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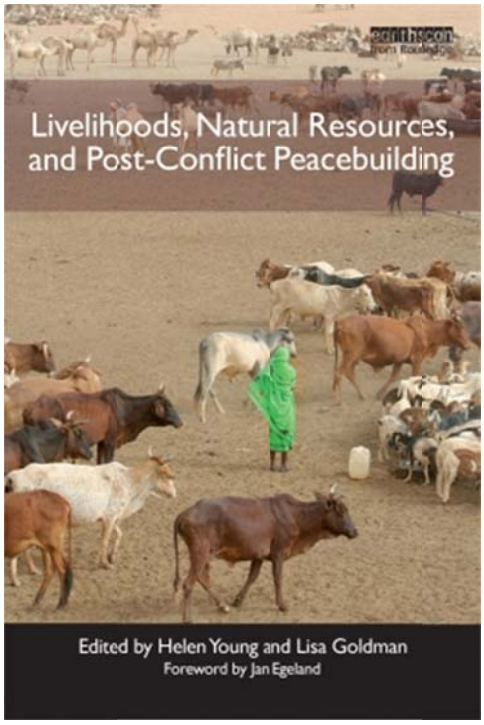

The Interface Between Natural Resources and Disarmament, Demobilizations, and Reintegration: Enhancing Human Security in Post-Conflict Situation

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The interface between natural resources and disarmament, demobilization, and reintegration: Enhancing human security in post-conflict situations

Glaucia Boyer and Adrienne M. Stork

Sustainable peace is not won by wars or by pressure on warring parties to come to the peace table, but through the arduous and lengthy resolution of the causes of conflict—economic inequality, social exclusion, and political marginalization. Often, at the heart of this peacebuilding process are issues related to the contested control over natural resources or the unfair distribution of revenues from natural resources, which may have been a source of the conflict. Given the sensitivity of these issues, however, they are seldom addressed in negotiations to end a conflict. This may result in a peace process that avoids dealing with the important role that natural resources can have in post-conflict peacebuilding, especially their contribution to the process of reintegration and recovery in the aftermath of conflict.

Disarmament, demobilization, and reintegration (DDR) is a systematic approach, developed over the past twenty years largely by the United Nations, to assist the reintegration of excombatants and those associated with armed forces and groups back into civilian life. DDR is a key part of security and peacebuilding measures; conditions for it are often negotiated as part of the peace agreement. By contributing to improving overall security and assisting excombatants and supporters of armed groups to return to civilian life, DDR helps to lay the groundwork for long-term development to occur. The primary goal of DDR, however, is to deal with the security threat posed by armed forces and groups in the aftermath of conflict and to enable members ultimately to return to civilian life with sustainable livelihoods.

This chapter argues that DDR programs have, for the most part, ignored or underestimated the importance of natural resources as a fundamental element of

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security, recovery, and peacebuilding. Applying the DDR framework, the chapter examines the role that natural resources play in the functioning of armed forces and the livelihoods of their members and associated groups. It identifies the ways in which the incorporation of a natural resource dimension can contribute to more sustainable reintegration of excombatants. Through a review of case studies and literature, the chapter outlines both the opportunities and risks that natural resources present for DDR programs, and provides policy recommendations for addressing the interface between natural resources and DDR, particularly through community-based approaches to economic reintegration.

The first section of the chapter describes the origins of DDR as a systematic framework, now formulated in the UN's Integrated Disarmament, Demobilization and Reintegration Standards (IDDRS), and highlights its strengths and shortcomings in enhancing post-conflict security and stability, with an emphasis on community-based reintegration of excombatants. It also identifies the various ways that natural resources are implicated in conflict and post-conflict situations. The chapter draws upon case studies and the extant literature to illustrate some of the linkages between natural resources and reintegration programs. It concludes with a discussion of the challenges facing DDR planners and offers recommendations for addressing those challenges.

DDR: ORIGINS, COMMUNITY-BASED REINTEGRATION, AND NATURAL RESOURCES

For over twenty years, the UN has been called upon to support the processes of disarming, demobilizing, and reintegrating excombatants in countries emerging from conflict. The first UN-supported DDR program occurred in 1989 as part of the United Nations Observer Group in Central America. Today, DDR is but one element in a complex set of post-conflict operations that seek to deal with the broader issues of security, economic development, human rights, and the rule of law. Its objectives are to increase security and stability during the immediate post-conflict period and to help lay the foundations for enduring peace and long-term development. DDR is a highly politicized and symbolic process, and indeed some would measure the success of a DDR program by the degree to which it sets the tone for the subsequent post-conflict recovery efforts (Harsch 2005; SIDDR 2006).

The changing nature of peacekeeping and post-conflict recovery strategies requires close coordination among several UN departments, agencies, funds, and programs. To overcome what had been an uncoordinated approach and translate the knowledge and lessons learned through twenty years of DDR experience into practical policy guidance, sixteen entities came together in 2005 as the UN Inter-Agency Working Group on DDR to formulate the IDDRS.[1] The IDDRS is a

[1] The organizations involved were the United Nations Department for Peacekeeping Operations, United Nations Department of Political Affairs, United Nations Department of Public Information, International Labour Organization, International Organization

framework of guidelines, policies, and practices to guide DDR programs globally (UNDDR 2006).

Thus, DDR has evolved into a highly organized and systematic approach. The UN recognizes that the primary responsibility for DDR rests with national institutions and that the UN's role is to support the process as a neutral institution. In practice, however, genuine national ownership is difficult to achieve, particularly at the early stages of post-conflict stabilization, when national legitimacy and capacity tend to be weak. Furthermore, national ownership is understood to be broader than exclusive central government ownership, requiring the participation of a wide range of state and nonstate actors at the national, regional, and local levels. This process is often dependent on international political and financial support.[2]

DDR takes place in both UN mission and nonmission contexts, and the roles and responsibilities of national and international actors will differ according to the situation. In mission contexts, such as in Darfur, South Sudan, and Côte d'Ivoire, the UN tends to act as an implementer (the mission implements disarmament and demobilization, while UNDP carries out reintegration, usually through local implementing partners); whereas in nonmission contexts, such as in Comoros, Sri Lanka, and Colombia, the UN plays more of an advisory role, although it may also be called upon to implement various components of the process depending on levels of national capacity.[3]

DDR programs can also be supported by other organizations involved in post-conflict peacebuilding. For example, the International Organization for Migration played a central role in the DDR process in Aceh, Indonesia, and regional organizations such as the Organization of American States have played a role in the Colombian DDR process. DDR is essential to post-conflict peacebuilding and recovery, and is considered by some to be "the heart of [the] transition from war to peace" (Colletta, Kistner, and Wiederhofer 1996, x; UNSG 2000).

