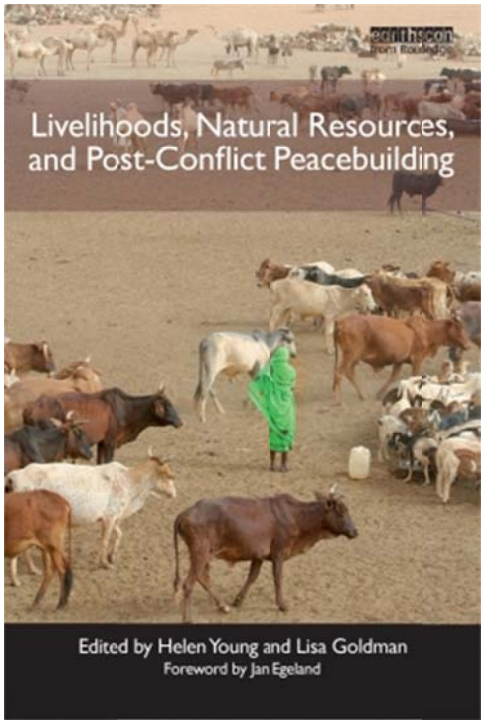
This chapter first appeared in *Livelihoods, Natural Resources, and Post-Conflict Peacebuilding,* edited by Helen Young and Lisa Goldman. It is one of six edited books on Post-Conflict Peacebuilding and Natural Resource Management (for more information, see www.environmentalpeacebuilding.org). The full book can be ordered from Routledge at https://www.routledge.com/products/9781849712330.



Part 4: Lessons Learned: Managing Natural Resources for Livelihoods: Helping Post-Conflict Communities Survive and Thrive

Helen Young[a] and Lisa Goldman[b]
[a] *Feinstein International Center, Tufts University*
[b] *Environmental Law Institute*

Online publication date: November 2015

Suggested citation: H. Young and L. Goldman. 2015. Part 4: Lessons Learned: Managing Natural Resources for Livelihoods: Helping Post-Conflict Communities Survive and Thrive. In *Livelihoods, Natural Resources, and Post-Conflict Peacebuilding,* ed. H. Young and L. Goldman. London: Earthscan.

PART 4

Lessons learned

Managing natural resources for livelihoods: Helping post-conflict communities survive and thrive

Helen Young and Lisa Goldman

Around the world, natural resources play a significant role in the buildup to, onset of, and continuation of violent conflict. Once peace agreements are signed, natural resources remain critical to peacebuilding, as they can help to ensure that peace is lasting, and that redevelopment is equitable and sustainable. The role of natural resources in promoting peace (or fueling conflict) is often intertwined with the livelihoods of local communities. Thus, a livelihoods lens can improve understanding of how natural resources are linked to conflict, and provide new insights into conflict mitigation and the design and implementation of more targeted and effective peacebuilding approaches.

Because livelihood production systems are often the mainstay of the wider economy and the basis for many social and economic relations, networks, and institutions, natural resources and livelihoods are linked to economic development, as well as to peace and security. Livelihoods not only provide food and income but also contribute significantly to identity, social capital, and personal and social fulfillment.

In many conflict-prone and post-conflict regions, natural resources play a fundamental role in supporting livelihood opportunities for both urban and rural populations, and have a strong impact on community resilience, local security, and long-term sustainability. This is especially true in developing, low-income countries, where natural capital accounts for 26 percent of total national wealth, versus approximately 13 percent in middle-income countries and 2 to 3 percent in developed countries (Lax and Krug 2013; OECD 2008). In many areas, the poorest populations are the most dependent on natural resources for their livelihoods and basic needs, and therefore most vulnerable to shocks that harm the natural resource base or limit or deny access to natural resources (Lax and Krug 2013).

Helen Young is a research director at the Feinstein International Center and a professor at the Friedman School of Nutrition Science and Policy, both at Tufts University. Lisa Goldman is a senior attorney with the Environmental Law Institute.

Local (bottom-up) conflict may develop as a result of rising tensions between livelihood groups, such as farmers and herders (agriculturalists and pastoralists), over access to natural resources. National or international (top-down) conflict—mobilized by political leaders, and involving organized armed forces and large-scale violence—can also be linked to (and affect) natural resources (Keen 2000).[1] In recent conflicts, armed groups have intentionally damaged or destroyed local natural resources and other livelihood-related assets, such as homesteads, land (by laying landmines), irrigation infrastructure, trees, wells, and terracing. Widespread looting of natural resources by militias and military elements (which may be sanctioned by military leaders), or by criminal elements emboldened by the conflict, can lead to further degradation or loss of natural assets that are essential to civilian livelihoods.

Civilians living in conflict-affected regions are often forcibly displaced and may flee across or within national borders to safer areas, or to camps for refugees or internally displaced persons (IDPs). The influx of refugees or IDPs, however, often subjects nearby natural resources to increasing population pressures and potentially uncontrolled natural resource extraction. In many cases, refugees or IDPs are unable to pursue their former livelihoods, as their former access to livelihood assets—such as farms, pastures, fishing grounds, or local businesses—has been lost.

For those who remain behind during conflict, livelihood opportunities are seriously disrupted. To survive conditions marked by insecurity, market distortions, and lack of regulation, households must find ways to cope, which may include seeking alternative livelihood options. In response to the immediate need for food and income, some may engage in maladaptive livelihood strategies—that is, strategies that are harmful to others, to the environment, or both. Illicit ways of earning a living, in turn, may further undermine the natural resource base, perpetuate social inequities and marginalization, and even promote violence or the continuation of conflict.

Following the adoption of a peace agreement, the natural resource base of a country or region can provide opportunities to advance peacebuilding—for example, by addressing lingering tensions over natural resource access and use, or by establishing cooperative management initiatives or institutions that promote natural resource governance, sustainable livelihoods, and benefit sharing. Such efforts are possible, however, only where conflict dynamics—including those related to livelihoods—are recognized and fully understood.

Given the strong connections between livelihoods, natural resources, and conflict, a focus on sustainable livelihoods during the post-conflict period offers opportunities to promote peacebuilding in a much broader sense. As the building blocks of community resilience to a wide range of threats, including conflict,

---

[1] This distinction between top-down and bottom-up violence differentiates between conflict mobilized by political leaders and entrepreneurs, whether for political or economic reasons, and violence engaged in by ordinary people, neither of which is necessarily independent of the other (Keen 2000).

livelihoods and natural resources are fundamental to the peacebuilding process. If they are overlooked, important opportunities to promote lasting peace may be lost. Where livelihoods are given priority, however, peacebuilding can promote the sustainable use of natural resources, increase cooperation between opposing groups, provide basic services to the poor and those most in need of resources, create income-generating opportunities for local communities, and enhance both regional security and resilience in the face of recurring shocks and instability.

The chapters that make up this book examine the role of natural resource–based livelihoods in conflict and in post-conflict peacebuilding. Relying on both research and practical experience, the chapters explore and clarify the nexus between livelihoods, natural resources, conflict, and peace. This final chapter offers further analysis of the perspectives on conflict and peacebuilding proposed by the chapters' authors. By closely examining these perspectives and revisiting the case studies, the chapter also identifies key lessons learned from livelihood interventions and livelihood-related peacebuilding initiatives in conflict-prone and post-conflict settings.

The first sections of the chapter lay the groundwork for understanding the nexus between livelihoods, natural resources, and conflict. The chapter begins with an overview of livelihoods and related concepts; in particular, it distinguishes between livelihoods as a means of living (including employment) and the sustainable livelihood approaches currently being applied in conflict and post-conflict settings. The chapter then links the key elements of livelihood systems—assets, strategies, and transforming policies and processes—to concepts of vulnerability, resilience, coping, and adaptation. The third section of the chapter examines the livelihoods–natural resources–conflict nexus more specifically and discusses its relevance to post-conflict peacebuilding.

The chapter's remaining sections proceed with a discussion of effective peacebuilding- and livelihood-related interventions in post-conflict situations. The fourth section focuses on evidenced-based programming; it highlights the importance of building a shared understanding of the issues and examines approaches to apply theory to practice. The section ends by identifying five key elements in the assessment of post-conflict, natural resource–based livelihood initiatives: (1) understanding the historical context—in particular, livelihood- and natural resource–related conflict dynamics; (2) recognizing the impact of climate variability and seasonality on natural resource–based livelihoods; (3) adopting a multilayered analysis of the post-conflict situation, in order to understand the linkages between local tensions and national or transnational conflict; (4) using conflict analysis tools to enhance livelihood-based peacebuilding efforts; and (5) promoting the development and use of new interdisciplinary tools and approaches and expert analysis.

The fifth and sixth sections of the chapter, respectively, consist of (1) a framework for categorizing and analyzing the interventions captured in the case studies, in accordance with their aims and objectives; and (2) a distillation of the lessons learned from the implementation of various livelihood interventions. Both sections include overviews of programming approaches, goals, and results.

The concluding section of the chapter proposes a set of principles to keep in mind when designing and implementing livelihood-based natural resource management projects in countries emerging from conflict.

LIVELIHOOD APPROACHES: TWENTY-FIVE YEARS ON

There is no simple blueprint for talking about livelihoods. One helpful starting point, however, is to distinguish between livelihoods as a means of making a living, and the livelihoods concept that underpins livelihood approaches. With respect to the first meaning, the *Oxford Dictionary of English* defines *livelihood* as "a means of securing the basic necessities of life" (OUP 2010, 1034). This is the basis for Blake Ratner's definition: "the ability of families to provide for themselves and sustain the rural economy"—but Ratner adds an emphasis on rural livelihoods based on natural resources (Ratner 2015*, 327).[2]

The vast majority of rural livelihoods, as well as a high proportion of urban livelihoods, depend on access to natural resources. For example, close to 1.6 billion people (25 percent of the global population) depend on forest resources for their livelihoods, and nearly 540 million people (8 percent of the world's population) rely on fisheries and aquaculture to sustain their livelihoods (UNEP, FAO, and UNFF 2009; FAO 2011, n.d.). The percentage of natural resource–based livelihoods in some regions is even higher: in the Sahel region of Africa, for example, 80 percent of the population relies on natural resources for their livelihoods (UNEP et al. 2011).

While precise estimates for conflict-affected countries are difficult to come by, Somalia and Sudan are known to have the highest number of pastoralist and agropastoralist livestock producers in sub-Saharan Africa (more than 7 million in each) (Rass 2006); in Somalia, pastoralists and agropastoralists account for approximately 80 percent of the population. In Sudan, 52.8 percent of households depend on cultivation and animal husbandry (the two main types of agriculture), and 80 percent of the workforce overall is employed in agriculture (Ahmed 2008).

In the context of international development, *livelihoods* usually refers to the sustainable livelihoods approach—a broader concept that encompasses, for example, livelihood security and livelihood systems. One widely accepted definition of *livelihoods* in this sense is that proffered by Ian Scoones:

> A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living. A livelihood is sustainable when it can cope with and recover from stresses and shocks, [and] maintain or enhance its capabilities and assets, while not undermining the natural resource base (Scoones 1998, 5).

This definition highlights the key elements of a livelihood system (human capabilities, livelihood assets, and livelihood activities or strategies), while

[2] Citations marked with an asterisk refer to chapters in this book.

emphasizing sustainability—specifically, environmental sustainability, as well as the resilience to cope with and recover from stresses, shocks, and instability.

The Scoones definition builds on earlier work, undertaken in the late 1980s and earlier, that is still highly relevant to post-conflict contexts today. In addition to emphasizing the links between livelihoods and the natural resources on which they depend, this research broadened notions of sustainability to include the net effects and implications for all livelihood groups and systems—a perspective that encompassed social sustainability and equity (Chambers and Conway 1991). Acknowledging the potential effect of one person's livelihood activities on other livelihood systems, both now and in the future (Scoones 1998), is crucial in the context of post-conflict peacebuilding and competition over natural resources.

Before the advent of livelihood approaches, the principal approach to food insecurity was known as the "food-first" approach. In the 1990s, however, Susanna Davies, along with Simon Maxwell and other colleagues, proposed situating food security within the broader context of livelihood security (Davies 1996; Maxwell et al. 1992). This shifted the emphasis from food insecurity (how people fail to feed themselves) to "what people do (e.g. what production systems they are part of and on what terms they participate), where people fit into the local resource management systems, and what kind of flexibility their overall livelihoods provide" (Maxwell et al. 1992, 31). This marked a significant change in outlook and approach. For example, famine early warning systems no longer focused solely on food availability and flows but also began to focus on livelihood issues, including both short-term coping strategies and longer-term adaptations (Buchanan-Smith and Davies 1995).[3]

By the mid- to late 1990s, the focus of development had shifted from economic growth toward sustainability and poverty reduction, which entailed renewed attention to well-being at the individual and household levels. In this context, the sustainable livelihoods approach became the dominant paradigm. Several international organizations adopted such an approach, the most visible promulgation of which was the UK Government White Paper on International Development, released in 1997 (Solesbury 2003).[4]

---

[3] The literature on coping strategies has its roots in research on household strategies for coping with episodes of food insecurity—which has broadened, over the past several decades, to include responses to a wider range of shocks, risks, and hazards. Davies helpfully distinguishes between coping strategies that are temporary responses to sudden food insecurity and adaptive strategies that mark a permanent change in the mix of strategies for accessing food (Davies 1993).

[4] A number of research institutions, agencies, and nongovernmental organizations have adopted livelihood approaches, including CARE, the Food and Agriculture Organization of the United Nations, the International Fund for Agricultural Development, Oxfam, the United Nations Development Group, the United Nations Development Programme, and the United Nations Environment Programme. See Carney et al. (1999); Drinkwater and Rusinow (1999); Hamilton-Peach and Townsley (n.d.); Hoon, Singh, and Wanmali (1997); Morse and McNamara (2013); Solesbury (2003); UNDG (2013); and UNEP (2007).

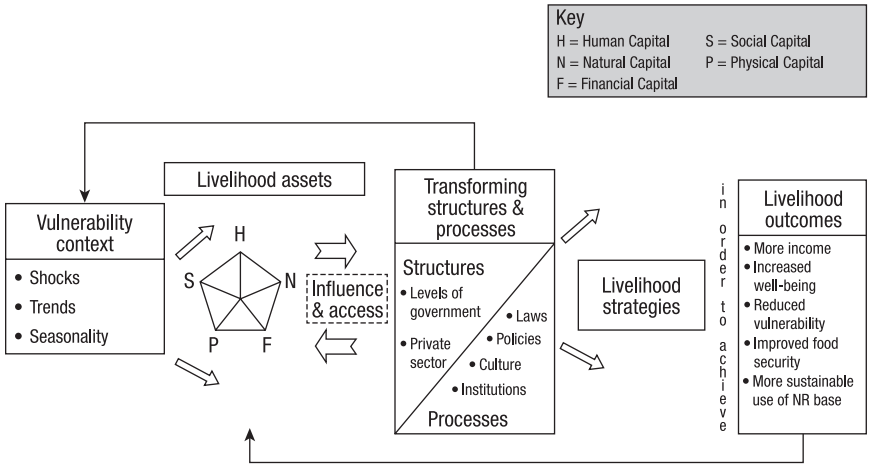


Figure 1. The sustainable livelihoods framework of the Department for International Development, United Kingdom
Source: Adapted from DFID (1999).

The framework shown in figure 1 is that of the United Kingdom's Department for International Development (DFID), and was originally proposed in DFID's sustainable livelihoods guidance sheets (DFID 1999). This framework has since been modified for various contexts, but the core elements remain unchanged. At the household level, those elements are livelihood assets, livelihood strategies, and livelihood outcomes—each of which, in turn, is subject to the influence of a range of institutions, policies, and processes. Among these processes are shocks, trends, and seasonality, which are captured in the figure under the heading of "Vulnerability Context."

Since the mid-1990s, a wide array of national governments, donor countries, development organizations, and research institutions have supported the goal of promoting livelihoods. Livelihood approaches are central to the discourses of development and poverty reduction, and livelihoods analysis has been incorporated into a broad range of other discourses and international strategies—including, for example, those related to disaster risk reduction; climate adaptation; environmental governance; and disarmament, demobilization, and reintegration (DDR).[5]

Livelihood approaches have also been used to link humanitarian programming to developmental approaches (Ross, Maxwell, and Buchanan-Smith 1994). In the late 1980s, following periodic famine and two dry decades across the Sahel, international attention focused on famine prevention, famine early warning,

[5] Ashley and Carney (1999); Ellis and Freeman (2005); UNDP (2005); UNEP et al. (2011); UNEP and UNDP (2013); UNEP (2014).

and protecting and promoting food security and livelihoods. Part of this new imperative included the application of livelihood approaches, particularly where humanitarian crises became protracted, with no end in sight. Such efforts were seen as a means of shifting from short-term emergency interventions designed to save lives to longer-term recovery (Maxwell 1999; Ross, Maxwell, and Buchanan-Smith 1994).

A livelihoods approach to humanitarian crises evolved in the context of rapidly expanding international responses to the complex political realignments—and emergencies—that coincided with the end of the Cold War.[6] These emergencies included Somalia (1992), the Rwandan genocide and the ensuing refugee crisis in the African Great Lakes region (1994), the war in Bosnia and Herzegovina (1992–1995), and the war in Afghanistan (2001–present). While the humanitarian imperative to save lives and prevent suffering took precedence during these crises, one perceived gap in the international response was the lack of broader support for local economies and communities affected by crisis, and for the transition to longer-term recovery and stability.

Such perspectives prompted international organizations working in these new humanitarian settings to make increasing use of livelihood approaches—while simultaneously shifting their focus from adaptation and resilience, viewed in the context of longer-term sustainability, to short-term humanitarian risks and vulnerabilities, viewed in the context of conflict dynamics and their effects on livelihoods (Collinson 2003; Lautze et al. 2003; Le Sage and Majid 2002).[7] For example, Sarah Collinson and her colleagues have proposed a sustainable livelihoods framework for conflict-affected and politically unstable situations that expands on similar earlier frameworks by (1) including a wider range of transforming structures and processes and (2) enlarging the assets portfolio to include political assets (Collinson et al. 2002). In their adaptation of the sustainable livelihoods framework, Sue Lautze and Angela Raven-Roberts take a somewhat different approach by omitting the vulnerability context, arguing that vulnerability is endogenous to livelihood systems in violent (conflict) settings (Lautze and Raven-Roberts 2006). In keeping with this perspective, Lautze and Raven-Roberts categorize livelihood assets as potential liabilities, because they can expose their owners to risk (see figure 2).

Since the mid-2000s, the pendulum has swung back to a focus on resilience, which is viewed as a unifying concept linking humanitarian, early recovery, and development concerns. The notion of resilience is also highly relevant to other

---

[6] A complex emergency, as defined by the UN and the Inter-Agency Standing Committee, is "a humanitarian crisis in a country, region, or society where there is a total or considerable breakdown of authority resulting from internal or external conflict and which requires an international response that goes beyond the mandate or capacity of any single agency and/or the ongoing UN country programme" (UN and IASC 2008, 22).

[7] See also Baro and Deubel (2006) and Collinson et al. (2002).

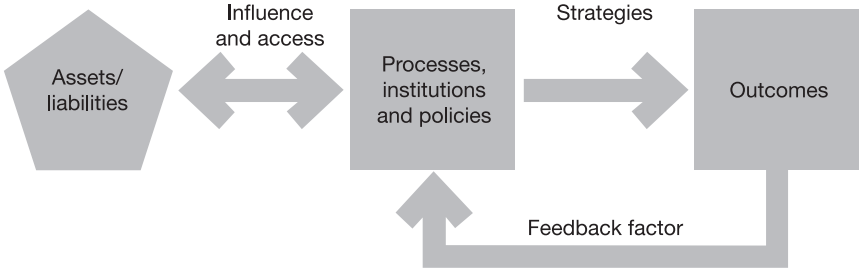


Figure 2. A livelihoods framework adapted for complex humanitarian emergencies
Source: Adapted from Lautze and Raven-Roberts (2006).

international agendas and aid modalities, including disaster risk reduction, climate adaptation and resilience, conflict resilience, and general community resilience (Bahadur, Ibrahim, and Tanner 2010; DFID 2011; Folke 2006). In a project that illustrates the links between resilience and peacebuilding, Cynthia Brady and her colleagues describe how, in post-conflict Mindanao (in the Philippines), collaborative peacebuilding efforts built trust between former adversaries and fostered social and institutional resilience (Brady et al. 2015*).

Livelihood approaches, including the sustainable livelihoods framework, have now been in use for more than twenty-five years (Morse and McNamara 2013). While initially used to promote sustainable development, these approaches have more recently been adapted and applied in a wide range of humanitarian, conflict, and post-conflict settings, in order to protect and support livelihoods, promote sustainability, reduce vulnerability, and strengthen resilience. Increasingly, these livelihood approaches have contributed to peacebuilding even where this was not an explicit goal of the interventions.

LIVELIHOOD SYSTEMS

The way in which livelihoods are framed and interpreted in this book is based on the conceptual framework shown in figure 1, in which livelihood assets, strategies, and outcomes are dynamically linked to vulnerabilities, structures, and processes. In the three subsections that follow, livelihood assets, livelihood strategies, and transforming structures and processes are reviewed in relation to key livelihood concepts, including risk and vulnerability, resilience, coping, and adaptation.

Livelihood assets

Livelihoods are based on a range of assets that a household owns or can access. The livelihood frameworks discussed earlier categorize livelihood assets into five (or sometimes six) types: physical assets, human assets, social assets, financial

(and/or economic) assets, and natural resources.[8] Assets can also be viewed in terms of their function—whether, for example, they are used for consumption, production, or income generation; or whether they are convertible, meaning that they can be directly consumed at a later point, or converted into another category of asset. Investing in social relations, for example, can be regarded as a convertible asset, as can savings, and debts that can be called in (Dorward et al. 2001).

Assets need not be owned directly to contribute to livelihoods, and may be accessed through claims and entitlements: for example, social relationships may give rise to opportunities to access assets. In the case of common-property resources, such as rangelands, assets may be shared.

