Enduring Responses to War and Disaster:

The Environmental Dimensions of Sustained Recovery

KEN CONCA AND ANITA VAN BREDA

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The Environmental Dimensions of Sustained Recovery

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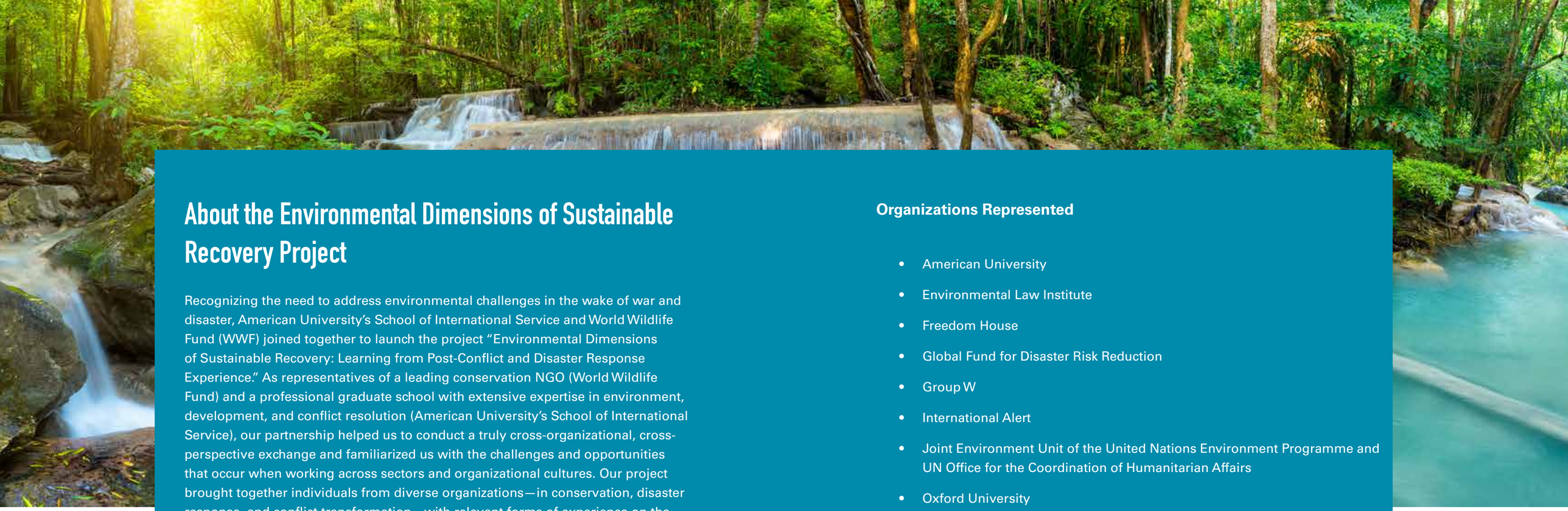


About the Environmental Dimensions of Sustainable Recovery Project

Recognizing the need to address environmental challenges in the wake of war and disaster, American University's School of International Service and World Wildlife Fund (WWF) joined together to launch the project "Environmental Dimensions of Sustainable Recovery: Learning from Post-Conflict and Disaster Response Experience." As representatives of a leading conservation NGO (World Wildlife Fund) and a professional graduate school with extensive expertise in environment, development, and conflict resolution (American University's School of International Service), our partnership helped us to conduct a truly cross-organizational, cross-perspective exchange and familiarized us with the challenges and opportunities that occur when working across sectors and organizational cultures. Our project brought together individuals from diverse organizations—in conservation, disaster response, and conflict transformation—with relevant forms of experience on the environmental dimensions of relief, recovery, and development. The goal has been to identify ways to make crisis response and recovery operations more environmentally and socially sustainable.

With funding from the United States Institute of Peace, we conducted a series of workshops in which participants pooled their knowledge, identified barriers, and formulated ideas to improve performance. The dialogue was based on two core premises: first, that these different types of organizations have accumulated useful knowledge through their experience working in post-conflict and post-disaster settings; and second, that such knowledge is not shared as effectively as it might be across the organizational and sector "stovepipes" and "silos" within which professionals in these fields work.

Disclaimer: *Participants joined the workshops on an individual basis. Unless otherwise referenced, all opinions expressed in this report are those of the authors and not necessarily of the participants or their organizations. Funding for the workshops was provided by the United States Institute of Peace (USIP), with additional support from the School of International Service (SIS) at American University. The opinions, findings, and conclusions or recommendations expressed are those of the authors and do not necessarily reflect the views of USIP, SIS, American University, or the World Wildlife Fund.*

Organizations Represented

- American University
- Environmental Law Institute
- Freedom House
- Global Fund for Disaster Risk Reduction
- Group W
- International Alert
- Joint Environment Unit of the United Nations Environment Programme and UN Office for the Coordination of Humanitarian Affairs
- Oxford University
- ProAct Network
- Refugees International
- Search for Common Ground
- Swedish Civil Contingencies Agency (MSB)
- Swedish Defence Research Agency (FOI)
- swisspeace
- United Nations Development Programme
- United Nations Environment Programme
- UN Refugee Agency (UNHCR)
- US Agency for International Development
- Women's Refugee Commission
- World Wildlife Fund

More Information: **http://edspace.american.edu/greentools/**

Executive Summary

This report summarizes lessons learned from a dialogue among lead organizations working at the intersection of post-conflict/post-disaster recovery, environmental sustainability and natural resource management, and conflict transformation. Conservation organizations have place-based experience and in-depth understanding of the local environmental resource base and ecosystem services; conflict- transformation organizations have experience with natural resources and the environment as cooperative tools or points of contention; and humanitarian organizations have practical experience with managing natural resources in the wake of crises. Yet, exchange of knowledge across these sectors has been sporadic, at best. The dialogue sought to tap these overlapping knowledge bases and identify ways to make crisis response and recovery operations more environmentally and socially sustainable, building on diverse organizational experiences.

A growing body of evidence shows that good environmental practices and responsible natural resource management are important foundations for re-establishing livelihoods, reducing vulnerability, and improving human security in the aftermath of a crisis. But too often, respondents fail to use existing appraisal and impact-assessment tools promptly, needs assessments struggle to incorporate environmental analysis effectively, and conflict-sensitivity trainings and programming lack environmental content. One barrier to more effective performance is the misperception that good environmental management in crisis response and recovery is excessively costly in time or money, or that it is not part of the core mission of helping people. Other identified barriers include the need to mobilize the right type of evidence more effectively, discontinuities in the 'relief-to-development' continuum, and a lack of organizational commitment and capacity.

We know how to do rapid environmental assessments that enhance recovery without delaying it; how to make resource-related decisions in a conflict-sensitive manner; and how to lighten the footprint of humanitarian operations, in ways that save both money and lives. To put this knowledge into practice requires several steps:

- increased awareness of better practices on the environmental dimensions of recovery and reconstruction;
- sustained learning about integrated approaches that link humanitarian, environmental, and conflict-related dimensions, through new mechanisms and platforms;
- more consistent and systematic application of existing tools, techniques, and knowledge; and
- a better 'enabling environment' of incentives, training, and values, both at the level of individual organizations and in the global financial architecture of humanitarian response.

INTRODUCTION

The frequency of crises—including war, disasters, and complex emergencies—and the human and economic toll they exert have increased rapidly in the last century. The 2015 UN World Conference on Disaster Risk Reduction noted that "exposure of persons and assets in all countries has increased faster than vulnerability has decreased, thus generating new risks and a steady rise in disaster-related losses, with a significant economic, social, health, cultural and environmental impact in the short, medium and long term, especially at the local and community levels" (UN WCDRR 2016). As with disasters, so with war: Ongoing violence in Afghanistan, Colombia, the Democratic Republic of Congo, Iraq, Myanmar, Somalia, Sudan, Syria, and other countries forcibly displaced a record 68.5 million people by the end of 2017, according to the UN High Commissioner for Refugees (2018).

Crises like these force the international community to make difficult, high-stakes choices about recovery and reconstruction:

- Which needs are most urgent?
- How can the complex cast of local and transnational actors coordinate their relief, recovery, and reconstruction actions?
- When and how should emergency responses evolve into longer-term recovery operations?
- How can aid and recovery be implemented in ways that heal societal wounds, rather than worsening existing tensions or creating new ones?
- How can international actors work effectively within the complex political agendas that mark the post-crisis landscape, without becoming captive to them?

A chilling statistic underscores the importance of these questions: Over the past two decades, disasters in developing countries have wiped out the equivalent of one-third of all development assistance (Kellett and Caravani 2013). There is no comparable estimate for the economic toll of conflict, but it is clearly substantial: Almost one-third of the world's people live in conflict-affected countries, and there is a general consensus that conflict deepens poverty (Rowherder 2014).

As the number of crises has increased, responses have become more professionalized and institutionalized. The need for evidence-based practice is now widely recognized, and the disaster response community has developed codes of conduct, acceptable standards, and best practices. Training programs have grown in number and sophistication. Web-based knowledge platforms such as Reliefweb.int and HumanitarianResponse.info make information widely available, help to coordinate efforts, and exchange lessons about what works and what doesn't.

For all that has been learned, however, little attention has been paid to the role of environmental protection and natural resource management in effective crisis response.

"Almost one-third of the world's people live in conflict-affected countries, and there is a general consensus that conflict deepens poverty.

Woman transporting firewood to a refugee camp in Uganda, July 2013 (Grace Cahill/Oxfam)

Post-conflict and post-disaster "needs assessments" have become standardized and institutionalized, but they have struggled to incorporate environmental knowledge and analysis effectively.

Tools for rapid environmental appraisal and impact assessment in disaster contexts now exist, but they are not yet used consistently or in a timely and effective manner—and when agencies do use these tools, they struggle to incorporate the outcomes into program management.

The importance of "conflict-sensitive" relief and recovery work is now widely recognized, but templates and trainings on conflict sensitivity have not kept pace with our understanding of how natural resources and environmental degradation can be sources of tension—or provide opportunities for peacebuilding and cooperation.

