problem is that to date most of the approaches recommended for doing this are derived from and more suited to, stable socio-political and legal situations (e.g. Crawford 2008; Fuller 2007; Blundell and Christie 2007; UNEP 2005; USAID 2005; Global Witness 2007; Kameri-Mbote 2007; Kaimowitz and Faune 2003; Lanjouw 2003; Giessen 2005). For example

recommendations for a well-trained police force and an effective judicial system in a post-conflict period to curb illegal logging (Debroux et al. 2007; Crossin et al. 2003; Barber and Talbott 2003; FAO 2005; Laurence 1997), 'third party observation'[1] (Brown et al. 2004; Global Witness 2005; Young 2004), the establishment of social responsibility contracts between companies and villages, and the provision of training programs that assist with developing skills for industries that do not rely on forest-related products (Crossin et al. 2003; Debroux et al. 2007; Smith 2002) may have potential in peaceful, less disrupted societies, but are out of step with the instability and needs of postwar scenarios. This is because in such scenarios extremely low organizational capacity is set against acute desperation, grievance, and a pervasive and entrenched culture of impunity.

This paper argues that deriving *operationally feasible* ways of connecting postwar natural resource management approaches to the unique postwar context needs to occur in ways which work effectively with the priority directions of the larger peace process. This means departing from conventional conservation approaches and tailoring conservation to the security, humanitarian, economic and logistical aspects of the peace process. To date such an approach has not been examined in the literature. This article describes four aspects of natural resource management that may be of utility in this regard. They involve: 1) the enforcement of protected areas; 2) retaining and rebuilding resource management capacity in the conservation sector; 3) developing postwar land tenure reform; and, 4) establishing community-based natural resource management (CBNRM) projects. The paper argues that if technically tailored to the operational context of a peace process, instead of focusing on conventional conservation priorities, then conservation efforts can be pursued in collaboration with security, disarmament, demobilization, and reintegration (DDR) processes; the food relief sector; postwar institutional derivation; and humanitarian efforts.[2] Subsequent to a brief review of the literature which examines the role that natural resources play in conflict and post conflict scenarios, and the obstacles to conservation and management, the article examines these four connections between the operational priorities of the peace process, and specific natural resource conservation efforts.

Natural Resources and Conflict

The relationship between conflict and the environment has been widely explored. Homer-Dixon (1994) has looked at links between environmental scarcity and conflict, while others have focused on the connection between conflict and spatially specific (lootable) natural resources (oil, diamonds, certain timber and wildlife species, etc.) (Auty 1993; Karl 1997; Basadau & Lay 2005; Orogun 2004; Ludgjala et al. 2005; Johnston 2004; Lujala et al. 2005; Rodgers 2006). However a primary effect of conflict on natural resources is the significant degradation and destruction of a variety of spatially extensive resources. The breakdown of both formal and customary law and order during conflict, together with a reduction in livelihood alternatives and an increase in desperation for the general population, facilitates the unsustainable use and extraction of resources. In Zimbabwe, Mozambique, the Democratic Republic of Congo, and Uganda for example, political instability and conflict led to widespread illegal hunting, causing

[1] The mandate of the observer is to accompany forest officials on joint missions in the field and to detect discrepancies between controlling missions and official procedures.

[2] It is worth restating that in a peace process the state, especially if a former belligerent, is considerably reduced in power and rights by the international community. Such that ownership of forests and other natural resources is usually always reworked and reformed in a peace process (e.g. Unruh 2008).

very large losses in wildlife populations apart from individual species that provide high value products (tusks, skins, certain body parts) (Duffy 1997; Kalpers et al. 2003; McPherson & Nieswiadomy 2000; Plumptre et al. 2000).