When analyzing the resilience of livelihood systems, it is more useful to consider assets than strategies (which are addressed in the next subsection), since a household's assets more accurately reflect the potential impact of stressors—such as conflict or disaster—on livelihoods.[9] An analysis of livelihood assets also reveals a household's capacity to cope with or survive crisis.

Similarly, at the level of the population group, a deficiency in a particular asset category can seriously undermine livelihoods. In the Darfur region of Sudan, for example, the camel-herding nomads have considerable physical assets in the form of their livestock herds, but the groups' human capital has been weakened by illiteracy and high maternal mortality; moreover, as a result of the Darfur conflict (2003–present), the nomads' relations with other groups have become polarized, weakening their social capital (Young 2009). Among Darfur's agri-culturalist populations, forcibly displaced households have not only lost their land—and therefore their principal livelihood asset—but may also have been separated from family members who possess the necessary business skills to generate income. Such losses create profound vulnerabilities that cannot easily be offset by other means. Thus, the Darfur conflict has had a differential impact on livelihood systems, enriching the physical assets of nomads by facilitating

---

[8] Such assets may be defined as follows: (1) *physical assets*: producer goods, including livestock, tools, and equipment; and buildings and basic infrastructure, such as water and sanitation, schools, information and communication technologies, and roads; (2) *human assets*: skills, knowledge, health, ability to work, and the ratio of dependents to productive adults within the household; (3) *social assets*: formal and informal social relationships or resources that can be drawn on in pursuit of livelihoods, including shared norms and values that facilitate cooperation, claims, and exchange; (4) *financial assets*: financial resources, including savings, access to credit and loans, and income from employment, trade, and remittances; (5) *economic assets*: entities that function as stores of value, over which ownership rights are enforced by institutions (individually or collectively), and from which owners may derive economic benefits either by holding them or using them over time; and (6) *natural resources*: environmental resources such as land, rangelands and pastures, water, forests, fisheries, and subterranean resources (such as minerals and oil). (These definitions are adapted from IRP and UNDP-India [2010].)

[9] As discussed later in the chapter, stressors often result in the transfer of assets away from the poor.

their livestock mobility and increasing their access to natural resources (which, prior to the conflict, may have been obstructed by the expansion of farms and the fencing off of pastures), while simultaneously reducing access to cultivable land among those who have been displaced. As long as the asset profile of either group remains skewed, livelihoods will be compromised and grievances will remain—circumstances that threaten to undermine peacebuilding.

Under conflict conditions, control of livelihood assets can shift radically from the perspective of gender and age. For example, in the absence of men, women may shoulder increasing responsibility for household decision making—as was the case in Aceh, Indonesia, where women took on important roles in traditionally male-dominated agricultural sectors, such as aquaculture and fisheries, in order to meet basic household needs (UNEP et al. 2013). While this strategy is practical and often empowering, livelihood security issues can arise when male combatants are demobilized—as occurred in Nicaragua in 1988, when approximately 16,000 women lost their jobs to men returning from the civil war (Karuru and Yeung 2015).

Challenges to traditional gender norms, including those related to natural resource management, can alter notions of masculinity, and may affect relations between men and women in the post-conflict period (Boyer and Stork 2015*). In some cases, shifts in gender roles have been associated with domestic violence and the reinforcement of gender inequalities (UNEP et al. 2013). Given that women and girls often have closer ties to natural resources (through agriculture and horticulture, firewood collection, and domestic water use) and are primarily responsible for household food security—and because men and women often have different conceptions of peace and, in particular, effective natural resource management—gender analysis is crucial to livelihoods in the post-conflict setting (Karuru and Yeung 2015).

Livelihood strategies

Livelihood strategies are what people do to achieve their livelihood objectives and ambitions—that is, the livelihood outcomes that they are seeking. These objectives might include the following:

- Meeting household consumption needs.
- Making investments to maintain or increase income or production, either now or in the future (for example, by purchasing land or tools, or by increasing knowledge, skills, or capacities through education or health care).
- Building social capital (for example, maintaining social relationships and meeting cultural obligations).

Livelihood strategies can also be described as livelihood actions or activities—among practitioners, this description often serves as the starting point for discussing and describing local livelihoods.

In conflict and post-conflict settings, livelihood objectives are often a compromise: a trade-off between competing household needs or, alternatively, between the various risks associated with attempting to meet those needs under difficult conditions. Often, people are willing to face considerable risk to maintain their livelihoods and meet consumption needs, as in the case of displaced women who risk gender-based violence by traveling to their farms for cultivation. In the post-conflict period, returning to one's place of origin is generally a high priority for those who were displaced, and is linked to the resumption of livelihoods. After the war in Bosnia and Herzegovina, returning refugees and IDPs demanded that they be able to return to their original settlements, underscoring the social and psychological value of particular places in connection with livelihoods recovery (Green 2015*). Security—including protection, if required—is a priority and a precondition for sustainable livelihoods.

The chapters in this book illustrate a wide range of livelihood strategies that require access to and use of natural resources, including the following:

- Primary production, including farming, horticulture, pastoralism, and beekeeping (Roe 2015*; Bowling and Zaidi 2015*; Webersik and Crawford 2015*).
- Fisheries (Brady et al. 2015*; Scheiber and Jones 2015*; Webersik and Crawford 2015*).
- Processing, including charcoal making; organic fertilizer production; and the production, in cooperation with the BioTrade Initiative, of value-added products based on biodiversity (Webersik and Crawford 2015*; Jaramillo Castro and Stork 2015*).
- Extraction, including the mining of metals, diamonds, and other minerals (Keili and Thiam 2015*).
- Agroforestry (Renner 2015*; Srey and Schweithelm 2015*; Boyer and Stork 2015*).
- Ecotourism and conservation, including serving as guides, park rangers, and members of patrols tasked with protecting national parks (Maekawa et al. 2015*; Walters 2015*; Pritchard 2015*; Westrik 2015*).
- Rural and urban small businesses, including vocational trades such as textile design, embroidery, carpentry, food processing, and honey production (Keili and Thiam 2015*).
- Trading networks and market chains, including serving as merchants, agents, and middlemen (Webersik and Crawford 2015*).

Most livelihood strategies use or affect natural resources, either directly or indirectly. The majority of the case studies in this book—and indeed the vast majority of livelihoods in post-conflict countries—depend on accessing land and other natural resources. In Viet Nam, for example, over 60 percent of the population relies on agriculture and forest resources for its livelihoods (Lax and Krug 2013); and in Myanmar, 70 percent of the country's 55 million people depend

on farming and fishing as their primary livelihood strategies (Talbott, Waugh, and Batson 2013).

The assets and capacities available to a given household influence that household's ability to pursue specific livelihood strategies. The factors referred to in figure 1 as the "Vulnerability Context" and "Transforming Structures and Processes" also wield strong influence. The factors affecting the vulnerability context are dynamic and often seasonal, and have implications for public health, agriculture, and market trends. For example, extreme variability, year to year, in the climatic conditions that affect a major crop raises the risk of an annual hunger gap.

Households often use diversification, intensification, or migration to manage predictable stresses. Diversified livelihood strategies are potentially more sustainable, as one or more strategies may outperform others that are more susceptible to shocks. The case studies support this: as Alan Roe observes, diversification of on- and off-farm income can contribute to both risk reduction and wealth accumulation (Roe 2015*). Examples of intensification include the use of fertilizers or fodder supplements to increase production, or to extend the amount of land under cultivation. Migration includes traveling for work or trade, or moving livestock to access pastoral resources.

In the face of continued stress on livelihoods, households may engage in coping behaviors sequentially, depending on the severity and duration of the threat. Initially, households often cut back on consumption, to protect assets that are essential for livelihoods over the long term. If the situation worsens, households may begin to sell their assets. And, over the long term, large shifts may occur in the number of people practicing a particular coping strategy. In Somalia, for example, after Saudi Arabia imposed a livestock ban on Somali animals to avoid exposure to livestock that may have been infected with Rift Valley Fever, overall market demand for Somali animals dropped, and charcoal production in Somalia increased (Webersik and Crawford 2015*).

Although the phrase *coping strategies* may sound positive, the strategies often entail costs at both the household and community levels. At the household level, for example, reducing the number of meals leads to hunger and malnutrition, and selling assets leads not only to chronic hunger and malnutrition but also to impoverishment. In the wider context, large increases in the number of people practicing a particular coping strategy can devastate the environment: for example, because IDP and refugee settlements generate a massive demand for fuelwood, deforestation often occurs in the areas around such settlements (UNEP 2008). The wider costs of adaptation, and its implications for others, are considered later in this chapter.

Transforming policies, institutions, and processes

The livelihood asset base indicates a household's sensitivity to shocks and stresses and its capacity to respond to them. Adaptive capacity is also influenced, however, by the institutional and policy context, and by wider environmental, economic,

and political processes. There are many ways in which policies, institutions, and processes (PIPs) can influence livelihood outcomes, and thereby influence peacebuilding.

The range of influences on local livelihoods—and, by implication, peacebuilding—extends beyond the local community to the regional, national, and international domains. Local production and trade, for example, are affected by local markets—which are, in turn, subject to influences from the wider economy, including links with international trade. Similarly, a drop in local production can affect national and neighboring economies—as occurred when livestock exports from countries affected by Rift Valley Fever were banned, benefiting the export trade of unaffected countries.

The many domains of PIPs are connected through formal and informal institutions and networks, and by governance and policy frameworks that operate at different administrative scales, from the micro to the meso and macro levels. Despite the breadth and diversity across domains and levels, some general observations can be made about the analysis of PIPs and related topics. It is important to keep in mind, however, that any livelihoods analysis should incorporate a review and assessment of stakeholder institutions and the prevailing policy context. To make such efforts more manageable, the objectives of the livelihoods analysis should specify the parameters for reviewing policies and institutions, for example, the sectoral focus, the geographic areas and administrative levels that are of interest, and the historical timeframe.

Relevant topics include the national economy (both domestic and export); markets and trade; and the national, regional, and international policy context. Usually, a policy review will focus on issues pertinent to the specific livelihoods in question. Experience to date shows that local-level livelihoods are not independent from higher-level processes or the prevailing political economy—meaning that connections to national and international policies and processes always exist, and cannot be ignored. The following three subsections review some areas of critical relevance to natural resource–based livelihoods.

Land tenure and natural resource governance

Issues and grievances related to land tenure and other rights of access to natural resources are perhaps the most common challenges that arise in the course of efforts to support livelihoods after conflict. Because land tenure, in particular, may have been historically linked with conflict, it has powerful implications for peacebuilding.

Land tenure can be complicated by legal pluralism—the coexistence of customary laws and institutions with statutory ones.[10] Thus, one common

---

[10] For further analysis of legal pluralism and land management, see Unruh and Williams (2013).

grievance concerns the failure of governments and other authorities to respect customary property rights; in some instances, governments have either claimed state ownership of properties that, under customary law, are owned by other groups, or have awarded property rights held under customary law to entities other than the customary users.[11] Government policies may also affect land use—and, hence, local livelihoods. In Somalia, the shift from customarily held lands to state ownership led to changing patterns of land use: what was once rangelands and pastures or communally managed farmland has now been turned over to charcoal production, which is more profitable (Webersik and Crawford 2015*).

Historically, customary institutions were seen by communities, scholars, and practitioners—as well as by a number of government authorities—as helping to minimize conflict. Among pastoralist societies in the Karamoja region of Uganda, for example, the customary management of natural resources, by means of flexible and permeable boundaries between Kenya, Uganda, Ethiopia, and South Sudan, served as an important adjunct to herding strategies by allowing seasonal cross-border or transboundary migrations. Customary institutions were weakened by the process of state building in East Africa, however, as the authority and responsibilities associated with traditional governance mechanisms were reduced and transferred to a nascent civil and political administration (Lind 2015*).

Shared access to common-property natural resources allows multiple users to benefit from the same area of land at different times of the year and for different purposes. For example, in North Darfur, farmers engage in rainfed agriculture during the cultivation season; meanwhile, during the rainy season, pastoralists move to pastures further north (Osman et al. 2013). At the end of the growing season, pastoralists return to graze their livestock on the crop residues as they travel southward. The relationship between pastoralists and agriculturalists produces a number of mutual benefits: animal manure fertilizes the farmers' fields; the herders' camels help transport produce from fields to farm storage; and farmers and herders exchange animal products and crops. Several trends have undermined this reciprocity, however, including the use of fencing to enclose rangelands, the commercialization of crop residues and manure, and the increasing use of commercial fertilizer and other inputs. These modernizations, in turn, have led to the expansion of rainfed cultivation and an increase in sedentary livestock production, prompting a shift from communally shared land to individual land tenure that has led to increasing tensions, conflict, and polarization between livelihood groups.

---

[11] See, for example, Alden Wily (2015*) and Unruh and Williams (2013). Conflicts between farmers and pastoralists who are also divided by ethnic lines can be found in many other conflict-affected regions—including Darfur, where nomadic Arab pastoralists and settled farming communities are in conflict (Green 2015*).

The economy, markets, and trade

In many post-conflict countries, between 20 and 60 percent of gross domestic product is attributable to the net value added by agriculture—which includes crop cultivation, livestock production, forestry, hunting, and fishing (see table 1).

Table 1. Agricultural value added for countries affected by major armed conflict, 1990–2013

Country	*Agricultural value added as a percentage of gross domestic product (2012)*[a]	*Country*	*Agricultural value added as a percentage of gross domestic product (2012)*[a]
Afghanistan	25	Laos	28
Algeria	9	Lebanon	6
Angola	10	Liberia	39
Azerbaijan	5	Mozambique	30
Bangladesh	18	Nepal	36
Bosnia and Herzegovina	8	Nicaragua	20
Burundi	41	Pakistan	24
Cambodia	37	Peru	7
Central African Republic	54	Philippines	12
Chad	56	Russia	4
Colombia	6	Rwanda	33
Congo, Democratic Republic of the	25[b]	Senegal	17
Congo, Republic of	3[c]	Serbia	10
Croatia	5	Sierra Leone	57[c]
El Salvador	12	Sri Lanka	11
Eritrea	15[b]	Sudan	28
Ethiopia	49	Tajikistan	27
Georgia	9	Thailand	12
Guatemala	11	Timor-Leste	17[c]
India	18	Turkey	9
Indonesia	15	Uganda	26
Kosovo	14	United Kingdom	1

Source: World Bank (2014).

Notes:

Major armed conflict is defined as conflict that has resulted in more than 1,000 battle-related deaths overall. This threshold corresponds to the CumInt variable in the Uppsala Conflict Data Program/Peace Research Institute Oslo data (UCDP and PRIO 2013; Themnér and Wallensteen 2013). See also UCDP (2014).

For purposes of this table, agriculture includes forestry, hunting, and fishing, as well as crop cultivation and livestock production.

Data for Guinea-Bissau, Iran, Iraq, Israel, Kuwait, Libya, Myanmar, Palestine, Somalia, South Sudan, Syria, and Yemen are not available.

a. Value added is the net output of a sector after the addition of all outputs and the subtraction of all intermediate inputs. Value added does not reflect deductions for the depreciation of fabricated assets or the depletion or degradation of natural resources.

b. Most recent data are from 2009.

c. Most recent data are from 2011.

Thus, in such settings, economic recovery often depends on agriculture—typically by small, rainfed production systems.

The national value of pastoralist livestock production is often underestimated, in part because of a dearth of data. A study of livestock production in Ethiopia, Kenya, Sudan, and Uganda estimated that their combined livestock business was worth more than US$23 billion in 2009, which was 37 percent higher than official estimates (ICPALD 2013). In East Africa, especially in Somalia and Sudan, pastoralist livestock products have long been an important export; in particular, organically produced desert sheep are prized in the markets of Saudi Arabia and other Middle Eastern countries (AOAD 2009). Such local, often organic production is thus a mainstay of the Somali and Sudanese economies, making exports a key source of local livelihoods (Webersik and Crawford 2015*; UNEP 2013b). In Somalia, livestock exports account, on average, for 80 percent of exports (FAO Somalia 2014).

Market trends are influenced by the regional policy context; Saudi Arabia's 1998 ban on Somali livestock imports is one example. As noted earlier, the ban lowered market demand for pastoralist livestock; as a result, livestock owners were forced to sell livestock at lower margins (Webersik and Crawford 2015*). The livelihood gap created by the drop in livestock exports stimulated Somali charcoal production, in part as a coping strategy. Thus, a major shift in one livelihood system—pastoralism—prompted an increasing number of pastoralists to switch to charcoal production. Similarly, in Darfur, where insecurity has restricted access to preferred rangelands and migration routes, camel-herding nomads have become increasingly sedentary, necessitating a shift in livelihood strategies. Some of those shifts have been maladaptive: for example, nomads have used intimidation and violence as a means of controlling access to natural resources, displacing many rural farmers and destroying the local markets that the nomads depend on to sustain their livelihoods (Young et al. 2009).

Domestic and international policies

The policies of national governments and their neighbors can have wide-ranging effects on natural resource–based livelihoods. The policy, legal, and institutional frameworks that underlie land tenure and natural resource governance, together with the economy, markets, and trade—the focus of the two previous sections—may have developed over a long period of time, and may require reform if post-conflict challenges are to be successfully addressed.

The breadth of the policy domains that potentially impact livelihoods is vast, and the effects may vary in accordance with local conditions. Policy areas that affect natural resource–based livelihoods include the wide array of agricultural policies that support crop and livestock production through extension services and livestock health programs; water and water resource management; land tenure regimes; regulation of production and markets, including taxation; governance and rule of law initiatives that support the protection of rights to natural resources;

and health and education services. In post-conflict settings, additional policy domains may include military conscription, DDR plans, and the lifting of travel and trade restrictions as borders are reopened. For example, trade between eastern Chad and Sudan all but ceased during the conflict between those two countries, which included embargoes. Relations were normalized in 2010—and in early 2013, in anticipation of a particularly good harvest (cereal production in West Darfur State alone was expected to increase by 300 percent) and a surplus of both sorghum and millet, the government of Sudan lifted export bans to neighboring countries, opening the possibility of renewing formal cereal trade with Chad (FEWS-Net 2013).

The Karamoja region of Uganda has a long history of disarmament campaigns that have undermined both livelihood systems and perceptions of peace and security (Stites 2013). For example, the abrupt scaling back of the 2001–2002 disarmament campaign left many communities that had voluntarily disarmed vulnerable to losing their livestock and grain in raids conducted by those who still possessed weapons (Muhereza 2011).[12]

Policies introduced by former warring parties after conflict also influence economic recovery, including natural resource–based livelihoods. During their occupation of post–World War II Japan, for example, the Allies advanced a policy of maximizing natural resource harvesting in order to ensure domestic food security and restore Japan's devastated fishing industry, which was a source of livelihoods for 1.5 million people. The policy met these particular objectives, but it also led to unsustainable fishing and whaling practices, significantly depleting and degrading the whale and fish stocks in Antarctic and Pacific waters (Scheiber and Jones 2015*).

Although policy reform is an important tool of national development, reforms can magnify structural inequities and fuel conflict in post-conflict settings. In his examination of Afghanistan, for example, Roe questions the conventional agricultural development approach—that of maximizing economic growth and returns—arguing that this approach can exacerbate inequality and heighten political tensions (Roe 2015*). In particular, growth-oriented agricultural policies in Afghanistan have targeted areas perceived to be economically productive (such as those with greater access to irrigation water)—thereby marginalizing disadvantaged outlying rural areas, undermining their livelihoods, and aggravating existing tensions. Thus, what is sensible from a macroeconomic perspective may not be good politics.

---

[12] Afghanistan experienced a similar dynamic, in which communities that voluntarily disarmed following the 2001 invasion became vulnerable to those that had not disarmed (Sato 2011). Disarmament efforts in the Karamoja region have also been problematic for other reasons. For example, during the implementation of a subsequent disarmament effort, in 2006, the military was condemned for widespread human rights abuses (Pulitzer Center on Crisis Reporting 2011).

THE NEXUS OF LIVELIHOODS, NATURAL RESOURCES, AND CONFLICT: KEY POINTS FOR POST-CONFLICT PEACEBUILDING

One of the major goals of this book is to improve understanding and analysis of the livelihoods, natural resources, and conflict nexus. This nexus is widely acknowledged as critically important in peacebuilding;[13] until recently, however, it has received little attention. Instead, the literature has explored the links between conflict and livelihoods, and conflict and the environment.

Literature, for example, focusing on the links between conflict and livelihoods addresses, among other topics, the impact of conflict on livelihoods and local responses (Lind and Eriksen 2006; Stites et al. 2005; Young et al. 2005); refugees' pursuit of livelihoods in conflict settings (Jacobsen 2003); and humanitarian protection and local livelihoods (Jaspars and O'Callaghan 2010; Narbeth and McLean 2003). There are also reviews of conflict and violence, power relations, and livelihoods (Collinson 2003; Lautze and Raven-Roberts 2006), more general reviews of livelihoods from a programmatic perspective, and annotated bibliographies (Holland et al. 2002; Longley and Maxwell 2002; Schafer 2002).

In parallel, there has been a growing interest in conflict and the environment—particularly in the links between local-level natural resource conflict and higher-level civil and interstate conflict (Leroy 2009; Ratner et al. 2013; UNEP 2014). Brady and her colleagues have examined the links between local, natural resource–related conflicts and the higher-level national conflict between Philippine government forces and Muslim rebel groups in Mindanao (Brady et al. 2015*). At a global level, the fifth assessment report of the Intergovernmental Panel on Climate Change included a chapter on human security and another on livelihoods and poverty, which examine several livelihood dimensions of human security in the context of local and higher-level conflict, including mobility and migration, and cultural and economic factors (Adger et al. 2014; Olsson et al. 2014).

The dearth of evidence and comprehensive study of the livelihoods, natural resources, and conflict nexus represents a gap not only in the literature but in the tools available for peacebuilding. For peacebuilding to succeed, all actors must fully understand both the broader conflict dynamics and the role of natural resources in promoting sustainable livelihoods and a sustainable peace. Livelihood systems, including livelihood governance and livelihood institutions, play a crucial role in managing natural resources—in particular, by providing mechanisms through which rights can be claimed and disputes resolved nonviolently. The livelihoods, natural resources, and conflict nexus has also been ignored or underestimated in many standard programmatic approaches to building a durable peace after the conclusion of hostilities. Glaucia Boyer and Adrienne M. Stork argue, for example, that most DDR programs have failed to recognize natural resources "as a fundamental element of security, recovery, and peacebuilding" (Boyer and Stork 2015*, 187–188).