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for Migration, Joint United Nations Programme on HIV/AIDS, Office for Disarmament Affairs, United Nations Office of the High Commissioner for Human Rights, United Nations Children's Fund, United Nations Development Fund for Women, United Nations Development Programme, United Nations High Commissioner for Refugees, United Nations Institute for Disarmament Research, United Nations Population Fund, World Food Programme, and World Health Organization.

[2] DDR is often, though not always, a condition of a comprehensive peace agreement and is led by a national commission on DDR in a particular country, with broad support from donors. The most active donors of DDR have historically been the Nordic countries (Denmark, Finland, Norway, and Sweden); members of the European Union (Belgium, Germany, Italy, the Netherlands, and the United Kingdom); Japan; the United States; and multilateral donors such as the World Bank.

[3] Support for DDR is also mandated in several UN special political missions, including in Burundi and Guinea Bissau. An integrated DDR unit was also established within the UN Peacekeeping Mission in Haiti, although it was dissolved in 2007.

Community-based reintegration

Disarmament and demobilization are the easiest phases of the process from an operational perspective and can often occur relatively quickly after the signing of a peace agreement. The demobilization phase will often include a reinsertion period of six to twelve months, during which beneficiaries of the DDR process are assisted with their immediate needs, including food, clothing, and transportation to their communities of return. The reinsertion phase may also include participation in labor-intensive, quick-impact projects, such as building roads and schools or repairing infrastructure damaged during the conflict.

Reintegration is by far the most complex and lengthy phase of DDR, and requires a sound understanding of the range of social, political, and economic challenges faced by excombatants, associated groups (which include women and children who have performed a supporting role to the armed group, although they may not have been weapon-carrying combatants), and the communities that receive excombatants in the aftermath of conflict. The IDDRS defines reintegration as "the process by which ex-combatants acquire civilian status and gain sustainable employment and income . . . essentially a social and economic process with an open time-frame, primarily taking place in communities at the local level. It is part of the general development of a country and a national responsibility, and often necessitates long-term external assistance" (UNDDR 2006, 2). Indeed, it is recognized that the success of DDR will ultimately be determined by the sustainability of the reintegration phase (Fusato 2003).

In DDR, sustainable reintegration aims to achieve the effective transition of excombatants and associated groups from military to civilian livelihoods. To facilitate this process without exacerbating or causing new tensions between excombatants and communities, DDR programs must provide support for excombatants, members of associated groups, and members of communities to which the former combatants will be returning (Pouligny 2004). This model of community-based reintegration is endorsed by the policy guidance of the IDDRS, and has been approved and confirmed by all twenty-one members of the UN Inter-Agency Working Group on DDR.[4]

A community-based approach to reintegration allows DDR programs to address multiple needs and security concerns that will affect the success of the DDR process. For example, it provides support to excombatants and associated groups who are considered a security threat in the aftermath of conflict, mainly because these individuals are considered high-risk for recruitment back into armed groups, often lack job skills and education to self-reintegrate into society, and

[4] The United Nations Institute for Training and Research, the Office of the Special Advisor on Africa, the Office of the Special Representative of the Secretary-General for Children and Armed Conflict, the United Nations Peacebuilding Support Office, the United Nations Environment Programme, and the World Bank joined the Inter-Agency Working Group on DDR after the launch of the IDDRS.

are invariably socialized to high levels of violence (Ember and Ember 1994).[5] (See sidebar for community-based reintegration activities.)

A community-based approach implies working with national and local institutions, civil society, and communities so they also contribute to, and benefit from, successful reintegration. Through a community-based approach, DDR programs are better able to avoid the appearance that excombatants and associated groups are being singularly rewarded for their behaviors and activities during the conflict. The perception of such favoritism often causes resentment by receiving communities who are also in need of development assistance (Knight and Ozerdem 2004; Isima 2004).[6] Working through communities is also recognized to support the multiple forms of capital associated with livelihoods,[7] many of which have been degraded or severely disrupted during conflict (USAID 2005).

Community-based reintegration activities

- Create specific training and income-generating opportunities tailored to the needs of excombatants and associated groups, while also allowing other groups at risk that confront similar reintegration challenges to benefit from these opportunities.
- Build the capacity of existing training institutions to absorb excombatants and associated groups into their regular vocational training.
- Create employment and business development services for excombatants and associated groups, such as information, counseling, and referral services, and then gradually open these services to other members of the community through business services centers.
- When income-generating opportunities are created for excombatants and associated groups, ensure opportunities are not only based on solid labor market analysis but also improve the lives of community members and the larger local economic recovery.

Source: Adapted from ILO (2007).

Community-based reintegration can also be an important component in broader peacebuilding and "as means for community recovery" (UNPBC 2009, 1). It is important to remember, however, that DDR programs are only one element of activities in post-conflict situations, and that DDR programs are challenged by the inherent complexity of working in such conditions, including the dearth of local institutions and capacities, as well as challenges in coordination among agencies, a lack of financial resources, and the absence of strong political will

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[5] It is also true that many excombatants, and especially women associated with armed forces and groups, do demobilize voluntarily before DDR has begun. In these cases, the UN and partner agencies make special efforts to identify and provide assistance to these individuals as well.

[6] This is especially important since cash payments are often used during the disarmament, demobilization, and reinsertion phases of DDR, as well as during reintegration, when excombatants and associated groups are given special access to education and vocational training that may not be available to the community at large.

[7] According to the United Kingdom's Department for International Development, there are five types of capital associated with livelihoods: human capital (skills, knowledge, ability, and health); social capital (relationships, memberships, networks, and connectedness); natural capital (natural resources); physical capital (infrastructure, tools, and equipment); and financial capital (financial resources) (DFID 1999).

(SIDDR 2006; Pouligny 2004). Other processes that often occur simultaneously with DDR include security sector reform, transitional justice measures, macroeconomic adjustment policies, judicial reforms, political reforms, and electoral reforms, among others. The importance of funding and timing in the dispersal of funds for DDR programs has also been widely recognized (Spear 2002; UNOWA 2005).