With the onset of war, the movement of displaced people through natural areas causes biodiversity and habitat destruction, through heightened levels of resource extraction as they rely on naturally occurring foods and fuelwood for survival (Austin and Bruch 2003; Schmidt 1999; Jacobsen 1994). As well the use of natural and agricultural areas by military and insurgent forces for training sites, strategic bases, protection, depopulation, and scorched earth practices during conflict has a similar affect (Plumptre et al. 2000; Barber and Talbott 2003). Nietschmann's (1990a, 1990b) examination of forested areas in Nicaragua and elsewhere in Central America suggests that even preparations for conflict have a significant effect on spatially extensive natural resources. Indeed examinations into the 'geography of warfare' have found forested areas to be a primary location for warfare, as well as an asylum for displaced people during and after conflict (Barber & Talbott 2003; Buhaug & Gates 2002; Donovan et al. 2007; Draulans & Van Krunkelsven 2002; Johnston 2004). And CIFOR (2003) reports that countries with significant violent conflict within their forests comprise over half of the world's tropical forest areas apart from Brazil. An example is Liberia where the forest, not specific high value timber species, constitute the last remaining 'upper guinea forest' in west Africa and a biodiversity hotspot. In addition, deforestation and loss of wildlife represent the first and second greatest impacts on biodiversity resulting from warfare (Kalpers 2001; also Debroux et al 2007; Shambach et al 2001). As well, agricultural areas occupied by dislocatees also suffer because fuelwood and food supplies are strained over wide areas (Dudley et al. 2002; Plumptre et al. 2000). And Kreike (2004), who examined war in the Southern African region between 1970 and 1990, demonstrated that the displacement of populations leads to large-scale environmental degradation in what are considered 'safe-zones'.

Three primary problems combine to frustrate realization of more effective conservation and management of spatially extensive resources as a priority after conflict. First, the perspective of the international conservation community appears reluctant to compromise on positions, philosophy, and standards derived for, and widely applied in stable conditions (e.g. O'Brien 1998; Kameri-Mbote 2007; Stevens 2007; Fuller 2007; Biringer and Cariappa 2007; Blundell and Christie 2007; Price 2003). But conventional approaches cannot realistically be applied in chaotic postwar circumstances where personal, food, and livelihood security are themselves already significantly compromised; and where desperation, grievance, unpredictability, partial and mistaken information, and conflicting agendas from a variety of actors is the norm (e.g. Ward 2002; Klare 2001; Suliman 1999). For example, Rwanda's decision to remove a significant area of Akagera National Park from protected area status in order to accommodate returning Tutsi herders has been criticized by many conservationists (Kanyamibwa 1998; Kalpers 2001; Plumptre et al. 2001; Shambaugh et al. 2001). They point to the loss of forests and extinction of animal species, but there has been little discussion on what alternative options were available, the benefits of prioritizing some conservation areas while devaluing others, how this approach can be improved, or the type of impact it had on human welfare (Kanyamibwa 1998; Kalpers 2001; Plumptre et al. 2001; Shambaugh et al. 2001). Another instructive case is Zimbabwe, which at one point was the model for the combination of successful natural resource management and population well-being; only to have politics, power and the issue of land as a spatially extensive

resource, combine to become disastrous (Hill 2003; Tirivangani 2004; Roth and Gonese 2003). The Zimbabwe case highlights that conservation approaches relevant to stable and peaceful conditions are extremely difficult to sustain in disrupted circumstances. Certain natural resources will unavoidably be degraded after conflict as individuals, local communities, groups created by war, commercial interests, and elites scramble to survive or pursue opportunities created by a combination of an end to hostilities, lack of enforcement, grievance, retribution, and dislocation. Realizing conservation and management objectives 'on the ground' in such a socio-political environment requires specific constructs able to operate effectively under such conditions, which many current conservation and community advocacy perspectives do not provide.