---

[13] See, for example, Stites (2013), Osman et al. (2013), Engel and Korf (2005), Collinson et al. (2002), UNEP et al. (2011), and IISD (n.d.).

The focus here is on the nexus of livelihoods, natural resources, and conflict; this nexus usually exists, however, in the context of transforming structures and processes—from natural disasters to financial crises, political or demographic shifts, and the threats associated with climate change. (Table 2 lists examples of transforming processes, stresses, and shocks that can affect the livelihoods, natural resources, and conflict nexus.) Often, such transforming structures and processes are intertwined, and may interact synergistically. The challenge for policy makers

Table 2. Examples of national-level transforming processes, stresses, and shocks affecting the nexus of livelihoods, natural resources, and conflict

Natural disasters	• In Aceh, Indonesia, peacebuilding and recovery from the twenty-nine-year separatist conflict were transformed by the 2004 Indian Ocean tsunami, which severely damaged both the customary and statutory land tenure systems (Renner 2015*). • Periods of prolonged drought superimposed on long-standing political tensions or protracted conflict—for example, in Darfur and Sudan—create additional stressors that further erode natural resource–based livelihoods.
Administrative reorganization and new borders (national or subnational)	• A new international border between Sudan and South Sudan has had implications for the citizenship of some groups; control of oil resources; and cross-border livestock migration and trade—all of which have the potential to affect livelihoods and the relations between groups on either side of the border.
Deterioration of local security, including increasing access to small arms	• The transformation of traditional livestock-raiding practices in the Kenyan and Ugandan sections of the Karimojong Cluster from a reciprocal, rule-governed practice into a predatory activity—engaged in to obtain large amounts of livestock to sell in lucrative urban meat markets—was exacerbated by weakened local governments, diminished local security, and the influx of small arms (Lind 2015*).
Demographic trends, including rapid population growth, urbanization, displacement, and return	• The population of Afghanistan has climbed by approximately 70 percent since the mid-1980s, increasing demands on land and other natural resources, affecting agricultural productivity, and degrading the natural resource base (Roe 2015*). • In Sudan, new urban dwellers (often internally displaced persons) have left behind rural livelihoods based on natural resources in exchange for relatively insecure employment or trade, forcing many to adopt marginal, urban-oriented coping strategies (Pantuliano et al. 2011).
Major land reforms, including privatization of communal lands	• In many post-conflict countries—from Colombia to Myanmar to Sierra Leone—governments have aggressively promoted and facilitated foreign investment in agriculture, often leading to charges of land grabbing (Unruh and Williams 2013).
Long-term social and economic marginalization	• In Mindanao, Philippines, historical marginalization has contributed to poverty, local grievances, political rivalries, and natural resource competition (Brady et al. 2015*; Defensor Knack 2013). • In Sudan, growing disparities in wealth and well-being (particularly with respect to health and education) have been linked to a history of political and social marginalization (Young et al. 2005).

is to fully understand the relative importance of—and connections between—these structures and processes.

In Darfur, for example, conflict—and the resulting forced displacement—has undermined livelihoods and created pressures on the environment, including water supplies, cultivable land, and forestry resources. Displacement to urban and peri-urban areas has also led to urban energy deficits, and the increasing demand for firewood from recently urbanized populations carries environmental costs—specifically, deforestation and land degradation. Moreover, firewood collection by IDPs entails high risks of intimidation and violence (Buchanan-Smith et al. 2011; UNEP 2007). At the same time, IDPs and the urban poor cannot afford alternative fuels such as petroleum, kerosene, or liquefied natural gas.

Wide-ranging transformative processes contribute to unique contexts in each post-conflict country; nevertheless, some general patterns are evident, from which clear lessons can be drawn. The two subsections that follow explore the influence of natural resource–based livelihoods on conflict and post-conflict peacebuilding, and the impact of conflict on natural resource–based livelihoods.

Influence of livelihoods on conflict and post-conflict peacebuilding

Livelihoods and related issues affect conflict and post-conflict peacebuilding in a number of ways, including the following:

- Livelihood assets may serve as conflict resources—meaning that they may fuel, prolong, or create incentives for conflict, and thereby exacerbate insecurity.
- Natural resource scarcity and inequitable access to natural resources can fuel conflict, and may be linked to wider political agendas.
- Alienation—in part, as a result of eroding traditional age- and gender-based roles—makes male youth more susceptible to recruitment by militias or the military.
- Identity claims linked to livelihoods can trigger or exacerbate conflict.
- Lack of sustainable livelihood opportunities can undermine the peacebuilding process.

It follows that if these factors are driving conflict at the local level, they can also serve as entry points for peacebuilding.

Livelihood assets as conflict resources

Conflict resources are defined as "natural resources whose systematic exploitation and trade in a context of conflict contribute to, benefit from or result in the commission of serious violations of human rights, violations of international humanitarian law or violations amounting to crimes under international law" (Global Witness 2006, 1). The extraction and exploitation of conflict resources are linked to global and domestic markets, as well as to the domestic conflict economy. The conflict economy may include the illicit extraction and trade of high-value

natural resources, such as diamonds, opium, and columbite-tantalite (coltan) by organized networks; the resulting profits may prolong or even fuel the conflict.

In any particular natural resource–related conflict, a number of dynamics may be at play. Two of the chief drivers are (1) competition for economic opportunities related to natural resources (often referred to as the "greed" driver), and (2) social, political, and ideological causes related to natural resources (often referred to as the "grievance" driver). These drivers are not mutually exclusive—and in many cases, both are at work. It is also possible that actors' motivations may change over the course of a conflict—for example, starting with grievance, but quickly moving on to greed.

Michael Ross has proposed that natural resources might lead to armed conflict through four main pathways: (1) effects on economies (such as negative growth and increasing poverty); (2) effects on government (such as corruption, state weakness, and lack of accountability); (3) effects on people living in natural resource–rich regions (such as economic incentives to form a separate state); and (4) effects on rebel movements (such as financing for rebel activities) (Ross 2003). These mechanisms demonstrate elements of both greed and grievance.

Another view, advanced by Paul Collier, suggests that conflicts are more likely to be caused by greed—that is, by economic opportunities and agendas that motivate violent efforts to seize control over high-value natural resources (Collier 2000). Collier also describes the ways in which civil wars create economic opportunities for a minority of actors while destroying them for the majority. In keeping with this perspective, an analysis undertaken shortly after the end of the Cold War highlighted the ways in which post–Cold War civil conflicts had produced a political economy shaped by the power relations between winners and losers, and by the illicit transfer of assets from the weak to the strong (Duffield 1994). In conflict-affected areas controlled by rebels or warlords (including portions of Ethiopia, Liberia, Sierra Leone, Somalia, and Sudan), the emergence of "asset transfer economies"—some of which are linked to international trading networks—has been widely reported (Collinson et al. 2002; Duffield 1994; Keen 2000).

The mechanisms for forcefully transferring assets from losers can range from market pressures to violent appropriation through pillage or looting, which are often justified as a necessary means of supplementing or even replacing the wages of soldiers or officials (Keen 2000). Where commodities are of a lower value but more widely produced and traded, there may be efforts to control the resource trade through the exaction of illegal taxes or the imposition of illegal requirements for licenses. In Somalia, for example, warlords and their militias demanded the payment of levies on banana exports, which were used to directly support their activities and institutions (Webersik and Crawford 2015*). Similarly, Somali militias have gained financing by controlling charcoal exports.

After Somali pirates hijacked a ship loaded with charcoal for export, the United Nations imposed a ban on Somali charcoal exports. Since approximately 80 percent of Somalia's charcoal is exported, the ban severely undermined local businesses and deprived many Somalis of their principal livelihood source. The

overall effectiveness of the UN ban has been questioned, however, because illegal exports of charcoal from Somalia have continued—and, by some accounts, increased (Charbonneau 2013).

In an environment in which organized illicit networks control natural resources, a wide range of livelihoods may depend on the perpetuation of conflict. In South Darfur State, Sudan, for example, military and security interests have been linked to the opportunistic—and lucrative—felling of high-value and irreplaceable mahogany forests (UNEP 2008). Meanwhile, militia groups that control other, less valuable forestry resources have engaged in violence and intimidation to prevent others—especially urban IDPs—from collecting firewood. Thus, IDPs who need fuel for cooking are largely dependent on a market controlled by their adversaries (Young et al. 2009).

Some economic activities are actually more profitable under conditions of conflict—and in such cases, those who profit are likely to be a small minority with close ties to powerful interests (Keen 2008). In Somalia, for example, warlords, local militias, and some urban truck owners are among those profiting from the new export trade in charcoal—a trade that also happens to be dominated by certain tribes (Webersik and Crawford 2015*).

Even where large-scale natural resource extraction is not illegally supporting conflict, excessive exploitation is likely to contravene national laws and policies, and contribute directly to deforestation, pollution, land degradation, and widespread erosion—as well as to the loss of livelihoods linked with natural resources. In Sudan, for example, oil development has caused significant environmental and social damage (including forced relocations and water contamination), threatening livelihoods and exacerbating conflict. The construction of roads for oil exploration and production has also hampered livelihoods by altering local hydrology and disrupting irrigation, sparking resentment against oil companies and political leaders; increasing water scarcity offers yet further potential to intensify local conflict (Patey 2012). The rampant illegal exploitation of forest resources in Cambodia is another example: the timber is financially valuable and easy to harvest and sell, but illegal harvesting undermines the livelihoods of large, forest-dependent populations (Srey and Schweithelm 2015*).

Resource scarcity and inequitable access to natural resources

Scarcity has long been put forth as one of the factors fueling competition and conflict over natural resources (Homer-Dixon 1999). Although competition often appears to be the primary cause of local conflict, more complex causal factors are often involved. In many cases, for example, underlying causes include (1) long-term social, political, and economic marginalization of certain groups (sometimes as a result of national policies); and (2) social and economic trends that result in landlessness, displacement, or inequitable access to natural resources—and thereby undermine or destroy livelihoods (Stites 2013).

Structural inequities in access to natural resources can increase competition and fuel local grievances—which, in vulnerable rural communities, may escalate

to violent conflict. In Afghanistan, for example, the two most common sources of local conflict are disputes over land and water (Waldman 2008; UNCTA 2013). In his review of natural resource access and livelihood outcomes among four production systems in Afghanistan—irrigated farming, semi-irrigated farming, rainfed farming, and nomadic pastoralism—Roe notes the disparities between the systems: as might be expected, rainfed farming receives less water than irrigated, but there are also disparities within systems. The duration of the irrigation flow to upstream irrigated farms, for example, is more than twice that to comparably sized downstream farms—a disparity that has the potential to trigger violent conflict between upstream and downstream groups. A number of factors have intensified disputes over access to and use of irrigation water in river valleys, including drought, opium poppy cultivation, and ethnic differences (Roe 2015*).

Many researchers now agree that natural resource scarcity is one of several factors that can contribute to conflict, while recognizing that economic, social, and political agendas also play a role (Collinson et al. 2002; Stites 2013). In Mindanao, for example, the heart of the conflict was, for many, "the struggle for political and economic control over the land and resources necessary to sustain the lives and livelihoods of Mindanoans," a perspective that addresses the integration of economic, social, and political factors (Brady et al. 2015*, 342).

Political and economic agendas at various levels are often intertwined: specifically, local competition and conflict over natural resources may be tied to higher-level regional interests, and ultimately to wider national conflicts. For example, in parts of Darfur, a long history of pastoralist-farmer conflict broadly corresponds to wider political allegiances—specifically, to support for either government or rebel forces. Because the two levels of conflict interact, influencing one another, a local conflict between farmers and herders over land, water, or pastures can easily transform into a wider conflict that includes issues of ethnic identity and is linked to the higher-level conflict between the government and the rebels (UNEP 2013a). The lesson for peacebuilding is that the potential interactions between stakeholders at all levels need to be taken into consideration in efforts to foster peace.

Erosion of traditional age- and gender-based roles

Intergenerational relations—including tensions over access to natural resources—can contribute to conflict, and may therefore pose challenges to post-conflict peacebuilding. In Sierra Leone, for example, ancestral lineages traditionally determined who controlled and owned land; as a result, young men who lacked access to land had trouble finding wives, and were more easily recruited by rebels (Keili and Thiam 2015*). Moreover, during the post-conflict period, a number of trends hampered the integration of youth into the post-conflict economy—including rural-to-urban migration; international migration; participation in the informal economy; self-employment in marginalized areas or slums; and widespread unemployment, which created an exceptionally large pool of applicants for any given job. In light of such patterns, Andrew Keili and Bocar Thiam

emphasize the importance, in Sierra Leone, of initiatives that target alienated youth, and that focus on education and training (Keili and Thiam 2015*).

Since the mid-1980s, in Karamoja, Uganda, the traditional rites of passage through which young men establish themselves as adult warriors have gradually decayed, alienating male youth from their communities—and particularly from adult men and elders. Instead, young men have increasingly turned to their peers in search of status, support, and recognition as men, undermining the traditional authority of elders (Stites 2013). The role of the Ugandan military in responding to livestock raids has also marginalized elders, who had historically played an important role in maintaining peace between different groups (Stites and Akabwai 2009). The traditional role of male elders in managing natural resources has also diminished: whereas they were once central to the management of access to pastoralist resources (water, pastures, and fodder), they now have no control over the collection, production, sale, or exchange of firewood and wild greens, all of which are increasingly important for subsistence. Finally, as women's roles in natural resource exploitation—and household subsistence—has increased, men's roles have decreased (Stites 2013). In sum, protracted conflict can give rise to dramatic shifts in traditional natural resource management practices, which are likely to have implications for natural resource access, competition, and conflict.

Identity claims precipitating or triggering conflict

In an analysis based on social identity theory, Arthur Green explores the connections between social identity and natural resources, and the ways in which both are connected to conflict and peacebuilding (Green 2015*). Green posits that when group identities are closely linked to natural resources, economic "conflicts of interest" may become intractable "conflicts of values." Green identifies four ways in which the overlaps between identity and natural resources can be related to conflict:

- Identity claims involving ownership of or privileged access to natural resources (either symbolic or material) can drive conflict.
- Identity can influence claims of inequitable distribution of resource rents.
- Identity can be used to mobilize collective action in natural resource conflicts, in order to serve other economic interests.
- Preexisting identity framing can foster conflict over natural resources.[14]

To the extent that a livelihood is a way of life, it contributes to social and cultural identity, which may persist long after the livelihood activity has ceased. Pastoralism, for example, is both a system of livestock production and a cultural identity shared by those who have long since sold their animals. Furthermore,

[14] Edward Aspinall argues that without the social identity framework, there would be no politically salient grievances (Aspinall 2007).

because pastoralism as a cultural identity cuts across ethnic lines, a focus on the shared interests and values associated with pastoralism has the potential to build unity among ethnically distinct groups, and thereby support peacebuilding.

The Darfur region provides an example of the powerful influence of identity framing on conflict. Since the outbreak of conflict, in 2003, Darfuri identities have been radically and traumatically simplified, creating a misleading "Arab" versus "African" dichotomy (de Waal 2005). By obscuring and depoliticizing the underlying causes of violent conflict (Mamdani 2007), this identity framing further polarized the groups in question. Such divisions, in turn, have reached into the realm of livelihoods, where "Arab groups" are seen as engaging primarily in pastoralism, and "African groups" are seen as engaging primarily in farming. The reality, however, is far more complex: intractable tribal conflicts, including incidents of ethnic cleansing, have increased the incidence and severity of tribal polarization—which in no way mirrors the simple Arab-African divide, and which has clear links to higher-level political interests and actions in Khartoum (UNEP 2013a).

Similarly, in Mindanao, the conflict between Islamic rebel groups and the Philippine government has been framed as a matter of social and religious identity, with inequitable distribution of resources constituting additional causal factors (Brady et al. 2015*). Thus, any effort to address the cause of the conflict requires an understanding of the identity framing, which should feature strongly in peacebuilding efforts.

The coexistence of natural resource conflict and identity framing does not necessarily mean that identity framing is driving the conflict: political or socioeconomic factors may be at work as well, fostering both the conflict and the identity framing. Overestimating the role of identity carries the risk that competing claims or grievances may become entrenched, causing further polarization. Some observers have argued that this has occurred in Darfur, where politicized reporting on the conflict has entrenched identity framing of the issues (Mamdani 2007).

Despite this proviso, evidence does suggest that livelihoods are often the link between social identity and natural resources. In such cases, what is being defended or attacked is not the natural resources as such, but the resources as a livelihood asset—which are crucial for survival, for the development of the wider economy, and for peacebuilding.

Lack of sustainable livelihood opportunities

Disparities at multiple levels can contribute to resentment and grievances, and thereby fuel conflict. In Aceh, Indonesia, the exploitation of natural gas and forestry resources by multinational companies contributed to national wealth—but because benefits did not accrue locally or serve local interests (including through the provision of livelihoods), this resource exploitation contributed to Acehnese grievances, among them resentment toward the central government (Renner

2015*). After the signing of the memorandum of understanding that ended the conflict in 2005, local economic disparities linked to livelihoods (in particular, high unemployment among former rebels, who in some cases were driven to engage in illegal logging) threatened to undermine peacebuilding, as did disparities between the level of assistance directed to tsunami victims and to conflict-affected individuals.

Impact of conflict on livelihoods

Armed conflict has both a systematic (direct) and systemic (indirect) effect on the lives and livelihoods of civilians. Direct impacts include systematic intimidation; rape and other forms of violence; and death. Other direct impacts include forced displacement; the breakup of communities and households; the loss or destruction of livelihood assets; intimidation and gender-based violence; the destruction of infrastructure; and damage to or destruction of social networks, governance, and civil society institutions through the targeted, systematic killing of leaders. The indirect effects of conflict are even wider, and derive primarily from the risks associated with living in a conflict zone.

Conflict destroys livelihood assets or renders them inaccessible, and similarly erodes or destroys long-established livelihood coping mechanisms and the livelihood institutions on which people depend. Even in the face of such massive changes, however, livelihood strategies and local livelihood institutions continue to adapt and evolve (Justino 2009; Young et al. 2005).

Systematic impacts of conflict: Loss of life and livelihoods

Whether local (bottom-up), civil (top-down), or transnational, armed conflict disrupts and destroys lives and livelihoods. In the economic realm, conflict directly impacts local livelihoods through the transfer of assets from the majority of people (losers) to a small minority empowered by the conflict (winners). These systematic transfers are often linked to the top-down agendas of political and military leaders—who may, for example, attempt to persuade young men to join militias by offering them the spoils of war (Keen 2008).

Asset transfers take many forms, including pillage and looting; demanding protection money in return for sparing victims from violence or allowing them limited access to their own land and natural resources; monopolistic control of trade, or of the benefits obtained through aid; exploitation of labor; and taking direct control of land.[15] A number of these activities have implications for the environment and natural resource base, over and above their impact on livelihood assets.

The tactics of war and conflict—including those adopted by organized armies, militias, and others—may result in the deliberate and systematic destruction of the

[15] This list is based on an analysis, by David Keen, of the short-term economic functions of conflict (Keen 2000).

livelihoods of certain groups, or the assets upon which the livelihoods are based. Among the methods used to implement such strategies are intimidation and violence, ethnic cleansing, forced displacement, livestock raiding, and scorched-earth tactics.

Regardless of the type of conflict, deliberate attacks on the means of production and other livelihood assets, including natural resources, are prohibited under international humanitarian law (Stewart 2011; Pejic 2001; Henckaerts 2005).[16] Despite provisions under the Geneva Conventions, other treaties, and customary international law, however, civilians are often in the line of fire: not only do combatants target civilians' livelihood assets, but military commanders have in some cases given combatants license to loot, as a supplement to or substitute for wages. Thus, what would be considered livelihood assets in peacetime potentially become liabilities during conflict, exposing their owners to extreme risks, not only because of their economic value but because of a conflict of interests and clash of identities (Lautze and Raven-Roberts 2006). Predatory livestock raiding in South Sudan and in the Kenyan region of the Karimojong Cluster are examples of vulnerability linked with the ownership of assets—in these cases, cattle (Keen 1994; Hendrickson, Armon, and Mearns 1998).

Forced displacement—when violence, or the threat of it, compels people to leave their homes in search of refuge elsewhere—has serious impacts on livelihoods during and after conflict. In Afghanistan, for example, during the second half of the twentieth century, almost one-quarter of the population was displaced by conflict (Bowling and Zaidi 2015*).

Freedom of movement—strategic mobility—is an essential condition for livelihoods, including those of the displaced. By preventing people from moving safely, insecurity restricts access to farms, rangelands, and other natural resources; constricts market networks; undermines service delivery; interferes with labor migration; and prevents migrant laborers from sending money home to their families. Insecurity, and the resulting restrictions on mobility, is thus one of the most serious constraints on livelihoods—and the main reason why livelihoods fail. In essence, conflict conditions shut down livelihood strategies by limiting mobility and access to livelihood resources and institutions, thus rendering unavailable the vast array of coping strategies that could be used in peacetime.

In wartime, sweeping changes brought about by conflict and insecurity have transformative impacts on local services, social systems, and local governance. Displacement splits families and cuts them off from their wider social systems and support networks. Although their new location may be more secure, displaced people are outsiders: in addition to being separated from family and friends, they

---

[16] "It is prohibited to attack, destroy, remove or render useless objects that are indispensable to the survival of the civilian population, such as foodstuffs, agricultural areas for the production of foodstuffs, crops, livestock, drinking water installations and supplies and irrigation works, when the purpose of such action is starvation" (Pejic 2001, 1099).

are often deprived of the support of community networks and institutions. They may also have difficulty obtaining access to health, education, and other basic services.

