Assessing and Restoring Natural Resources in Post-Conflict Peacebuilding

Edited by David Jensen and Steve Lonergan
Foreword by Klaus Töpfer

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Preface

Decades of civil wars, international wars, and wars of secession demonstrate the strong relationship between natural resources and armed conflict. Disputes over natural resources and their associated revenues can be among the reasons that people go to war. Diamonds, timber, oil, and even bananas and charcoal can provide sources of financing to sustain conflict. Forests, agricultural crops, and wells are often targeted during conflict. Efforts to negotiate an end to conflict increasingly include natural resources. And conflicts associated with natural resources are both more likely to relapse than non-resource-related conflicts, and to relapse twice as fast.

Immediately after the end of a conflict, a window of opportunity opens for a conflict-affected country and the international community to establish security, rebuild, and consolidate peace—or risk conflict relapse. This window also presents the opportunity to reform the management of natural resources and their revenues in ways that would otherwise be politically difficult to achieve. Capitalizing on this opportunity is particularly critical if natural resources contributed to the onset or financing of conflict—and, if this opportunity is lost, it may never reappear. Moreover, poorly informed policy decisions may become entrenched, locking in a trajectory that serves the interests of a limited few.

Since the end of the Cold War, and particularly since 2000, substantial progress has been made in establishing institutional and policy frameworks to consolidate peacebuilding efforts. In 2005, the United Nations established the Peacebuilding Commission to identify best practices for peacebuilding. The commission is the first body to bring together the UN's humanitarian, security, and development sectors so that they can learn from peacebuilding experiences.

The Peacebuilding Commission has started to recognize the importance of natural resources in post-conflict peacebuilding. In 2009, along with the United Nations Environment Programme, the commission published a pioneering report—*From Conflict to Peacebuilding: The Role of Natural Resources and the Environment*—that framed the basic ways in which natural resources contribute to conflict and can be managed to support peacebuilding. Building on this report, the commission is starting to consider how natural resources can be included

within post-conflict planning and programming in Sierra Leone, the Central African Republic, Guinea, and other countries.

Since the establishment of the Peacebuilding Commission, the policies governing post-conflict peacebuilding have evolved rapidly. In his 2009 *Report of the Secretary-General on Peacebuilding in the Immediate Aftermath of Conflict*, UN Secretary-General Ban Ki-moon articulated five priorities for post-conflict peacebuilding, all of which have natural resource dimensions. The following year, in an update to that report, Ban Ki-moon noted the pressing need to improve post-conflict natural resource management to reduce the risk of conflict relapse, and urged "Member States and the United Nations system to make questions of natural resource allocation, ownership and access an integral part of peacebuilding strategies." And a 2011 UN report, *Civilian Capacity in the Aftermath of Conflict*, highlighted approaches for mobilizing civil society to support peacebuilding in many realms, including natural resources.

The World Bank has also begun focusing on natural resources: the Bank's 2011 *World Development Report*, for example, placed the prevention of fragility, conflict, and violence at the core of the Bank's development mandate. Drawing on the Bank's experiences around the world, the report focuses on jobs, justice, and security, and highlights the contribution of natural resources to these goals.

Despite growing recognition of the importance of post-conflict natural resource management, there has been no comprehensive examination of how natural resources can support post-conflict peacebuilding. Nor has there been careful consideration of the risks to long-term peace caused by the failure to effectively address natural resources. Practitioners, researchers, and UN bodies have researched specific resources, conflict dynamics, and countries, but have yet to share their findings with each other at a meaningful scale, and limited connections have been drawn between the various strands of inquiry. As a result, the peacebuilding community does not know what works in what circumstances, what does not, or why.

Given the complexity of peacebuilding, practitioners and researchers alike are struggling to articulate good practice. It is increasingly clear that natural resources must be included as a foundational issue; many questions remain, however, regarding opportunities, options, and trade-offs.

Against this backdrop, the Environmental Law Institute, the UN Environment Programme, the University of Tokyo, and McGill University launched a research program designed to examine experiences in post-conflict peacebuilding and natural resource management; to identify lessons from these experiences; and to raise awareness of those lessons among practitioners and scholars. The program has benefitted from broad support, with the government of Finland—one of the few donor governments to explicitly recognize the role of natural resources in both conflict and peacebuilding efforts—playing a catalytic role by providing core financing.

The research program has been guided by the collective experiences of the four members of the Steering Committee: as the coordinators of the program and the series editors, we have drawn on our work in more than thirty post-conflict

countries. Our experiences—which include leading environmental assessments in Afghanistan, developing forest law in Liberia, supporting land reform in Mozambique, and fostering cooperation around water in Iraq—have led to a shared understanding that natural resource issues rarely receive the political attention they merit. Through this research program and partnership, we hope to catalyze a comprehensive global effort to demonstrate that peacebuilding substantially depends on the transformation of natural assets into peacebuilding benefits—a change that must occur without mortgaging the future or creating new conflict.