This lack of systematic attention to the environmental dimensions of recovery is troubling. A growing body of evidence shows that good environmental practices and responsible natural resource management are important foundations for re-establishing livelihoods, reducing vulnerability, and improving human security in the aftermath of a crisis. Healthy ecosystems provide clean water, livelihood resources, useful natural capital, and vital goods and services for community recovery. Functioning ecosystems are a key component of disaster risk reduction and climate change adaptation. They can enhance socio-ecological resilience and provide a buffer against the worst effects of storms, flooding, or drought. If resources and ecosystems are managed well and included in the recovery equation, future vulnerability to both conflict and disaster may be reduced as households gain livelihood options, communities improve resilience[1], and governments face fewer demands they cannot meet.

The decisions that shape which path is taken—environmentally responsible recovery or increased vulnerability and instability—begin in the earliest days of post-conflict and post-disaster efforts. As recovery, reconstruction, and redevelopment proceed, several critical junctures emerge that present path-dependent choices, yet these key moments frequently go unrecognized, or, even more troubling, are recognized but unappreciated. Underlying this perspective are two common misperceptions:

- That good environmental management in crisis response and recovery requires significant human and financial resources, draining money and staff from the core mission of helping people; and,
- That the environment is a lesser consideration and can wait until more urgent needs are addressed.

Other inhibiting factors are more subtle but no less important. The responsibility for the environmental elements of recovery is often poorly defined and accountability mechanisms are often lacking.

We know how to do rapid environmental assessments that enhance recovery without delaying it; how resource-related decisions can trigger conflict; how to make such decisions in a conflict-sensitive manner; and how to lighten the footprint of humanitarian operations, in ways that save both money and lives. But at all levels of the response process, there is a dearth of professionals trained in this knowledge, as well as a lack of mechanisms for sharing existing knowledge across the many different organizations operating in the recovery landscape.

While "sustainability" has become a buzzword that lacks crisp meaning, we believe that it is still a valid goal. We must pay attention to the healthy functioning of ecosystems that provide often unnoticed but critical human benefits; understand the longer-term consequences of short-term decisions; and pay attention to the underlying conditions required to support natural resource-based livelihoods. A UN-commissioned study on the integration of environmental considerations into humanitarian operations notes:

> *Environmental stewardship during humanitarian action reduces conflict drivers and increases resilience. To be effective, however, what is needed is for the environment to be systematically integrated into humanitarian programs and operations: this is a humanitarian responsibility, not a choice. Timely planning, identifying key needs and issues, together with cross-sectoral integration of environmental issues before and during humanitarian action can help make that difference (ProAct Network and Groupe URD 2014).*

Our goal has been to bring together individuals from different types of organizations with experience in these areas—including environmental groups, first responders to humanitarian crises, and conflict transformation and peacebuilding organizations—in an effort to identify ways to make crisis response and recovery operations more environmentally and socially sustainable. Key findings of the dialogue catalyzed by our project include the following:

- Increase awareness and understanding of, and capacity for, better practices on the environmental dimensions of recovery and reconstruction.
- Foster sustained learning about post-crisis integrated approaches that link humanitarian, environmental, and conflict-related dimensions through new mechanisms and platforms.
- Encourage the consistent and systematic application of existing tools, techniques, and knowledge by the wide range of organizations working as first responders, crisis managers, and conservation and natural resource management practitioners.
- Reduce the barriers to greater effectiveness, including obstacles related to knowledge, training, values, individual and organizational incentives, and the global financial architecture of humanitarian response.

THE ENVIRONMENT AT STAKE:
Natural resources in crisis recovery

War and disaster have immediate and devastating impacts on the ability of local communities or entire nations to pursue sustainable livelihoods. As Conca and Wallace (2009) note, "Violent conflict does extraordinary damage to the environment on which people depend for their health and livelihoods; human insecurities in such settings have a strong, immediate ecological component as people struggle for clean water, sanitation, food, and fuel in a context of war-ravaged infrastructure, lost livelihoods, and disrupted institutions." Their review of the UN Environment Programme's rapid post-conflict assessments identified several critical environmental effects of conflict, including the loss of resource-based livelihoods, the disruption of institutions that promote effective resource management, the environmental impacts on local communities in the process of reconstruction and recovery, and the challenges of rebuilding state capacity and the rule of law around natural resource management.

Disasters have similar environmental effects. An environmental assessment conducted by the International Union for the Conservation of Nature (IUCN) in the immediate aftermath of the 2005 earthquake in Pakistan documented widespread damage to irrigation channels, water mills, and fish farms, as well as intensified pressures on dwindling natural resources used for fuel, shelter, and reconstruction (IUCN Pakistan 2006). A rapid environmental assessment prepared for USAID in the wake of the 2010 Haitian earthquake identified severe problems with sanitation and waste disposal, drinking water contamination, debris management, food security, and environmental conditions in emergency shelters (Sun Mountain International and CHF International 2010).

Moreover, conflict and disaster are linked in ways that mutually reinforce vulnerability and human insecurity. Civil conflict enhances vulnerability to the effects of disasters by weakening government institutions and displacing populations. Civil Conflict increases pressure on critical ecosystems that provide "natural security" by absorbing floodwaters, stabilizing soil, screening against seawater incursion, mitigating drought, and many other risk-reducing effects (Stolton, Dudley, and Randall 2008). Of 41 UN peacekeeping

Men, women & children wait for relief aid in the Dadaab refugee camp, Somalia, August, 2011. shutterstock.com

operations fielded between 1980 and 2010, all but one experienced at least one disaster, and a majority confronted multiple episodes (UNEP 2012).

Although the precise relationship between conflict and disaster remains debated, research indicates that disaster may be a significant risk factor for the subsequent occurrence of violent civil conflict.[2] Perceptions of the government's response to a disaster, its consequences for economic growth, and the impacts on social solidarity appear to play a role in determining whether disasters exacerbate conflict.[3] In an overview of the scholarly literature, Scheffran and colleagues (2012) identify a "double vulnerability" to climate change and armed conflict in countries with low indices of human development.

Climate change adds a worrisome driver to this already volatile mix. The Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (Cisneros et al. 2014) warns that, across much of the planet's land surface, climate models predict more intense and longer droughts and more frequent extreme precipitation events. The IPCC also notes that increased human vulnerability will mean greater consequences from drought and flooding, even if the level of hazard stays the same (Cisneros et al. 2014). While scholars continue to debate the precise implications of climate change for violent conflict (Salehyan 2008, Dalby 2009), Hendrix and Salehyan (2010) find evidence that extreme deviation in rainfall (both wet and dry) in sub-Saharan Africa correlated with political violence during the period 1990-2009. Buhaug, Gleditsch, and Thiessen (2008) find that climate change's propensity to intensify disasters may be the primary way that it leads to violent conflict, by increasing economic and political instability, social fragmentation, migration, and inappropriate disaster responses. Poorly planned disaster responses—those that worsen environmental degradation and fail to protect the essential services provided by functioning ecosystems—enhance vulnerability, decrease resiliency, and increase risk.

The conflict in Syria provides a cautionary tale: Extended drought, exacerbated by poor water management practices and policies, is one of the factors implicated in the uprising against the Assad regime (De Châtel 2014). The conflict has had devastating human and environmental consequences, displacing millions of people and making it extremely challenging to meet their basic needs. Recovering from this conflict will also present the international community with a complex agenda, the outlines of which are already visible (see Box 1).

If the destructive synergies between disaster and conflict can be worsened by poor environmental governance and natural resource management, there are also positive opportunities to tap the synergies between environmental protection, well-managed resource use, disaster risk reduction, and peacebuilding. Such positive synergies will not be tapped effectively, however, unless natural-resource and environmental management considerations become much more consistently integrated into relief and recovery operations.

Box 1:

Conflict and Recovery in Syria

Charles Kelly

Before recovery activities begin, the access needed to conduct a sound environmental assessment is often difficult to obtain. Yet after recovery efforts begin, there is little or no time for even rapid assessments. Given this conundrum, anticipatory pre-appraisal is critical, but often overlooked. A rapid-appraisal desk study by ProAct Network's Charles Kelly identified some of the challenges that recovery efforts will face in Syria when the time comes for systematic responses.

Kelly's appraisal was based on the assessment framework contained in the Rapid Environmental Impact Assessment in Disasters process (Kelly 2005). The Rapid Environmental Impact Assessment is designed for use in conflict and other crisis situations, and focuses on critical issues while maintaining overall attention to the elements of a normal environmental impact assessment.

The conflict in Syria continues to change, and these changes will affect the scale and scope of environmental challenges that will need to be addressed in the recovery phase. Much more detailed information, including on-site assessments, will be needed to develop systematic environmentally aware recovery plans. The general nature of the Syrian conflict is clear, however, and the types of environmental challenges are likely to remain similar to those we can see in available documentation and reports.

Right: Farmers pumping from the Qwaq river, south of Aleppo, Syria, February 2011 (François Molle)

Kelly identified significant pre-conflict environmental issues in Syria:

- significant air pollution problems in coastal industrial areas and major cities;
- land degradation due to over- or inappropriate use, desertification, and poor irrigation practices, affecting more than half the country's territory;
- water resources that are near or at full exploitation;
- limited use of sanitary/engineered landfills or recycling for solid waste;
- few treatment facilities for wastewater;
- no designated landfill sites for receiving hazardous wastes;
- significant damage to freshwater ecosystems;
- extensive loss of forest coverage; and
- unknown impacts of nuclear activities and chemical weaponry.

The conflict itself has had significant, if largely unmeasured, conflict-related environmental impacts, including the very large number of internally displaced people and refugees, currently estimated at 6.6 million internally displaced people and more than 5.6 million refugees (UNHCR 2019). The conflict has also produced significant kinetic damage, chiefly in the form of destruction of urban housing units and associated infrastructure (water, sanitation, electricity, gas). High levels of explosive remnants of war, together with improvised explosive devices, impede safe access and movement, as well as future recovery operations. Impacts spill over into neighboring countries, as large numbers of refugees strain delivery of essential services and the conflict disrupts the regional transportation network.