While the displaced may initially lack leaders or institutions to represent their interests, new leaders, institutions, and forms of governance quickly evolve that are adapted to the new setting. Among the displaced in Darfur, for example, new leaders were elected who were skilled at representing IDPs' humanitarian needs and working closely with the international humanitarian community (Young and Maxwell 2013).

Systemic impacts of conflict: Maladaptation and poor natural resource governance

While the systematic (direct) impacts of violent conflict are plain to see, the indirect, systemic changes brought about by conflict—such as the development of an exploitative conflict economy—are less obvious and more insidious. These indirect impacts involve complex and evolving system dynamics, including interactions and feedback loops between various subsystems. A livelihoods lens helps to discern systemic changes at the local level, revealing the effects of conflict on the different elements of the livelihoods framework.[17]

As noted earlier, conflict can strain positive coping strategies, compelling people to employ strategies that are maladaptive—that is, either illicit or harmful to the lives and livelihoods of others. In particular, maladaptive strategies may undermine the natural resource base, perpetuate inequities and marginalization, and promote continued conflict.

A livelihoods study of Arab camel-herding groups often associated with the Janjaweed militias (which support the government of Sudan's counterinsurgency) found that they had adopted several new livelihood strategies that were deemed maladaptive because of their negative impacts on other groups—in particular, rival ethnic groups that included Fur, Masalit, and Zaghawa farmers, many of whom had a history of tribal conflict with the camel-herding groups and supported the rebels. In an effort to survive under threat of the rebellion undertaken by groups that they regarded as their adversaries, the camel herders had rapidly diversified to include short-term, conflict-related livelihood strategies. In addition to their survival value, these strategies were motivated, in part, by long-held grievances related to the herders' lack of a tribal homeland and land tenure, and their minimal access to health and education services.[18] Although these

---

[17] A participatory livelihoods analysis based on the livelihoods framework shown in figure 2 has been used to explore how conflict differentially affected local livelihood systems in Darfur (Young et al. 2007).

[18] Herders had also suffered substantial livestock losses as a result of a drought in the mid-1980s: distress sales, starvation, and disease led to a 92 percent decrease in the size of the livestock population (Young et al. 2009).

new livelihood strategies provided quick and sizable cash returns, they were often linked with either militarization (membership in militias and armed forces) or intimidation and violence—specifically, controlling the lucrative firewood trade and denying others access to common-property resources (Young et al. 2005).[19]

In the case of the Darfuri camel herders, peacebuilding actors need to understand and address the systemic failures that contributed to the original grievances, including inequitable land tenure regimes and failing natural resource governance. In the short term, the international community's response to the gender-based violence and intimidation perpetrated by Janjaweed militias against IDP women who left their camps to collect firewood is to view rape as a weapon of war and accordingly to promote protection for the women (Gingerich and Leaning 2004). A longer-term solution would also recognize the underlying, livelihood-related rationale for the herders to control access to lucrative natural resources. Such a solution must include improvements to natural resource governance that can ensure sustainable livelihoods for all, including equitable access to resources.

In another example of maladaptive livelihoods, illegal logging in post-conflict Aceh, Indonesia, sparked by high unemployment, constrained the government's ability to assist noncombatants and facilitate the reintegration of former rebels, all of which undermined peacebuilding (Renner 2015*). In the African Great Lakes region, where post-conflict unemployment of excombatants may have resulted in illegal poaching, the solution was to replace maladaptive strategies with adaptive ones: establishing associations of former poachers helped them to develop livelihoods that supported conservation and did not harm protected areas (Maekawa et al. 2015*). In Mozambique, years of conflict had led to dependence on illegally extracted natural resources, which continued as a short-term post-conflict coping strategy. Similarly, in Sierra Leone, a "diamond-mining trap" pushed young men to join rebel groups during the civil war (Keili and Thiam 2015*).

At the local level, maladaptive strategies that harm the livelihoods of others can fuel existing tensions and entrench long-standing grievances, leading to a vicious cycle of expanding violence—particularly in environments characterized by failing natural resource governance, pressure on resources, and manipulation (of all sides) by higher-level interests with their own agendas. Once such feedback loops have been created, the only way out is to break the cycle of conflict.

Conflict has been shown to lower local and national agricultural productivity; causes include the laying of landmines, internal displacement, and limited access to farms (as a consequence of general insecurity). Figure 3 shows the shifting levels of millet cultivation in the Darfur region over several decades. By 2004,

---

[19] Gender-based violence has been used to control access to natural resources in both Darfur and the eastern Democratic Republic of the Congo. See, for example, Hayes and Perks (2012) and Gingerich and Leaning (2004).

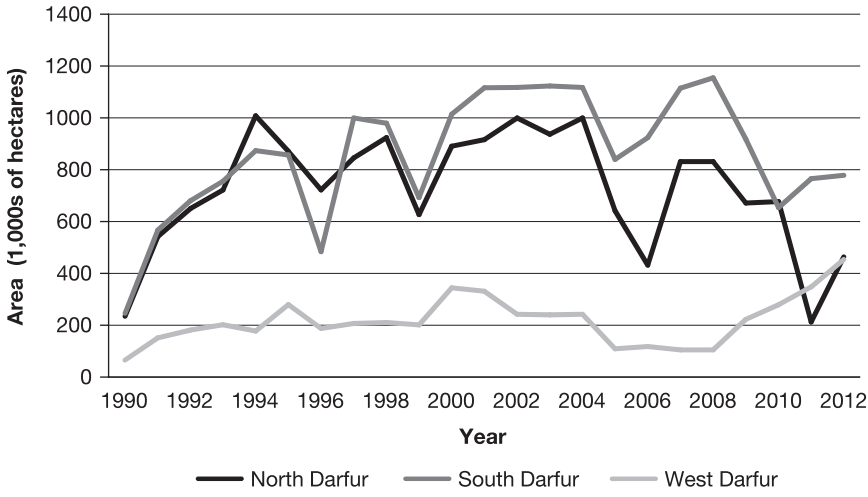


Figure 3. Millet cultivation in Darfur, by state and year
Source: Adapted from Young et al. (2014).

once the conflict in Darfur had taken hold, large numbers of people were displaced and millet cultivation was reduced. By 2007, some recovery had occurred in the states of South Darfur and North Darfur, and by 2012 only West Darfur State had achieved pre-conflict production levels, whereas continued conflict yielded further deterioration in South Darfur. The conflict-caused drops in agricultural productivity led to rising food prices and food insecurity.

In Somalia, productive lands are often left fallow during conflict, undermining livelihood opportunities for local populations (Webersik and Crawford 2015*). In addition, local conflicts often erupt over productive agricultural land, leading to land grabbing and violence. Rural livelihoods have also been compromised by the indirect effects of violent conflict. For example, in 1992, when Somalia was plagued by conflict, major banana production and export companies abandoned their Somali operations because of conflict-related insecurity. These plantations, along with large-scale farms and irrigation systems, deteriorated or were seized by militias or other groups that lacked the skills to manage the land effectively. And in the lower Shabelle region of Somalia, violent conflict caused local populations to lose access to their farms, to their irrigation systems, and to the opportunity to work on former plantations (Webersik and Crawford 2015*).

In the wake of conflict, different factions may remain in control of certain areas, which then become off-limits to certain groups. In Sudan, Chad, and the Central African Republic, for example, pastoralists have been cut off—for years at a time—from their favored seasonal grazing areas (Pantuliano et al. 2009; Young et al. 2009). In Sudan's Darfur region, Arab camel-herding groups were unable to access the rainy-season pastures on the fringes of the Sahara, as this region had been under the control of another ethnic group since 1997 (Young et al.

2009). After lengthy tribal negotiations—which demonstrated the importance of local customary institutions and mechanisms for mediation—the herders regained access in 2010.[20]

Natural resources important to livelihoods—including land, water, and forests—are often used as leverage for political purposes. In Afghanistan, for example, because land offers significant livelihood opportunities, successive regimes have used land to secure political patronage (Bowling and Zaidi 2015*). Similarly, in Darfur, in return for sedentization,[21] the government promised community development, including education, health care, and other basic services, creating a major incentive for Arab camel-herding groups to support the government (Young et al. 2009).

While national policies and statutorily mandated institutions provide the legal framework for rights of access to land and other natural resources, such access often exists, in practice, under conditions of legal pluralism, with local institutions and customary law playing a key role in natural resource management. In such contexts, it is important not only to effectively manage legal pluralism, but also to protect the capacity of both statutory and customary institutions to govern natural resources effectively, including by upholding access rights. Such institutions are central to supporting livelihoods, establishing and maintaining security, and promoting the rule of law.

Conflict—especially conflict over natural resources—can erode or destroy the institutions that allow people to exercise their rights (Ratner 2015*; UNEP 2014), and this loss of capacity and legitimacy can in turn serve as a conflict driver. In Sudan, for example, where traditional authorities lack the capacity to resolve disputes over livestock—in part because they are not aligned with the ruling political party—"villagers resorted to burning pastureland, with considerable damage to the environment, so that the area would not attract pastoralists" (Siddig, El-Harizi, and Prato 2007, 16). Similarly, in the Karimojong Cluster, one of the structural causes of conflict is the degradation of customary pastoralist institutions, such as reciprocal resource-use agreements, intermarriage, and mutually beneficial trade and exchange (Stites 2013; Lind 2015*). Two factors, meanwhile, have seriously undermined livelihoods in the cluster: a severe weakening of the customary institutions that had traditionally been used to manage conflict, and the government's failure to provide security for herding groups.

* * *

The value of a livelihoods lens in a post-conflict setting is that it focuses on the everyday lives of individuals, households, and communities, while recognizing the transforming structures and processes that influence their capacity to survive a crisis, ensure the sustainability of their livelihoods, and maintain

---

[20] Ahmed Sulieman Balah, Nomad Development Council, personal communication, 2013.

[21] The objective of sedentization seems to be the transformation of pastoralists into farmers, and the abandonment of traditional pastoralism (Shazali and Ahmed 1999).

their own livelihoods without harming those of other groups. In many cases, by generating discussions about common interests—including sharing natural resources and building understanding—a livelihoods lens makes it possible to cross barriers between ethnic or livelihood groups that might otherwise seem insurmountable.

EVIDENCE-BASED APPROACHES TO LIVELIHOOD INTERVENTIONS: CHALLENGES, ISSUES, AND LESSONS

Thus far, the chapter has emphasized the nexus of livelihoods, natural resources, and conflict. As noted earlier, understanding this nexus is key to identifying entry points for planning, implementing, and evaluating effective peacebuilding- and livelihood-related interventions. The focus in this section is on an evidence-based approach to livelihood interventions (and related policies) that is designed to generate new information, which can then be shared with different actors at various levels.

The starting point for an evidence-based programming approach is a rigorous assessment and analysis process that is driven by clear objectives; grounded in a recognized conceptual framework (such as the sustainable livelihoods framework discussed earlier); and based on standard practice. Ideally, the assessment should be demand driven, involving several stakeholders with shared interests who have agreed to the goal of promoting peacebuilding through an evidence-based approach. Success in such endeavors requires strong collaboration and commitment from the start; that commitment, in turn, is facilitated by clarifying the roles and interests of all involved.

This section reviews challenges, issues, and lessons associated with the use of evidence-based processes for the development of peacebuilding- and livelihood-related interventions and policies. Such processes are important to the development of integrated approaches to livelihoods recovery—that is, approaches that connect livelihoods to both natural resource management and peacebuilding. Evidence-based approaches are also important to the assessment of the potential environmental and social impacts of interventions, and to the evaluation of projects and programs. Finally, evidence-based processes can be helpful in revealing how and why peace processes unravel, in identifying the motivations of peace spoilers, and in examining other, deeper questions.

Framing of key concepts: Building a shared understanding

How an issue is framed influences how key actors and stakeholders perceive and understand it. Thus, the framing of sustainable livelihoods can make the difference between neglect and attention on the part of decision makers. For example, the notion of supporting livelihoods recovery may gain more traction if the activities are framed as an opportunity to reduce conflict and foster stabilization. Similarly, promoting sustainable natural resource management may have more

traction if it is linked to specific economic benefits.[22] And land degradation associated with natural resource extraction may receive high-level political attention only if the resulting economic harm and damage to stability are stressed.

Framing starts with a conceptual framework and the definition of key concepts (such as sustainable livelihoods, resilience, and vulnerability). In part because local and national policy makers, practitioners, and stakeholders may have less access to recent developments, perspectives, and evidence than outsiders, such concepts may have different meanings to different segments of the target audience; it is thus crucial to establish the conceptual framework and definitions from the outset.

With regard to framing, it is important to note that the same concepts may legitimately be assigned different meanings, depending on the disciplinary perspective. Vulnerability, for example, can be framed either as an outcome or a process: the phrase *outcome vulnerability* reflects a scientific framing, whereas *context vulnerability* reflects a human-security framing (O'Brien et al. 2007). In the realm of livelihoods, a focus on outcome vulnerability is associated with quantitative indicators of outcomes—for example, access to food and income, or prevalence of malnutrition. A focus on context vulnerability, in contrast, shifts attention toward the underlying causes of vulnerability (or resilience) in livelihood systems, and lends itself to more qualitative methodologies. Similarly, while outcome vulnerability might favor the household as the unit of analysis, context vulnerability aims to understand the relationships, interconnections, and feedback loops within the system itself. Both approaches can be useful, depending on the aims of the assessment. Because it includes both precise (quantitative) information and more nuanced (qualitative) analysis, a combined quantitative and qualitative approach (also known as a "mixed methods" approach) generates the most comprehensive picture.[23]

There is no blueprint or prototype for analyzing the nexus of livelihoods, natural resources, and peacebuilding, in part because of the wide variation in context—including livelihood systems, use of natural resources, and peacebuilding approaches. Ideally, the analysis that forms a key part of the assessment should be grounded in an explicit conceptual understanding linked to a wider body of theory, as presented in the first part of this chapter. If the assessment objectives are too loosely formulated, they run the risk of generating assorted but largely meaningless data, as there is no frame of reference. However, an explicit conceptual framework—including a theory of change—helps ensure coherence in the planning, design, and implementation of livelihood assessments.[24]

---

[22] See, for example, Sorensen (2015).

[23] The same points—regarding outcome versus context, and qualitative versus quantitative approaches—apply to analyses of resilience.

[24] Increasingly, project design is based on a theory of change—a tool that maps the assumptions or preconditions that are required, at each stage, to bring about the desired outcomes. This approach helps peacebuilding actors better understand the complex and interrelated factors that influence project outcomes. See Coryn et al. (2011).

From theory to practice: Analytical approaches to history, climate variability, and conflict

This chapter addresses both the theoretical debates and the practical considerations associated with the peacebuilding experience, with the ultimate goal of drawing out clear lessons that can be of value to practitioners. This section highlights three elements that are crucial to the success of post-conflict peacebuilding and/or to livelihood initiatives that address both livelihoods and natural resources:

- Taking a historical perspective on the conflict, and being aware of what that history implies for livelihoods and peacebuilding.
- Recognizing the importance of seasonality and climate variability, and their effects on livelihoods, natural resources, and conflict.
- Incorporating conflict analysis into livelihood approaches, in order to understand the reciprocal impacts of livelihoods and conflict.

The section concludes by offering examples of approaches, tools, and technologies that can enable practitioners and other peacebuilding actors to meet the analytical demands of an evidence-based approach.

Historical perspective

Post-conflict settings usually represent a significant shift from the conflict and pre-conflict periods. Liz Alden Wily, Jeremy Lind, and other researchers stress the value of a historical perspective in efforts to understand conflict dynamics and their implications for peacebuilding. Historical perspectives on natural resources, livelihoods, and conflict can be incorporated into the full range of assessment methodologies commonly deployed in conflict-affected countries—including post-conflict environmental assessments, environmental impact assessments, strategic environmental assessments, and post-conflict needs assessments.[25] Alden Wily's examination of the historical origins of the pastures dispute in Afghanistan's central highlands, for example, emphasizes iterative learning on the ground, which is an important principle of qualitative methodologies and is essential both for building a comprehensive understanding of the situation and engaging in deeper analysis (Alden Wily 2015*).

In practical terms, understanding the origins of conflict often means recognizing the effects of political and social marginalization, and the ways in which they may have contributed to poverty, grievances, political rivalries, and natural resource competition—as was the case, for example, in Mindanao (Brady et al. 2015*; Young et al. 2005). Historical analysis should also include the key role that natural resource exploitation can play in local grievances: this was the

[25] See, for example, Bouma (2012), Brown et al. (2012), Jensen (2012), Jensen and Lonergan (2012), and Conca and Wallace (2012).

case, for example, in both Darfur and Aceh, where exploitation led to secessionist movements (Young et al. 2005; Renner 2015*).[26]

Seasonality and climate variability

Seasonality is a crucial dimension of natural resource–based livelihoods: in the agricultural realm, cultivation, livestock production, and horticulture follow distinct cycles. In fact, seasonality even affects mineral extraction: in Sierra Leone, for example, diamond mining is tied to agricultural cycles, because it represents an alternative livelihood strategy (Keili and Thiam 2015*).

Some regions, drylands in particular, are known for their seasonal extremes and interannual climate variability, which can lead to unpredictability in the availability and distribution of water and pastures, and can also determine the success or failure of rainfed harvests. Natural climate variability across geographic areas and over time affects land use patterns, and even small climatic differences yield significant variations in the duration of rainfall, the duration of seasons, and the timing of interannual variability. These differences, in turn, can have a major impact on the viability and production of crops (Ellis and Galvin 1994).

Seasonal climate variability also plays a fundamental role in the selection of livelihood strategies, and may limit livelihood options. For example, in West Africa, a monomodal rainfall pattern favors crop-livestock production, whereas in parts of East Africa, a bimodal rainfall pattern favors more livestock-intensive production methods.

From a policy perspective, crop-livestock production is intimately tied to fundamental interactions between people and ecosystems—which, in turn, are shaped by rainfall patterns and other climatic drivers (such as temperature, humidity, and ambient carbon dioxide concentration). Thus, peacebuilding and development policy cannot ignore climatic influences on production methods. Understanding and being able to project climate impacts on agricultural production and natural ecosystems will enable analysts to infer how land use will respond to future climatic variations, whether they result from natural patterns or are the result of broader climate changes (Luedeling et al. 2014).

Variable environments are those where unpredictability rather than stability is the norm; both the environments themselves and the associated production models are sometimes referred to as "nonequilibrium" (Scoones 1996; Bruch 2008). Pastoralist livestock producers take advantage of such variability, using the mobility of their herds to access the best available pastures for the time of year, while managing stocks of fodder for the hot, dry season before the rains produce new growth. The seasonal and often unpredictable availability of rainfall—and, hence, cultivation and pastures—is a crucial dimension of livelihoods that must

---

[26] Carol Westrik's overview of peace parks examines their historical development—which, in some cases, includes disagreements over territorial boundaries and other natural resource–related disputes (Westrik 2015*).

be managed strategically to ensure both livelihood security and the sustainability of the natural resource base (AU 2010).

If conflict or insecurity restricts the movements of pastoralist herds, serious consequences may result, including overgrazing, degradation of available pastures, increasing livestock disease, and drops in reproduction rates and in the general quality of the livestock (Young et al. 2009).[27] Participatory rural appraisal tools—including the mapping of livestock migration; the development of seasonal calendars (that show expected seasonal or interannual patterns of production within the agricultural year); and the establishment of historical timelines (that track trends in intra-annual climate variability, such as severe droughts and periods of food insecurity, including famine)—are valuable means of capturing and predicting seasonal variations. In Sudan, Helen Young and her colleagues compared retrospective methods for monitoring land use and livestock migrations (based on semistructured interviews with herders) with real-time monitoring of livestock herds using global positioning system (GPS) tracking devices, complemented by weekly phone interviews with herders (UNEP 2013a). The study revealed the wide range of conflict-avoidance strategies that herders employ in the face of extreme (and potentially violent) tribal conflict. One such strategy—quickly leaving the conflict zone for safer areas, which were often more densely populated or farmed—required the herders to keep their livestock under close control, so as not to damage local farms. Herders also had to negotiate with farmers to ensure that they could stay in the area without creating problems with the host community.

Integrating conflict analysis into livelihood approaches

In the context of livelihood approaches, conflict analysis is essential to improving understanding and informing programming. It can be used, for example, for the following (UNDG 2013; Engel and Korf 2005):

- Identifying the reciprocal impacts of conflict and livelihoods.
- Clarifying and assigning priorities to issues that need to be addressed.
- Identifying the root causes and contributing factors of conflict, in order to determine appropriate responses.
- Clarifying stakeholder motivations, incentives, and relationships, including the willingness and ability to cooperate with other stakeholders.
- Increasing understanding of the links between broader social, political, and economic contexts and natural resource–related conflicts.

Ideally, a conflict analysis includes a political economy analysis, which would reveal how the political and economic processes associated with conflict

[27] For an analysis of incorporating consideration of climate change into post-conflict peacebuilding, see Matthew and Hammill (2012).

have eroded and undermined both local livelihoods and the environment; a political economy analysis is also valuable for informing program design and implementation. Sarah Collinson and her colleagues describe a political economy approach that seeks to understand vulnerability in terms of

> powerlessness rather than simply material need or the failure of basic "entitlements". Vulnerability and power are therefore analyzed as a political and economic process, in terms, for instance, of neglect, exclusion or exploitation, in which a variety of groups and actors play a part. People are most vulnerable when their livelihoods and coping strategies are deliberately blocked or undermined, or if their group identity, political position and/or material circumstances (in some cases their wealth) make them particularly exposed to violence (Collinson et al. 2002, 3; citations omitted).

The tools used in conflict analysis complement those used in political economy analysis. A number of contributors to this book stress the importance of integrating conflict analysis into livelihood approaches and natural resource management initiatives.[28] According to Belinda Bowling and Asif Zaidi, using conflict analysis tools (especially participatory ones) to ensure that conflict dynamics and related considerations are taken into account from the start, by all relevant actors, increases the likelihood that post-conflict natural resource management initiatives will succeed (Bowling and Zaidi 2015*). Based on their work in Mindanao, Brady and her colleagues recommend using conflict analysis to inform project design, and tracing both the project's progress and its impact on the conflict situation; they also advise including peacebuilding and conflict-mitigation indicators in the project performance plan (Brady et al. 2015*). The United Nations Environment Programme (UNEP) also recommends including conflict analysis at the operational planning stage of peacebuilding activities, considering environmental sustainability in planning for relief and recovery operations (to avoid risking future conflict), and integrating environmental and natural resource indicators into peacebuilding strategies (UNEP 2009).