Since its inception in 2007, the program has grown dramatically in response to strong interest from practitioners, researchers, and policy makers. Participants in an initial scoping meeting suggested a single edited book consisting of twenty case studies and crosscutting analyses. It soon became clear, however, that the undertaking should reflect a much broader range of experiences, perspectives, and dimensions.

The research program yielded more than 150 peer-reviewed case studies and analyses written by more than 225 scholars, practitioners, and decision makers from fifty countries. The case studies and analyses have been assembled into a set of six edited books, each focusing on a specific set of natural resources or an aspect of peacebuilding: high-value natural resources; land; water; resources for livelihoods; assessment and restoration of natural resources; and governance. Examining a broad range of resources, including oil, minerals, land, water, wildlife, livestock, fisheries, forests, and agricultural products, the books document and analyze post-conflict natural resource management successes, failures, and ongoing efforts in sixty conflict-affected countries and territories. In their diversity and number, the books represent the most significant collection to date of experiences, analyses, and lessons in managing natural resources to support post-conflict peacebuilding.

In addition to the six edited books, the partnership has created an overarching book, *Post-Conflict Peacebuilding and Natural Resources: The Promise and the Peril*, which will be published by Cambridge University Press. This book draws on the six edited books to explore the role of natural resources in various peacebuilding activities across the humanitarian, security, and development sectors.

These seven books will be of interest to practitioners, researchers, and policy makers in the security, development, peacebuilding, political, and natural resource communities. They are designed to provide a conceptual framework, assess approaches, distill lessons, and identify specific options and trade-offs for more effectively managing natural resources to support post-conflict peacebuilding.

Natural resources present both opportunities and risks, and postponing their consideration in the peacebuilding process can imperil long-term peace and undermine sustainable development. Experiences from the past sixty years provide many lessons and broad guidance, as well as insight into which approaches are promising and which are problematic.

A number of questions, however, still lack definitive answers. We do not always understand precisely why certain approaches fail or succeed in specific instances, or which of a dozen contextual factors are the most important in determining the success of a peacebuilding effort. Nevertheless, numerous discrete measures related to natural resources can be adopted now to improve the likelihood of long-term peace. By learning from peacebuilding experiences to date, we can avoid repeating the mistakes of the past and break the cycle of conflict that has come to characterize so many countries. We also hope that this undertaking represents a new way to understand and approach peacebuilding.

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Foreword

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In early 1999, one year into my tenure as Executive Director of the United Nations Environment Programme (UNEP), the conflict in Kosovo escalated into an international war. The range of modern weaponry involved and the deliberate targeting of industrial and military facilities made it clear that the Balkans faced not only a humanitarian crisis of tragic proportions, but also potentially serious environmental damage.

In the face of dire predictions of environmental disaster, UN Secretary-General Kofi Annan asked UNEP to conduct an impartial and scientific investigation of the effects of the Kosovo conflict on the environment and human settlements. To conduct the assessment, UNEP and United Nations Human Settlements Programme (UN-HABITAT) established the Joint UNEP/UN-HABITAT Balkans Task Force.

The resulting report, *The Kosovo Conflict: Consequences for the Environment and Human Settlements*, was published in October 1999. In addition to outlining general linkages between armed conflict and environmental damage, the report identified four environmental hot spots—heavily contaminated sites where remediation was essential to protect human health—and recommended, on humanitarian grounds, a series of urgent cleanup measures. On the basis of the report, UNEP raised significant financial resources from the international community to implement remediation efforts, which were undertaken in partnership with local authorities.

This pioneering work raised awareness of the environmental impacts of conflict and paved the way for the development of new expertise within UNEP to address such impacts. The investigation of the environmental consequences of the Kosovo conflict was followed by similar field assessments throughout the Balkans and in conflict-affected regions across the globe, from Afghanistan to Gaza, Iraq, and Sudan. Each assessment was designed to fit the unique geographic, political, and security conditions of the particular situation.

Ultimately, UNEP's work in the Balkans led to the creation of the Post-Conflict and Disaster Management Branch, which is tasked with undertaking assessments that allow war-torn communities to know whether their water is safe to drink, whether their air is safe to breathe, and whether their land can be

cultivated without risk. Moreover, such assessments have helped to ensure that environmental and natural resource management issues are included in recovery and reconstruction plans, enabling communities to "build back better"—that is, in ways that bolster sustainable, long-term development and strengthen peace and stability. Today, one of UNEP's six priorities is to assess and address the environmental dimensions of disasters and conflicts; and neutral, objective, post-crisis assessments remain a cornerstone of UNEP's operations.