Based on this rough assessment, a broad picture of the environmental needs in the recovery phase emerges, leading to these recommendations:

- Impact assessments of pre-conflict and conflict impacts in Syria must begin before recovery operations, using a variety of distance assessment approaches. Sector-specific strategic environmental reviews should be included in any damage and needs assessment, and should be incorporated into donor conferences. A second project-level environmental review should screen for negative impacts and develop mitigation plans.
- Efforts to address poor water quality and quantity and poor sanitation (solid and liquid waste) should be implemented during the current relief phase and evolve through recovery, leading to developmental efforts to significantly reduce negative impacts in these areas.
- To clear the way for recovery operations, there should be a debris management plan that incorporates reuse and recycling, labor-intensive public works, and use of recovered materials for local industrial needs.
- A shelter strategy, to be developed before recovery begins, should be subjected to a strategic environmental review to identify ways to reduce environmental impacts, opportunities to improve shelter provision, and a method for integrating these measures into shelter planning.
- An environmental impact-focused review of livelihoods should be conducted to identify direct and indirect negative environmental impacts and define options to reduce these impacts; results should be gender-disaggregated.
- Plans to close temporary shelters inside and outside Syria should include repairing structural damage, as well as returning camps to their original green-field state or develop them for other purposes.
- Options to reduce industry-based environmental damage should be assessed, to avoid increased pollution and environmental degradation when Syria's industrial base restarts operations.
- Before recovery begins, human capacities to manage the range of environment-focused recovery tasks, from reviews to on-site waste management, should be assessed.

Source: Kelly, Charles (2013, June 5). "Post-Conflict Environmental Management: Planning Considerations for the Aftermath of the Syrian Conflict." Paper presented at the Workshop on Environmental Dimensions of Sustainable Recovery: Learning from Post-conflict and Disaster Response Experience," School of International Service, American University, Washington, DC.

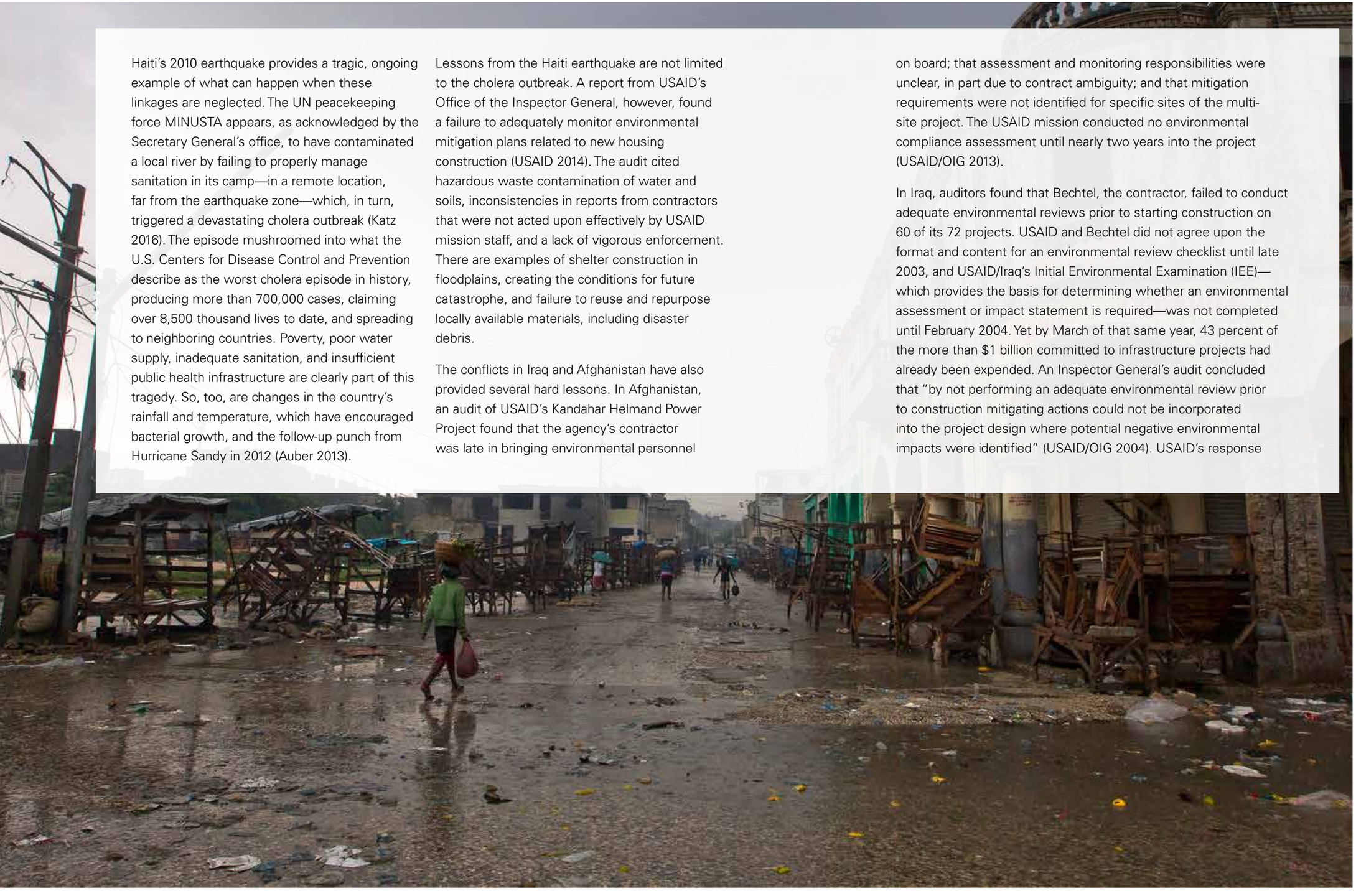
HARD LESSONS

Haiti's 2010 earthquake provides a tragic, ongoing example of what can happen when these linkages are neglected. The UN peacekeeping force MINUSTA appears, as acknowledged by the Secretary General's office, to have contaminated a local river by failing to properly manage sanitation in its camp—in a remote location, far from the earthquake zone—which, in turn, triggered a devastating cholera outbreak (Katz 2016). The episode mushroomed into what the U.S. Centers for Disease Control and Prevention describe as the worst cholera episode in history, producing more than 700,000 cases, claiming over 8,500 thousand lives to date, and spreading to neighboring countries. Poverty, poor water supply, inadequate sanitation, and insufficient public health infrastructure are clearly part of this tragedy. So, too, are changes in the country's rainfall and temperature, which have encouraged bacterial growth, and the follow-up punch from Hurricane Sandy in 2012 (Auber 2013).

Lessons from the Haiti earthquake are not limited to the cholera outbreak. A report from USAID's Office of the Inspector General, however, found a failure to adequately monitor environmental mitigation plans related to new housing construction (USAID 2014). The audit cited hazardous waste contamination of water and soils, inconsistencies in reports from contractors that were not acted upon effectively by USAID mission staff, and a lack of vigorous enforcement. There are examples of shelter construction in floodplains, creating the conditions for future catastrophe, and failure to reuse and repurpose locally available materials, including disaster debris.

The conflicts in Iraq and Afghanistan have also provided several hard lessons. In Afghanistan, an audit of USAID's Kandahar Helmand Power Project found that the agency's contractor was late in bringing environmental personnel on board; that assessment and monitoring responsibilities were unclear, in part due to contract ambiguity; and that mitigation requirements were not identified for specific sites of the multi-site project. The USAID mission conducted no environmental compliance assessment until nearly two years into the project (USAID/OIG 2013).

In Iraq, auditors found that Bechtel, the contractor, failed to conduct adequate environmental reviews prior to starting construction on 60 of its 72 projects. USAID and Bechtel did not agree upon the format and content for an environmental review checklist until late 2003, and USAID/Iraq's Initial Environmental Examination (IEE)—which provides the basis for determining whether an environmental assessment or impact statement is required—was not completed until February 2004. Yet by March of that same year, 43 percent of the more than $1 billion committed to infrastructure projects had already been expended. An Inspector General's audit concluded that "by not performing an adequate environmental review prior to construction mitigating actions could not be incorporated into the project design where potential negative environmental impacts were identified" (USAID/OIG 2004). USAID's response



A report from USAID's Office of the Inspector General found a failure to adequately monitor environmental mitigation plans related to new housing construction.

A woman walks through deserted downtown Port au Prince, Haiti, following Hurricane Sandy, October 2012 (Logan Abassi UN/MINUSTAH)

was that "since a large majority of the job orders were for the rehabilitation of existing facilities with minimal new construction…, mission officials determined that no potential significant adverse impacts were likely. Consequently, the IEE and subsequent environmental reviews were deferred to ensure that progress for humanitarian assistance would not be impeded" (USAID/OIG 2004). How USAID could make such a determination in the absence of an initial environmental assessment is unclear, but deferment in the name of humanitarian expedience is a common occurrence and not unique to USAID.

The consequences of environmental inattention are not limited to worsened human health, the degradation of vital ecosystems, or enhanced social and ecological vulnerability; they may also include provoking or exacerbating social conflicts, undermining efforts to win trust, and creating barriers to working collaboratively with local communities. In Iraq, the coalition forces' Camp Alpha took over ancient sites of great archeological and heritage value for its base of operations. In the process, the forces did irreparable damage to the ancient city of Babylon, by digging, cutting, infilling, constructing earthen berms, and erecting barbed-wire barriers. In Afghanistan, poor solid-waste management practices at Bagram Air Force Base inadvertently led to the burning of a copy of the Qu'ran, which in turn provoked riots and acts of retribution that killed at least 29 Afghans and 6 American soldiers (Krooks, Whalley, and Anderson 2012).

Even seemingly benign efforts to provide assistance can trigger tensions when they are insensitive to the local social structure and socioeconomic dynamics. A 2011 USAID tree-sapling distribution program in Afghanistan's Arghandab district produced reports of "destabilization" in some areas; problems included perceived irregularities in the distribution process, local market saturation, a 75 percent mortality rate among distributed saplings, falsification of the documents required of recipients, and extortion of recipients by insurgent groups (Office of the SIGAR 2013).

Plans to distribute 16,000 irrigation pumps in Afghanistan's Helmand Province were scotched when it was determined that they were not needed and the provincial governor expressed concerns that the pumps would lead to water theft from existing irrigation canals. No assessment of the impact on local water supplies had been conducted. The pumps were placed in storage and ultimately disassembled for their power supplies (Office of the SIGAR 2013).