Natural resources, conflict, and DDR

Access to natural resources for livelihoods can be an underlying tension leading up to a conflict between groups, and can influence the duration of the conflict (Weinstein 2005; Ross 2004b). Natural resources also play a significant role at different stages of a conflict (Ross 2004a). Natural resources that are taken illegally and sold on national or international markets can be used to finance the recruitment of combatants, the acquisition of arms, and the daily subsistence and livelihoods of armed forces and groups connected to combatants.

When natural resources are implicated in a conflict, they become a factor in the conflict economy, with far-reaching effects on the livelihoods of populations in the regions. A conflict economy consists of the collective economic exchanges that occur during armed conflict; they often include the extraction and sale of natural resources to finance conflict by either side. Given the way that the economy becomes intertwined with hostilities, the conflict economy inherently implicates the command structure and military livelihoods of armed groups involved in the conflict, as has been seen in the well-known cases of diamonds and timber in Sierra Leone and Liberia, minerals in the Democratic Republic of the Congo (DRC), and timber in Cambodia. In conflict situations, economic opportunities are often available to members of armed forces and groups due to the fact that they carry weapons and can become a dominant factor driving the recruitment of opportunistic individuals in armed forces (Global Witness 2009; ICG 2007; Weinstein 2005). To compound these problems further, the conflict economy often functions in such a way that both armed forces and their associated groups have an incentive to continue fighting (Ohlsson 2000).

Conflict adversely affects the human, social, financial, physical, natural, and political capital of livelihood systems within communities and the broader society, as access to essential livelihood assets is destroyed, becomes restricted, or comes under control by particular groups (USAID 2005). Without a range of livelihood assets, people tend to rely on immediately available resources to survive, often in ways that are not sustainable in the long term—rapid deforestation, extraction of high-value minerals, or shifting patterns of agriculture and grazing that degrade the land and resource base. Conflict can also degrade the traditional local systems of natural resource management, resulting in a loss of indigenous knowledge about livelihood support systems and ecosystems, and it can destroy the social and cultural practices tied to the management of those resources.

THE ROLE OF NATURAL RESOURCES IN DDR

Given the role that natural resources play in conflicts, whether as underlying drivers of conflict itself or as a means for armed groups to fund their activities, it is important that natural resources are incorporated into all phases of DDR programs. Natural resources are often already implicated in the reintegration activities supported by DDR, and control of natural resources is often a security concern in situations where DDR takes place.

Disarmament

Disarmament is an important security measure because it reduces the number of weapons available to those who would continue the conflict. The disarmament phase is vital in building confidence between the government, its own armed forces, irregular armed groups, and communities, and it is a highly symbolic process (often, there is a ceremonial burning or other means to destroy the arms collected, an oft-called "flame of peace"). Disarmament programs carried out within a DDR program can occur in sequence with or simultaneously to other initiatives for disarmament or reduction in small arms and light weapons from individuals other than members of armed forces or groups (such as members of community security programs).

Disarmament is difficult to incentivize and achieve, since weapons are often the means by which combatants make their livelihoods, and combatants may feel vulnerable and uncertain about their ability to support themselves without weapons.[8] DDR programs in the past have offered cash payments for weapons, although this has inadvertently led to the creation of a market for weapons (Isima 2004), and such buyback schemes are no longer endorsed by the UN (UNDDR 2006).[9] Furthermore, where the economic resources of armed forces and their associated groups are derived from the armed exploitation of natural resources, or where arms provide security for livelihood activities, the incentives to disarm may be especially low (IPA 2003).

Many people in rural communities and highly armed societies rely on arms to defend their livestock, land, and other livelihood assets. In Karamoja, in northern Uganda, the government's enforcement of disarmament programs has led to greater insecurity regarding natural resources among rural communities because they must rely on local police to provide safety for their livestock held in kraals, or pens, as they no longer have weapons with which to protect themselves against raiding groups. With their livestock penned, they have been unable to pursue their

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[8] In the eastern region of the DRC, AK-47s are often referred to as "credit cards." The same has been noted in the Darfur conflict in Sudan.

[9] The IDDRS specifically advises that DDR programs shall "[a]void attaching monetary value to weapons" as a means of encouraging their surrender, to avoid fueling arms flows (UNDDR 2006, 18).

traditional methods of herding, resulting in severe degradation of the land. Coupled with drought and other climatic changes in the area, this restriction has resulted in a loss of livelihood revenue and traditional natural resource management practices in Karamoja (Sites and Akabwai 2009). While the Karamoja disarmament program was not part of a DDR program per se, it highlights the relationship between access to arms and protection of livelihood assets, and shows the unintended consequences on the natural resources upon which those livelihoods depend.

The disarmament in Karamoja also affected gender roles within the region's communities. Due to fragile security, women were displaced from activities they traditionally participated in alongside men, such as managing livestock, and were forced to rely on exploiting natural resources in ways that increased their vulnerability to violence. For example, as women traveled farther into the countryside to harvest firewood and food, they encountered armed rebels who threatened or attacked them. These unintended consequences affected their relationship with the men in the community, who were unable to offer them protection after being disarmed, and who in turn experienced a profound change in their masculine identities. The impact was especially strong for young men, who traditionally relied on livestock for their livelihoods and to acquire the wealth needed for marriage.

While disarmament programs within an overall DDR strategy may differ from the findings in Karamoja, the importance of arms for security and livelihoods should not be underestimated. The Karamoja program offers DDR practitioners many insights into the links between disarmament and livelihoods. The armed pastoralists in the region were not combatants in a conflict, but they do rely on arms as an essential livelihood asset to protect their livestock. They must now shift their livelihood strategies to depend on assets other than arms. The experience in Karamoja serves as an example for DDR practitioners to consider the broader livelihood implications of disarmament activities, as well as the sequencing of DDR program activities.[10]

Further research is necessary to clarify the effects of disarmament on the extraction of natural resources where such resources have played a significant role in funding armed conflict. Carrying a weapon often is of great importance to identity and to livelihoods following conflict (CSRS 2009). The speed at which weapons are taken away in a DDR program requires that livelihoods support and social assistance for these individuals must be available from the outset. Hence, DDR should not be viewed and funded as a linear process (in which disarmament is the first step, followed by demobilization and then reintegration). Instead, DDR should be viewed as concurrent and mutually supportive activities. For example, reintegration facilitates disarmament and demobilization because weapons are more easily collected when excombatants have alternative livelihood opportunities.