As global awareness of the complex relationship between natural resources and conflict increases, more national and international organizations are seeking to address the connections. In 2011, for example, the president of the International Committee of the Red Cross identified the protection of the environment during armed conflict as one of four themes that need to be reinforced by humanitarian law. Within the European Union (EU), the policies pertaining to stability and conflict prevention call for the mismanagement of natural resources to be addressed. The UN and the EU have also created a partnership on natural resources and conflict prevention to issue guidance, conduct training, and develop joint programs in fragile states. Within the UN family, the Department of Peacekeeping Operations and the Department of Field Support adopted a new policy, in 2009, to limit the environmental footprint of peacekeeping operations; the UN Peacebuilding Commission has held high-level meetings to examine the ways in which natural resources can support peacebuilding; the Department of Political Affairs has added mediators with expertise on land and water conflicts to its global roster; and Secretary-General Ban Ki-moon, in his July 2010 *Progress Report of the Secretary-General on Peacebuilding in the Immediate Aftermath of Conflict*, formally called on member states and the UN system to "make questions of natural resource allocation, ownership and access an integral part of peacebuilding strategies."

The examples of post-conflict environmental assessments, restoration, re-mediation, and reconstruction presented in this book make clear that the work of the Balkans Task Force and the Post-Conflict and Disaster Management Branch is only part of the wide range of initiatives being undertaken to manage natural resources to support peacebuilding. The links between natural resources and violent conflict are now generally accepted; the tasks that remain for practi-tioners, policy makers, and researchers are threefold: first, to help communities address—and ultimately prevent—violent conflict over natural resources, as well as the environmental damage that results from such conflict; second, to transform natural resources so as to maximize opportunities for sustainable livelihoods, employment, economic diversification, and reconciliation without causing new conflict or environmental degradation; and third, to restore the productivity of degraded natural resources and to begin using them on a more sustainable basis. This book, together with the other five edited books in the series, represents an important step toward achieving these goals. I am proud that UNEP's early assessment work in the Balkans helped to catalyze such important follow-up efforts, and I can only hope that the lessons contained in these books improve programming and impact at the field level.

Acknowledgments

The cover was designed by Nikki Meith. Cover photography is by Per-Anders Pettersson/Getty Images.

Except as otherwise specifically noted, the maps in this publication use public domain data originating from Natural Earth (2009, www.naturalearthdata.com). The designations employed and the presentations do not imply the expressions of any opinion whatsoever on the part of UNEP or contributing organizations concerning the legal status of any country, territory, city or area or its authority, or concerning the delimitation of its frontiers or boundaries.

When available, URLs are provided for sources that can be accessed electronically. URLs contained in this book were current at the time of writing.

Placing environmental and natural resource risks, impacts, and opportunities on the post-conflict peacebuilding agenda

David Jensen and Steve Lonergan

Following conflict, a country's natural resources are the single most important asset available to kick-start economic recovery, employment, and livelihoods, and to sustain basic services. Decisions about the restoration, management, and protection of natural resources have fundamental implications for short-term stability, longer-term sustainable development, and successful peacebuilding. Yet many post-conflict countries lack (1) sound information on the quality or quantity of the natural resource base and (2) an accurate picture of how resources were damaged or destroyed during conflict. Moreover, there is often little understanding of the ways in which natural resources may have provided a lifeline to populations coping with conflict, or of how resources may have become entwined with the conflict economy. An informed understanding of the linkages between natural resources and conflict is essential, however, to capitalize on the peacebuilding potential of resources while avoiding the perils associated with their poor governance.

The immediate post-conflict period provides a window of opportunity to establish security, rebuild institutions, and consolidate peace (see sidebar). This period also offers the chance to rebuild and transform the institutions that are related to the restoration, management, and allocation of natural resources in ways that would otherwise be politically difficult to achieve. Capitalizing on early opportunities is particularly critical if the economy depends primarily on natural resources, if resources contributed to the onset or financing of conflict, or if resources were heavily damaged during conflict.

Too often, there is a misperception that environmental governance, including the sustainable management of natural resources, is distinct from—and sometimes even in conflict with—peacebuilding and development goals. Ensuring that natural

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2 Assessing and restoring natural resources in post-conflict peacebuilding

Post-conflict peacebuilding and natural resources: Key terms and concepts

Following conflict, peacebuilding actors leverage a country's available assets (including natural resources) to transition from conflict to peace and sustainable development. Peacebuilding actors work at the international, national, and subnational levels, and include national and subnational government bodies; United Nations agencies and other international organizations; international and domestic nongovernmental organizations; the private sector; and the media. Each group of peacebuilding actors deploys its own tools, and there are a growing number of tools to integrate the peacebuilding efforts of different types of actors.