Livelihood approaches can help analyze the connections between administrative levels, and can also help combine local-level (bottom-up) analysis with the regional- and national-level (top-down) analyses of the wider political,

---

[28] Conflict analysis tools include the development of historical timelines for key local and national conflict-related events; identifying and mapping key stakeholders, and tracing changes in their political positions over time; reviewing the relationship between local livelihood groups and other groups connected to the conflict; reviewing the impact of conflict dynamics on livelihood strategies, assets, and key institutions; and reviewing the impacts of livelihood coping strategies (including maladaptive ones) on conflict dynamics. It is important to note that any conflict analysis can provide only a snapshot of the conflict dynamics at play, as the conflict context changes continuously; thus, any analysis needs to be regularly updated and refined (APFO et al. 2004; Mason and Rychard 2005).

economic, and environmental dynamics. Indeed, Collinson advocates such an approach:

> [M]any of the issues and questions of concern to political economy analysis can also be viewed through the lens of livelihoods analysis. The livelihoods approach starts by investigating how individuals, households and communities try to achieve and sustain their livelihoods. Livelihoods analysis is cross-sectoral, and seeks to take into account the totality of economic, political, social and cultural factors affecting people's lives and livelihoods from the local up to the national and international levels. It thus has the potential to complement or be combined with more conventional political economy analysis, which is often approached from the "top down", and frequently fails to connect effectively with the local level (Collinson 2003, 25).

A number of experiences with managing natural resources to support livelihoods in post-conflict settings emphasize the links between local, national, and even transnational conflicts and interests. Alden Wily describes such a case in Afghanistan—where, in 2009, evidence emerged suggesting that "Taliban were arming Kuchi [Pashtun nomads]"; there were also "rumors of Iranian support for Hazara [settled communities]" (Alden Wily 2015*, 126). At the same time, both the national army and local police forces were deployed in the conflict area, and a U.S. military unit was positioned to the east of the area. Various field studies have also explored the many levels of conflict in Darfur (UNEP 2007, 2014; Young et al. 2009).

Analytical approaches, tools, and technologies

A wide range of assessment tools and technologies are available to effectively design and implement projects intended to improve livelihoods and natural resource management in post-conflict situations. While a comprehensive review is beyond the scope of this chapter, it is worth highlighting some of the more widely applied and more innovative approaches.

Where settings are reasonably secure and survey teams have access to local communities or IDP camps, household questionnaires are widely used. Such efforts are often complemented by more qualitative, participatory approaches, such as focus groups and interviews with key informants. When interviews are used, it is crucial to follow the principles of informed consent; moreover, it is important to assess—and minimize—any risks to informants that may accompany the interview process. For example, where being interviewed in public might create risk for interviewees, extreme care must be taken to find a secure and relatively private place to conduct interviews. Gender-sensitive approaches to interviewing are also necessary, both to protect interviewees and to obtain more accurate responses. To the extent possible, interviewees should be drawn from both sexes and should represent a broad range of views, ethnicities, social status, and political affiliations.

Stakeholder analysis, an effective and widely used programming tool, especially where there are multiple land users, involves two steps (DFID 2001):

- Identifying key stakeholder groups—that is, groups whose interest in an initiative differs from that of other groups.
- Analyzing both the perspectives of key stakeholder groups (including their roles, views, and needs), and their relationships with other stakeholder groups.

A stakeholder analysis also involves identifying (1) statutory and customary institutions that are in a position to affect, or to be affected by, an initiative, and (2) individuals holding authority or power, and their links to stakeholder groups.

The wide range of tools for stakeholder analysis includes participatory, qualitative methods such as focus groups, key informant interviews, and surveys based on questionnaires. Where there are many land users whose access and ownership rights exist under conditions of legal pluralism, it is essential to include the interests, rights, and responsibilities of different groups in the mapping exercises and other stakeholder analyses.[29] Young and her colleagues describe a pastoralism stakeholder mapping process that was undertaken for all of Sudan, which then served as the foundation for stakeholder engagement in a subsequent program (Young et al. 2012).

In Mindanao, the Philippine Environmental Governance (EcoGov) Project consistently sought to engage all key individuals and groups in achieving common objectives—including not only those stakeholders who promoted peace and fostered local resilience but those who had vested interests in perpetuating conflict. Accordingly, technical projects addressing natural resources that were important to a range of livelihoods were implemented in a way that "reduced grievances, fostered and strengthened social and institutional resilience, and constructively engaged the key figures who were most capable of mobilizing people for action" (Brady et al. 2015*, 362).

Economic analysis—in particular, of the links between local livelihoods and the national economy—can demonstrate the major contribution of local livelihood systems to wider development, including exports; such information might be overlooked in national statistics, and therefore by policy makers (Behnke 2012). Pastoralists, in particular, have often suffered social, economic, and political marginalization, as well as having been blamed for natural resource conflict, yet the significant contribution of pastoralist livestock production to local and national economies is often underestimated or missed entirely (UNEP 2013b).

---

[29] Stakeholder analysis can help to (1) reveal stakeholders' perspectives, capacity to participate, relative political power, access to information, and institutional means of commanding attention; (2) identify the areas and sources of power and patronage; and (3) determine which stakeholders depend upon which environmental resources and services, and how those stakeholders may be affected by change—or by conflicts, gaps, and overlaps in the roles and functions of other stakeholder groups (DFID 2001).

Thus, analysis of economic contributions can help mitigate negative perceptions of pastoralists.

A number of other approaches to economic and conflict analysis are relevant to local livelihoods and natural resources. Analyses have been undertaken, for example, of the impact of conflict on markets and trade, including livestock, cereals, and cash crops in Darfur (Buchanan-Smith et al. 2012; Buchanan-Smith and Fadul 2008). Commodity-chain analysis can identify power relations, governance structures, and exchange relationships within commercial networks, from primary production to consumption (Collinson et al. 2002). An advantage of this approach is that the analysis spans all levels, from the producer to commercial intermediaries in primary, secondary, and tertiary markets. Moreover, given the sensitivity of information on potential conflict resources, conventional research methods based on structured interviews may not be suitable for investigating who controls the commodity chain at different points. Working with local researchers using qualitative methods, Margie Buchanan-Smith and her colleagues developed a participatory approach for market analysis in Darfur that is based on understanding market trends and the influences on them (Buchanan-Smith, El Tayeb, and Fadul 2013).

Christian Webersik and Alec Crawford describe the challenges of data collection in Somalia, where basic statistical data are missing—and, to the extent that pre-conflict data exist, their accuracy and validity are in question (Webersik and Crawford 2015*). As a result, the authors' analyses relied largely on interviews with staff at aid agencies, local and international nongovernmental organizations, and (now defunct) government entities. Although these sources were important, the authors note that the quantity and quality of data available in Somalia are subject to bias, as the data that are available are obtained from secure (rather than insecure) areas and interview environments.

New interdisciplinary tools

Finally, a wide range of new assessment technologies are being developed and introduced, including remote sensing and spatial planning (Schimmer 2008; Tanik et al. 2008); tracking of cross-border livestock migration through GPS devices (UNEP 2013a); and digital data gathering (DDG) that makes use of smartphones, tablets, and wireless technology to allow rapid data entry, transfer, and analysis.[30]

* * *

Assessments and other analyses are crucial for informing policy processes and designing evidence-based peacebuilding strategies, programs, and projects. The information generated is also crucial to proper monitoring and evaluation of the subsequent impact of interventions.

---

[30] DDG involves the use of handheld devices such as smartphones, tablets, and data pens to record data in the field and transfer information back to a server. It has been used in Chad and Sudan (among other places) by Concern Worldwide (Matturi 2013).

As noted earlier, whenever livelihood-related peacebuilding initiatives are undertaken, there are three key requirements: an understanding of the historical perspective of the conflict, which may include long-standing marginalization of particular groups; a recognition of the implications of seasonality and climate variability on lives and livelihoods; and a grasp of the conflict itself, including interactions between top-down and bottom-up conflict-related processes. Two key challenges remain: (1) establishing a standard set of tools and approaches, based on recognized good practice, for routine application in peacebuilding contexts, and (2) using a meta-analysis or broader review of previous analyses to learn from the collective experience represented therein.

LESSONS FROM POST-CONFLICT EFFORTS TO STRENGTHEN NATURAL RESOURCE–DEPENDENT LIVELIHOODS

Earlier sections of this chapter present an overview of how livelihoods, natural resources, and conflict relate to one another; are explored in the case studies included in this book; and are positioned within the wider literature. This section and the next examine the ways in which various actors are strengthening natural resource–based livelihoods in post-conflict settings, and discuss what these experiences might imply for applying existing livelihood frameworks in such settings, as well as for the post-conflict peacebuilding process.

A broad range of livelihood interventions are in the process of being implemented in countries at various stages of post-conflict peacebuilding and with widely varying histories of conflict. Some of the interventions examined in this book focused specifically on livelihoods or natural resources but had incidental peacebuilding effects, while others focused on peacebuilding but also affected livelihoods or natural resource management. Taken together, the case studies suggest that an intervention in any of these three areas (livelihoods, natural resources, or peacebuilding) is likely to affect the other two, and that at least some of those effects may be positive.

The design of interventions must therefore reflect the interrelated nature of livelihoods, natural resources, and peacebuilding. The three subsections that follow broadly categorize the chapters in this book according to the types of interventions that were undertaken and the primary focus of the initiatives in question (whether livelihoods, natural resources, or peacebuilding), even if the efforts sometimes led to unintended results in other realms. The focus in these subsections is on the rationale for the approaches that drove the interventions, and what the interventions were designed to accomplish. (Chapters that span more than one category are classified according to the primary objective of the intervention.)

Livelihoods: Provision, promotion, and protection

The first category of interventions comprises those case studies in which livelihoods support was a central aim, regardless of whether the interventions supported

peacebuilding as well, or existed alongside peacebuilding efforts. The chapters in question focus on markets and trade (conflict economies, value chains, and national economic development); service provision; ecotourism and peace parks; and the rebuilding of livelihoods.

Among the chapters that address markets and trade, some illustrate how a market-driven approach can help strengthen or rebuild livelihoods, while others warn of the risks that such an approach can entail. For example, Lorena Jaramillo Castro and Adrienne M. Stork explore how environmentally and socially sustainable value chains can protect natural capital and biodiversity in countries recovering from conflict (Jaramillo Castro and Stork 2015*). They highlight the BioTrade Initiative, launched by the United Nations Conference on Trade and Development, which has used marketing and commercial strategies targeted to subnational and international markets to strengthen a large number of natural resource–based business initiatives, and thereby develop sustainable livelihoods in Colombia.

Among the potential drawbacks to the market-based approach are those highlighted by Roe, who questions the use of a market-oriented agricultural and natural resource management policy in Afghanistan (Roe 2015*). Roe's concern stems from the fact that maximizing national economic growth (by focusing on areas that already enjoy preferential access to irrigation water) has the potential to exacerbate inequality and sharpen political tensions. To balance the objectives of building a competitive rural economy and a stable rural society—with equal access to livelihood resources, especially irrigation water—Roe recommends the use of evidence-based policy making, the identification of comparative advantages among farming systems, and the development of policies that draw on that identification to facilitate greater equality in natural resource access.

Another illustration of potential constraints on a market-based approach—at least in countries with ongoing conflict—is Somalia, where the trade in bananas, charcoal, and fish has helped drive conflict between local groups and among warlords (Webersik and Crawford 2015*).[31] Webersik and Crawford note that although the country's unrestricted, market-oriented economy holds the potential to support some form of livelihood-based redevelopment, the current lawlessness and the dearth of alternative livelihood options suggest that unsustainable natural resource exploitation will continue to drive conflict for the foreseeable future. Under such circumstances, any market intervention targeting livelihoods would be unavoidably linked to ongoing conflict dynamics, whose complexity may not even be fully understood.

Several chapters focus on ecotourism and peace parks as a means of providing local livelihood opportunities, as well as contributing to economic development more broadly. As discussed by Miko Maekawa and her colleagues, mountain gorilla ecotourism is being used to rebuild local livelihoods in Africa's Great

[31] A United Nations Security Council–mandated monitoring group has estimated that charcoal exports generated millions of dollars in annual revenues for al Shabaab, a militant Islamic group (UNSC 2013).

Lakes region, following a series of armed conflicts (Maekawa et al. 2015*). The market-based approach implemented in the region includes a focus on pricing, international outreach, and reform of the tourism sector. In the former Yugoslavia region, an initiative is under way to establish a transboundary peace park on adjacent lands in Albania, Montenegro, and Kosovo (Walters 2015*). As J. Todd Walters notes, although the park has not yet been established, it holds significant potential to provide ecotourism-related benefits to local populations.

Of the two chapters in this group that focus on direct efforts to rebuild natural resource–based livelihoods following conflict, the first—by Keili and Thiam—surveys a number of alternative livelihood programs for youth in post-conflict Sierra Leone, which were designed to engage and empower young men who are alienated from elders (who were the traditional authorities) and who face limited livelihood prospects, particularly in the diamond sector (Keili and Thiam 2015*). The second chapter, by Harry N. Scheiber and Benjamin Jones, explores the Allied efforts, in post–World War II Japan, to alleviate severe protein shortages, spur economic redevelopment, and restore livelihoods by adopting institutional and policy reforms designed to maximize fisheries production (Scheiber and Jones 2015*). Although the reforms met the goal of supporting local livelihoods, they created significant sustainability concerns.

Natural resource governance and environmental protection

The second category of interventions captured in the case studies focuses on natural resource governance and environmental protection. These interventions are framed in different, often overlapping ways: land and natural resource governance; sustainable management of natural resources; community-based natural resource management (CBNRM); and the building or transformation of natural resource–related institutions and policies. Some chapters profile new environmental governance approaches that were instituted as part of post-conflict peacebuilding efforts, while others examine how a failure to focus on natural resource governance has undermined livelihoods, post-conflict peacebuilding, and sustainable natural resource management.

Several chapters highlight ambitious approaches to strengthening natural resource governance following (and sometimes during) conflict. Bowling and Zaidi examine the new institutional and regulatory framework—rooted in CBNRM—adopted by the interim government in Afghanistan, with the assistance of UNEP (Bowling and Zaidi 2015*). The CBNRM approach was intended to help restore the natural resource base, improve rural livelihoods, reduce the number of disputes and conflicts over natural resources, and contribute to peacebuilding. The approach was pilot tested by UNEP and other international entities in different areas of the country, in order to combine a top-down and bottom-up approach to natural resource governance—that is, (1) to test which top-down measures work (focusing specifically on capacity development and the application of management tools), and which need to be amended, and (2) to identify

local approaches that could be scaled up, to inform national policy and practice. The new legal tools that were developed also contained specific provisions to promote peacebuilding in the context of natural resource management.

As Brady and her colleagues recount, in the Philippines, the EcoGov Project sought to strengthen biodiversity conservation by working with local government units on the island of Mindanao, where conflict over land, fisheries, and forests has hindered sustainable natural resource management for community livelihoods (Brady et al. 2015*). The project demonstrated how improved environmental governance can provide an important entry point for addressing conflict and building peace, even where this is not an explicit aim of a given initiative. Among other things, the project helped local governments develop coastal resource management plans, which increased fishery productivity, and a forest land use plan, which strengthened land tenure and access to forest resources.

The remaining chapters in the natural resources category review problems and missed opportunities in natural resource governance following an end to civil conflict. Srey Chanthy and Jim Schweithelm examine the actions of the United Nations Transitional Authority in Cambodia in the early post-conflict peacebuilding years, with a particular focus on forest management, noting the effects of failing to implement sustainable harvesting measures prior to allocating natural resources (Srey and Schweithelm 2015*). In addition to suffering the severe environmental harms brought about by logging (both legal and illegal), forest communities lost important assets—including land, nontimber forest products, foods and food sources, and building materials. These losses were compounded by the subsequent award of agricultural concessions within forested areas.

Taking a broader look at rural livelihood struggles in Cambodia, Blake Ratner notes that the success of post-conflict livelihood interventions depends on two factors: the existence of local rights to natural resources, and a governance system that enables communities to exercise these rights (Ratner 2015*). Michael Renner examines the challenges of natural resource governance following the peace agreement, signed in 2005, that ended a twenty-nine-year secession struggle in Aceh, Indonesia (Renner 2015*). These include a lack of long-term, sustainable livelihood opportunities and difficulties in reintegrating former combatants, who have resorted to widespread illegal logging and other forms of natural resource exploitation.

Peacebuilding

The third category of interventions focuses on peacebuilding and its connection to local livelihoods. One group of chapters examines efforts to build peace between livelihood groups that are competing over natural resources, and to understand how those localized conflicts are connected to higher-level conflicts. A second group analyzes approaches to reintegrating former combatants through the provision of natural resource–based livelihood opportunities. And one chapter discusses how protected areas can help bring divided groups together and indirectly support post-conflict peacebuilding.

The chapters by Jeremy Lind and Liz Alden Wily examine peacebuilding efforts in countries where armed conflict has persisted (particularly at the local level) and is putting pressure on natural resource access for livelihood needs. In a case study focusing on the Kenyan and Ugandan regions of the Karimojong Cluster, Lind examines the dynamics behind persistent livestock raiding and banditry and highlights local peacebuilding efforts to address these conflicts—efforts that have primarily taken the form of confidence-building dialogues between neighboring pastoralist groups (Lind 2015*). The chapter notes, however, that the benefits of local-level reconciliation are limited, as customary pastoralist institutions have weakened over time against a backdrop of structural conflict, generalized insecurity, and the absence of rule of law.

In contrast, Alden Wily highlights the comparative strength of local peacebuilding approaches in Afghanistan, despite weak rule of law and the absence of national governance (Alden Wily 2015*). In her review of efforts to resolve the country's historic pastureland conflicts in the central highlands, Alden Wily stresses the value of a localized approach to resolving conflicts, which can draw on social familiarity between groups. Among the initiatives that Alden Wily describes are field-based pilot projects that brought together Hazara farmers and Kuchi nomads, who negotiated pasture access and developed community-based approaches to natural resource management.

In their chapters, Matthew F. Pritchard and Glaucia Boyer and Adrienne M. Stork examine the use of natural resource–based livelihood opportunities to facilitate DDR (Pritchard 2015*; Boyer and Stork 2015*). Pritchard focuses on the employment of former combatants as game guards in Mozambique's Gorongosa National Park, while Boyer and Stork survey a range of DDR approaches linked to natural resources—including reforestation in Afghanistan, waste management and organic fertilizer production in Colombia, and ecotourism in Aceh. Both chapters highlight the challenges and benefits of using natural resources to meet the livelihood needs of former combatants, in an effort to avert conflict relapse.

The final chapter focused on peacebuilding is Carol Westrik's overview of peace parks. In addition to reviewing their historical development, Westrik notes ways in which the parks can contribute to post-conflict peacebuilding: specifically, by fostering economic development through ecotourism and by providing employment opportunities for former combatants (Westrik 2015*).

* * *

Taken together, these three sets of chapters illustrate how interventions addressing livelihoods, natural resources, and post-conflict peacebuilding converge, to varying degrees. All of the interventions profiled in the case studies involve natural resources of one kind or another, whether it is the direct consumption of natural resources (for example, through forestry, pastoralism, or fisheries) or their protection and conservation (for example, through ecotourism) that support local livelihoods. And, depending on both the nature of the conflict and the nature of the resource use, livelihoods interventions and their relationship to peacebuilding initiatives also vary. Where access to natural resources is contested

(as in Afghanistan, the Karimojong Cluster, and the Philippines), peacebuilding activities linked to natural resource consumption tend to focus more closely on customary institutional approaches. In contrast, peacebuilding activities that focus on providing employment through natural resource–based jobs tend to rely on market-based efforts to develop alternative livelihoods. Thus, the design of a particular livelihoods intervention should take into account both the type of natural resource and the peacebuilding objectives in question. Even with the most careful of plans, however, situation-specific factors—such as the tsunami in Aceh—can drive interventions in unexpected directions.

Alone or in combination, the three broad categories of intervention presented in this section have been shown to contribute to a variety of outcomes linked to peace, sustainability, and resilience. Their strength lies in their potential synergy: a combined focus on all three response categories provides added value by embracing wider goals, and potentially generating interconnections within complex systems.

LESSONS FROM IMPLEMENTATION

This section turns from the aims of the interventions to the lessons that can be gained from the chapters in this book and from the broader literature. The focus is on experiences with natural resource–based livelihood interventions, as well as on the implications of those experiences for post-conflict peacebuilding. Some of the experiences described were successful; others were not. As a result, the lessons reflect both what seems to have worked, and the obstacles that may be encountered—and potentially overcome.

The lessons have been grouped into four categories: balancing trade-offs, prioritization and sequencing, the role of institutions, and market-based approaches, each of which is discussed in turn.

Balancing trade-offs

One of the most fundamental lessons regarding post-conflict livelihood initiatives concerns the inevitable trade-offs that are required, in light of the political, economic, and cultural context. Among the many factors that can influence decisions about trade-offs are the type and history of the conflict, the natural resources at issue, the content of the peace agreement, and the nature of the post-conflict leadership. The following subsections examine the trade-offs between economic recovery and environmental sustainability; economic recovery and equitable natural resource access and benefit sharing; and DDR programs and local livelihood needs.