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[10] For additional analyses of livestock and peacebuilding in the Turkana Karimojong Cluster, see Jeremy Lind, "Manufacturing Peace in 'No Man's Land': Livestock and Access to Natural Resources in the Karimojong Cluster of Kenya and Uganda," in this book.

Disarmament may also have a negative impact on the physical environment where it is carried out. Disposal of the collected weapons and ammunition poses potential security and environmental risks. Often, the weapons are simply stored in containers until they can be properly dismantled (while subject to being stolen), or are burned in symbolic "flames of peace" ceremonies. While the symbolic importance of such a ceremony should not be underestimated, it is important that the disposal of weapons does not create a source of risk or contamination to the soil, air, and water resources in the area (UNDDA 2002).

Demobilization

The demobilization process takes place with excombatants receiving documentation certifying their transition from military to civilian life. This marks the beginning of severing participants' formal ties with the military command structures and livelihoods to which they have been accustomed (UNDDR 2006). Demobilization may be done with groups of excombatants gathering in camps, barracks, assembly areas, or cantonment sites, although mobile demobilization teams have been used in certain cases. The demobilization phase generally also comprises reinsertion assistance (transitional support to cover the basic needs of excombatants and their families in the form of monetary allowances, food, clothes, shelter, and short-term training and employment) until the reintegration program is operational (UNDDR 2006).

During demobilization and reinsertion, excombatants go through the process of transforming their personal identities—losing their military identity and gaining a civil one. This process is closely tied to their livelihoods, their previous affiliation with armed forces, and their place in the receiving community. While DDR deals with large numbers of people, the personal transformation of each participant is highly dependent on the motivation of each individual and the specific conditions into which that individual is being reintegrated. Where the military livelihoods depended on the extraction of natural resources, it is important that DDR programs acknowledge the particular skills and survival tactics of excombatants. The activities planned for reinsertion (such as quick-impact projects) and reintegration should seek to build upon these skills and support the acquisition of new ones wherever possible, and to encourage the sound management of natural resources to support livelihoods through the education and training programs associated with reintegration.

As excombatants begin to transform their identities through demobilization and reinsertion, culturally appropriate symbols of identity and power are important. It is common practice that reinsertion assistance includes monetary resettlement packages in addition to basic tools and necessities, so that excombatants are not forced to travel back to their communities empty-handed. This process can be especially important for males, as masculine identity is often tied to the ability to possess assets, and some may feel emasculated after turning in their weapons and losing the identity they possessed as part of a combatant group during the conflict (IAWG 2012).

In transitioning from demobilization and reinsertion to reintegration, access to livelihood assets is paramount for both social and economic reasons. In many societies, land and access to livelihood assets such as livestock are extremely important to personal identity, status in society, family relationships, and prospects for marriage.[11] Land is notoriously one of the most difficult aspects of post-conflict resettlement and reintegration, and often becomes a source of conflict in itself. Rights to land and other natural resources are generally left outside a comprehensive peace agreement, to be resolved at a later stage in the peace process. While the omission is mainly due to the urgency with which agreements are signed in order to cease hostilities, it makes it difficult for DDR programs to assist in the rebuilding of livelihoods and provide access to productive livelihood assets in the post-conflict environment.

The reinsertion part of the demobilization phase offers important opportunities for peacebuilding and community reconciliation. Reinsertion is often composed of short-term, labor-intensive, low-skill, quick-impact projects, designed to keep excombatants busy (and thus reduce their threat to overall security), and to provide them with rapid income that could create peace dividends for the surrounding communities, such as infrastructure rehabilitation, sanitation, and demining of agricultural areas. It is through involvement in such projects that excombatants can begin readjusting to a new type of livelihood and begin reconciling with the civilian population.

Infrastructure rehabilitation projects that rely on natural resources and provide community-wide benefits can also serve as a platform for reconciliation between groups and encourage mechanisms for nonviolent conflict resolution, many of which may exist in the traditional culture of the communities. There is also an opportunity to promote the sound management of natural resources in the course of reinsertion projects. This can have far-reaching effects on the sustainability of the livelihoods supported by those resources, as well as greater resilience to environmental change and reduced vulnerability to natural disasters.

Where demobilization camps are used, they can have a significant impact on local natural resources, depending on the size of the camps, their placement, and the provisioning of fuelwood, water, and waste disposal. It is vitally important that economic resources be rechanneled to support the development of the population as a whole, not just the camps.

Finally, demobilization will challenge the command structure of armed forces, as well as their power and political influence, making this aspect of the peace process a disincentive to their participation in DDR programs. In settings where armed forces and combatant groups are undergoing DDR, incentives for the conflict economy to continue are sure to be present. The incentives include the exploitation of natural resources to continue funding leaders of armed groups and other political interests, as well as to support the livelihoods of rank-and-file excombatants and associated groups.

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[11] For additional analyses of identity, natural resources, and post-conflict peacebuilding, see Arthur Green, "Social Identity, Natural Resources, and Peacebuilding," in this book.

Reintegration

Reintegration is by far the most complex, lengthy, and resource-intensive phase of DDR. As such, DDR practitioners and donors must look critically at the impact of funding cycles on program implementation, paying special attention to the planning and implementation of reintegration. To date, reintegration is usually underfunded and lacks the resources to be planned and executed properly, despite its critical role in ensuring that excombatants and associated groups successfully transition to a civilian life and do not take up arms in the future. In addition to adequate funding, reintegration must complement broader ongoing programs for recovery and development in order for DDR to be successful and sustainable. Access to livelihood assets and their sustainable management must be a central focus of any program that seeks to support the objectives of reintegration and longer-term post-conflict recovery and peacebuilding (UNEP 2009).

The overarching goal of reintegration as a part of DDR is to contribute to security and stability through activities that support sustainable livelihoods for returning excombatants, their social integration within families and communities, and their participation in political processes. These activities, which ultimately aim to support peacebuilding and recovery, also lay the groundwork for long-term development processes to take root.