A post-conflict period typically begins after a peace agreement or military victory. Because a post-conflict period is often characterized by intermittent violence and instability, it can be difficult to pinpoint when the post-conflict period ends. For the purposes of this book, the post-conflict period may be said to end when political, security, and economic discourse and actions no longer revolve around armed conflict or the impacts of conflict, but focus instead on standard development objectives. Within the post-conflict period, the first two years are referred to as the *immediate aftermath of conflict* (UNSG 2009), which is followed by a period known as *peace consolidation*.

According to the United Nations, "Peacebuilding involves a range of measures targeted to reduce the risk of lapsing or relapsing into conflict by strengthening national capacities at all levels for conflict management, and to lay the foundations for sustainable peace and development" (UNSG's Policy Committee 2007). In many instances, this means addressing the root causes of the conflict.

There are many challenges to peacebuilding: insecurity, ethnic and political polarization (as well as marginalization), corruption, lack of governmental legitimacy, extensive displacement, and loss of property. To address these and other challenges, peacebuilding actors undertake diverse activities that advance four broad peacebuilding objectives:*

- *Establishing security*, which encompasses basic safety and civilian protection; security sector reform; disarmament, demobilization, and reintegration; and demining.
- *Delivering basic services*, including water, sanitation, waste management, and energy, as well as health care and primary education.
- *Restoring the economy and livelihoods*, which includes repairing and constructing infrastructure and public works.
- *Rebuilding governance and inclusive political processes*, which encompasses dialogue and reconciliation processes, rule of law, dispute resolution, core government functions, transitional justice, and electoral processes.

Although they are sometimes regarded as distinct from peacebuilding, both peacemaking (the negotiation and conclusion of peace agreements) and humanitarian assistance are relevant to peacebuilding, as they can profoundly influence the options for post-conflict programming. Peacemaking and humanitarian assistance are also relevant to this book, in that they often have substantial natural resource dimensions.

Successful peacebuilding is a transformative process in which a fragile country and the international community seek to address grievances and proactively lay the foundation for a lasting peace. As part of this process, peacebuilding actors seek to manage the country's assets—as well as whatever international assistance may be available—to ensure security, provide basic services, rebuild the economy and livelihoods, and restore governance. The assets of a post-conflict country include natural resources; infrastructure; and human, social, and financial capital. Natural resources comprise land, water, and other renewable resources, as well as extractive resources such as oil, gas, and minerals. The rest of the book explores the many ways in which natural resources affect peacebuilding.

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* This framework draws substantially from the *Report of the Secretary-General on Peacebuilding in the Immediate Aftermath of Conflict* (UNSG 2009), but the activities described have been regrouped and supplemented by activities articulated in USIP and U.S. Army PKSOI (2009), Sphere Project (2004, 2011), UN (2011), UNSG (2010, 2012), and International Dialogue on Peacebuilding and Statebuilding (2011).

resource restoration and management are placed on the political agenda as immediate post-conflict priorities requires making a strong case regarding both the potential benefits of swift action and the potential risks of inaction.

Since the mid-twentieth century, the international community's responses to the connections between natural resources, conflict, and peacebuilding have been mixed, evolving in fits and starts as various conflicts have revealed the many challenges that need to be addressed. The use of Agent Orange in the Viet Nam War is one of the most visible and acute examples of the environmental impacts of conflict in recent history. It is estimated that between 1962 and 1971, the United States sprayed more than 72 million liters of defoliants, including Agent Orange, over Viet Nam, exposing nearly 17 million people to the risks associated with these chemicals (Briggs and Weissbecker 2012). Apart from the immense human toll, the ecological damage was devastating: some estimates suggest that up to half of South Viet Nam's commercial hardwood forests and mangrove forests were destroyed.

In the aftermath of the war, the international community responded with new legal instruments designed to prevent similar environmental damage in future conflicts:

- The Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, adopted in 1976 and entered into force in 1978, was intended to prevent states from using tactics or technologies that could alter the weather, and thereby cause catastrophic environmental change.[1]
- Additional Protocol I to the 1949 Geneva Conventions, adopted in 1977, contained two important articles (35 and 55) that were designed to afford the environment some measure of protection during international armed conflict by prohibiting "widespread, long-term and severe" damage to the environment (UNEP 2009b).[2]

These important advances in international law did nothing, however, to prevent the environmental damage that occurred during the 1990–1991 Gulf War, when the retreating Iraqi army destroyed more than 700 oil wells (Briggs and Weissbecker 2012; UNEP 2003); nor did they prevent Saddam Hussein's government, over a period of several years following the 1990–1991 Gulf War, from

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[1] Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques, December 10, 1976. http://treaties.un.org/doc/Treaties/1978/10/19781005%2000-39%20AM/Ch_XXVI_01p.pdf.