Second, many activities currently proposed for natural resource conservation in postwar scenarios are too broad and top down to be effectively operational on the ground, based as they usually are, on politics, policy, law, interstate relations, national institutional capacity, and needing significant periods of time—all of which are significant problems after war. Third, for at least several years after the close of a war (when resource extraction is greatest) the UN-led peace process as previously noted, is first and foremost a military endeavor, and security concerns prevail over 'civil affairs' (including resource conservation and management). This means that the timing in terms of need for intervention with regard to natural resource management (early after the close of a war), does not match the timing priorities of those in the UN command structure who operate a peace process. This engages a broader dilemma for peace processes in general; which is that with initial security success in a peace process, other issues (reintegration, restitution, (re)claiming land and property, food security, conflicting aspirations in society, etc.) emerge and need attention. But because these frequently require difficult decisions involving opposing groups and/or individuals, and win-win arrangements are in reality rare, tensions are created. The UN military command is usually unwilling to effectively support lower priority projects or activities that would result in additional tensions, due to the security concerns they may produce. This is particularly the case for of spatially extensive natural resource management at a time when their unregulated exploitation can be seen by the UN as a valuable cushion for livelihoods, and as a form of economic gain for stressed and unstable populations (Schmidt 1999). Thus it is not that management of spatially extensive natural resources after a war itself is unimportant, rather its low priority in peace operations is instead due to *how* such management is to be operationalized. What is needed for natural resource conservation in the first several years after a war are much more tailored management efforts that are able to connect conceptually and operationally with the priority components of a peace process that are already underway. The remainder of this article describes four possibilities for such a connection, providing illustrative examples of workable projects where possible. It is worth noting that most of these projects were not initiated or implemented with the objective of resource conservation, yet to a significant degree conservation is one of their primary outcomes. In this regard an important point is that many valuable potential conservation approaches suited for postwar scenarios, will come from outside of conventional conservation paradigms.

Approaches to Postwar Natural Resource Conservation

Management of protected areas

An important element of demobilization, disarmament, and reintegration in a peace process is deriving employment that engages ex-combatants (e.g., Takasu 2008; Colletta et al 1996b; Colletta 1997; Parsons et al 2006; Hatton et al 2001; Goovaerts 2007). This task is difficult since

their skill set and familiarity with violence is problematic. One form of employment commonly available after a war is with the proliferation of private security interests and companies who recruit ex-combatants to provide a variety of services (legal and otherwise) in unstable postwar environments (Abrahamsen & Williams 2006). For example in postwar Liberia, ex-combatants were hired to protect rubber plantations against illegal rubber tapping. In some countries, depending on political constraints, ex-combatants are also integrated into national militaries and police forces (Hatton et al. 2001). These initiatives are positive in that they employ ex-combatants in jobs where their military skills apply, but more importantly because they remove ex-combatants from the pool of postwar unemployed and marginalized, thus reducing the prospect for members of this element of society to engage in armed 'social banditry', which is common after a war. However such employment and armed forces integration are never able to absorb the quantity of ex-combatants which need to be dealt with after a war (Colletta et al 1996b; DW 2004).

The utility of ex-combatants as game guards, conservation area enforcement personnel (unarmed and armed), and in anti-poaching units can be treated in a similar context as their inclusion in reformed military, police, and security units—dependent on a need to employ ex-combatants, and local to national political and security priorities. While employing ex-combatants in natural resource enforcement contexts can contribute to the relatively quick effect of managing (even preserving) areas and resources, such employment also lends itself to rapid, defined funding and project approaches by donors and NGOs involved in a peace process. And while not intended to make anything other than a modest contribution to overall national demobilization and reintegration, the value of the approach is that it can be paired with the larger DDR effort, while influencing resource management. Employing ex-combatants as wildlife guards has been proposed for Afghanistan, Sudan and DR Congo, and the approach has been successfully used in Mozambique (UNEP 2007).