In many areas where economic reintegration programs take place, livelihoods are based on access to natural capital from local resources (such as arable land for agriculture, fisheries, forests, and subsoil minerals) and ecosystem services (such as freshwater provisioning, regeneration of soils, and sanitation). These may be the same resources that exacerbated tensions leading to conflict or financed the activities of armed forces and other groups during conflict.

Reintegration programs have the opportunity to promote the sustainable management of natural resources to help improve the success of the livelihoods at stake and the objectives of the overall DDR program. Promoting the sound management and productivity of natural resources will improve the contribution they make to development and poverty alleviation, both of which are necessary factors for peacebuilding.

Specifically, natural resources can provide both quantitative and qualitative contributions to reintegration. Quantitatively, the management of natural resources creates jobs and employment opportunities, and facilitates the development of a variety of employable and transferable skills in numerous sectors: agriculture, agroforestry, nontimber forest products, forest management, biotrade, fisheries, aquaculture, sanitation, fresh water provisioning, energy generation, ecotourism, protected area management, and restoration, all of which offer public and private opportunities to expand existing economic opportunities (Holmes and Cooper 2005). In addition, the sustainable management of natural resources offers prospects for value chain development, which can support the development and sustainability of business sectors and industries.

Qualitatively, the management of natural resources can ensure the sustainable use of those resources, thus improving or maintaining the health and flow

of natural capital and ecosystem services. Many cultures have traditional natural resource management practices and traditional knowledge about their local natural environment that can contribute to sustainable practices when uninterrupted by conflict, and it is important that these practices are supported as part of rebuilding livelihoods. Furthermore, encouraging cooperation over shared resources and ecosystem services can also promote peacebuilding and reconciliation, thus contributing to the objectives of DDR and laying the groundwork for sustainable development.

The sound management of natural resources can also help preserve and protect the ecosystem services that support livelihoods. Ecosystem services are typically divided into four categories—provisioning (such as food, water, and timber), regulating (protection from natural hazards, climate, and disease control), supporting (soil formation, nutrient cycling, and primary plant production), and cultural (spiritual, educational, recreational, and aesthetic values)—and are directly linked to food security and other basic needs (McNeely 2005). The maintenance of ecosystem services is critical to reducing vulnerabilities to disasters and climate change, and to supporting livelihoods dependent on those services.

CASE STUDIES

The cases described in this section demonstrate how natural resource management has been incorporated into reintegration programs in Afghanistan, Colombia, Indonesia, and Mozambique.

Each case is unique to the conflict and setting in which it took place. While these four cases illustrate only some of the ways that natural resources can support economic reintegration programs, they do demonstrate several concrete options available to DDR programs. The cases range across continents, showing that natural resource management could be further integrated into DDR programs in different ways depending on the specific ecological and development context.

DDR programs should always be evaluated on a case-by-case basis. While the assessment methodologies and approaches followed in each case were modeled on the standards set out in the IDDRS, each program had to adapt to the conditions on the ground. The cases do show, however, that there is potential to further integrate natural resource management into DDR programs, and that the benefits from doing so can support the objectives of overall DDR and reintegration, as well as recovery and long-term development.

Afghanistan: Reforestation, conservation, and employment of excombatants

Following decades of conflict, the condition of many of Afghanistan's natural resources has declined to unsustainable levels, making livelihoods difficult to reestablish. Although Afghanistan has always lacked heavy forest cover for geographical and climatic reasons, nearly half of the woodlands that existed in the

country have been lost since 1991 (Azimi 2007). Only 12 percent of the land in Afghanistan is arable, but 80 percent of the population is dependent on agriculture as the main source of livelihoods (Kelly 2004).

Afghanistan is highly prone to drought, a condition exacerbated by the loss of forest cover. In its post-conflict environmental assessment of Afghanistan, UNEP estimated that the Afghan pistachio woodlands have lost over 50 percent of their natural forest cover, as have other previously forested areas of the country (UNEP 2003). In addition, the majority of irrigation canals and systems, which were responsible for the irrigation of approximately one-third of arable cropland, were destroyed in the conflict with the Soviet Union and later conflicts.

To address the needs of vulnerable populations and to reintegrate former combatants, the government of Afghanistan created the Afghan Conservation Corps (ACC) project, implemented by the United Nations Office for Project Services. Through the ACC, excombatants and vulnerable populations were hired to assist in reforestation work in the pistachio woodlands and the eastern conifer forests. Since its creation in 2003, the ACC has undertaken 350 projects in twenty-three provinces, and generated approximatley 400,000 labor days for vulnerable Afghans (UNDDR 2006). The projects held management and technical training workshops for ministry staff, teachers, and extension workers, and conducted environmental education for villagers and school children. ACC workers have rehabilitated 108 nurseries, restored 32 public parks, planted pistachio seeds on

226 hectares of pistachio woodland in 7 provinces, and planted an average of 150,000 conifer and 350,000 fruit trees each year across the country.[12]

The ACC project was implemented through local governing councils and management structures. According to Wendy MacClinchy of the Best Practices Unit at the UN Department of Peacekeeping Operations, UN personnel and other international participants remained behind the scenes in order to give the projects a local face and voice.[13] Through the ACC, the Women's and Youth Conservation Corps was established for specific projects, such as revitalizing women's gardens, building women's dormitories, beautifying school compounds, planting fruit tree seedlings for future income, and cultivating home nurseries. Additionally, seven training centers have been built in seven provinces, three seed-storage facilities erected, 100 kilometers of irrigation canals rehabilitated in eleven irrigation systems, and 1,000 meters of retaining walls built to stabilize river banks.[14] In Nuristan, a northeastern province with extensive woodland cover that faced threats of illegal logging, conservation of forestry resources through the promotion of traditional Nuristani carpentry has been encouraged, and three projects to implement garbage pickup have helped to collect 1,000 cubic meters of waste.

The establishment of forest management committees (FMCs) by community elders enhanced community capacity and development in seven provinces. The FMCs were supported by the ACC and the Afghan Ministry of Agriculture, Irrigation and Livestock (MAIL), and by 2007 the FMCs had drafted forest protection plans to cover 3,200 hectares of woodlands and established forty full-time guards to protect the pistachio woodlands. Due to increased protection and improved management practices, villagers in the biggest pistachio woodland site, Shareek Yaar, estimated that revenues for their 2006 pistachio harvest had increased by 65 percent.[15]

The ACC project in Afghanistan is a clear example of a livelihoods strategy based upon the restoration of degraded ecosystems. The conflict in Afghanistan affected livelihoods in the pistachio sector, as well as other agricultural sectors harmed by the destruction of irrigation canals and other infrastructure. The conflict also contributed to deforestation and the destruction of productive lands. A focus of the reintegration phase of DDR in Afghanistan is to rebuild these livelihoods and to contribute to the restoration of sustainable ecosystems and ecosystem services.