The United States is certainly not alone in struggling with these challenges. The UK's Independent Commission for Aid Impact has flagged the difficulties facing UK aid to Afghanistan, stressing the need for evidence-based interventions and closer consultation with beneficiaries (ICAI 2014). Other bilateral aid agencies have struggled with "mainstreaming" environmental considerations into their work, including failures to assess environmental performance of aid operations and to mainstream environmental considerations into aid operations (Brunnström et al. 2006, Kelly 2013). Nor are donors the only international actors facing such challenges: private-sector firms face challenges of combining effective environmental analysis with conflict-sensitive approaches to infrastructure projects, particularly in fragile states (see Box 2).

Destruction of a school in Yemen, (Shutterstock.com)

Box 2:

Resilient Infrastructure: Private Sector Investment and Conflict-Sensitive Procedures

International Alert

International Alert is a peacebuilding organization that works with local people in more than 25 countries around the world. International Alert focuses on issues that influence peace, including governance, economics, gender relations, social development, climate change, and the role of businesses and international organizations in high-risk places. Drawing on its experiences in Kenya (in both Turkana and Nairobi), India, and Nepal, International Alert analyzed the the role of a "conflict-sensitive" procedures as part of private-sector involvement in efforts to create resilient infrastructure.

Having a roof or road to weather the impacts of storms and floods is an important element of human security. Infrastructure projects can strengthen the resilience of local populations while decreasing vulnerability to environmental risks. The need for improved infrastructure, such as buildings and roads, is particularly high in very poor countries or those that are affected by conflict or fragility. High rates of population growth and urbanization will continue to drive the demand for improved infrastructure. Meeting this demand is a financial and technical challenge for governments, civil society, and development, and humanitarian organizations.

Part of this financing and capacity gap can be met through private sector investments. Yet conflict may impose significant additional costs of doing business: expenditures on security, higher risk premiums and capital costs, damage to property and infrastructure, lost productivity, risks to workers and corporate reputation, and the threat of litigation.

Moreover, business operations themselves can negatively affect fragile and conflict-affected contexts in a number of ways:

- First, projects may create elevated expectations. For example, efforts to develop the oil reserves in Turkana, the poorest county in Kenya, have been disrupted because of tension with local communities. Since the Kenyan government has failed to meet their development needs, the communities have directed their demands to the oil company, which has demonstrated its ability to drill for water, build roads, and provide security, where the government cannot.
- Second, tensions can arise over who benefits from the project, who is excluded from benefits, and who is negatively impacted. In Nepal, a multi-million dollar water and sanitation project, which aimed to improve water provision in 20 small towns, would divert water from rural areas. An assessment by International Alert found that the project conducted community consultations with town-based beneficiaries, but not with the rural communities that will lose water.
- Third, the failure to anticipate unintended consequences can cause problems. In Kibera, the largest informal settlement in Nairobi, Kenya, part of a project to reclaim environmentally degraded and unsafe land through clean-up and flood-protection measures had to be abandoned when local strongmen, who wanted to capitalize on the improved land value, took over the site.

Independently or in combination, these effects may further destabilize an already fragile situation. Such impacts are particularly problematic in contexts that are sensitive to environmental risks and vulnerable to changes in the natural resource base.

To avoid creating or aggravating conflict, a conflict-sensitive approach to business and infrastructure projects is needed. Conflict sensitivity means that a company understands the context in which it operates; understands the interaction between its intervention and the local context; and acts upon these understandings, in order to avoid negative impacts and maximize positive impacts. Key elements of conflict sensitivity are:

- Compliance: Not complying with applicable laws and regulations can undermine stability in a country, and also lead to immediate legal risk for companies. Compliance programs, risk management, and employee training promote proactive risk identification and can help reduce compliance violations and legal costs.
- Do No Harm: Even with full compliance, business practices can unintentionally do harm. Therefore, companies must conduct due diligence using improved conflict risk and impact assessment tools to avoid fueling conflict. Increased awareness and assessment of risks to and impacts on local communities can help ensure that business operations do not fuel tensions or violence.
- Peacebuilding: Building on compliance and do-no-harm principles, companies can help ensure a more stable operating environment through a peacebuilding approach, which is guided by three key principles: First, open channels of communication make it easier to tackle contentious issues constructively. Second, local relationships give beneficiaries of infrastructure projects a legitimate interest in investments. Third, cost and benefit sharing for sustainability give both contractors and beneficiaries a stake in the process and outcome of the project.

Barriers to implementing these principles are not trivial. Many different actors, often with complex agendas, must be engaged. The governance structure may be ineffective or unclear. Buy-in and commitment may be lacking from a company's senior leadership, given the additional effort and upfront costs involved. Nevertheless, clear benefits may be realized in the medium-to-long term: better risk management, lower operational costs, improved reputation and increased goodwill, and positive stakeholder engagement.

Source: Mitra, Shreya, Janani Vivekananda, and Janpeter Schilling (2015, July). "Engineering Peace: Climate and Conflict-sensitive Business Practice in Fragile Contexts." *EDSR Working Paper 4, available at http://edspace.american.edu/greentools/.*

GROWING RECOGNITION AND RESPONSE

In recent years, development agencies and intergovernmental organizations have begun to respond to growing recognition of the environmental linkages in conflict and disaster:

- The World Bank's Fragile and Conflict-Affected Countries group identified environmental risks that affect conflict vulnerability as a question for its Research, Knowledge and Learning Program (World Bank n.d.).
- "Sustainable development" is part of the mandate of the UN Peacebuilding Commission, and the UN Environment Programme (UNEP) operates a Disasters and Conflicts branch that has been conducting environmental assessments in war- and disaster-torn settings since the Balkan wars of the late 1990s.
- UNEP has also partnered with the UN Office for the Coordination of Humanitarian affairs (OCHA) to create a joint environment unit (JEU) on post-disaster/post-conflict environmental emergencies, such as oil spills, groundwater contamination, or toxic releases. The JEU (2014) recently added mainstreaming environment into humanitarian action to their portfolio.
- The "Science for Peace and Security" initiative of NATO (2010) included an environmental security component.
- The UN's International Strategy for Disaster Reduction (2010) has emphasized that environmental degradation aggravates the impacts of disasters, since it affects natural processes, alters the resource base, and increases vulnerability. Recognition of this fact is beginning to yield a conceptual shift in crisis risk management, which seeks to integrate environment and disaster management into development planning, so that the environment becomes a tool of disaster risk reduction by mitigating impacts and increasing resilience (Shaw 2006, WMO/GWP 2006, de Guzman 2003). The UN Sendai Framework for Disaster Risk Reduction adopted in 2015 recognizes the role ecosystem-based disaster risk reduction can play in reducing risk.

Non-governmental organizations are also beginning to build their capacity to address environment-conflict-disaster links:

Mercy Corps (n.d.) has a Climate Change Unit and has adopted the strategic goal "to mainstream climate change adaptation and energy poverty alleviation into humanitarian and development programming via adaptation programming and the adoption of market-based energy solutions."

The World Wildlife Fund and American Red Cross collaborated for five years following the Indian Ocean tsunami and developed the *Green Recovery and Reconstruction: Training Toolkit for Humanitarian Assistance*, which is designed to enable careful environmental assessment and action in humanitarian response. WWF has continued the work with an *Environment and Disaster Management* program.

"In recent years, development agencies and intergovernmental organizations have begun to respond to growing recognition of the environmental linkages in conflict and disaster.

The village of Ilanga in the Democratic Republic of Congo created a map in order to better delimit the boundaries of particular land concessions on their traditional lands, September 2017 (Molly Bergen/WCS, WWF, WRI)

The International Red Cross Red Crescent Movement developed a *Green Response* initiative, the goal of which is to save lives and reduce suffering without risking damage to the livelihoods, health and survival of affected people and improving the environmental outcomes of life-saving operations.

Practical Action has a disaster risk reduction and climate change program with the overall goal to strengthen the ability of poor people to use technology to cope with threats from disasters, environmental degradation and civil conflicts.

These organizational adaptations remain slow and tentative, however. The detailed knowledge base required to guide and institutionalize them remains fragmented, and policy frameworks remain underdeveloped. One important but underused site of accumulated knowledge is the experiences of a heterogeneous array of organizations, including conservationists, first responders to humanitarian emergencies, and crisis management and conflict transformation groups. Through crisis response, or attempts to promote conflict management, or simply from their work on the ground with ongoing projects in conflict and disaster zones, these organizations have accumulated extensive experience with the environmental dimensions of war and disaster.

Conservation organizations such as WWF and others have substantial experience with trying to sustain conservation projects in conflict zones or disaster recovery areas, and growing experience supporting environmentally responsible disaster risk reduction and response (Shambaugh et al. 2001). First responders such as Care International, Médecins Sans Frontières, the International Rescue Committee, and the International Federation of Red Cross/Red Crescent Societies have extensive experience with managing and attempting to sustain local water, fuel, and biological resources in rescue efforts (van Dorp 2009). Crisis management, mediation, and peacebuilding organizations such as Search for Common Ground (see Box 3), the Centre for Humanitarian Dialogue, and Global Witness have extensive experience with the role of natural resources in initiating, sustaining, or funding conflict, and with the complexities of peace negotiations that must incorporate these dimensions (Haysom and Kane 2009). Refugee advocacy organizations such as Refugees International (see Box 4) have come to see climate change as a significant driver, and are identifying environmental underpinnings of sustainable livelihoods both for displaced people and for those who return home in the wake of disaster or conflict.

In seeking to distill lessons from the work of these groups, the experience of the military is instructive. The US Army's Environmental Policy Institute commissioned a 2008 study "to assess how the Army approaches environmental considerations in overseas contingency operations" including planning, training, and operations in post-conflict and reconstruction activities (Mosher et al. 2008).The rationale for the study was recognition that complex, post-Cold War operations involving elements of peacekeeping and "nation building" were keeping Army units in the field longer than anticipated; that environmental risks and impacts had implications for the health and well-being of both troops and local populations; and that better environmental performance could produce good will and affect the effort to win "hearts and minds."

The assessment, which included a database of 111 case studies, reached several important conclusions.