[2] Protocol Additional to the Geneva Conventions of 12 August 1949, and relating to the Protection of Victims of International Armed Conflicts (Protocol I), 8 June 1977, art. 35. The triple cumulative standard called for in Additional Protocol 1, under which all three conditions must be proven for a violation to occur, has been nearly impossible to enforce, particularly given the lack of precise definitions for "widespread," "long-term," and "severe" (UNEP 2009b).

draining 90 percent of the Mesopotamian marshlands in retaliation against an uprising of the Marsh Arabs (Bruch et al. 2009). Nevertheless, the severe environmental damage caused by conflicts in Iraq again prompted a number of important international responses. In 1991, the United Nations Security Council (UNSC) established the United Nations Compensation Commission to provide financial compensation for losses—including environmental damage—resulting from Iraq's illegal invasion of Kuwait (Payne 2013); the inclusion of environmental damage within the scope of compensation constituted an important international precedent.

Also on the normative front, the 1992 Rio Declaration on Environment and Development included principle 24, which recognized that "warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary" (UNGA 1992, prin. 24).[3]

In 2001, the United Nations General Assembly (UNGA), at the urging of the government of Kuwait, established November 6 as the International Day for Preventing the Exploitation of the Environment in War and Armed Conflict— a day for the international community to reflect on the challenge of deliberate war-related environmental damage and take further collective action toward prevention (UNGA 2001). Importantly, UNGA formally recognized that environmental damage during armed conflict impairs ecosystems and natural resources long after conflict has subsided, and often extends beyond the limits of national territories as well as beyond the present generation.

In addition to being subjected to purposeful harm, natural resources play another role in conflict: as financing sources. With the end of the Cold War, in 1989, many countries and armed groups turned to natural resources to fund conflict: since 1990, eighteen internal conflicts have been partially fueled or financed by natural resources (UNEP 2009a). In many cases, natural resources also became the spoils of war: in the wake of conflict, and with little or no regard for transparency, fair terms, or benefit sharing with local communities, resource concession contracts have been handed out by combatants and governments alike.

Where natural resources have been used to finance conflict, the UNSC has in some cases mandated UN peacekeeping missions to address the challenges of natural resource governance (UNEP 2012). So far, five missions have been given direct mandates to help post-conflict countries restore or extend state authority over natural resources (with varying degrees of breadth with respect to the resources addressed and the activities in which the missions engaged): Cambodia, Liberia, Sierra Leone, the Democratic Republic of the Congo, and Abyei, Sudan (UNSC 1992, 2003, 2004, 2008a, 2008b, 2011).[4] To restrict their use in

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[3] See Bruch et al. (2012) for more information.
[4] In addition, the UN expert group investigating the production and illicit export of diamonds in Côte d'Ivoire had a mandate to cooperate with the UN peacekeeping mission (UNSC 2005).

conflict financing and prevent illegal trade, the UNSC has also imposed a range of sanctions on oil, diamonds, and timber (UNEP 2012). In the early 2000s, two initiatives—the Kimberley Process (KP) and the Extractive Industries Transparency Initiative (EITI)—were established to restrict conflict financing from diamonds and to ensure transparency in oil, gas, and mining revenues, respectively.[5]

The KP and the EITI were also important elements in the expanding set of tools that the international community could use to address the linkages between natural resources, conflict, and peacebuilding. As these linkages became more complex and multifaceted, the UN saw a need to establish new, dedicated capacity to assist member states in addressing them. As a result, in 2005, the United Nations Environment Programme (UNEP) established the Post-Conflict and Disaster Management Branch (PCDMB). PCDMB's mandate is (1) to conduct post-conflict environmental assessments at the request of member states, and (2) to help integrate environmental and natural resource considerations into UN reconstruction, peacebuilding, and humanitarian assistance efforts. In 2008, the task of helping member states to assess and address the environmental dimensions of both conflicts and disasters became one of UNEP's six overarching priorities; and in 2010, the UN Secretary-General called on member states and the UN system to make "natural resource allocation, ownership and access an integral part of peacebuilding strategies" (UNSG 2010).[6]

This book is an initial response to this call. It captures some of the main lessons that have emerged from efforts to integrate post-conflict environmental assessment into peacebuilding. It also illustrates how post-conflict reconstruction efforts can take environmental and natural resource issues into account—and investigates how, as part of the peacebuilding process, environmental hot spots caused by conflict have been remediated, and natural resources damaged by conflict or unsustainable practices have been restored. The aim is to demonstrate why such measures are important; how they can strengthen peacebuilding; and how they can be better integrated into peacebuilding programs, policies, and practices. Finally, the book highlights the necessity, in assessment, remediation, and restoration, of responding to the unique conditions of post-conflict countries.