While there are some risks to employing ex-combatants as guards and rangers, these must be weighed against other opportunities for both conservation, and alternative employment opportunities for ex-combatants, and what the former fighters will be doing (including resource exploitation and banditry) if not employed. Ex-combatants can be difficult, but not impossible, to supervise. Various peace processes have employed training and supervisory frameworks for integrating ex-combatants into rural police and military units (e.g., Colletta 1997; Colletta et al 1996b), such that the approach to supervision of ex-combatants in post-conflict enforcement roles is not new. Indeed the funding and provision of African militaries by members of the international community to engage in anti-poaching and wildlife protection activities and other environmental protection efforts is not uncommon (Henk 2006). And it must be realized that the employment, supervision, training, enforcement of laws, and relationships to local communities with regard to ex-combatants will by necessity be more unsystematic and roughshod than such an endeavor would be in peaceful settings. While a potential risk is that heavy-handed armed enforcement by ex-combatants can lead to problems with recovering local communities, the real comparison is not between such employment and enforcement in conflict versus peaceful settings, but between employment of ex-combatants and non-employment of ex-combatants (and the ensuing greater violence due to social banditry) in post-conflict circumstances (DW 2004; Colletta et al 196b).

In Afghanistan a $141 million US initiative called the 'New Beginnings Program' is a DDR program for ex-combatants that has used natural resource management as a dominant component to disarm, demobilize, and reintegrate over 60,000 former troops (UNDP 2007). The agriculture aspect of the initiative employed ex-combatants in both farming and in de-mining of agricultural land, both of which contribute to relieving pressure on natural areas by engaging former fighters and others on otherwise unusable land due to landmine presence (Pain and Lautze 2002; Bruch et al 2007). In this same context the 'seeds and tools' agenda as well can have a similar effect (e.g. Buerkle 2005).

In Mozambique demobilization and employment of large numbers of ex-combatants was critical to the peace process (Alden 2001). Mozambique used ex-combatants as park rangers, anti-poaching personal, and informants for the re-opening of Gorongosa National Park after the 16 year RENAMO civil war (Hatton et al. 2001). Mozambique's National Directorate of Forestry and Wildlife recruited ex-combatants to become wardens and game scouts. Emergency teams were set up that comprised Wildlife Service staff with work experience from before the war, together with demobilized combatants, and recruits from local communities (Hatton et al. 2001). The involvement of ex-combatants was seen as a valuable way to prevent further conflict that could arise from disgruntled and unemployed ex-combatants (Hatton et al. 2001). As well, the former fighters were viewed as an important resource for controlling illegal hunting and de-mining as a combined activity, since they were trained in tracking, handling firearms, were self-sufficient in the bush, and frequently had first hand knowledge of the locations of both wildlife and landmines (Hatton et al. 2001). Such a combination of resource management and specific activities that are operational priorities in a peace process is where significant potential resides, and where more innovation is needed. In postwar Mozambique special attention was taken to ensure that each patrol team had ex-combatants from both sides in the war (RENAMO and FRELIMO) in order to prevent possible conflict between teams and to promote reconciliation (Hatton et al. 2001). Initially teams were established in the old park headquarters where they patrolled unarmed, in part due to tight weapons controls during the peace process, and to promote a more 'people friendly' image compared to the previous (pre-war) management encounter with local communities. As the old management roads became re-opened, more permanent bases were set up further within park boundaries (Hatton et al. 2001). From there teams undertook regular patrols, controlling illegal activities, consulting with local communities and collecting information about the status of the park. By the end of 18 months the park was under regular management, and illegal activities were greatly reduced (Hatton et al. 2001). It should be noted that 18 months is actually quite fast for regular management to be reinstated after a war, particularly for an area as extensive as Gorongosa National Park. For Mozambique the use of ex-combatants had an additional benefit. Because of the relationships developed in the demobilization and use of ex-combatants in wildlife-related employment, the Ministry of Defense and the Ministry of Tourism have derived a formal agreement regarding the permanent multiple use of former soldiers in policing the nation's national parks (Bruch et al 2007).