Economic recovery and natural resource sustainability

In the immediate aftermath of conflict, it is necessary to balance the need for rapid, large-scale economic redevelopment with the longer-term use of natural

resources, including both livelihood uses and ecological purposes. In the absence of adequate policy, legal, and institutional frameworks, the revitalization of natural resource–based harvesting and trade may jeopardize long-term sustainability. In the damaged economy of post–World War II Japan, for example, the revival and expansion of the fisheries sector—through the rebuilding of the fishing fleet, the expansion of authorized fishing zones, and the reintroduction of whaling in the Antarctic—helped alleviate food shortages and create employment. At the same time, efforts to reform the country's fisheries management policies and implement a more sustainable approach to harvesting fell short, partly because the revitalization plan was so successful that fisheries officials became reluctant to implement and enforce policies designed to hold expansion in check (Scheiber and Jones 2015*).

Similarly, peace parks face competing priorities, namely economic development and environmental conservation (Westrik 2015*). Tourism, including ecotourism, can make it difficult to maximize both objectives: although growing numbers of visitors can increase revenues at peace parks and other protected areas, they can also put significant pressure on the natural resources that attracted the visitors in the first place.

Trade-offs between sustainable natural resource use and livelihoods support can also be seen in other natural resource–based activities—such as artisanal mining (which employs large numbers of people but entails significant environmental damage, including toxic air and water emissions) and charcoal production (which bolsters incomes but also contributes to widespread deforestation) (Zulu and Richardson 2012).

In many cases, policies that promote livelihoods redevelopment through the revitalization of natural resource sectors would be more effective if they implemented sustainability measures at the outset; doing so after the fact can be much more challenging.[32] In Cambodia, for example, an overwhelming emphasis on rapid economic development—coupled with widespread corruption and a lack of mechanisms for protecting local rights to natural resources—has led to unchecked mining and logging operations and land grabs for agricultural concessions, all of which have undermined long-term environmental sustainability and livelihoods (Ratner 2015*; Williams 2013). Although a more robust legal framework was eventually enacted, the international community's initial failure to promote legislation that would have helped shape forest policy before the allocation of natural resource concessions had serious consequences (Srey and Schweithelm 2015*). (The issue of when to implement sustainability measures is also discussed later in the chapter, in the section titled "Prioritization and Sequencing.")

---

[32] For a discussion of the challenges of using strategic environmental assessment for ongoing projects, rather than at the outset, see Bouma (2012).

Economic recovery, equitable benefit sharing, and natural resource access

Research has suggested that economic growth and livelihood security "are not necessarily positively linked or always mutually reinforcing" (Mallett and Slater 2012, 7). Thus, there may be trade-offs between promoting national economic recovery and ensuring equitable natural resource access and benefit sharing. Roe's analysis of potential agricultural interventions in Afghanistan revealed a trade-off between economic recovery, on the one hand, and rural stability and conflict avoidance, on the other (Roe 2015*). Roe also shows how a market-driven approach to agricultural policy reform, which focused on irrigated farming in river valleys, exacerbated unequal access to water in rural Afghanistan. To balance the goal of fostering a competitive rural economy with the need to build a stable rural society, Roe recommends greater emphasis on strengthening farming systems overall, and less focus on the market chains for agricultural products.

DDR, local livelihoods, and natural resource sustainability

Natural resource–related DDR programs also give rise to trade-offs. Given the risk of conflict relapse posed by the reintegration of large numbers of former combatants, programs that seek to employ excombatants in natural resource–related positions (for example, as game wardens, park guides, miners, or farmers) need to attend to competing needs, including community relations, natural resource sustainability, and institutional development.[33]

Experiences in Mozambique's Gorongosa National Park highlight some of the tensions that can arise when DDR programs are implemented (Pritchard 2015*). For example, if local communities are not actively involved in the establishment and management of protected areas, community members may feel alienated from the process and respond by engaging in unsustainable natural resource exploitation; concerns about community involvement also apply to the hiring of excombatants in protected areas. One of the many advantages of active community engagement in DDR-related processes is that it helps ensure that DDR programs do not create the perception that former combatants have an unfair advantage, awarded at the expense of local communities' livelihood needs; community engagement also helps to ensure that excombatants do not alienate local communities.

Another trade-off associated with DDR activities in protected areas is the pressure to act quickly to protect biodiversity resources—such as by hiring excombatants as park wardens before the initial DDR has been completed—versus taking the time to ensure that initial reintegration of excombatants has occurred.

---

[33] For an exploration of the employment of excombatants in industrial coal mining in post-World War II Japan and the challenges of unsustainable natural resource use, see Nakayama (2012).

The latter approach can also afford government agencies time to establish conservation priorities, determine institutional capacity, and reach out to local communities (Pritchard 2015*).

Prioritization and sequencing of interventions

One of the greatest challenges in post-conflict reconstruction is determining how to prioritize and sequence political, social, and economic policies to sustain peace and prevent a return to violence (Timilsina 2007). Prioritization and sequencing inform a broad spectrum of peacebuilding interventions, from policy initiatives to field-based pilot projects and institutional reform. How interventions are prioritized and sequenced helps determine the success of natural resource–based livelihood initiatives. Decisions about prioritizing and sequencing interventions must take a number of factors into consideration: scale (national or local, top-down or bottom-up) and type (policy or pilot initiative); speed (the length of time after the peace agreement that the intervention is implemented); and context (the presence of enabling conditions). The next three subsections consider each of these factors in turn; other prioritization and sequencing options are presented in table 3.

National versus local, policy versus pilot approaches

The initial decision to develop a natural resource–related livelihood initiative at the national or local level (and sometimes at both levels) can lead to divergent outcomes, even with respect to the same country or intervention. Several experiences demonstrate the effectiveness of working at the local level. For example, a review of the EcoGov Project, in the Philippines, emphasizes the value of a locally driven approach that focused on local government units, as well as the critical role of local peace initiatives in the absence of a national-level peace agreement (Brady et al. 2015*). Similarly, with respect to Afghanistan, given the political challenges of addressing land tenure at the national level, Alden Wily stresses the value of a local peacebuilding approach—in this case through the use of local pilot pastureland initiatives (Alden Wily 2015*). Alden Wily also notes that piloting can help overcome national resistance and fear of change, while setting practical precedents and giving communities the opportunity to provide input. With respect to the Gorongosa National Park initiative, the initial success of integrating DDR into the initiative derived, in part, from the fact that a national policy was not required as a precursor, although the subsequent development of national policies emphasizing natural resource protection strengthened the long-term sustainability of the initiative (Pritchard 2015*).

Despite the benefits of working at the community level, purely local approaches do have limitations, and a national approach may be a necessary accompaniment. Lind's chapter on the Karimojong Cluster—a region characterized by structural conflict, general insecurity, and the absence of the rule of

Table 3. Approaches to managing livelihoods in post-conflict situations

	Immediate aftermath	*Peace consolidation*
Livelihood process		
Livelihoods assessment	Identify local livelihood needs and assets in both rural and urban areas, considering the following: • The role of natural resources in contributing to conflict onset. • Impacts of the conflict on livelihoods (including natural resource tenure). • What is necessary to protect and support livelihoods and food security in the short term. • The current status of the natural resource base. • Threats to natural resources posed by seasonal variability and climate change. • Maladaptive coping strategies for livelihoods.	Periodically assess livelihoods. Monitor livelihood interventions. Periodically evaluate the effectiveness of livelihood plans and interventions.
Planning for rebuilding livelihoods	On the basis of livelihoods assessments, develop plans to protect, support, and promote livelihoods in both rural and urban areas. Plans should focus on rebuilding key sources of livelihoods support (such as fisheries, forestry, and agriculture). Develop targeted plans for addressing maladaptive livelihood strategies.	On the basis of the findings from monitoring and evaluation efforts, periodically review plans for supporting livelihoods.
Participatory processes and governance	Ensure the participation of all stakeholders (for example, through local committees that manage natural resource access). Establish community-based mechanisms and capacity to monitor the use of agricultural land, pastures, rangelands, and other natural resources, and to take enforcement action when statutory or customary law is violated. Ensure that participatory measures include women and girls, youth, and other marginalized groups. Include community representatives in the development of natural resource management plans. Facilitate public engagement in peace agreements.	Building on the experiences with participatory processes and governance, consider formalizing these approaches through national laws and policies. Institute channels to allow communities to access decision makers and to access courts to protect their rights to natural resources. Promote public participation in the development and adoption of natural resource laws and policies.

Legal and policy reform	Quickly develop legal safeguards to ensure sustainable resource harvesting. Institute measures to increase transparency and accountability in managing natural resources and their revenues, including measures related to planning, concessions, and payments to the government. Develop measures (including legal pluralism) to address access and tenure issues related to land, forests, and other natural resources essential to livelihoods. Incorporate community-based rights and authority over natural resources into new laws and policies. Where tenure reform (whether for land or other natural resources) is necessary, start a consultative process early, taking account of ethnic, gender, and age differences to assess needs, reform objectives, and options, and to build public support for the process.	Ensure that the legal and policy framework continues to be informed by the experiences of pilot and field-based projects. Review the effectiveness of measures to increase transparency and accountability in the management of natural resources and their revenues; modify laws and institutions, and institute other measures accordingly. Consider ways to more effectively integrate and (where integration is difficult) delineate statutory and customary norms and institutions governing land, forests, and other natural resources essential to livelihoods. Develop measures to ensure shared access to common-property natural resources, being sure to give consideration to age and gender. Building on the consultative process, reform laws and policies governing natural resource tenure (where necessary).
Institution building and reform	Implement institutional reform through capacity building, decentralization of natural resource management, and the hiring of more progressive staff. Minimize jurisdictional conflicts by spelling out governmental mandates clearly. Address tensions between competing groups regarding natural resource use and access through consultative and participatory processes.	Strengthen customary institutions for managing natural resources, while promoting gender balance where possible. Build cooperative relationships between government agencies managing natural resources.
Pilot and field-based projects	Institute pilot projects early on, in order to demonstrate the benefits of peacebuilding, inform the development of national laws and policies, and guide scaled-up interventions. Prioritize efforts to provide young men and women with education and training for livelihoods (including literacy and skills-based training).	Review the effectiveness of pilot projects to determine which should be scaled up. Scale up efforts targeting young men and women.

Table 3. (*Cont'd*)

	Immediate aftermath	*Peace consolidation*
Livelihoods substance		
Maladaptive livelihoods	Strengthen security to support access to basic resources. Explore incentives that will encourage the abandonment of maladaptive strategies.	
Economic recovery	Support efforts to add value through the processing of natural resources. Engage the private sector through natural resource–based initiatives such as the BioTrade Initiative. Promote access to markets by relaxing trade restrictions and improving security. Balance the goal of maximizing agricultural development with the goal of building a more stable rural society.	Improve roads and other infrastructure to allow greater access to markets.
Disarmament, demobilization, and reintegration (DDR)	Analyze the opportunities and risks presented by natural resources in the context of DDR, and develop DDR plans that take the results of this analysis into account. Undertake initial DDR efforts. To support reintegrating excombatants who are taking up or returning to agricultural livelihoods, determine whether there are any barriers to access to land, water, credit, or inputs. Support short-term employment options that will help to rebuild the productive capacity of the natural resource base (for example, through reforestation, rebuilding irrigation structures, or rebuilding roads to transport goods to market).	Using carefully targeted incentives—including a range of services, such as skills-based training and marketing support— promote the reintegration of former combatants into natural resource–based jobs (for example, in agriculture, forestry, fisheries, conservation, and tourism).
Alternative livelihoods	Support local, skills-based training, both (1) to provide alternative livelihoods and (2) build the capacity of local training institutions. Explore the sustainability of local innovation, including opportunties to scale up. Analyze market value chains to address bottlenecks and identify opportunities for added value.	

law—highlights the limits of local-level reconciliation (Lind 2015*). Under conditions such as those that characterize the Karimojong Cluster, local approaches focused only on the manifestation of chronic conflict cannot meaningfully address the underlying structural dynamics, which require complementary efforts at the regional and national levels.

Taken together, the case studies in this book suggest that local approaches may more effectively address contested natural resource access and use by recognizing customary laws and engaging customary institutions—particularly where national governance is weak and political tensions obstruct negotiations at the national level. On the other hand, national approaches may be needed where customary institutions have eroded or where other limits to local approaches exist.

Given the evident advantages of the approach, it is not surprising that successful efforts often engage both the national and local levels. In Afghanistan, combining a top-down approach (focused on building national-level institutional capacity and management tools) with a bottom-up one (focused on limited, field-level pilot projects) maximized the effectiveness of UNEP's legal and institutional reform efforts (Bowling and Zaidi 2015*). In contrast to some of the more limited interventions (such as DDR approaches) examined in the other case studies, this broader strategy succeeded in advancing more comprehensive reforms in Afghanistan, including the development of an environmental governance structure.

Experience suggests that peacebuilding should optimally begin at the local level, in order to inform national processes. This was also the conclusion of a field-based study of livelihoods and vulnerability among pastoralists in Darfur (the Northern Rizaygat), which emphasized the need to begin peace processes at the local level in order to clarify interests and concerns before linking them to higher-level actions and talks (Young et al. 2009). The same conclusion was echoed in other work undertaken by UNEP in Darfur, which focused on rebuilding relationships between livelihood groups and their governing institutions (UNEP 2014).

Early action

A number of arguments support the adoption of measures in the immediate aftermath of conflict to address livelihood coping strategies—in particular, maladaptive strategies that may be harming natural resources. For example, early action helps gain community support and bring rampant (and often illegal or illicit) natural resource harvesting under control, whereas delay can lead to severe natural resource degradation. In Cambodia, for example, the interim government's failure to develop forest management laws, institutions, and data before handing out large-scale timber concessions—and the failure to prohibit the extensive illegal logging that had been under way since the 1990s—drastically reduced timber yields and caused significant ecological damage (Srey and Schweithelm 2015*). Similarly, a case study of Afghanistan suggests that community-based

pilot projects in natural resource management should be implemented early in the post-conflict period: the sooner communities experience improvements in their livelihoods, the more likely they are to support the peacebuilding process and resist a return to conflict (Bowling and Zaidi 2015*). The case study also recommends integrating environmental and natural resource management issues into national planning, reconstruction, and development processes during the immediate post-conflict period; otherwise, it will be difficult to raise such issues later, in the face of competing priorities. A corollary point that can be drawn from other experiences (including in the Philippines and the Karimojong Cluster) is that peacebuilding efforts can begin even before peace agreements are signed, including under conditions of protracted conflict.[34]

Failing to act quickly to address livelihood needs can entrench poor natural resource–harvesting practices that may prove difficult to alter later on. Experience with post–World War II fisheries policy in occupied Japan is a reminder of the potential pitfalls of focusing on immediate livelihood needs at the expense of longer-term sustainability (Scheiber and Jones 2015*). This raises the question of how to phase in approaches that can help foster livelihoods recovery in the short term and promote economic development over the long term, without sacrificing the natural resource base. This difficult balance may not be possible in all cases. In Japan, for example, short-term, unsustainable natural resource use was prioritized not only in the fisheries sector but also in the energy sector (Nakayama 2012).

Enabling conditions

Enabling conditions, particularly in the political realm, are often prerequisites for successful natural resource–based livelihood approaches. One examination of post-conflict environments identifies four types of enabling conditions required for economic recovery (Brown, Langer, and Stewart 2008):

- A secure situation.
- An international commitment to help enforce the peace and provide aid for reconstruction and development.
- The capacity of the state to maintain law and order and deliver services.
- The political inclusivity of the state.

Two of the case studies in this book illustrate how these enabling conditions can influence the prioritization and sequencing of livelihood interventions in countries emerging from conflict. In Africa's Great Lakes region, security and stability served as necessary preconditions for the development of mountain gorilla ecotourism (Maekawa et al. 2015*). After peace had been reestablished

[34] See, for example, Buchanan-Smith and Bromwich (2015), Brady et al. (2015*), and Lind (2015*).

in Rwanda and Uganda, both countries were able to successfully revive their ecotourism industries through business reforms, investment in tourism fairs, and the incorporation of tourism into economic plans. In the Democratic Republic of the Congo, however, ongoing instability and insecurity have constrained the adoption of similar measures to boost mountain gorilla ecotourism. In Mozambique, conflict fatigue supported DDR. In addition, extensive international financial support for DDR programs helped lay the groundwork for the successful hiring of former combatants as game guards in Gorongosa National Park, an intervention that supported both livelihoods and post-conflict peacebuilding (Pritchard 2015*).

The role of institutions

In countries emerging from conflict, where institutional capacity has been weakened or destroyed, capacity building is often a core need. Robust institutions governing natural resources can help strengthen livelihoods and peacebuilding; however, when policies are reformed during the post-conflict period, institutions may need to be reformed as well. Institutional resistance to improved natural resource management can undermine both livelihoods and peacebuilding (Mallett and Slater 2012).

The active participation of government and community institutions in natural resource–based livelihood initiatives at the appropriate level—whether national, subnational, or local—is critical for ensuring the sustainability of such initiatives. Such participation can be a challenge, however, where conflict has eroded government and community institutions. An examination of post-conflict forest reform in Cambodia, for example, demonstrates the significant governance challenges posed by the destruction of government institutions during the civil war (Srey and Schweithelm 2015*). With respect to Nepal, where community forest user groups helped sustain livelihoods and prevent conflict after the disruption of the rural economy, Ratner and his colleagues offer a resource rights and governance framework that emphasizes the importance of strong local institutions in supporting rural livelihood resilience (Ratner et al. 2013).

Where entrenched bureaucracies may be corrupt, or wedded to approaches that maximize natural resource exploitation without concern for sustainability, simply engaging with institutions may not be enough. Instead, a number of measures may be required to reform institutions and reduce resistance to new approaches to natural resource management, including capacity building; the introduction of transparency and accountability measures; and the promotion of staff who are less entrenched in previous ways of doing things. In their case study of Japan, Scheiber and Jones note that an entrenched bureaucracy enhanced the stability of the fisheries sector and provided useful assistance with policy coordination; nevertheless, the rigidity of the bureaucracy posed obstacles to policy reform—specifically, a movement away from maximizing production (Scheiber and Jones 2015*). The authors note that, as the result of the Allies'

mentoring of a newer generation of fisheries management officials (as well as newer fisheries research facilities and strengthened fisheries sciences), the scientific research capacity of the fisheries sector improved. In Afghanistan, policy makers encountered similar institutional resistance to a decentralized, community-based approach to managing forests, wildlife, and rangelands, particularly within the Ministry of Justice (Bowling and Zaidi 2015*).

On the other hand, informal or community-based institutions have supported post-conflict peacebuilding and redevelopment. In Mindanao, the EcoGov Project engaged local community groups and governance institutions (such as local government units) to support organizational change and increase transparency, accountability, and public participation in natural resource management (Brady et al. 2015*). By engaging various stakeholders in the collaborative envisioning, planning, and implementation of natural resource management initiatives, project staff sought to integrate efforts across different levels of governance (family, community, local, provincial, and national), so that each reinforced the other. Project staff also sought to reorient paradigms of competition and conflict, by focusing instead on mutual understanding and common objectives; those objectives also provided linkages between various levels of natural resource governance. In Mozambique, where informal community reconciliation ceremonies helped facilitate the reintegration component of the DDR initiative undertaken in Gorongosa National Park, customary institutions played a significant role in helping to bring different groups together, preempting potential conflicts over natural resource access in protected areas (Pritchard 2015*).

UNEP's program in Darfur is pioneering a new approach to supporting the recovery of both livelihoods and local governance institutions for natural resources (UNEP 2014). At the core of the program are two related ideas: first, that rebuilding good natural resource governance requires restoring the trust and collaborative relationships that have been destroyed by conflict; and second, that livelihoods can be rebuilt effectively only after trust is reestablished. UNEP's approach focuses on restoring three types of relationships: institution to institution, institution to community, and community to community. UNEP has also developed a framework for assessing and monitoring improvements in the quality of these relationships. The five relationship dimensions addressed in the framework are "Directness (good communication); Commonality (shared purpose); Continuity (time together and a shared history); Multiplexity (mutual understanding and breadth); and Parity (fairness)" (UNEP 2014, 5).

Weakened customary institutions can undermine livelihood access and contribute to conflict. In the Karimojong Cluster, for example, the waning of customary pastoralist institutions that had traditionally helped manage conflict between pastoralist groups led to the loss of livestock assets in the region (Lind 2015*). That this occurred as a result of state building in East Africa illustrates the potentially complex relationship between local and national or regional institutional development. For example, a number of measures undertaken in the name of state control—including the use of military force to subdue pastoralist groups,

punitive confiscation of livestock, commoditization of livestock, and prohibitions on barter and trade—intensified ethnic divisions and created more rigid social relations—which, in turn, undermined the customary institutions that pastoralists had historically used to manage ecological uncertainty and natural resource scarcity. In Sierra Leone, control by older chiefs of customary institutions governing access to land led to alienation among young men, which played a major role in precipitating conflict (Keili and Thiam 2015*). Nevertheless, in the context of peacebuilding efforts and when paired with alternative livelihood schemes, customary institutions have the potential to bring together youth and elders.

Institutional reform poses many challenges. Experiences with natural resource management in Japan and Afghanistan, discussed earlier, highlight the need for institutional reform to accompany policy reform, particularly with respect to developing more sustainable approaches to managing natural resources for livelihoods and other purposes. In both countries, tensions arose when policy makers who were wedded to top-down approaches were confronted by new approaches to natural resource management (Scheiber and Jones 2015*; Bowling and Zaidi 2015*).

Problems may also arise when multiple institutions are involved in natural resource management. As Bowling and Zaidi note with regard to Afghanistan, in order to avoid overlapping mandates, which can obstruct local-level governance and peacebuilding, it is essential to clearly delineate governmental mandates during the peacebuilding stage. In his case study of Mozambique, Pritchard attributes some of the success of the Gorongosa DDR initiative to the small scale of the project, which enabled centralized decision making within the National Directorate of Forestry and Wildlife and avoided the need for expansive government mandates (Pritchard 2015*).

Several chapters identify capacity building as a key component of institutional reform. In Afghanistan, Darfur, and elsewhere, natural resource interventions (whether for livelihood purposes or other objectives) are unlikely to succeed without concurrent and sustained capacity-building efforts (Bowling and Zaidi 2015*; UNEP 2014). Experiences implementing natural resource–related DDR efforts in Afghanistan confirm the importance of capacity building, particularly at the community level, where the establishment of forest management committees by community elders strengthened community capacity and development in seven provinces (Boyer and Stork 2015*).