The twenty case studies included in this book cover twenty-three post-conflict countries and territories (see map on page 6) and were written by thirty-five experts from UN agencies, government ministries, nongovernmental organizations, academia, and the military. The book is organized into four thematic sections: "Post-Conflict Environmental Assessments," "Remediation of Environmental Hot Spots," "Restoration of Natural Resources and Ecosystems," and "Environmental Dimensions of Infrastructure and Reconstruction."

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[5] See, for example, Grant (2012), Wright (2012), Bone (2012), Mitchell (2012), and Rich and Warner (2012).

[6] Other important policy documents on post-conflict peacebuilding include World Bank (2011), UN (2011), UNSG (2009, 2012), and UNEP (2009a).
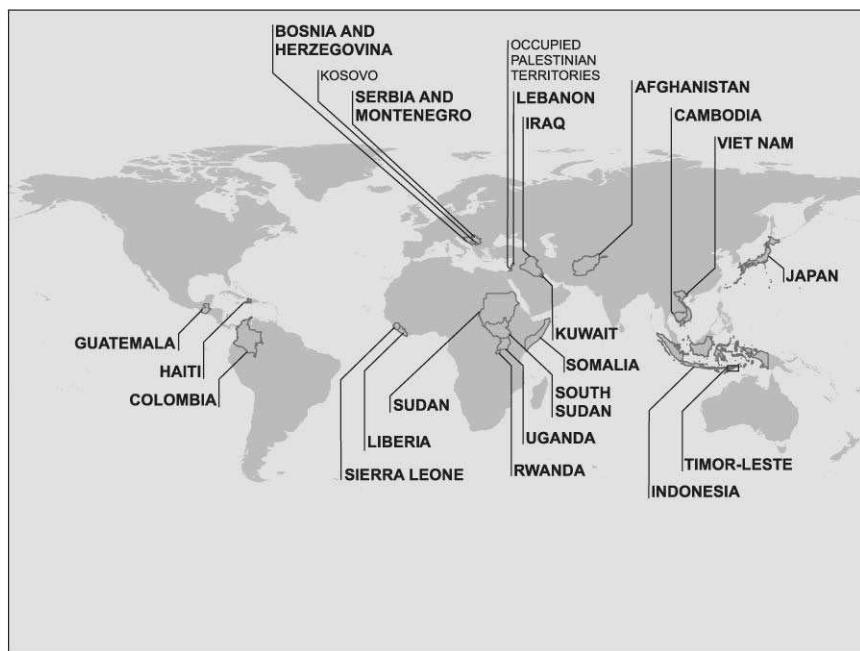
Post-conflict and conflict-affected countries and territories from which lessons have been drawn in this book, either through case studies or broader thematic analyses
Notes: UN member states are set in bold. During the time under consideration in this book, the Palestinian territories were known as the occupied Palestinian territories, and Serbia and Montenegro were one country: first the Federal Republic of Yugoslavia, then Serbia and Montenegro.

POST-CONFLICT ENVIRONMENTAL ASSESSMENTS

The complexity of the potential linkages among natural resources, conflict, and peacebuilding justifies comprehensive assessments at the outset of the peacebuilding process. Such assessments must include three major tasks:

- Identifying the role of natural resources and the environment in contributing to conflict outbreak, financing, perpetuation, and relapse risk.
- Determining the conflict's direct and indirect impacts on natural resources and identifying the associated risks to human health, livelihoods, and security.
- Evaluating opportunities to restore and use natural resources, in order to achieve peacebuilding and sustainable development outcomes while minimizing environmental damage and new grievances.

Environmental assessments in post-conflict countries face a number of challenges: first, many post-conflict countries lack baseline environmental data—

a situation that has often been exacerbated by the conflict itself. Second, key actors with control over natural resources may resist efforts to establish transparency. Third, the "winners" and "losers" in a conflict are typically keen to promote specific agendas—and are therefore not necessarily trustworthy sources of information. Given the lack of reliable data, an objective and verifiable assessment conducted by an impartial actor can be a valuable tool for needs assessments and for the development of priorities.