- First, environmental considerations "have a significant impact on" the prospects for success of post-conflict operations.
- Second, the environmental challenges in post-conflict field operations differ significantly from routine environmental management operations in the United States, and the Army found that it lacked a comprehensive approach for dealing with these differences.
- Third, poor environmental practices "can increase current and future costs, liabilities, diplomatic problems, and risks to soldier health" (Mosher et al. 2008).

Box 3:

Resolving Conflicts, Managing Resources, and Responding to Crises: The Need for Integration

Search for Common Ground

The humanitarian, environmental, and conflict resolution fields are increasingly overlapping. Organizations focused predominately on peace and conflict, such as International Alert, Interpeace, swisspeace, Life and Peace Institute, ACCORD, and Saferworld, are increasingly operating alongside environmental and humanitarian organizations. Humanitarian organizations such as Catholic Relief, Mercy Corps, Pact, Norwegian Refugee Council, International Rescue Committee, and International Committee of the Red Cross are increasingly trying to be conflict-sensitive in order to improve their programs' effectiveness, as well as incorporating components of peacebuilding into their work. Organizations focused primarily on poverty and longer-term development initiatives, such as CARE, World Vision, Oxfam, Mines Advisory Group, and Save the Children, are doing the same.

Search for Common Ground, an organization that has worked on dozens of conflict issues in Africa, Asia, Europe, the Middle East and North America, operates in this increasingly complex conflict resolution landscape. It seeks to build sustainable peace by helping all parties in a given location work together to find solutions to conflict, using dialogue, media, and community activities. The goal is to change daily interactions between groups and individuals in conflict so that they can work together to build their community. Its mission is to facilitate a shift away from adversarial approaches and toward cooperative solutions, so that differences stimulate social progress rather than violence.

Many of the conflict areas in which Search for Common Ground works face complex humanitarian and environmental challenges. Competition over natural resources is a key point of contention between groups and individuals. Conflicts often have major humanitarian consequences, and humanitarian challenges are typically tightly coupled with natural resource issues. More generally, as the conflict-resolution landscape has grown more crowded, conflict-sensitive humanitarian work around natural resource management presents both promising opportunities and significant challenges for all three sectors. Search for Common Ground's experience has shown that accumulating cross-sectoral expertise and building collaborative partnerships are important.

Search for Common Ground has collected lessons from its experiences in several conflicts, including ethnic clashes around the oil sector and compensation issues in Al-Fula, Sudan; fishing disputes in Dongo, Democratic Republic of Congo (DRC); efforts to transform land-related conflicts in Burundi; and community-based environmental clean-up work in Oporoza, Nigeria.

First, the environmental, humanitarian, and conflict resolution fields interact on multiple levels, generating windows of opportunity for sustainable recovery from conflict, but also creating the possibility for major mistakes to be made. In each of the aforementioned cases, grievances linked to the environment were part of the underlying causes of conflict. Perceived injustices from the exploitation of resource wealth in Nigeria and Sudan led to militancy and conflict; competition over scarce resources, including agricultural land in Burundi and fishing rights in the DRC, led to clashes between communities. At the same time, the immediate consequences of conflict, particularly forced displacement, have led to other environmental crises, as displaced people and host communities compete for resources, which may be sometimes exacerbated by poorly conceived international assistance programs. Under these circumstances, humanitarian and environmental practitioners can play a crucial role in shaping the availability of local resources and addressing underlying conflict dynamics. There is a need for dynamic, integrated analysis that accounts for the multiple ways in which resources and the environment intersect with the trajectory of conflict and peace. Such an analysis would help identify and address gaps in knowledge, and therefore help practitioners in all three fields understand the cross-cutting issues that they all face.

Second, there is a need to mainstream conflict and environmental sensitivity into humanitarian action programs. In emergency situations, donor-backed humanitarian agencies are often taking steps and making decisions that would normally be led by the government, such as reconstructing schools and identifying healthcare priorities. The mechanisms through which individuals in the affected areas provide input, how decisions are made, the overall objectives being served, and how they are communicated are important and potentially controversial.

A fisherman on the Congo River, Lukolela, Democratic Republic of Congo, August 2012 (Ollivier Girard/CIFOR)

Environmental assessment and conflict analysis are being integrated into the humanitarian realm, but with relatively little synergy between the two. For example, in many refugee contexts, such as the central African refugee camps in southern Chad, refugees compete with local residents for firewood, land, and water. Established dispute resolution systems, consisting of joint committees to mediate disputes and carry out sensitization campaigns, are largely divorced from long-term interventions, such as more efficient cookstoves. In the Burundi case, the conflict resolution and arbitration processes held to resolve land disputes were largely conducted without systematic environmental analysis. The process may address short-term grievances, but at the price of undermining any chance for long-term sustainability, by creating economically or ecologically non-viable plots.

Third, the conception of the environment as a shared interest should be cultivated, so that it can function as a platform for peacebuilding at the local level. The potential for environmental issues to function as a point of cooperation and commonality is relatively under-exploited at a local level. Search for Common Ground's experience with community clean-up activities in Oropoza, Nigeria, showed that care for a shared space can provide a point of commonality at the local level, while simultaneously improving the health of the natural resources themselves. This approach, which is more common in the maintenance of other forms of public goods such as repairing a road, maintaining a clinic, or contributing to the functioning of a school, could readily be adapted to the realm of environmental management.

Efforts to act on these lessons face many challenges—not least, the differences of organizational and professional culture among the humanitarian, environmental, and conflict-resolution sectors, as well as the differences between the spatial and temporal scales on which they work. But experience also points to many potential benefits of partnership. An increased focus on prevention, through better coupling of environmental forecasting to early-warning systems, could help humanitarian and conflict practitioners anticipate and respond to challenges with greater efficacy and efficiency. Better resource-management practices can create "win-win" opportunities, which in turn may transform zero-sum perceptions among parties in conflict. And there are ample opportunities for better integration of environmental sensitivity into post-conflict planning.

Source: Jobbins, Mike, Woodrow Covington, and Valerie Puleo (2015, July). "Natural Resources, Conflict and Humanitarian Challenges: Lessons from Community-Based Conflict Transformation." *EDSR Working Paper 1,* Subsequently published by Search for Common Ground, www.sfcg.org/wp-content/uploads/2017/04/Lessons-from-Community-based-conflict-transformation_032317.pdf.

Box 4:

Environmental Recovery, Risks, and Refugees

Refugees International

For 35 years, Refugees International has engaged in advocacy on behalf of millions of refugees and internally displaced persons (IDPs) across the globe. An independent organization that accepts no governmental or UN funding, Refugees International originated in 1979 as a citizens' movement in response to the Indochinese refugee crisis, and has expanded to advocate for the needs of refugees, IDPs, and stateless people living in limbo without citizenship rights. Informed by field missions to countries experiencing displacement crises, Refugees International documents the needs of displaced people for basic services such as food, water, shelter, and protection from harm, and formulates recommendations to policymakers and humanitarian responders to ensure that refugees, IDPs, and stateless persons are adequately protected and assisted.

In the 21st century, it is evident that war and conflict are not the only drivers of displacement. Disasters from natural hazards are displacing increasing numbers of people, often overwhelming the capacity of governments to respond, and climate change presents an emerging threat with significant, complex implications for population displacement and the humanitarian system. Refugees International grew concerned that current normative frameworks were ill-equipped and poorly resourced to address these challenges. In late 2009, prompted by the war in Darfur, Refugees International launched its climate displacement program, which has conducted missions to some of the worst weather-related crises in recent history, including the 2010 Pakistan floods, the 2012 drought and food crisis in the Sahel, and the 2013 typhoon in the Philippines.

Key conclusions gleaned from the organization's experience include:

- During and after armed conflict or disaster, governments, donors, and humanitarian agencies do not often view restoring the environment and natural resources as a priority, given the massive need for short-term, life-saving assistance. Environmental destruction resulting from these crises—or in some cases, preceding them—creates significant risks for the affected people, and significantly undermines their ability to recover. This is particularly true for displaced people, who often lack sufficient access to the essential environmental services that are critical to their immediate survival, health, and wellbeing, such as food, clean water, fuel for cooking, and sanitation.
- Among the chief risks that ensue from adverse environmental conditions are increased gender-based violence in and around camps; loss of natural resource-dependent livelihoods; conflicts arising between groups (such as displaced people and host communities) competing for natural resources; and recurrent displacement for those who take shelter in degraded or hazard-prone areas (which is particularly likely in urban areas).

- Given these vulnerabilities, environmental recovery programs are key to durable solutions for IDPs and refugees. A 2014 environmental assessment of Somalia commissioned by USAID concluded that land degradation "may well be the largest environmental contributor to food insecurity and poverty in Somalia" (USAID Somalia 2014). A 2012 program launched by UNHCR to facilitate the voluntary return of displaced people in Somalia found that 57 percent were receiving food aid a short time after returning home because they were unable to return to farming or pastoralism, which suggests that return programs that do not include support for environmental recovery may be short-lived.
- While efforts in and around camps have gained the most attention, UNHCR reports that 58 percent of refugees live in urban areas (UNHCR 2018). Both in and outside of camps, we should integrate environmental considerations into early recovery, livelihoods, and disaster risk reduction/resilience programming. Unfortunately, at present, all three areas face significant funding challenges, as well as discontinuities in transitioning from relief work to development work.
- Nevertheless, there are opportunities to use environmental recovery to promote durable solutions for displaced populations. Protracted crises are forcing more attention to livelihood activities, including their environmental dimensions. The growing recognition of the need for resilience in the face of recurrent crises creates an opportunity to build bridges between humanitarian and development actors, which should include a focus on environmental recovery and sustainability. And as an increasing number of displaced people move to urban areas—from which many can't or won't return— the pressure increases to shift from a traditional "sectoral" approach toward place-based integrated strategies, which can better account for environmental factors. The response and recovery plan adopted for the Philippine city of Tacloban, which was 90 percent destroyed in late 2013 by Typhoon Haiyan, is a good example of this shift in focus.

Source: Thomas, Alice (2015, July). "Environmental Recovery and Displacement in Post-Disaster and Post-Conflict Settings." *EDSR Working Paper 3*, http://edspace.american.edu/greentools/.