Colombia: DDR, private-sector engagement, waste management, and organic fertilizer production

Colombia's internal conflict has persisted through various stages for over four decades, resulting in the need to demobilize and reintegrate thousands of

[12] Simonetta Siligato, UN Office for Project Services official, personal communication with authors, 2009.
[13] Wendy MacClinchy, personal communication with authors, May 2009.
[14] Siligato, personal communication, 2009.
[15] Siligato, personal communication, 2009.

excombatants from both paramilitary and guerrilla groups. As of 2013, 55,800 members of armed groups demobilized in Colombia, 10 percent of whom were women. Reintegration has been supported by individually targeted and community-based approaches through the Colombian High Council for Reintegration (Alta Consejería Presidencial para la Reintegración, or ACR).[16] The program is organized around three pillars: education, psychosocial support, and economic reintegration.

The Colombian DDR program reflects the emphasis in recent years on engaging the private sector in reintegration strategies. Biprocol is a company that produces organic solid and liquid fertilizers by using earthworms to break down plant and animal wastes collected from surrounding communities. Each of

[16] In 2011, ACR became the Colombian Agency for Reintegration (Agencia Colombiana para la Reintegración). For more information about ACR, see www.reintegracion.gov.co/Paginas/InicioACR.aspx#.Uij0JWTXh2I.

the company's ten locations employs approximately thirty demobilized individuals, all of whom are members of Colombia's ACR reintegration program.[17] Some Biprocol projects, such as those in Pereira (west of Bogotá), employ former members of both paramilitaries and guerrilla groups. In several of its locations, Biprocol receives financial support from ACR, as well as from the U.S. Agency for International Development (USAID) and the International Organization for Migration.

In addition to being a profitable business model, the Gonzales family, which operates Biprocol, views it as contributing to sustainable development in Colombia by providing organic fertilizer products that help to rebuild the soil and offer greater productivity to farmers. This contributes to the conservation and preservation of arable land and natural resources, and provides an alternative to harmful petrochemical fertilizers. By producing the fertilizers from animal and plant wastes, the company is offering a free waste disposal alternative to communities that would have to dispose of the organic matter in other ways. Finally, its business model provides alternative livelihoods to excombatants who might otherwise have few opportunities, thereby promoting and supporting the overall peace process in Colombia.

Biprocol demonstrates a strong commitment to encouraging and complementing the psychosocial, educational, and social support for reintegration offered by ACR. Biprocol also supports activities and social events designed to encourage group interaction and participation, such as weekly soccer matches and bring-your-family-to-work events. Employees are also offered a chance to make presentations to groups of colleagues, as well as opportunities to apply the math and business skills that they are learning through the ACR education programs.

Supporting agriculture through DDR allows the issues of livelihoods, identity, and food security to be addressed within reintegration programs. The Biprocol example demonstrates that waste management and fertilizer production can be an entry point for natural resource management within DDR. It further illustrates that a successful private-enterprise model within a DDR program can produce both a marketable product and alternative waste management practices. The organic waste collected is transformed into a useful product with good market value by a process that also supplies jobs to individuals, and avoids waste disposal costs for others.

Colombia is an agriculturally productive society with a growing level of environmental consciousness. There is a healthy domestic market for organic fertilizers, and regional foreign markets could potentially be tapped as well. In areas surrounding Santa Marta, in northern Colombia, coffee and cacao production require intensive amounts of fertilizer, for which Biprocol is a locally derived source. In this model of engaging private enterprise in DDR, demobilized individuals are part of a livelihood strategy in which they are able to build technical

[17] Information on Biprocol is from the company's web site and based partly on the authors' correspondence, in May 2009, with the Gonzales family, which operates the company.

skills, gain business experience, and are seen as contributing to environmental sustainability with a product that improves land and soil conditions—thus contributing to the health of Colombian society as a whole.

Aceh, Indonesia: Employing former combatants as ecotourism guides

Aceh is a region rich in oil, gas, and timber, and competition for these resources was one of the causes of insurgencies in 1953 and again from 1976 to 2005. Historically, the government of Indonesia (GOI) in Jakarta has controlled these resources, with only approximately 0.5 percent of the revenues being returned to Aceh (Beeck n.d.). In the struggle for Aceh's autonomy and independence, the Free Aceh Movement (Gerakan Aceh Merdeka, or GAM) employed both male and female combatants, using guerrilla tactics against the Indonesian military (Tentara Nasional Indonesia, or TNI) that led many combatants to spend great

lengths of time deep in Aceh's interior rainforests, developing skills that could later be adapted during their reintegration into civilian life.

As the GOI supplied only 25 percent of TNI's budget, both the national army and GAM supported their struggles financially through cultivation of cannabis, illegal logging, illegal mining, and other activities (Beeck n.d.; Jones 2006). Indonesia has the world's third-largest tropical forest, and its high level of biodiversity was threatened by palm oil production, legal and illegal timber harvesting, and climate change. The deforestation rate in Indonesia is the second-highest in the world, and destruction of the forest and peat moss soils contribute significantly to the country's carbon emissions (Wetlands International 2011).

The tsunami that struck the coast of northern Sumatra on December 26, 2004, devastated the province of Aceh and provided a break in the fighting that led to successful peace negotiations. After nearly thirty years of conflict, the GOI and GAM signed a memorandum of understanding (MOU) in August 2005 that initiated disarmament and established an autonomous government for the province of Aceh.

Since the former GAM combatants know the mountainous terrain of Aceh better than anybody, many have been recruited to work for ecotourism firms around Aceh (Global Travel Industry News 2008). One such company, Aceh Explorer Adventure Tours, is run by Mendel Pols, a Dutch citizen.[18] He employs former GAM rebels to give tours in the jungle areas where they once operated as combatants. Pols noted in interviews that it was very difficult for him to employ former rebels at first, but that once he gained the trust of the ex-GAM community and won the support of former commanders, he has been able to employ twenty-three former combatants as guides. He has invested in the equipment and gear needed for his guides, and in the beginning most of his customers were aid workers living in the region for tsunami recovery efforts.