Individuals, communities, organizations, and nations recovering from conflict also face a number of important decisions about assessment. At what point should an environmental assessment be undertaken? When data are limited, how can sound judgments be made about needs and priorities? How can the assessment address spatial variations in land use, environmental impact, and needs? Can the assessment process itself be used as a platform for community engagement and reconciliation? Who will participate in decision making, and who will set priorities for action? What are the trade-offs associated with different natural resource investments? How can different interventions be sequenced and coordinated? Part 1 of this book provides some initial insight into these challenges, on the basis of case studies from Afghanistan, Albania, Bosnia and Herzegovina, Iraq, Lebanon, Liberia, Macedonia, the occupied Palestinian territories, Serbia and Montenegro, Somalia, and Sudan.[7]

REMEDIATION OF ENVIRONMENTAL HOT SPOTS

Chemical contamination, hazardous waste (including rubble), landmines, and unexploded ordnance are significant threats to human and ecological health in post-conflict settings. The cost of cleanup may be high, but intervention is often crucial to the success of peacebuilding—both as a means of protecting human health, and as a way to demonstrate domestic authorities' capacity for effective response.

When conflict causes environmental hot spots, remediation must address a number of key concerns: What is the minimum level of cleanup needed to avert significant risk? Can remediation projects provide immediate employment for excombatants? Should preexisting levels of contamination and pollution be taken into account in determining the extent of cleanup? Where should hazardous materials be stored or disposed of? When population groups are at odds, can the remediation of hot spots that pose equal threats to all groups be used to build mutual trust, and as an opportunity for cooperation? While there is little question that rapid remediation of hazardous sites is necessary, both domestic and international actors have had difficulty addressing these challenges. The case studies in part 2—which are from Cambodia, Iraq, Lebanon, Serbia and Montenegro, Sierra Leone, Sudan, and Viet Nam—capture some of the key lessons learned to date.

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[7] Albania and Macedonia are not evaluated as conflict-affected countries but rather are mentioned because each was affected by refugee flows.

RESTORATION OF NATURAL RESOURCES AND ECOSYSTEMS

In addition to having been directly damaged by conflict, natural resources and ecosystems may have been harmed by unsustainable practice before or during conflict. Natural resources are often the very foundation of post-conflict recovery, offering livelihoods and employment (for example, farming, forestry, fishing, and mining); construction materials (such as lumber or reeds); and water for people, agriculture, and livestock. Trying to restore ecosystems and natural resources while simultaneously engineering livelihood recovery may seem like a contradiction. But restoration can be a major source of emergency employment—and, in the longer term, post-conflict livelihoods will depend on the restoration and sustainable management of the natural resource base. Thus, the question is not whether restoration should be undertaken, but how quickly and to what extent.

The key challenges in designing and implementing restoration programs in post-conflict countries include the following: Should restoration efforts be directed by local communities, or by outside organizations that have greater technical expertise? In order to support peacebuilding, can restoration be used both as a source of emergency employment, and as a means of empowering communities? Can the restoration of natural resources and the recovery of human livelihoods proceed simultaneously? What practical steps can be taken if the affected region is no longer ecologically viable? How can restoration be undertaken in the absence of good governance? To what condition should the environment be restored? How should the contributions of nonstate actors be coordinated, and by whom? In part 3, case studies from Haiti, Iraq, and Lebanon highlight key considerations in designing and implementing restoration programs in post-conflict countries. This part of the book also considers the potential implications of climate change for natural resources and peacebuilding.

ENVIRONMENTAL DIMENSIONS OF INFRASTRUCTURE AND RECONSTRUCTION

Reconstruction is always a priority in conflict-affected regions, particularly in relation to water, waste, and energy infrastructure. Any reconstruction efforts must take social, economic, and environmental impacts into account, both from a sectoral perspective (which calls for strategic environmental assessments) and on a project-by-project basis (which calls for environmental impact assessments). Like remediation and restoration, reconstruction faces a number of challenges, including the following: How can competing priorities, particularly for scarce resources such as water, be addressed? How can environmental impact assessments be conducted as rapidly as possible, to avoid delays that could affect peacebuilding? How can investments in natural resource–related infrastructure also support peacebuilding, through job creation, confidence building, and regional cooperation? Part 4 includes case studies from Afghanistan, the Balkans, Iraq, and Sudan, as well as lessons from post–World War II reconstruction efforts. This part

of the book also considers the importance, in project evaluations, of assessing a project's potential positive and negative effects on access to natural resources.

FUTURE OUTLOOK

The fragility of post-conflict settings requires immediate attention to natural resources once a conflict has ended—and, in many cases, while it is occurring. Natural resources are essential to most peacebuilding activities, but the design and implementation of post-conflict peacebuilding policies and programs have often failed to effectively analyze, plan for, or address natural resources. This book highlights the important role of environmental assessment, remediation, restoration, and reconstruction in the peacebuilding context, including the implementation challenges that practitioners are likely to face. In addition to stressing the importance of integrating natural resource management and environmental sustainability into peacebuilding, the book offers lessons on how to achieve such integration.