In the Philippines, it was necessary to develop the organizational capacity of local government units to help them address environmental threats, while also improving transparency, accountability, and public participation (Brady et al. 2015*). In Africa's Great Lakes region, the private sector provided critical investment and expertise in countries emerging from conflict, which often lack the capacity to develop an ecotourism industry (Maekawa et al. 2015*). On the other hand, impaired capacity within Mozambique's National Directorate of Forestry and Wildlife actually presented an opportunity for the directorate's DDR initiative: there was a demand for trained park personnel that could be met by drawing

on former combatants who needed gainful employment (Pritchard 2015*). The arrangement had the added benefit of offering park employees significant opportunities for upward mobility.

Market-based approaches

Although market-based approaches can support the development of natural resource–based livelihoods in post-conflict countries, experience also suggests that they may, in some cases, undermine equitable natural resource access. Another potential drawback of market-based approaches is that they may offer private-sector entities incentives or opportunities to act as peace spoilers, by seeking to undermine peacebuilding efforts or capitalize on redevelopment programs for financial gain.

Post-conflict Colombia and Sierra Leone are examples of the successful use of market-based efforts. In their case study of Colombia, Jaramillo Castro and Stork describe the Sustainable BioTrade Programme, a market-based initiative that supported local livelihoods, bolstered post-conflict economic recovery, and helped avert further local conflict (Jaramillo Castro and Stork 2015*). And in post-conflict Sierra Leone, small-business development—in particular, small-scale agriculture—nurtured alternative livelihood opportunities and helped support peacebuilding (Keili and Thiam 2015*).

Analyses of opportunities around protected areas have identified the critical role of ecotourism—not only in supporting local communities, but in providing employment for former combatants (for example, as tour guides, park rangers, and hotel and restaurant owners).[35] Maekawa and her colleagues identify concrete ways in which pricing, market development, international outreach, and reform of the tourism sector strengthened mountain gorilla ecotourism and facilitated macroeconomic growth in the Great Lakes region of Africa (Maekawa et al. 2015*). In Colombia, private-sector drivers of livelihoods development include waste management and organic fertilizer production (Boyer and Stork 2015*).

The disadvantages of a market-driven approach are typically associated with the inequitable distribution of benefits—as is the case in Rwanda and Uganda, where the direct benefits of ecotourism (especially jobs) tend to accrue to higher-income communities adjacent to tourism hubs. Although governmental authorities have attempted to address the disparity through revenue sharing, these efforts have been shown to favor wealthier communities, indicating that more must be done to support local livelihoods for poorer communities (Maekawa et al. 2015*). In Cambodia, government decisions to grant large-scale private concessions for logging, industrial agriculture, mining, and hydropower have undermined efforts to bolster local livelihoods by foreclosing community access to natural resources (Ratner 2015*).

---

[35] See, for example, Westrik (2015*), Maekawa et al. (2015*), Boyer and Stork (2015*), and Walters (2015*).

One of the most persuasive illustrations of the potentially harmful effects of market forces is in Somalia, where warlords have appropriated livelihood-based resources, including bananas, charcoal, and fisheries, thereby indirectly facilitating conflict rather than peacebuilding (Webersik and Crawford 2015*). Although these resources lack the strategic value of diamonds or gold, armed groups can still benefit financially from controlling their trade. Thus, natural resources have created a new conflict economy whose participants are more interested in maintaining and profiting from conflict than pursuing peace.

In yet another example of the perverse impacts of market forces in Somalia, the devaluation of the Somali shilling has been driving the unsustainable production of charcoal, as rising fuel prices have turned farmers away from machinery-based agriculture and toward charcoal production. At the same time, the Somalia experience also shows how the power of the markets can be harnessed to correct the perverse incentives that underpin conflict dynamics. For example, when the European Union import demand dropped—as a result of the reduction of preferential trade agreements between the European Union and Somalia, the liberalization of import markets, and the repeal of certain import quotas—70 percent of Somalia's banana trade, which had been captured by warlords, collapsed (Webersik and Crawford 2015*).

CONCLUSION

Supporting the reestablishment of local livelihoods is a fundamental component of post-conflict peacebuilding, particularly in light of the linkages between livelihoods, natural resources, and conflict. The dependence of a large proportion of rural and even urban populations on natural resources means that sustainably managing these resources is essential to economic recovery. Thus, a focus on sustainable livelihoods provides opportunities to promote peace and build community resilience to a wide array of risks, including conflict and environmental degradation.

In considering how to transition from maladaptive to sustainable livelihoods, several core concepts emerge. Successful solutions are based on a participatory approach that incorporates the perspectives of a wide range of stakeholders. In particular, key local and national actors who may exert significant influence over various population groups, or who may be able to initiate new ways of thinking or acting that avoid maladaptive practices, should be drawn into peacebuilding processes. Given that livelihood systems often share or compete with one another for common-property resources, it is critical to broaden the programming lens to consider the implications of a given intervention (or risk) for the livelihoods of all population groups, especially those that depend on seasonal access to natural resources. It is also essential to consider the implications of maladaptive strategies for the livelihoods of future generations.

Livelihoods theory, while important to understanding livelihood dynamics, is insufficient on its own to support the appropriate design of peacebuilding approaches. Purely theoretical approaches risk promoting unrealistic expectations,

and fail to address the numerous and complex challenges and exceptional circumstances that present in practice. Instead, theoretical approaches must be informed by best practices that are rooted in messy, complex local realities. By combining theoretical considerations and debates with practical experience, this book highlights issues that deserve particular attention, while contributing to the development of long-term, institutional understanding of the impacts of (and interactions between) peacebuilding and livelihood initiatives.

A livelihoods analysis is the first step in developing an evidence-based approach to livelihood interventions and policies in post-conflict countries. While there is no blueprint for such an analysis, key components include assessments of outcome or process vulnerability, seasonality and climate variability, the conflict (including the political economy), and post-conflict environmental issues and needs. Tools and technologies that can be used in such analyses include local surveys based on household questionnaires, stakeholder analysis and mapping, remote sensing and spatial planning, GPS tracking, and digital data gathering.

Taken together, the case studies in this book illustrate a theory of change that underlies post-conflict livelihood interventions based on sustainable natural resource management. This theory of change consists of three related premises: First, livelihoods are essential to peacebuilding. Second, in most, if not all, developing countries, natural resources are essential to the majority of livelihoods, especially in rural areas. Third, to foster a sustainable peace, natural resources must be managed for the more effective support of livelihoods. Thus, to strengthen peacebuilding and resilience to conflict, practitioners and governments must work at all governance levels and with all stakeholder groups to support, protect, and promote sustainable livelihoods—and the natural resources on which they are based.

In designing livelihood interventions and policies, it is important to balance trade-offs that may arise between national economic recovery on the one hand, and local livelihoods and natural resource sustainability on the other. How to prioritize and sequence interventions is another critical question. Depending on context, it may be desirable to start with a locally based pilot approach that feeds into national-level law or policy—or, conversely, to establish national policy that can provide guidance, structure, and an enabling environment for local interventions. It is also important to act early in the peacebuilding process, in order to address livelihood coping strategies—especially maladaptive ones.

Despite progress in developing natural resource–based livelihood interventions capable of strengthening post-conflict peacebuilding, more work needs to be done, particularly with regard to (1) developing programs to address maladaptive livelihoods, and (2) establishing monitoring and evaluation frameworks that can capture the peacebuilding impact of livelihood programs. Additional experience focused on young males, who play a pronounced role in armed conflict, is also needed. For example, instead of simply providing new livelihoods for excombatants, it is critical to examine both overall sustainability and the differential impacts of particular interventions on various groups. A renewed

focus on sustainability and resilience, on examining livelihood challenges from multiple perspectives, and on experiential learning can help inform the future direction of livelihoods, natural resources, and post-conflict peacebuilding.

REFERENCES

Adger, W. N., J. Pulhin, J. Barnett, G. D. Dabelko, G. K. Hovelsrud, M. Levy, U. Oswald Spring, and C. Vogel. 2014. Human security. In *Climate change 2014: Impacts, adaptation, and vulnerability,* ed. H. L. T. A. J. Palutikof. Cambridge, UK: Cambridge University Press. http://ipcc-wg2.gov/AR5/images/uploads/WGIIAR5-Chap12_FGDall.pdf.

Ahmed, N. M. E. 2008. Households depending on agriculture (cultivation and animal husbandry) as a main source of livelihood using 2008 population census data. Paper presented at the Data Dissemination Conference 5th Population Census, Khartoum, Sudan.

Alden Wily, L. 2015. Resolving natural resource conflicts to help prevent war: A case from Afghanistan. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

AOAD (Arab Organization for Agricultural Development). 2009. *Arab agricultural statistics yearbook*. Vol. 29. www.aoad.org/Statistical_Yearly_Book_Vol_29.pdf.

APFO (African Peace Forum), Centre for Conflict Resolution, Consortium of Humanitarian Agencies, FEWER, International Alert, and Saferworld. 2004. *Conflict-sensitive approaches to development, humanitarian assistance and peacebuilding: A resource pack*. www.conflictsensitivity.org/publications/conflict-sensitive-approaches-development-humanitarian-assistance-and-peacebuilding-res.

Ashley, C., and D. Carney. 1999. *Sustainable livelihoods: Lessons from early experience*. London: United Kingdom Department for International Development.

Aspinall, E. 2007. The construction of grievance: Natural resources and identity in a separatist conflict. *Journal of Conflict Resolution* 51 (6): 950–972.

AU (African Union). 2010. *Policy framework for pastoralism in Africa: Securing, protecting and improving the lives, livelihoods and rights of pastoralist communities*. Addis Ababa, Ethiopia. http://rea.au.int/en/sites/default/files/Policy%20Framework%20for%20Pastoralism.pdf.

Bahadur, A. V., M. Ibrahim, and T. Tanner. 2010. The resilience renaissance? Unpacking of resilience for tackling climate change and disasters. Strengthening Climate Resilience Discussion Paper No. 1. Brighton, UK: Institute of Development Studies, University of Sussex.

Baro, M., and T. F. Deubel. 2006. Persistent hunger: Perspectives on vulnerability, famine, and food security in sub-Saharan Africa. *Annual Review of Anthropology* 35:521–538.

Behnke, R. 2012. The economics of pastoral livestock production in Sudan. Medford, MA: Feinstein International Center, Tufts University. http://fic.tufts.edu/assets/Briefing-Paper-Economics-of-Pastoral-Livestock1.pdf.

Bouma, G. 2012. Challenges and opportunities for mainstreaming environmental assessment tools in post-conflict settings. In *Assessing and restoring natural resources in post-conflict peacebuilding*, ed. D. Jensen and S. Lonergan. London: Earthscan.

Bowling, B., and A. Zaidi. 2015. Developing capacity for natural resource management in Afghanistan: Process, challenges, and lessons learned by UNEP. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Boyer, G., and A. M. Stork. 2015. The interface between natural resources and disarmament, demobilization, and reintegration: Enhancing human security in post-conflict situations. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Brady, C., O. Agoncillo, M. Z. Butardo-Toribio, B. Dolom, and C. V. Olvida. 2015. Improving natural resource governance and building peace and stability in Mindanao, Philippines. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Brown, G., A. Langer, and F. Stewart. 2008. A typology of post-conflict environments: An overview. CRISE Working Paper No. 53. Oxford, UK: Centre for Research on Inequality, Human Security and Ethnicity, Oxford University. http://economics.ouls.ox.ac.uk/13008/1/workingpaper53.pdf.

Brown, O., M. Hauptfleisch, H. Jallow, and P. Tarr. 2012. Environmental assessment as a tool for peacebuilding and development: Initial lessons from capacity building in Sierra Leone. In *Assessing and restoring natural resources in post-conflict peacebuilding*, ed. D. Jensen and S. Lonergan. London: Earthscan.

Bruch, C. 2008. The end of equilibrium. *Environmental Forum* 25 (5): 30–35.

Buchanan-Smith, M., and B. Bromwich. 2015. Preparing for peace: An analysis of Darfur, Sudan. In *Governance, natural resources, and post-conflict peacebuilding*, ed. C. Bruch, C. Muffett, and S. S. Nichols. London: Earthscan.

Buchanan-Smith, M., and S. Davies. 1995. *Famine early warning and response: The missing link*. London: IT Publications.

Buchanan-Smith, M., Y. El Tayeb, and A. J. A. Fadul. 2013. Understanding trade and markets in a protracted conflict: The case of Darfur. *Humanitarian Exchange*, no. 58:35–37. www.odihpn.org/humanitarian-exchange-magazine/issue-58/understanding-trade-and-markets-in-a-protracted-conflict-the-case-of-darfur.

Buchanan-Smith, M., and A. A. Fadul. 2008. *Adaptation and devastation: The impact of the market on trade and markets in Darfur; Findings of a scoping study*. Medford, MA: Feinstein International Center, Tufts University. http://fic.tufts.edu/assets/Adaptation-and-Devastation-2008.pdf.

Buchanan-Smith, M., A. J. A. Fadul, A. R. Tahir, and Y. Aklilu. 2012. *On the hoof: Livestock trade in Darfur*. Nairobi, Kenya: United Nations Environment Programme. www.un.org/en/events/environmentconflictday/pdf/UNEP_Sudan_Tufts_Darfur_Livestock_2012.pdf.

Buchanan-Smith, M., H. McElhinney, H. Bagadi, M. A. Rahman, A. Dawalbeit, A. Dawalbeit, M. Khalil, and B. E. D. Abdalla. 2011. *City limits: Urbanisation and vulnerability in Sudan; Nyala case study*. London: Humanitarian Policy Group, Overseas Development Institute. www.ircwash.org/sites/default/files/Buchanan-2011-CityNyala.pdf.

Carney, D., M. Drinkwater, T. Rusinow, K. Neefjes, S. Wanmali, and N. Singh. 1999. Livelihood approaches compared: A brief comparison of the livelihood approaches of the UK Department for International Development (DFID), CARE, Oxfam and the United Nations Development Programme (UNDP). London: United Kingdom Department for International Development. www.start.org/Program/advanced_institute3_web/p3_documents_folder/Carney_etal.pdf.

Chambers, R., and G. Conway. 1991. Sustainable rural livelihoods: Practical concepts for the 21st century. IDS Discussion Paper No. 296. Brighton, UK: Institute of Development Studies, University of Sussex.

Charbonneau, L. 2013. Exclusive: U.N. monitors see arms reaching Somalia from Yemen, Iran. Reuters, February 10. www.reuters.com/article/2013/02/10/us-somalia-arms-un-idUSBRE9190E420130210.

Collier, P. 2000. Doing well out of war: An economic perspective. In *Greed and grievance: Economic agendas in civil wars*, ed. M. Berdal and D. M. Malone. Boulder, CO: Lynne Rienner.

Collinson, S., M. Bhatia, M. Evans, R. Fanthorpe, J. Goodhand, and S. Jackson. 2002. Politically informed humanitarian programming: Using a political economy approach. HPN Network Paper No. 41. London: Overseas Development Institute. www.odihpn.org/hpn-resources/network-papers/politically-informed-humanitarian-programming-using-a-political-economy-approach.

Collinson, S. E. 2003. Power, livelihoods and conflict: Case studies in political economy analysis for humanitarian action. HPG Report No. 13. London: Humanitarian Policy Group, Overseas Development Institute.

Conca, K., and J. Wallace. 2012. Environment and peacebuilding in war-torn societies: Lessons from the UN Environment Programme's experience with post-conflict assessment. In *Assessing and restoring natural resources in post-conflict peacebuilding*, ed. D. Jensen and S. Lonergan. London: Earthscan.

Coryn, C. L. S., L. A. Noakes, C. D. Westine, and D. C. Schröter. 2011. A systematic review of theory-driven evaluation practice from 1990 to 2009. *American Journal of Evaluation* 32 (2): 199–226. www.wmich.edu/evalphd/wp-content/uploads/2010/05/A-Systematic-Review-of-Theory-Driven-Evaluation-Practice-from-1990-to-2009.pdf.

Davies, S. 1993. Are coping strategies a cop out? *IDS Bulletin* 24 (4): 60–72.

———. 1996. *Adaptable livelihoods: Coping with food insecurity in the Malian Sahel*. London: Macmillan Press.

Defensor Knack, P. 2013. Legal frameworks and land issues in Muslim Mindanao. In *Land and post-conflict peacebuilding*, ed. J. Unruh and R. C. Williams. London: Earthscan.

de Waal, A. 2005. Who are the Darfurians? Arab and African identities, violence and external engagement. *African Affairs* 104 (415): 181–205. http://afraf.oxfordjournals.org/content/104/415/181.abstract.

DFID (Department for International Development, United Kingdom). 1999. Sustainable livelihoods guidance sheets. London. www.eldis.org/vfile/upload/1/document/0901/section2.pdf.

———. 2001. Sustainable livelihoods guidance sheets. London. www.efls.ca/webresources/DFID_Sustainable_livelihoods_guidance_sheet.pdf.

———. 2011. *Defining disaster resilience: A DFID approach paper*. London.

Dorward, A., S. Anderson, S. Clark, B. Keane, and J. Moguel. 2001. Asset functions and livelihood strategies: A framework for pro-poor analysis, policy and practice. Paper contributed to EAAE seminar on livelihoods and rural poverty. https://cgspace.cgiar.org/bitstream/handle/10568/4163/Asset_Function.pdf?sequence=.

Drinkwater, M., and T. Rusinow. 1999. Application of CARE's livelihoods approach: How the sustainable livelihoods framework has been applied by CARE International. Paper presented at the Natural Resources Advisors' Conference.

Duffield, M. 1994. The political economy of internal war: Asset transfer, complex emergencies and international aid. In *War and hunger: Rethinking international responses to complex emergencies*, ed. J. Macrae and A. Zwi. London: Zed Books / Save the Children Fund.

Ellis, F., and H. A. Freeman, eds. 2005. *Rural livelihoods and poverty reduction policies*. London: Routledge.

Ellis, J., and K. A. Galvin. 1994. Climate patterns and land-use practices in the dry zones of Africa. *BioScience* 44 (5): 340–349.

Engel, A., and B. Korf. 2005. *Negotiation and mediation techniques for natural resource management*. Rome: Food and Agriculture Organization of the United Nations. ftp://ftp.fao.org/docrep/fao/008/a0032e/a0032e00.pdf.

FAO (Food and Agriculture Organization of the United Nations). 2011. Forests and poverty reduction. www.fao.org/forestry/livelihoods/en/.

———. n.d. Fisheries and aquaculture. www.fao.org/docrep/014/am859e/am859e07.pdf.

FAO (Food and Agriculture Organization of the United Nations) Somalia. 2014. Livestock: The mainstay. www.faosomalia.org/livestock.

FEWS-Net (Famine Early Warning Systems Network). 2013. Sudan food security outlook: April to September 2013. http://reliefweb.int/sites/reliefweb.int/files/resources/Sudan%20Food%20Security%20Outlook%20April%20to%20September%202013.pdf.

Folke, C. 2006. Resilience: The emergence of a perspective for social-ecological systems analyses. *Global Environmental Change* 16 (3): 253–267.

Gingerich, T., and J. Leaning. 2004. *The use of rape as a weapon of war in the conflict in Darfur, Sudan*. Boston, MA: Harvard School of Public Health.

Global Witness. 2006. *The sinews of war: Eliminating trade in conflict resources*. www.globalwitness.org/sites/default/files/import/the_sinews_of_war.pdf.

Green, A. 2015. Social identity, natural resources, and peacebuilding. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Hamilton-Peach, J., and P. Townsley. n.d. An IFAD sustainable livelihoods framework. www.ifad.org/sla/framework/index.htm.

Hayes, K., and R. Perks. 2012. Women in the artisanal and small-scale mining sector of the Democratic Republic of the Congo. In *High-value natural resources and post-conflict peacebuilding*, ed. P. Lujala and S. A. Rustad. London: Earthscan.

Henckaerts, J.-M. 2005. Study on customary international humanitarian law: A contribution to the understanding and respect for the rule of law in armed conflict. *International Review of the Red Cross* 87 (857): 175–212. www.icrc.org/eng/resources/documents/publication/p0860.htm.

Hendrickson, D., J. Armon, and R. Mearns. 1998. The changing nature of conflict and famine vulnerability: The case of livestock raiding in Turkana District, Kenya. *Disasters* 22 (3): 185–199.

Holland, D., W. Johnecheck, H. Sida, and H. Young. 2002. Livelihoods and chronic conflict: An annotated bibliography. Working Paper No. 184. London: Overseas Development Institute.

Homer-Dixon, T. 1999. *Environment, scarcity, and violence*. Princeton, NJ: Princeton University Press.

Hoon, P., N. Singh, and S. Wanmali. 1997. Sustainable livelihoods: Concepts, principles, and approaches to indicator development; A draft discussion paper. Paper prepared for the Workshop on Indicators for Sustainable Livelihoods, New York, August. www.academia.edu/3231210/Sustainable_livelihoods_concepts_principles_and_approaches_to_indicator_development_a_draft_discussion_paper.

ICPALD (IGAD [Intergovernmental Authority on Development] Center for Pastoral Areas and Livestock Development). 2013. The contribution of livestock to the economies of

Kenya, Ethiopia, Uganda and Sudan. Policy Brief No. ICPALD8/SCLE/8/2013. Nairobi, Kenya. http://igad.int/attachments/714_The%20Contribution%20of%20Livestock%20to%20the%20Kenya,%20Ethiopia,%20Uganda%20and%20Sudan%20Economy.pdf.

IISD (International Institute for Sustainable Development). n.d. Natural resources, livelihoods and security. www.iisd.org/ecp/es/livelihoods/default.asp.

IRP (International Recovery Platform) and UNDP-India (United Nations Development Programme in India). 2010. *Guidance note on recovery: Livelihood*. Kobe, Japan: International Recovery Platform Secretariat. www.unisdr.org/files/16771_16771guidancenoteonrecoveryliveliho.pdf.

Jacobsen, K. 2003. Livelihoods in conflict: The pursuit of livelihoods by refugees and the impact on the human security of host communities. *International Migration* 40 (5): 95–123.