Right: A Somali refugee stands inside a tent with her baby in Dollo Ado, Ethiopia, August 2011 (Eskinder Debebe)

Recommendations included improved policy and guidance frameworks, stronger incorporation of environmental considerations into planning, and strengthened training on good practices. The most striking recommendation: "the Army needs to bring about a cultural change regarding the ways environmental issues are viewed and handled in contingencies. Such change is difficult and will require a broad-based effort that includes changes in doctrine, training, and equipment" (Mosher et al. 2008).

Military experience has also shown that the benefits of a reduced logistics tail and safer, more efficient field operations are substantial. The U.S. Army found that resupply operations in Iraq and Afghanistan from 2003-2007 accounted for 3,046 U.S. casualties. The per-unit financial cost of water resupply convoys in Iraq was more than one-third the cost of fuel resupply (Hearne and Scott 2013).

Efforts by the UN to "green" peacekeeping operations have identified similar opportunities to improve performance through better environmental and natural resource management. A path-breaking study conducted by the UN Environment Programme (2012), in consultation with the Department of Peacekeeping Operations and the Department of Field Support, found important linkages among mission cost, mission success, and environmental factors such as water, energy, land use, and handling of toxic materials. For example, peacekeeping operations were found to consume, on average, 84 liters of water per person per day (lpcd). This figure contrasts dramatically with UNHCR recommendations for refugee camps (often located in close proximity to peacekeeping operations) of 15 lpcd and an absolute survival minimum of 7 (UNEP 2012). Given the challenges of water scarcity, water quality, and sanitation in many countries where UN peacekeepers operate, poor water practices by peacekeepers can heighten tensions with local communities, and even small efficiency gains or avoided impacts can enhance mission effectiveness.

Improved efficiencies have multiple benefits beyond peace operations, such as climate change mitigation. A 2008 assessment found that the climate footprint of UN peacekeeping operations was roughly the same as that of the city of London (UNEP 2012). The Swedish Defence Research Agency has led the way in addressing the environmental footprint of field operations, producing a series of studies, toolkits, and pilot projects on energy efficiency, water management, shelter construction and waste handling—tasks often performed in broadly similar ways by military, peacekeeping, and humanitarian operations (see Box 5).

There are, of course, dangers in drawing too-close analogies between civilian and military experiences; civilians operating in the context of conflict, disaster, and complex emergencies have a fundamentally different mission than military or peacekeeping forces, and face different opportunities and constraints. But the larger insights of the military's experience remain: The environment matters in fundamental ways, and organizational cultures must shift to address this fact.

Evidence suggests that the civilian side may be slower in getting the message, however. A recent pair of collaborative exchange meetings in the United States and Europe, which brought together more than 30 humanitarian and military organizations, found that "the military has done a better job at documenting the impact of environmental considerations on operations than [has] the humanitarian community" (Kelly 2014, see Box 6).

A community discusses a water supply and sanitation project in their village, Kaski, Nepal (Simone D. McCourtie/World Bank)

Box 5:

Changing Minds for More Sustainable Missions

Swedish Defence Research Agency

For more than a decade, the Swedish Defence Research Agency (FOI) has addressed the environmental impact and sustainability of temporary communities, such as the military, peacekeepers, or humanitarians in conflict and disaster areas. FOI is Northern Europe's largest research institute in the defence and security sector. It has provided support on environmental matters to the Swedish armed forces, the Swedish Ministry for Foreign Affairs, the United Nations Environment Programme, UN peacekeeping and field-support operations, and the Swedish Civil Contingencies Agency.

Early on, the Swedish Defence Research Agency's focus on the environment tended to be reactive and primarily driven by legal requirements. Over time, however, their work has shown that the environmental legacy of the military, peacekeeping, and humanitarian communities may be significant, especially in terms of cumulative impacts. A key lesson learned is that direct and indirect impacts run counter to resilience-building efforts and hamper positive development in the affected region.

The organization's experiences with environmental issues at the policy level and the tactical level, and in working with the military community, UN peacekeeping, and humanitarian organizations operating in conflict and/or crises areas have generated some key findings:

- There is a growing demand for sustainable operations, particularly when operations are located in fragile or remote areas. "Sustainability" refers to the capacity and capability to sustain the mission, as well as environmental, social, and economic sustainability. This growing emphasis is driven by multiple concerns: protecting health, lives, and livelihoods; minimizing the unintended environmental and socioeconomic footprint during conflict and disaster situations; reducing costs; and avoiding litigation.
- Although there are a wealth of tools and guidance for civilian peacetime activities, these tools are not easily adapted to conflict and disaster contexts, mainly due to the unique and often extreme conditions in crises, including lack of applicable environmental legislation, low institutional capacity in the receiving nation, challenges of conducting monitoring and assessment in difficult security environments, logistical challenges of working in remote locations, and cultural and language barriers to participatory engagement. The Swedish Defence Research Agency has therefore focused on the need to develop methods that can be used in conflict and disaster contexts.
- Key barriers include local communities' concerns over the footprint and impacts of field operations; the perception that environmental issues are just "bugs and bunnies"; lack of coordination; and the lack of clear accountability for the full environmental footprint of operations. A survey of subject-matter experts from 10 nations, NATO, the European Union, and the UN identified "the mindset amongst planners" as the single largest challenge for operationalizing environmental considerations, followed closely by resource constraints, such as the lack of environmental professionals, insufficient time, and inadequate information.
- Pre-deployment actions are critical to success, including increasing support for environmental policy and doctrine; gathering "environmental intelligence" such as strategic foresight and vulnerability assessment; developing tools for environmental impact assessments, baseline studies, and strategic environmental assessments; and conducting training and awareness programs.

Drawing on a case study of UN peacekeeping in East Africa, the Swedish Defence Research Agency found that although personnel working in UN field missions are often aware of environmental issues, a lack of policy, guidance, and resources makes it difficult for mission staff to take practical action. The 2009 Environmental Policy for UN Field Missions created a starting point for individual missions to operationalize environmental considerations. Missions in South Sudan and Somalia have issued environmental assessments, introduced environmental management systems, conducted environmental awareness trainings, and deployed pollution-reducing and resource-conserving technical equipment, such as wastewater treatment devices and solar water pumps. However, current financing practices for peacekeeping and humanitarian action can run counter to sustainable development, because they encourage short-term returns on investments and temporary solutions.

Moving forward, the Swedish Defence Research Agency stresses the need for changing the mindsets of decision-makers, senior management, and donors about what 'the environment" is, how it is affected by peace operations and humanitarian action, how it affects actors in the field, and what constitutes a sustainable mission. It recommends three steps:

- Using a "mission lifecycle" approach, including systematic application of existing environmental tools at appropriate stages;
- Embracing a multi-stakeholder approach to strategic environmental assessment; and
- Developing and deploying emerging new tools that reflect lessons learned, such as the Camp Authoring tool, which allows experts from different fields to work together in an iterative manner to understand the different conditions and challenges in the planning, operation, and decommissioning of a camp.

Source: Waleij, Annica, Zacharias Tjäder, and Birgitta Liljedahl (2015, July). "The Gap between Buzz Words and Excellent Performance: The Environmental Footprint of Military and Civilian Actors in Crises and Conflict Settings." *EDSR Working Paper 2*, http://edspace.american.edu/greentools/.

BARRIERS TO EFFECTIVE INTEGRATION

The desire for better practices is universally shared and there are many collaborative efforts underway that seek to challenge and improve the existing crisis response system. Yet, if we are to break the cycle of decline that crisis imposes, particularly for the poorest and most vulnerable communities whose livelihoods rely most directly on functioning natural ecosystems, we need a more systematic and collective response that reduces risk and vulnerability.

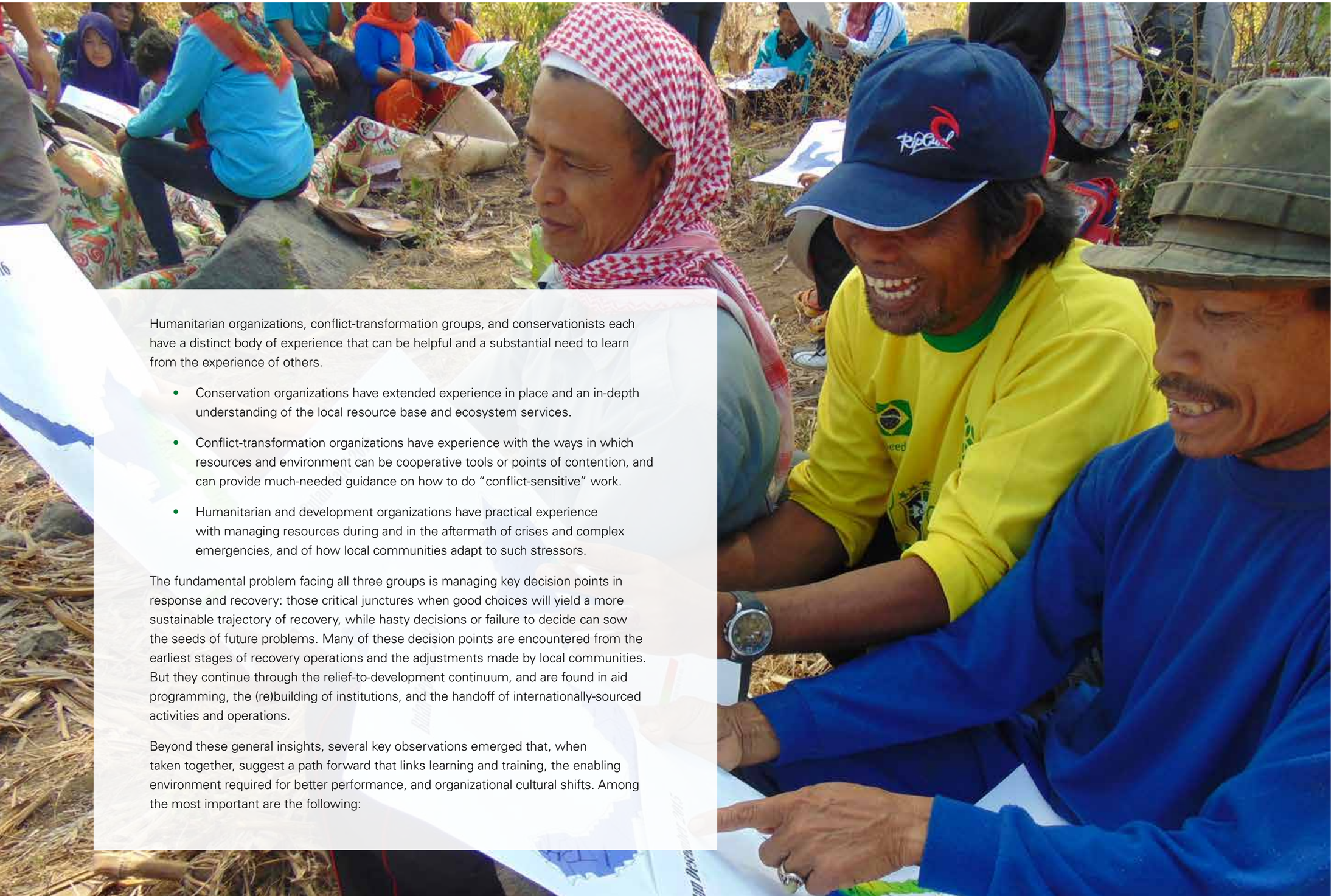
A major challenge to such a response is that emerging knowledge and awareness about critical linkages among natural resources, environmental management, disaster response, humanitarian action, and peacebuilding remains largely dispersed and unintegrated. Little has been done to evaluate, compare, or even document successes and failures. The accumulated learning has not been systematized, nor for the most part even exchanged, across the different types of organizations that work in the field or shape policy and practice. Nor has there been any systematic effort to extend such learning to the practices of bilateral donors and intergovernmental agencies. As noted in the working paper contributed by staff from Search for Common Ground (Box 3), differing organizational cultures and different temporal frameworks are among the factors inhibiting broader sharing of lessons.