The Aceh region is experiencing increasing growth in tourism and the infrastructure necessary to support a burgeoning tourism industry. As of 2008, at least 400 tourism sites in Aceh had been established (Tourism Indonesia 2008). If tourism in Aceh succeeds, it can provide employment opportunities to former combatants and conflict-affected people, and perhaps contribute to preserving some of the richest remaining biodiversity in Southeast Asia. Seventy percent of the forest in Aceh is under some form of protection within the Ulu Masen and Leuser ecosystems, and the Ulu Masen system is host to one of the first pilot projects in Indonesia under the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (REDD), as part of a scheme to pay for carbon credits in order to support the protection of the Ulu Masen ecosystem (Lang 2010).

Although Aceh Explorer Adventure Tours is not part of an official DDR program, it is a compelling example of how the unique, employable skills of excombatants can be promoted and used for the development of local business

[18] The Aceh case study is partially based on the authors' correspondence with Mendel Pols in April 2009.

and livelihoods. It is also an example of how the knowledge gained during armed conflict can be used for a productive livelihood afterwards if appropriate opportunities are present. This is especially important considering that most excombatants in DDR often have difficulty finding gainful employment because they are far behind their civilian counterparts in education (UNDDR 2006).

In July 2008 the governor of Aceh released the Aceh Green Strategy, a sustainable development plan that will base the future of Aceh's development on the sustainable use of natural resources and conservation of the area's remarkable biodiversity.[19] Reintegration programs that can support the Aceh Green Strategy are beneficial for the region as a whole, and can complement the broader, long-term development strategy. Ecotourism, as an economic strategy that is based upon conservation principles, is in accordance with the Aceh Green Strategy. Reintegration in Aceh that is based upon the goals of the strategy, including participation in REDD and other carbon credit schemes, can contribute to both environmental sustainability and successful reintegration as part of a long-term development strategy (Zwick 2008).

Mozambique: Employing excombatants in the management of parks

The Rome General Peace Accord in 1992 brought an end to almost twenty years of civil war in Mozambique between the Mozambican National Resistance (Resistência Nacional Moçambicana, or RENAMO) and the government. The post-conflict period has been characterized by the strengthening of institutions for the management of natural resources, as well as the rehabilitation of the wildlife sector and management of protected areas. (In 1994, for example, the government enacted a series of environmental policies, including the Environmental Framework Law, the Land Law, and the Forestry and Wildlife Law.) During the long conflict, natural resources, especially forests and wildlife, had been severely overexploited in some areas, while in other areas forests were able to regenerate. In general, most of the populations of large wild game in Mozambique suffered greatly during the conflict, as did the ecosystems that were easily accessible and exploitable (Hatton, Couto, and Oglethorpe 2001).

The signing of the peace agreement led to the establishment of the United Nations Mission in Mozambique (ONUMOZ), which lasted for two years and was primarily responsible for the disarmament and demobilization of RENAMO and government forces, the organization of national presidential and parliamentary elections, and, in close collaboration with the United Nations High Commissioner for Refugees, the repatriation and resettlement of some 1.3 million refugees returning to Mozambique.

The reintegration component of ONUMOZ was minimal. The mission had a short-term focus, and reintegration was made difficult by the low literacy levels

[19] For an analysis of the Aceh Green Strategy and peacebuilding, see Lakhani (2015).

of the excombatants (Schafer 1998). In addition, it was difficult to engage excombatants in rural livelihoods such as agriculture, and many migrated to urban areas after demobilization (Medi 1997). Long-term reintegration was not planned or budgeted for within the Mozambique DDR program, which was at that time conceived as merely a short-term stabilization measure (Levine 2006).

Despite these challenges, some excombatants were employed by the Mozambique National Directorate of Forestry and Wildlife (Direcção Nacional de Florestas e Fauna Bravia, or DNFFB), which was responsible for the management of protected areas in Mozambique until 2001, when that responsibility was transferred to the Ministry of Tourism. The DNFFB employed demobilized combatants to patrol the Gorongosa National Park to control illegal poaching of wild game.[20] To prevent conflict between the teams of guards, former

[20] For a more detailed discussion of the DDR program in Gorongosa National Park, see Matthew F. Pritchard, "From Soldiers to Park Rangers: Post-Conflict Natural Resource Management in Gorongosa National Park," in this book.

members of both sides of the previously warring parties were placed on the same team and were led by a trained wildlife service ranger. Overall, only small numbers of demobilized combatants were employed in the natural resources sector, but those who were employed had highly valued skills and knowledge about the region and the terrain in the park areas, including knowledge of where park authorities could travel safely and avoid landmines (Schafer and Black 2003).

Mozambique's experience is uncommon in that there was little or no focus on supporting long-term reintegration or planning for anything comparable to what today is described in the IDDRS as reintegration. However, since natural resources are so abundant in Mozambique and thus critical to the economic recovery of the country, there were ample opportunities for the management of these resources to incorporate the employment of demobilized individuals. These opportunities focus on several components: development of government jobs in the newly created environmental management agencies, employment opportunities in the management of protected areas, and jobs in the new sectors of tourism and sustainable forestry that emerged after the peace agreement.

INTEGRATING NATURAL RESOURCES AND DDR: CHALLENGES AND RECOMMENDATIONS

Addressing natural resources and livelihoods within a DDR program can be challenging. While some challenges will flow from the particular circumstances of the post-conflict situation in which a program operates, others will arise from three key problems found in any DDR program: funding gaps, lack of an inclusive approach, and the presence of spoilers. Still others may arise from the availability of natural resources and the threat posed by their availability to armed forces and groups.

Within the United Nations, these issues are being taken up by the Inter-Agency Working Group on DDR. Incorporating natural resource management into DDR programs can help to overcome these inherent challenges and support the overall success and sustainability of DDR.