Conservation Capacity

The subtraction of a broad range of junior level administrative and technical capacity is common during conflict, and emerges as a serious problem during recovery (Price 2003; Marquardt et al 2002; UNEP 2005; Shambaugh 2001). In the developing world especially, the gap in postwar capacity between those that are able to occupy the higher ministerial positions, and those that are

little more than semi-literate, is a significant challenge. As a near-pervasive feature after prolonged conflicts, the well educated often return from exile or safe positions within the country (including political positions) to occupy leadership positions in urban areas. The more numerous mid and lower level trained and experienced personnel have usually scattered to a variety of internal displacement and refugee camps, or take up residence and employment in other countries. Conservation staff who worked in rural areas prior to a conflict are particularly vulnerable to targeting by insurgent groups due to their government employment and hence perceived government sympathies.

Training a critical mass of new natural resource management employees after conflict and providing them with experience is costly and time-consuming (Shambaugh et al. 2001; UNEP 2005, 2003). And although this can produce long-term results, it does not address immediate conservation needs subsequent to conflict. While such training is underway the resource base of a country can degrade significantly as a result of the combination of low capacity in conservation and protected area management, and natural resource extraction activities by IDPs, refugees, local communities, and national and international commercial interests (Debroux et al. 2007; Shambaugh et al. 2001). While it is challenging to maintain organizational and technical capacity during times of conflict so as to prepare for recovery, pre-empting the loss of trained junior personnel is possible. When conservation staff can no longer perform their duties due to the advancing momentum of conflict, funds and projects can be directed toward providing training or employment either within more stable parts of the country, in neighboring countries, or abroad. For example a joint project funded by the World Wildlife Fund and German technical assistance (GTZ) has provided support to maintain park personnel for 15 years in eastern DR Congo (UNEP 2007). This strategy is particularly viable if there are trans-boundary protected or conservation areas between two or more countries and one of them is in conflict (Blom & Yamindou 2001; Ali 2007). When such transboundary areas do not exist, staff from a conflict country can be transferred to assist staff in a neighboring country struggling to maintain natural resource management operations in the face of large influxes of refugees (and often militias), along with other repercussions of being next door to a war. This then can increase management capacity in border areas which are quite vulnerable to the effects of conflict. Such a strategy allows park and other conservation employees to continue to work and gain needed experience for the post-conflict period. An additional alternative, useful for keeping track of conservation personnel during conflict, is to place them in administrative, operational, and other managerial positions in refugee and IDP camps (to keep them employed and keep track of them), as a contribution to humanitarian organization, or UN efforts.[3] In addition, it is quite common for government units, international agencies, NGOs, embassies, and donors (including national and international conservation organizations) to derive detailed contingency plans as a particular country in which they are working becomes increasingly unstable and moves toward open conflict. Such plans normally include the re-programming of projects and activities, and the

[3] A related option is to provide short study tours to neighboring countries (Shambaugh et al. 2001). These keep staff members engaged, and allow them to learn about developments and advances not currently employed in their country that can later be used to influence policy and practice in the post-conflict period. Such an option might include short courses in technical colleges - such as the African wildlife colleges in South Africa and Tanzania. Other possibilities include distance education with foreign technical schools and universities, or enrollment into universities abroad (Shambaugh et al. 2001).

relocation of personnel; and could include efforts to prevent the permanent loss of trained junior level resource management staff, by setting up predetermined arrangements designed to employ, train, or keep track of them.

In Mozambique human resources within the conservation sector were highly affected by the long history of conflict. At the end of the independence war in 1975 only 19 Mozambicans had university degrees in the country 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. Of the 28 personnel trained between 1977 and 1981, 16 remained in service at the end of the RENAMO – FRELIMO war (1977-1992). The school was forced to close down in 1981 when RENAMO forces attacked the park headquarters. However during the war various wildlife personnel, including some graduates from the Gorongosa Training School, completed certificate and diploma courses at Mweka Wildlife College in neighboring Tanzania. And while donor funding for capacity building and other conservation directives did not get reinstated in Mozambique until the mid to late 1990s in the post-conflict period, the junior level employees that remained and returned from training played vital roles by quickly implementing projects, and training and leading teams to rehabilitate protected areas.