Horizontal learning and capacity building across environmental organizations, crisis responders, and conflict transformation organizations would pay large dividends in both knowledge and practice, in several ways: creating a more comprehensive framework for understanding context, identifying better practices and cautionary tales among the accumulated body of experience, extending wider knowledge of existing toolkits and other practice-oriented resources, and establishing sustained engagement among a forward-looking network of organizations and individuals with learning to share and insights to test and develop.

“...emerging knowledge and awareness about critical linkages among natural resources, environmental management, disaster response, humanitarian action, and peacebuilding remains largely dispersed and unintegrated.

Displaced Darfuris farm rented land in the rainy season, Tawila, Sudan, August 2011 (UN Photo/ Albert Gonzalez Farran)

LESSONS LEARNED



Humanitarian organizations, conflict-transformation groups, and conservationists each have a distinct body of experience that can be helpful and a substantial need to learn from the experience of others.

- Conservation organizations have extended experience in place and an in-depth understanding of the local resource base and ecosystem services.
- Conflict-transformation organizations have experience with the ways in which resources and environment can be cooperative tools or points of contention, and can provide much-needed guidance on how to do "conflict-sensitive" work.
- Humanitarian and development organizations have practical experience with managing resources during and in the aftermath of crises and complex emergencies, and of how local communities adapt to such stressors.

The fundamental problem facing all three groups is managing key decision points in response and recovery: those critical junctures when good choices will yield a more sustainable trajectory of recovery, while hasty decisions or failure to decide can sow the seeds of future problems. Many of these decision points are encountered from the earliest stages of recovery operations and the adjustments made by local communities. But they continue through the relief-to-development continuum, and are found in aid programming, the (re)building of institutions, and the handoff of internationally-sourced activities and operations.

Beyond these general insights, several key observations emerged that, when taken together, suggest a path forward that links learning and training, the enabling environment required for better performance, and organizational cultural shifts. Among the most important are the following:

"The fundamental problem facing all three groups is managing key decision points in response and recovery...

Farmers use rainfall estimates compiled by World Neighbors (WN) and Institute of Technology Bandung (ITB) with USAID / OFDA assistance to help reduce losses due to extreme weather events, Indonesia, August 2015 (World Neighbors Indonesia)

Box 6:

Green Humanitarianism: Defining Better Practices in Greening Field Operations

Green Humanitarians

As part of the "Green Humanitarianism: Defining Better Practices in Greening Field Operations" initiative, more than 60 individuals from military, governmental, nongovernmental, and UN-affiliated organizations that conduct or support field operations during crises, conflicts, and complex emergencies met in Washington, DC, and Geneva, Switzerland, in late 2013.

These exchanges, which created an informal opportunity to share best environmental field practices, identify barriers, and set a forward-looking agenda for action and improvement, produced some noteworthy examples and findings. First, the military has done a better job of documenting the benefits (in lives, health, and costs) of environmentally sound approaches than the humanitarian community. For example, the Swedish Defence Research Agency and US Army Central Command have both moved toward a stronger environmental sensibility, by making the case that environmental practices affect success of the mission; that clearly defined responsibilities and priorities are important; and that aims must be matched with organizational capacities.

In South Sudan and Uganda, the impact of refugee camps includes environmental damage from field operations and tensions between camp and host communities around water, construction materials, and fuel. There are also challenges related to conceptual confusion, the need to prioritize issues into a shorter and more comprehensible list, and the weak accountability to local communities (Cue 2013).

In its "green containers" pilot project in Juba, South Sudan, the United Nations Mission in South Sudan (UNMISS)—which had nearly 7,000 military and over 3,000 civilian personnel at 31 mission sites—addressed the challenges of water management, resource management, pollution, hazardous materials, and impacts on local communities, cultural resources, and ecosystems. The pilot project stressed sustainable housing units—including solar panels, environment-friendly construction materials, rainwater harvesting, composting, and low-energy installed office equipment—as well as soil remediation, better impact assessment, and environmental awareness training (Gryzbowski 2013) .

Overall, fitting environmental analysis and expertise into the standard "aid template," which emphasizes distinct temporal stages and narrow sectoral functions, is an ongoing challenge.

Recommendations include developing:

- Stronger "political dialogue" with donor agencies on financing, standards, and accountability;
- Better mechanisms for information sharing and coordination;
- Solutions to problems common to military and humanitarian actors, including camp operations, water, energy, and waste management;
- An "Environment Cluster" to allow the environmental community to speak with a single, clearer voice on humanitarian and military field operations;
- A manual on pre-disaster preparedness for debris management;
- Case-study research on UN missions; and
- Options for engaging the North Atlantic Treaty Organization (NATO).

Note: The first exchange was held at the Environmental Law Institute in Washington, DC, and co-sponsored by the Disasters/Conflict Section of the International Association of Impact Assessment, the Global Environmental Politics Program at American University, the OCHA/UNEP Joint Environment Unit, ProAct Network, and the Swedish Defense Research Agency. The second exchange was held at the Geneva Centre for Security Policy in Geneva, Switzerland, and was funded by OCHA/UNEP Joint Environment Unit.

Source: "Green Humanitarianism: Defining Better Practices in Greening Field Operations." Available at https://greenhumanitarians.wordpress.com/

Left: The United Nations Mission in South Sudan hands over a mini water-yard facility to residents of Gormoyok, South Sudan, July 2015 (UN Photo/JC McIlwaine)

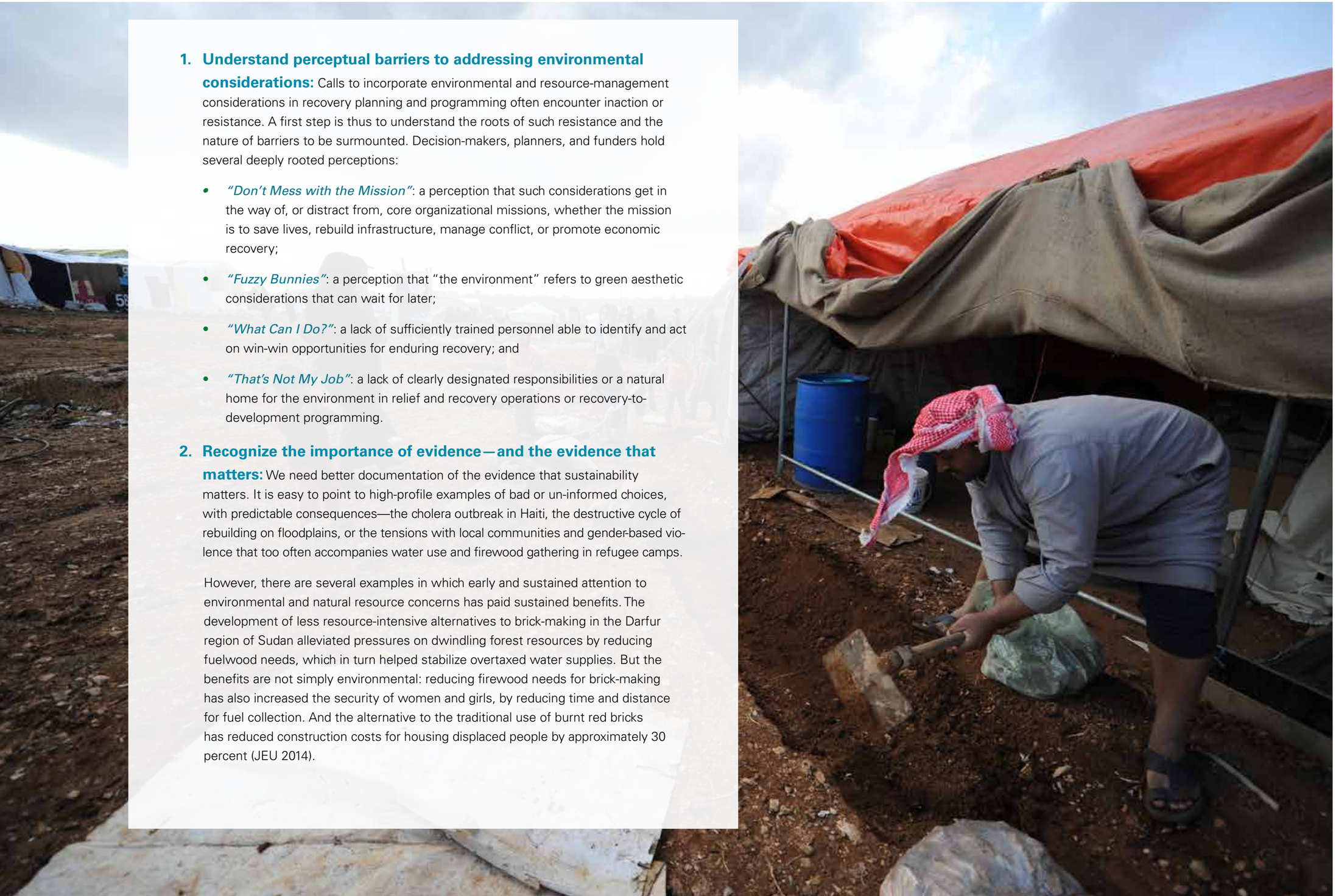
RECOMMENDATIONS

1. **Understand perceptual barriers to addressing environmental considerations:** Calls to incorporate environmental and resource-management considerations in recovery planning and programming often encounter inaction or resistance. A first step is thus to understand the roots of such resistance and the nature of barriers to be surmounted. Decision-makers, planners, and funders hold several deeply rooted perceptions:

   - *"Don't Mess with the Mission"*: a perception that such considerations get in the way of, or distract from, core organizational missions, whether the mission is to save lives, rebuild infrastructure, manage conflict, or promote economic recovery;
   - *"Fuzzy Bunnies"*: a perception that "the environment" refers to green aesthetic considerations that can wait for later;
   - *"What Can I Do?"*: a lack of sufficiently trained personnel able to identify and act on win-win opportunities for enduring recovery; and
   - *"That's Not My Job"*: a lack of clearly designated responsibilities or a natural home for the environment in relief and recovery operations or recovery-to-development programming.

2. **Recognize the importance of evidence—and the evidence that matters:** We need better documentation of the evidence that sustainability matters. It is easy to point to high-profile examples of bad or un-informed choices, with predictable consequences—the cholera outbreak in Haiti, the destructive cycle of rebuilding on floodplains, or the tensions with local communities and gender-based violence that too often accompanies water use and firewood gathering in refugee camps.

   However, there are several examples in which early and sustained attention to environmental and natural resource concerns has paid sustained benefits. The development of less resource-intensive alternatives to brick-making in the Darfur region of Sudan alleviated pressures on dwindling forest resources by reducing fuelwood needs, which in turn helped stabilize overtaxed water supplies. But the benefits are not simply environmental: reducing firewood needs for brick-making has also increased the security of women and girls, by reducing time and distance for fuel collection. And the alternative to the traditional use of burnt red bricks has reduced construction costs for housing displaced people by approximately 30 percent (JEU 2014).



there are several examples in which early and sustained attention to environmental and natural resource concerns has paid sustained benefits.

A man digs to divert the flow of rainwater away from his tent in Amman, Jordan, November 2013 (Karl Schembri/Oxfam)

But such stories are not a substitute for a sufficient body of rigorous, well-documented assessments. In the post-conflict sphere, the joint project undertaken by the Environmental Law Institute, UNEP, the University of Tokyo, and the IUCN Commission on Environmental Law, which sought to distill lessons on "environmental peacebuilding" from post-conflict natural resource management, pulled together 150 case studies from experts in the field (see http://www.environmentalpeacebuilding.org/). In its report on how to "mainstream" environmental considerations in humanitarian action, the UNEP/OCHA Joint Environment Unit (2014) underscored the need for documented case studies on "what has and has not worked effectively," so as to collect best practices and provide practical suggestions for action.

We must move beyond general examples to quantify benefits in terms of dollars saved, lives saved, and livelihoods enhanced. Other benefits—including ecosystem-related and peacebuilding gains—are not to be discounted, but are often secondary in their impact on key decision-makers. In documenting benefits, both positive cases and negative cases are important and useful.

3. **Transcend relief-to-development discontinuities.** There are a series of barriers in the "enabling environment"—the confluence of rules, institutions, and incentives where organizations actually do their work. Chief among these barriers is the much-criticized, but also deeply institutionalized, tendency to view crises through the lens of a "relief to development" continuum. As Maxwell and colleagues (2010) have described it, relief-to-development presumes "that crises have a distinct beginning and end, and that the normative direction for programming [is] to transition from emergency response ('relief') to dealing with chronic problems ('development') as quickly as possible." While the continuum concept has fallen out of favor in academic research, it continues to guide programming and staffing for on-the-ground responses. This in turn yields highly segmented efforts and discontinuities, which make it harder to establish the proper incentive structures and accountability frameworks for incorporating environmental analysis. It also fails to recognize the challenges of what might be termed chronic crisis settings.

4. **Strengthen organizational capacity.** A second major problem in the enabling environment is the lack of appropriately trained personnel that can take environmental considerations seriously while operating effectively in the humanitarian and peacebuilding realms. Many online and face-to-face trainings on environmental management, humanitarian action, or conflict sensitivity are now available, and toolkits for field personnel have proliferated. Of 73 available trainings and toolkits that we were able to identify, however, only two contained material that sought to link the triumvirate of environmental management, humanitarian response, and peacebuilding/conflict sensitivity at the heart of our work (see Box 7).

   But who should be trained? Much of the analysis in the military arena has stressed the need for dedicated professionals embedded in field operations. In the less hierarchical humanitarian sphere, in contrast, the focus has been more on "sensitivity" training so that personnel with more fluidly defined responsibilities on a range of tasks will have the necessary knowledge and skills.

   This depth-versus-breadth debate parallels the longstanding discussion in the increasingly institutionalized post-conflict and post-disaster "needs assessment" process about how to integrate environmental considerations. A key coordination mechanism in humanitarian work is the "Cluster Approach" system, in which groups of organizations (UN-based, NGOs, and others) form a cluster that coordinates efforts in 11 key aid sectors, such as health, housing, food, or water and sanitation (UNOCHA n.d.). The environment is considered a "cross-cutting" issue (like age, gender, HIV/AIDS, and others). Without an individual who has

Charred hillside, Phôngsali Laos, May 2011. (Andy Cohn)

both the responsibility and the mandate for them, cross-cutting issues can languish for lack of attention. Is the environment better treated as its own issue cluster or as a cross-cutting theme that affects all clusters? Cluster status can bring attention and resources, but can also overly compartmentalize problems. To improve effectiveness, the environment must be managed as a cross-cutting issue—with institutional mandates, staff training, funding allocations, and individual organizational advisors assigned to the cluster agencies. The occasion of the 2016 Humanitarian Summit however sparked a nascent discussion, regarding the idea that the time has come for the UN to establish a formal Environment Cluster.

5. **Stress advance planning and the recurring "to-do" list:** Although each situation is different, recovery is generally accompanied by a clear list of challenges. The water, sanitation, and hygiene (WASH) sector and the chronic problem of clearing debris are promising entry points for developing better frameworks for environmentally sensitive responses. Similarly, the humanitarian-military exchange (see Box 7) identified several key areas for cooperative research and collaboration, including waste and debris management, camp management, operating in urban environments, water consumption, energy efficiency, and certification tools for energy-efficient field operations (Kelly 2014).

6. **Recognize trade-offs:** We must recognize that this work will always involve hard choices, trade-offs, and inherent uncertainties. Among the most important and challenging are:

   - Determining how far organizations should seek to go "outside the fence" of their core competencies;
   - Balancing the obvious need for better, earlier, and more integrated assessments with the equally obvious need to act rapidly;
   - Balancing an organization's internalized expertise with the importance of local participation;
   - Learning from past experience, while also recognizing elements of the "new normal" are driven by a combination of factors, including climate change, urbanization, and shifting views about the possibility or desirability of the eventual return of displaced peoples.

Right: Royal Navy Lynx Helicopter bringis Aid to the Philippines following Typhoon Haiyan, November 2013. (Defence Images)

Box 7:

Toolkits

Toolkits—including training courses, handbooks, manuals, "best practices" checklists, searchable databases, and knowledge platforms—have become common across the landscape of relief, recovery and development programming. As part of the Environmental Dimensions of Sustainable Development project, we engaged in a process of identifying some of the most commonly used tools across the three communities making up our dialogue. These tools have been assembled into a searchable database on our project web site, available at *http://edspace.american.edu/greentools/*. For each tool, we provide a brief description of its content, uses, and authors, as well as links to further resources and the tool itself. We welcome suggestions for additional content as the site is periodically updated.

The figure shows the distribution and focus of tools we identified in environmental management, humanitarian action, peacebuilding, and conflict sensitivity. We note both the relative abundance of tools that seek to move outside their singular domain (shaded overlapping areas among the three spheres), as well as the paucity of tools that integrate all three themes (center shaded area).

Figure 2: Relevant toolkits identified, by areas of focus

Source: Compiled by the authors from the Environmental Dimensions of Sustainable Recovery database, available at http://edspace.american.edu/greentools/

Endnotes

1 For the purposes of this paper we follow the definition of resilience used by MercyCorps: "the capacity of communities in complex socio-ecological systems to learn, cope, adapt and transform in the face of shocks and stresses." *Resilience at Mercy Corps*, April 2013, http://www.mercycorps.org/sites/default/files/Mercy%20Corps%20Resilience%20Principles%20April%202013.pdf

2 Several early studies found that disaster is a significant risk factor for the subsequent occurrence of violent civil conflict (Brancati 2007, Nel and Righarts 2008, Nelson 2010). Slettebak (2012), however, finds that climate-related disasters reduce rather than increase the risk of civil war. Berrebi and Ostwald (2011) find a significant association between disaster-related deaths and subsequent terrorist activity.

3 Using public-opinion data in the wake of a pair of earthquakes in EL Salvador in 2001, Olson and Gawronski (2010) find that perceptions of factors such as government capacity, competence, compassion, and credibility played a key role in shaping public attitudes about those events. Wood and Wright (2015) find that state authorities tend to escalate repression in the wake of natural disasters, because of a combination of increased grievances and declining state control. Ghimire and Ferreira (2013) find that large floods increase the probability of conflict incidence through their effect on GDP growth, but Bergholt and Lujala (2012) find that, while there is a link between climate-related disasters and reduced economic growth, there is no significant effect on subsequent violent conflict. Omelicheva (2011) finds a disaster-conflict link to exist only in states already prone to conflict.

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