Funding gaps

Implementing DDR remains especially challenging for the international community due to a fragmented funding architecture and a need for more commitment by the international donor community to reintegration programs. The debate continues over how widely to apply financial support for reintegration, and whether the communities where excombatants return should be included as beneficiaries of reintegration programs. (If they were included, additional financial resources would be needed for their programming.) A lack of commitment and funding up front for reintegration programs makes it extremely difficult, if not impossible, to adequately conduct the assessments that are necessary to properly

plan reintegration programs. Without proper assessments, it is likely that the role of natural resources in the activities of armed groups and the opportunity that such resources present for reintegration and peacebuilding will continue to be overlooked, especially in funding to support natural resource management in DDR programs.

The lack of funding for reintegration programs also increases the difficulty of linking DDR programs to broader recovery and development initiatives. Reintegration programs provide an opportunity to address the relationship between armed-group activities and natural resources by supporting excombatants, associated groups, and the receiving communities in rebuilding livelihoods. The gains made in this area during reintegration and the contributions of these gains to peacebuilding should continue into long-term development. Funding for reintegration programs and further financial support for the transition to development is essential to achieve these goals.

Links between reintegration and wider recovery initiatives

It is often argued that DDR, while a tool to achieve immediate peace and stability, is effective only when it is also part of a larger, synchronized strategy to achieve long-term peace and stability through community security, security sector reform, and development support. The DDR process will fail if too much pressure is placed on it alone to achieve gains in post-conflict recovery that are better achieved through a coordinated effort among all development and security actors, such as those providing assistance to communities receiving excombatants, working on issues of land tenure and access to land, or addressing the gender dimensions of recovery.

At the same time, it is clear that the opportunities presented by DDR to address security and recovery challenges in the early stages following conflict can have lasting impacts on the security and development outcomes to follow. In Sudan and South Sudan, for example, local conflicts over resources are frequently used to destabilize political agendas. Thus, it is imperative that DDR programs carefully analyze and integrate the linkages between natural resources and security into their planning.

While it is apparent that providing assistance to communities receiving excombatants is an essential part of the reintegration process, how to achieve it is not as clear. At the very time that reintegration programs are being mounted, those communities are likely to also come under pressure from the waves of internally displaced persons and refugees that typically migrate after a conflict ends. Migration provides a further strain on the natural resource base for livelihoods, and a coordinated effort is required to address its impact. Programming needs to more systematically address the issues concerning natural resources that have a direct impact on DDR, including the role of receiving communities, access to and management of land, and gender roles.

Although the importance of land tenure and access to land are recognized by most DDR programs, the means to address them are not always forthcoming.

Land security is extremely important to the restoration of livelihoods and post-conflict peacebuilding, yet is often not addressed within the peace agreement, and may later become a source of conflict due to contradictory regulations or lack thereof.[21] In many countries, land tenure and property rights provide access to productive assets and resources that ensure food security, social status, and sustainable livelihoods. Reintegration programs are inevitably challenged by the problem of access to land for program participants and other returnees, especially where the traditional processes that govern land disputes have been severely disrupted by conflict (Unruh 2001).

Land is an issue for both rural and urban reintegration, and can be a highly symbolic resource for sociopolitical and cultural reasons. Group identity is often inextricably linked to the area from which it originates, thus making redistribution of land and ownership after conflict highly contentious (Unruh 1998). Additionally, there are many competing interests for land resources in the post-conflict context, including the private sector (Pantuliano 2007). DDR programs that seek to promote the access of women to livelihood assets are often particularly challenged by the issue of access to land, as land remains unavailable to women in many areas.[22]

Gender dimensions are critically important to every aspect of the DDR program, from eligibility, to access to benefits, to reintegration support and programming (UNDDR 2006). In many developing countries, women and girls often have the closest ties to natural resources such as agriculture and water, and are responsible for providing the basic resources to feed and clothe families (IFAD 2001). DDR programs integrating the management of natural resources must closely examine ways in which gender roles obstruct access to certain livelihood resources, and promote women's participation in decision making in natural resource management.

Gender roles may shift during the course of conflict, and the changes may have profound effects on the relationships between men and women afterwards. As excombatants and women associated with armed forces change their livelihoods during peacetime, concepts of masculinity and gender roles will invariably need to shift as well. DDR programs should confront these challenges when promoting access to land and other natural resources for women, but currently DDR programs are ill-equipped in terms of guidance to address these issues.

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[21] This is the case for the 2005 Comprehensive Peace Agreement in Sudan, where land issues were left to be decided at a later date, according to a process outlined in the agreement, by the National Land Commission and the Southern Sudan Land Commission (Pantuliano 2007). For a more detailed discussion of land issues between Sudan and South Sudan, see Salman (2013). Land issues have been a source of conflict between refugees and returnees in Rwanda and Uganda as well (Bruce 2007a, 2007b; Rugadya 2009).

[22] See, for example, Karuru and Yeung (2015).

Spoilers and security

Control over natural resources is a leverage point for any party to an armed conflict. In many conflicts, access to natural resources, control over extractive resources, and control over the market for these resources lie at the heart of the conflict. Thus, the potential impact of peace spoilers—stakeholders in a DDR process who have vested interests in keeping the status quo, including their access to and control of natural resources, and seek to undermine any aspect of it—must be considered during DDR planning and while conducting assessments.

The private sector, which is important in post-conflict economic development, could also play the role of spoiler. In many post-conflict situations, important aspects of the peacebuilding process are contingent on investments and other forms of support from the private sector. Peacebuilding organizations often rely on the business expertise of those in the private sector when investing in DDR and redevelopment programs. While the private sector has come to fill this essential role in planning for post-conflict recovery, growing private-sector involvement in redevelopment programs also increases opportunities for spoilers who seek either to undermine peacebuilding efforts or utilize redevelopment programs for their own financial gain. To address the use of natural resources in post-conflict peacebuilding, the role of private companies needs to be considered. While the private sector may be abiding by all rules and laws in a particular country, the vulnerability of conflict resources to further exploitation in such weak settings, coupled with their importance for post-conflict peacebuilding and development, make the private sector extremely important for DDR.

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Guidance on these three key issues is needed in the IDDRS in order to ensure that DDR processes foster a more systematic link between natural resources and economic reintegration. Access to renewable and sustainable energy supplies, waste management and sanitation, sustainable food production systems, and fresh water supplies are crucial to supporting livelihoods and reintegration, and can be effectively addressed within DDR programs. Failure to address them may further compromise security and undermine the objectives of such programs. Alternatively, these factors can be addressed in ways that promote livelihoods and form the basis for sustainable recovery in the short and medium term, and development initiatives in the long term.

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