Post-conflict land and land policy reform

Reconstruction priorities increasingly include land and/or land policy reform as part of efforts to address the causes of conflicts, build durable peace, and facilitate economic recovery (e.g., Unruh 2005a; 2003). The linkage between spatially extensive resource conservation and land policy reform is that dislocatees, many ex-combatants, and other rural dwellers after a war will need to occupy rural land in some fashion. If they do not quickly reintegrate into areas of origin, or are not otherwise provided with secure (at least temporarily) access to land resources to meet near-term needs, then they will migrate to areas considered more 'open access,' such as national parks, wilderness, and conservation areas (e.g., Amacher et al 1998; Myers 1997; Alao 2007; Shambaugh et al 2001). Thus land policy reform in post-conflict settings, while intended to deliver on the needs of local people for secure access to land as part of the peace process (Unruh 2005a; 2007), can also be used to move forward with natural resource management priorities.

But actual change 'on the ground' in land tenure reform will be highly variable across a postwar landscape. And the difficulty generally, and for natural resource management in particular, will be to translate national land and policy reform into location-specific, applied tenure approaches. The problem is that certain groups within a recovering population will be more able than others to take advantage of new legislation. Still other groups will be 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. The overall result is that local authorities (traditional, war-related, or emerging) often have much greater relative power than the state in the post-conflict tenure setting. In such a spatially variable legal environment, experience has demonstrated that it is much more difficult to deliver something as broad and general as tenure security or a new land law to an entire national population, than it is to implement a smaller more precise element of a law (postwar or prewar) that attends to very specific tenure security issues for certain groups in certain areas (Unruh 2006; 2005a). What is needed are efforts at providing specific forms of security of tenure for key populations—

including those that reside in or near conservation areas of concern, as a first step. Such a specific delivery can then stimulate an easier subsequent delivery of other forms of tenure security (and law) to other segments of the population (Unruh 2007; 2005a).

In postwar Sierra Leone large areas of previously cultivated land remained uncultivated a number of years after the end of the war. At the same time there was extremely high rural unemployment and a severe national food security problem (Unruh 2005b). Land in rural areas of the country is tightly held by 'land-owning lineages' who are reluctant to grant secure access to tenants (IDPs, refugees, ex-combatants, 'strangers' – those not from a particular chiefdom, commercial interests), and who use quick and capricious eviction of non-lineage members so as to retake land (Unruh 2005b; Richards et al 2005). As a result many IDPs and others instead occupied national parks, forested areas, and state land in order to attend to near-term livelihood and food security needs. In this case the primary tenure question was, why were the land-owning lineages unwilling to grant forms of temporary land access to non-lineage occupants in economic arrangements of rental, sharecropping, leasing, or lending? Fieldwork with rural inhabitants indicated that the landowning lineages in much of the country feared that if they did engage in such arrangements with prospective tenants, they would not get the land back at the end of the agreed upon term, and that instead a permanent claim would be made on the land by tenants, particularly if improvements such as tree crops were made (Unruh 2005b). This fear was aggravated by a peace process that pursued greater empowerment for IDPs, strangers, women's groups, disenfranchised youth and ex-combatants with regard to the landholding lineages. However the 'right of reversion' (that the land reverts back to the owner after a rental, lease, or loan), is a common part of many land and property laws, including in pre- and postwar Sierra Leone. The land-owning lineages sought to operationalize this 'right of reversion' on their own, in the absence of functioning formal law, in order to pre-empt any permanent claims. The issue was not that they pursued a right of reversion with regard to prospective tenants, but rather how. For land tenure reform in Sierra Leone, this specific right is more precise, and arguably of more utility, and more quickly and effectively implemented with a subset of people (lineage leaders) in specific areas, than attempting to enhance a general feeling of tenure security among an entire (and divisive) postwar population. Field research in Sierra Leone revealed that if the 'right of reversion' in formal law is specifically delivered in a project format to lineage leaders, and they are convinced they can rely on it, they would be more willing to allow tenants on their agricultural land in secure arrangements of rental and leasing, thus drawing this population away from areas of conservation concern--forests, wilderness areas, national parks, etc. (Unruh 2005b).