Jaramillo Castro, L., and A. M. Stork. 2015. Linking to peace: Using BioTrade for biodiversity conservation and peacebuilding in Colombia. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Jaspars, S., and S. O'Callaghan. 2010. Challenging choices: Protection and livelihoods in conflict—Case studies from Darfur, Chechnya, Sri Lanka and the occupied Palestinian territories. HPG Report No. 31. London: Humanitarian Policy Group, Overseas Development Institute.

Jensen, D. 2012. Evaluating the impact of UNEP's post-conflict environmental assessments. In *Assessing and restoring natural resources in post-conflict peacebuilding*, ed. D. Jensen and S. Lonergan. London: Earthscan.

Jensen, D., and S. Lonergan 2012. Natural resources and post-conflict assessment, remediation, restoration, and reconstruction: Lessons and emerging issues. In *Assessing and restoring natural resources in post-conflict peacebuilding*, ed. D. Jensen and S. Lonergan. London: Earthscan.

Justino, P. 2009. Poverty and violent conflict: A micro-level perspective on the causes and duration of warfare. *Journal of Peace Research* 46 (3): 315–333.

Karuru, N., and L. H. Yeung. 2015. Integrating gender into post-conflict natural resource management. In *Governance, natural resources, and post-conflict peacebuilding*, ed. C. Bruch, C. Muffett, and S. S. Nichols. London: Earthscan.

Keen, D. 1994. *The benefits of famine: Political economy of famine and relief in southwestern Sudan, 1983–1989*. Princeton, NJ: Princeton University Press.

———. 2000. Incentives and disincentives for violence. In *Greed and grievance: Economic agendas in civil wars*, ed. M. R. Berdal and D. Malone. Boulder, CO: Lynne Rienner / International Development Research Centre.

———. 2008. *Complex emergencies*. Cambridge, UK: Polity Press.

Keili, A., and B. Thiam. 2015. Mitigating conflict in Sierra Leone through mining reform and alternative livelihoods programs for youth. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Lautze, S., Y. Aklilu, A. Raven-Roberts, H. Young, G. Kebede, and J. Leaning. 2003. Risk and vulnerability in Ethiopia: Learning from the past, responding to the present, preparing for the future. Boston, MA: Feinstein International Famine Center, Tufts University / Inter-University Initiative on Humanitarian Studies and Field Practice. http://fic.tufts.edu/assets/risk_ethiopia.pdf.

Lautze, S., and A. Raven-Roberts. 2006. Violence and complex humanitarian emergencies: Implications for livelihoods models. *Disasters* 30 (4): 383–401.

Lax, J., and J. Krug. 2013. Livelihood assessment: A participatory tool for natural resource dependent communities. Working Paper No. 7. Hamburg, Germany: Thünen-Institut für Weltforstwirtschaft.

Leroy, M., ed. 2009. *Environment and conflict in Africa: Reflections on Darfur*. Addis Ababa, Ethiopia: University for Peace.

Le Sage, A., and N. Majid. 2002. The livelihoods gap: Responding to the economic dynamics of vulnerability in Somalia. *Disasters* 26 (1): 10–27.

Lind, J. 2015. Manufacturing peace in "no man's land": Livestock and access to natural resources in the Karimojong Cluster of Kenya and Uganda. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Lind, J., and S. Eriksen. 2006. The impacts of conflict on household coping strategies: Evidence from Turkana and Kitui districts in Kenya. *Die Erde* 137 (3): 249–270.

Longley, C., and D. Maxwell. 2002. Livelihoods, chronic conflict and humanitarian response: A synthesis of current practice. Working Paper No. 182. London: Overseas Development Institute. www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/2991.pdf.

Luedeling, E., R. Kindt, N. I. Huth, and K. Koenig. 2014. Agroforestry systems in a changing climate: Challenges in projecting future performance. *Current Opinion in Environmental Sustainability* 6:1–7.

Maekawa, M., A. Lanjouw, E. Rutagarama, and D. Sharp. 2015. Mountain gorilla ecotourism: Supporting macroeconomic growth and providing local livelihoods. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Mallett, R., and R. Slater. 2012. *Growth and livelihoods in fragile and conflict-affected situations*. Working Paper No. 9. London: Secure Livelihoods Research Consortium.

Mamdani, M. 2007. The politics of naming: Genocide, civil war, insurgency. *London Review of Books* 29 (5): 5–8.

Mason, S., and S. Rychard. 2005. Conflict analysis tools. Bern: Swiss Agency for Development and Cooperation. www.css.ethz.ch/publications/pdfs/Conflict-Analysis-Tools.pdf.

Matthew, R., and A. Hammill. 2012. Peacebuilding and adaptation to climate change. In *Assessing and restoring natural resources in post-conflict peacebuilding*, ed. D. Jensen and S. Lonergan. London: Earthscan.

Matturi, K. 2013. Making real-time M&E a reality through ICT. *Ontrac* 55:2–3. www.intrac.org/data/files/resources/775/ONTRAC-55-New-technologies-in-monitoring-and-evaluation.pdf.

Maxwell, D. 1999. Programmes in chronically vulnerable areas: Challenges and lessons learned. *Disasters* 23 (4): 373–384.

Maxwell, S., and M. Smith, with S. Davies, A. Evans, S. Jaspars, J. Swift, and H. Young. 1992. Household food security: A conceptual review. In *Household food security: Concepts, indicators, measurements; A technical review*, ed. S. Maxwell and T. R. Frankenberger. New York: United Nations Children's Fund; Rome: International Fund for Agricultural Development. www.ifad.org/hfs/tools/hfs/hfspub/hfs.pdf.

Morse, S., and N. McNamara. 2013. *Sustainable livelihoods approach: A critique of theory and practice*. New York: Springer.

Muhereza, F. E. 2011. *An analysis of disarmament experiences in Uganda*. Nairobi, Kenya: Regional Centre on Small Arms. www.recsasec.org/publications/Uganda%20Report.pdf.

Nakayama, M. 2012. Making best use of domestic energy sources: The Priority Production System for coal mining and steel production in post–World War II Japan. In *Assessing and restoring natural resources in post-conflict peacebuilding*, ed. D. Jensen and S. Lonergan. London: Earthscan.

Narbeth, S., and C. McLean. 2003. Livelihoods and protection: Displacement and vulnerable communities in Kismaayo, southern Somalia. HPN Network Paper No. 44. London: Overseas Development Institute.

O'Brien, K., S. Eriksen, L. P. Nygaard, and A. Schjolden. 2007. Why different interpretations of vulnerability matter in climate change discourses. *Climate Policy* 7:73–88.

OECD (Organisation for Economic Co-operation and Development). 2008. *Natural resources and pro-poor growth: The economics and politics*. DAC Guidelines and Reference Series. Paris. www.oecd.org/greengrowth/green-development/42440224.pdf.

Olsson, L., M. Opondo, P. Tschakert, L. Authors, A. Agrawal, S. Eriksen, S. Ma, et al. 2014. Livelihoods and poverty. In *Climate change 2014: Impacts, adaptation, and vulnerability*, ed. C. B. Field, V. R. Barros, D. J. Dokken, K. J. Mach, M. D. Mastrandrea, T. E. Bilir, M. Chatterjee, et al. Draft contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge, UK: Cambridge University Press. http://ipcc-wg2.gov/AR5/images/uploads/WGIIAR5-Chap13_FGDall.pdf.

Osman, A. M. K., H. Young, R. F. Houser, and J. C. Coates. 2013. Agricultural change, land, and violence in protracted political crisis: An examination of Darfur. Boston, MA: Oxfam America.

OUP (Oxford University Press). 2010. *Oxford Dictionary of English*, ed. A. Stevenson. 3rd ed. Oxford, UK.

Pantuliano, S., M. Buchanan-Smith, V. Metcalfe, S. Pavanello, and E. Martin. 2011. *City limits: Urbanisation and vulnerability in Sudan*. London: Humanitarian Policy Group, Overseas Development Institute.

Pantuliano, S., O. Egemi, B. Fadlalla, M. Farah, and M. E. Abdelgador. 2009. Put out to pasture: War, oil and the decline of Misseriyya Humr pastoralism in Sudan. London: Humanitarian Policy Group, Overseas Development Institute. www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/4168.pdf.

Patey, L. A. 2012. Lurking beneath the surface: Oil, environmental degradation, and armed conflict in Sudan. In *High-value natural resources and post-conflict peacebuilding*, ed. P. Lujala and S. A. Rustad. London: Earthscan.

Pejic, J. 2001. The right to food in situations of armed conflict: The legal framework. *International Review of the Red Cross* 83 (844): 1097–1109.

Pritchard, M. F. 2015. From soldiers to park rangers: Post-conflict natural resource management in Gorongosa National Park. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Pulitzer Center on Crisis Reporting. 2011. Karamoja: Broken warriors. http://pulitzercenter.org/projects/karamoja-uganda-poverty-violence-disarmament-drought.

Rass, N. 2006. Policies and strategies to address the vulnerability of pastoralists in sub-Saharan Africa. PPLPI Working Paper No. 37. Rome: Pro-Poor Livestock Policy Initiative, Food and Agriculture Organization of the United Nations. www.fao.org/ag/againfo/programmes/en/pplpi/docarc/wp37.pdf.

Ratner, B. D. 2015. Building resilience in rural livelihood systems as an investment in conflict prevention. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Ratner, B. D., R. Meinzen-Dick, C. May, and E. Haglund. 2013. Resource conflict, collective action, and resilience: An analytical framework. *International Journal of the Commons* 7 (1): 183–208.

Renner, M. 2015. Post-tsunami Aceh: Successful peacemaking, uncertain peacebuilding. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Roe, A. 2015. Swords into plowshares? Accessing natural resources and securing agricultural livelihoods in rural Afghanistan. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Ross, J., S. Maxwell, and M. Buchanan-Smith. 1994. Linking relief and development. Report on a workshop titled "Linking Relief and Development," Institute of Development Studies, University of Sussex, March 28–29. Brighton, UK: Institute of Development Studies, University of Sussex. www.ids.ac.uk/files/dmfile/DP344.pdf.

Ross, M. 2003. Oil, drugs, and diamonds: The varying roles of natural resources in civil war. In *The political economy of armed conflict: Beyond greed and grievance*, ed. K. Ballentine and J. Sherman. Boulder, CO: Lynne Rienner.

Sato, M. 2011. Disarmament, demobilization, reintegration, and natural resources in Afghanistan. In *Harnessing natural resources for peacebuilding: Lessons from U.S. and Japanese assistance*, ed. C. Bruch, M. Nakayama, and I. Coyle. Washington, D.C.: Environmental Law Institute.

Schafer, J. 2002. Supporting livelihoods in situations of chronic political instability: Overview of conceptual issues. Working Paper No. 183. London: Overseas Development Institute. www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/2686.pdf.

Scheiber, H. N., and B. Jones. 2015. Fisheries policies and the problem of instituting sustainable management: The case of occupied Japan. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Schimmer, R. 2008. Tracking the genocide in Darfur: Population displacement as recorded by remote sensing. Genocide Studies Working Paper No. 36. New Haven, CT: Genocide Studies Program, Yale University.

Scoones, I., ed. 1996. *Living with uncertainty: New directions in pastoral development in Africa*. Brighton, UK: Institute of Development Studies, University of Sussex.

———. 1998. Sustainable rural livelihoods: A framework for analysis. IDS Working Paper No. 72. Brighton, UK: Institute of Development Studies, University of Sussex.

Shazali, S., and A. G. M. Ahmed. 1999. Pastoral land tenure and agricultural expansion: Sudan and the Horn of Africa. http://pubs.iied.org/pdfs/7403IIED.pdf.

Siddig, E. F. A., K. El-Harizi, and B. Prato. 2007. *Managing conflict over natural resources in Greater Kordofan, Sudan: Some recurrent patterns and governance implications*. IFPRI Discussion Paper No. 00711. Washington D.C.: International Food Policy Research Institute. www.ifpri.org/sites/default/files/publications/ifpridp00711.pdf.

Solesbury, W. 2003. Sustainable livelihoods: A case study of the evolution of DFID policy. Working Paper No. 217. London: Overseas Development Institute.

Sorensen, L. W. 2015. The power of economic data: A case study from Rwanda. In *Governance, natural resources, and post-conflict peacebuilding*, ed. C. Bruch, C. Muffett, and S. S. Nichols. London: Earthscan.

Srey, C., and J. Schweithelm. 2015. Forest resources in Cambodia's transition to peace: Lessons for peacebuilding. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Stewart, J. G. 2011. *Corporate war crimes: Prosecuting the pillage of natural resources*. New York: Open Society Foundations. www.opensocietyfoundations.org/reports/corporate-war-crimes-prosecuting-pillage-natural-resources.

Stites, E., and D. Akabwai. 2009. Changing roles, shifting risks: Livelihood impacts of disarmament in Karamoja, Uganda. Medford, MA: Feinstein International Center, Tufts University.

Stites, E., S. Lautze, D. Mazurana, and A. Anic. 2005. C*oping with war, coping with peace: Livelihood adaptation in Bosnia Herzegovina, 1989–2004*. Medford, MA: Feinstein International Center, Tufts University. http://fic.tufts.edu/assets/Coping-With-War.pdf.

Stites, E. H. 2013. Identity reconfigured: Karimojong male youth, violence and livelihoods. Ph.D. diss., Tufts University.

Talbott, K., J. Waugh, and D. Batson. 2013. A U.S. Asian-Pacific pivot point: Burma's natural resources. *Prism* 4 (3): 111–125. http://cco.dodlive.mil/files/2012/08/PRISM_4-3.pdf.

Tanik, A., D. Z. Seker, I. Ozturk, and C. Tavsan. 2008. GIS based sectoral conflict analysis in a coastal district of Turkey. *International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences* 37 (Part B8): 665–668. www.isprs.org/proceedings/XXXVII/congress/8_pdf/6_WG-VIII-6/03a.pdf.

Themnér, L., and P. Wallensteen. 2013. Armed conflict, 1946–2012. *Journal of Peace Research* 50 (4): 509–521.

Timilsina, A. R. 2007. Getting the policies right: The prioritization and sequencing of policies in post-conflict countries. Santa Monica, CA: RAND Corporation. www.rand.org/pubs/rgs_dissertations/RGSD222.html.

UCDP (Uppsala Conflict Data Program). 2014. Data publications. www.pcr.uu.se/research/ucdp/publications/data_publications/.

UCDP (Uppsala Conflict Data Program) and PRIO (Peace Research Institute Oslo). 2013. *UCDP/PRIO armed conflict dataset codebook*. Version 4-2013. www.pcr.uu.se/digitalAssets/124/124920_1codebook_ucdp_prio-armed-conflict-dataset-v4_2013.pdf.

UN (United Nations) and IASC (Inter-Agency Standing Committee). 2008. *Civil-military guidelines and reference for complex emergencies*. New York: United Nations Office for the Coordination of Humanitarian Affairs. www.refworld.org/docid/47da82a72.html.

UNCTA (United Nations Country Team in Afghanistan). 2013. *Natural resource management and peacebuilding in Afghanistan*. Nairobi, Kenya: United Nations Environment Programme. www.unep.org/disastersandconflicts/portals/155/countries/Afghanistan/pdf/UNEP_Afghanistan_NRM.pdf.

UNDG (United Nations Development Group). 2013. Natural resource management in transition settings. New York. www.un.org/en/land-natural-resources-conflict/pdfs/UNDG-ECHA_NRM_guidance_Jan2013.pdf.

UNDP (United Nations Development Programme). 2005. *Promotion of sustainable livelihoods*. Kabul, Afghanistan.

UNEP (United Nations Environment Programme). 2007. *Sudan: Post-conflict environmental assessment*. Nairobi, Kenya. http://postconflict.unep.ch/publications/UNEP_Sudan.pdf.

———. 2008. *Destitution, distortion and deforestation: The impact of conflict on the timber and woodfuel trade in Darfur*. Geneva, Switzerland; Khartoum, Sudan. http://postconflict.unep.ch/publications/darfur_timber.pdf.

———. 2009. *From conflict to peacebuilding: The role of natural resources and the environment*. Nairobi, Kenya. http://postconflict.unep.ch/publications/pcdmb_policy_01.pdf.

———. 2013a. *Pastoralism in practice: Monitoring livestock mobility in contemporary Sudan*. Nairobi, Kenya. http://reliefweb.int/sites/reliefweb.int/files/resources/Pastoralism-in-Practice-final.pdf.

———. 2013b. *Standing wealth: Pastoralist livestock production and local livelihoods in Sudan*. Nairobi, Kenya. www.unep.org/disastersandconflicts/Portals/155/countries/sudan/pdf/Livelihood/TUFTS_1339_Standing_Wealth_5_online.pdf.

———. 2014. *Relationships and resources: Environmental governance for peacebuilding and resilient livelihoods in Sudan*. Nairobi, Kenya. http://postconflict.unep.ch/publications/UNEP_Sudan_RnR.pdf.

UNEP (United Nations Environment Programme), FAO (Food and Agriculture Organization of the United Nations), and UNFF (United Nations Forum on Forests). 2009. *Vital forest graphics*. Nairobi, Kenya: United Nations Environment Programme. www.unep.org/vitalforest/Report/VFG_full_report.pdf.

UNEP (United Nations Environment Programme), International Organization for Migration, United Nations Office for the Coordination of Humanitarian Affairs, United Nations University Institute for Environment and Human Security, and Permanent Interstate Committee for Drought Control in the Sahel. 2011. *Livelihood security: Climate change, migration and conflict in the Sahel*. Geneva, Switzerland: UNEP. www.unep.org/pdf/UNEP_Sahel_EN.pdf.

UNEP (United Nations Environment Programme) and UNDP (United Nations Development Programme). 2013. *The role of natural resources in disarmament, demobilization and reintegration: Addressing risks and seizing opportunities*. Nairobi, Kenya; New York. http://postconflict.unep.ch/publications/UNEP_UNDP_NRM_DDR.pdf.

UNEP (United Nations Environment Programme), United Nations Entity for Gender Equality and the Empowerment of Women, United Nations Peacebuilding Support Office, and United Nations Development Programme. 2013. *Women and natural resources: Unlocking the peacebuilding potential*. Nairobi, Kenya. http://postconflict.unep.ch/publications/UNEP_UN-Women_PBSO_UNDP_gender_NRM_peacebuilding_report.pdf.

Unruh, J., and R. C. Williams. 2013. Lesson learned in land tenure and natural resource management in post-conflict societies. In *Land and post-conflict peacebuilding*, ed. J. Unruh and R. C. Williams. London: Earthscan.

UNSC (United Nations Security Council). 2013. Report of the Monitoring Group on Somalia and Eritrea pursuant to Security Council Resolution 2060 (2012): Somalia. S/2013/413. July 12. www.un.org/ga/search/view_doc.asp?symbol=S/2013/413.

Waldman, M. 2008. Community peacebuilding in Afghanistan: The case for a national strategy. Oxford, UK: Oxfam International. www.comw.org/warreport/fulltext/0802waldman.pdf.

Walters, J. T. 2015. A peace park in the Balkans: Cross-border cooperation and livelihood creation through coordinated environmental conservation. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Webersik, C., and A. Crawford. 2015. Commerce in the chaos: Bananas, charcoal, fisheries, and conflict in Somalia. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Westrik, C. 2015. Transboundary protected areas: Opportunities and challenges. In *Livelihoods, natural resources, and post-conflict peacebuilding*, ed. H. Young and L. Goldman. London: Earthscan.

Williams, R. 2013. Title through possession or position? Respect for housing, land, and property rights in Cambodia. In *Land and post-conflict peacebuilding*, ed. J. Unruh and R. C. Williams. London: Earthscan.

World Bank. 2014. Agriculture, value added (% of GDP). http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS.

Young, H. 2009. Pastoralism, power and choice. In *Environment and conflict in Africa: Reflections on Darfur*, ed. M. Leroy. Addis Ababa, Ethiopia: University for Peace.

Young, H., E. Bontrager, R. Krystalli, and A. Marshak. 2014. *Eastern Chad and West Darfur: An analysis of conflict and livelihood linkages*. Medford, MA: Concern Worldwide / World Agroforestry Centre / El Massar / Tufts University.

Young, H., and D. Maxwell. 2013. Participation, political economy and protection: Food aid governance in Darfur, Sudan. *Disasters* 37 (4): 555–578.

Young, H., A. E. K. Osman, M. Buchanan-Smith, B. Bromwich, K. Moore, and S. Ballou. 2007. *Sharpening the strategic focus of livelihoods programming in the Darfur region:. A report of four livelihoods workshops in the Darfur region (June 30 to July 11, 2007)*. Medford, MA: Feinstein International Center, Tufts University. http://fic.tufts.edu/assets/8nau6d0uugqce0wq8fe.pdf.

Young, H., A. M. Osman, A. Abusin, M. Asher, and O. Egemi. 2009. Livelihoods, power and choice: The vulnerability of the Northern Rizaygat, Darfur. Medford, MA: Feinstein International Center, Tufts University.

Young, H., A. M. Osman, Y. Aklilu, R. Dale, B. Badri, and A. J. A. Fuddle. 2005. Darfur—Livelihoods under siege. Medford, MA: Feinstein International Famine Center, Tufts University. http://fic.tufts.edu/assets/Young-Darfur-Livelihoods-Under-Seige.pdf.

Young, H., A. Rahim, A. Mohamed, and M. Fitzpatrick. 2012. *Pastoralism and pastoralists in Sudan: A stakeholder mapping and survey*. Medford, MA: Feinstein International Center, Tufts University / SOS Sahel / UNEP Sudan. www.fao.org/fileadmin/user_upload/drought/docs/Pastoralism-and-Pastoralists-in-Sudan-LB3-HY2.pdf.

Zulu, L. C., and R. B. Richardson. 2012. Charcoal, livelihoods, and poverty reduction: Evidence from sub-Saharan Africa. *Energy for Sustainable Development* 17 (2): 127–137. http://dx.doi.org/10.1016/j.esd.2012.07.007.