This kind of precision (in a variety of forms) in land tenure reform can be paired with two peace process priorities—reintegration of dislocatees onto rural lands and associated livelihoods; and land restitution for returnees unable to re-access rural land because it has been taken over and permanently claimed by ex-combatants and dislocatees. Both are priorities for the UN and the international community after conflict (FAO 2007; Leckie 2003, 2007; Van der Auweraert 2007; DW 2004), and both require considerable 'on the ground' efforts by the UN, NGOs, donors, and government in recording and preparing cases of claim and resolving disputes. Such an effort is always short on funds and personnel (Unruh 2005a) and the assistance of conservation interests in areas proximate to locations of conservation concern would be a significant contribution.

Community based natural resource management (CBNRM)

While a variety of CBNRM approaches have demonstrated significant utility in stable, peaceful settings, post-war scenarios present different constraints and opportunities. Unfortunately conventional CBNRM are not seen as serving the priorities of a peace process. However postwar CBNRM projects have the possibility to contribute to stability by providing livelihood strategies for recovering communities, and organizing communities around certain resources and resource management approaches (Debroux et al 2007; Ogbaharya 2006). While generally chaotic community dynamics can be an impediment to conventional CBNRM projects, new postwar communities and institutions existing at the local level can provide a viable avenue for the development of certain approaches (Unruh 2008). [4] For example a variety of countries have experienced the empowerment of women due to their role during civil wars (Schafer & Bell 2002; Watson et al. 1999), thus opening up the prospect for new institutional formation. While wartime experiences can shatter pre-existing communities and their social capital, analysts note the emergence of alternative wartime and postwar communities, capacity, and social capital (Plunkett 2005; Pouligny 2006; Unruh 2008) to which innovative and unconventional forms of CBNRM can be attached. Examples other than women include, refugees, migrants, the internally displaced, squatters, and ex-combatants, all involving new social networks and connection (Unruh 2008). Schafer & Bell (2002) note in Mozambique that local communities gained a new sense of confidence with respect to ownership of natural resources during the civil war. In this case rural inhabitants spent approximately twelve years without being subject to official government intervention in their daily affairs. This appears to have given communities a confidence to assert their rights over land and resources that they did not previously have. Such a sense of resource ownership is a potential asset in postwar CBNRM programs (Schafer & Bell 2002).

The key challenge in a post-conflict period is to design projects that are relatively rapid and easy to implement, produce a quick and meaningful return for local inhabitants, and can be adjusted over-time. Initially CBNRM projects would need to focus more on the extractive use of resources, rather than overall conservation, in order to have a quick impact on local welfare, be attractive to local communities, and achieve organizational objectives. In this regard extraction of a certain set of resources (even in a non-renewable form) while conserving a few others would need to be considered. Such an approach might not be warranted in peaceful settings, or desirable in the long-term, or confirm with conventional notions of CBNRM, but will be necessary in a post-conflict environment when humanitarian assistance is a priority. In this regard the relief sector can play a role by collaborating with the conservation sector on CBNRM projects in order to achieve the necessary community organization required for both relief assistance and CBNRM, in some cases as a combined activity. Specific questions include, can a CBNRM project implemented just after a war, focus more on extraction, hunting (specific species), and 'quick impact' efforts that can then be altered as peace and stability mature? Can CBNRM projects mimic crisis livelihood strategies, but in ways that build options over time? How can specific forms of assistance facilitate transitioning from purely extractive, highly degrading use of resources, into a CBNRM approach that is initially also extractive and somewhat degrading (although it matters what is degraded) via a form of 'crisis CBNRM

[4] Watson, Black and Harrison (1999) observe that while a number of social institutions may break down during conflict, others coalesce around different historical experiences, ideas and values, and some old institutions may acquire a new strength by exploiting opportunities presented by the conflict and post-conflict situation.

project' which has livelihood enhancement, livelihood building, and derivation of subsequent alternatives over time as priorities?

The bushmeat issue in post conflict scenarios is an instructive example. Because militaries, militias, and non-combatants typically kill and consume domestic livestock in the early stages of conflict (Blom & Yamindou 2001; Kalpers 2001; WFP 1999; Plumptre et al. 2000), bushmeat becomes an important food source throughout the remainder of the conflict and well into the postwar phase (Debroux et al. 2007; Yamagiwa 2003). The availability of weapons together with debilitated markets can make this particularly attractive for both combatants and non-combatants. Because bushmeat requires little effort to procure and makes for profitable trade, CBNRM projects can begin first by seeing bushmeat as the local inhabitants and operational aspects of the peace process do—an important livelihood cushion. Once CBNRM organizational objectives are underway, subsequent focusing on transitioning away from certain species, or away from bushmeat toward other forms of management can then become options.

Guinea is an example of a type of CBNRM in a conflict-affected area. In forested areas of the country in 2005, it was estimated that there were as many as 78,000 refugees from the conflicts in Sierra Leone and Cote d'Ivoire, as well as 82,000 IDPs (UNIDO 2005). For Guinea, hosting dislocatees has damaged social infrastructure, strained natural resources, and disrupted food supply for host communities (UNIDO 2005). Meanwhile the Guinea Forest Department as far back as the early 1990s, began to devolve management responsibilities to local villages (Fairhead & Leach 2000). Military-trained forest guards were grouped with forest agents who had been trained in participatory methods (Fairhead & Leach 2000). Through the Forestry Code, provisions were made for these agents to work closely with elected forestry committees or '*groupements*' who could manage village forests on behalf of the communities they represented, with approval of the National Forestry Director. To gain approval, the forest needed to be mapped and inventoried, and a management plan devised that showed zones for priority areas--tree planting, tree rehabilitation, timber exploitation and water protection. In addition, the village needed to formulate a development plan to receive revenues which were generated from forest resources (Fairhead & Leach 2000). Proponents of the initiative observe that 'there is management where there was no management before' since communities have taken on many of the roles and responsibilities of forestry agents (Fairhead & Leach 2000). The result has been to reduce incidents of illegal logging and incursion into forested areas by outsiders (Fairhead & Leach 2000).

The forestry *groupements* initiative has also attracted donor funding. Costs for training programs, organization of community committees, and travel expenses for stakeholders have been supported (Fairhead & Leach 2000). A donor has also expanded on a pilot project for IDPs, refugees and members of host communities in 'Forest Guinea' (a heavily forested part of the south) to reduce tensions between refugees/IDPs and host communities (UNIDO 2005). This project involves the construction of Community Based Production Centers that act as both education centers and small-scale village industry workshops for non-farm activities (UNIDO 2005).

Conclusion

In the immediate aftermath of war efforts to resolve the human crisis will take precedence over natural resource conservation concerns. While the importance of spatially extensive natural resources to postwar recovering livelihoods, economy, and longer term development is well understood, there remains an inability to engage in effective management of such resources. The intertwined reasons for this include, a conservation philosophy in the international community that resource management should take place with conventional approaches suited to stable peacetime scenarios; an under appreciation of the profound difference, on a wide variety of human – environment interactions, between stable and postwar circumstances; and a resulting lack of innovation that would attach a 'crisis natural resource management' approach to the existing priorities of a peace process. The success of natural resource management in this context will depend on whether management efforts can be altered to fit within the priorities of recovery and paired with initiatives that are already underway in a peace process. While the current article is just a start in this regard, much more technical innovation is needed, particularly within a context of the broader peace process, what is likely to work 'on the ground', and a conservation philosophy more suited to the reality of postwar human conditions.

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