Along with understanding the lessons of the past, it is equally important to assess future risk. For example, the list of fragile states identified in 2011 by the Organisation for Economic Co-operation and Development includes forty-five countries deemed to be at risk (OECD 2011). Of those, about 91 percent contain transboundary waters, globally significant biodiversity hot spots, or both (CI 2005; Wolf, Yoffe, and Giordano 2003); 68 percent contain World Heritage sites (UNESCO 2011); and 80 percent contain extractive resources of strategic global significance (USGS 2010; IEA 2011).

Understanding how to prevent natural resources from contributing to instability and conflict in fragile regions is a critical need, as is the provision of immediate technical and political support in the event of violence. Averting the pillage and plunder of natural resources in fragile states will be one of the key challenges of the next decade. In addition to strengthening post-conflict peacebuilding, this book is intended to provide insights into conducting assessments and designing programs to address the risks and opportunities presented by natural resources in fragile states.

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PART 1

Post-conflict environmental assessments

Introduction

In post-conflict environmental assessments, researchers employ investigative technical procedures in a specific geographical area to identify and evaluate the biophysical, social, and other environmental impacts that occurred as the result of a conflict, and to identify needs and the opportunities available to remediate these impacts and restore environmental health. Increasingly, environmental assessments are also investigating how natural resources contributed to the outbreak or perpetuation of conflict, as well as how they can be used to positively transform peacebuilding outcomes without creating new sources of conflict or major environmental impacts. With comprehensive environmental assessments, practitioners are better able to integrate environmental and natural resource considerations into post-conflict planning processes and longer-term decision making.

The post-conflict environmental assessments conducted by the United Nations Environment Programme (UNEP) have evolved and expanded since 1999, when they were first employed. In "Evaluating the Impact of UNEP's Post-Conflict Environmental Assessments," David Jensen reviews the evolution of these assessments and discusses how they are applied in the various policy frameworks they are meant to inform. Environmental assessments can lead to policy change, help to mobilize financing, and attract media coverage. Jensen evaluates the results of seven different post-conflict assessments conducted—in chronological order—in Serbia, Iraq, Afghanistan, the occupied Palestinian territories, Liberia, Lebanon, and Sudan. He quantifies the various impacts and determines the most relevant internal and external explanatory factors for them. Finally, he discusses the strengths and weaknesses of various assessment approaches and highlights the need for national involvement.

Ken Conca and Jennifer Wallace also consider UNEP's post-conflict environmental assessments and review a range of assessments to identify lessons for peacebuilding. Their chapter, "Environment and Peacebuilding in War-Torn Societies: Lessons from the UN Environment Programme's Experience with Post-Conflict Assessment," opens with an overview of the state of knowledge about environmental and natural resource linkages to peace and conflict. The subsequent analysis and discussion highlight four themes: the multiple, often indirect connections between violence and environmental degradation; the political dimensions of environmental assessment as a confidence-building tool; resource and environmental linkages among the formal, informal, illegal, and aid-based economies of war-torn societies; and the environmental dimensions of reconstituting regulations, the state, and the rule of law. Environmental issues create high-stakes choices in post-conflict settings, Conca and Wallace contend, and effective handling of these choices may create a solid foundation for peace and sustainable development; when such choices are handled poorly, however, environmental problems can undercut an already tenuous peace.

The Swedish Armed Forces and the Swedish Defence Research Agency have developed an environmental vulnerability assessment (EVA) framework that has been used to mitigate environmental risks during Swedish peacekeeping operations. In "Medical and Environmental Intelligence in Peace and Crisis-Management Operations," Birgitta Liljedahl, Annica Waleij, Björn Sandström, and Louise Simonsson highlight the need for increased understanding within the peace and security community of the nexus between security, environmental issues, and natural resources. They argue that robust, transparent, and systematically applied tools such as an EVA can aid in the recognition of environmental drivers of conflict and of potential environmental risks to human health. Such tools can also improve the ability to predict and mitigate negative environmental impacts from operations.

Regardless of the specific post-conflict assessment process utilized, three tools can support the consideration of natural resources and enhance the effectiveness of the assessment: consultation, adaptation to change, and the building of scenarios based on the desired end state of the post-conflict transition. In "Thinking Back-End: Improving Post-Conflict Analysis through Consultation, Adapting to Change, and Scenario Building," Alexander Carius and Achim Maas examine these approaches and pose specific questions that can complement crisis analysis and help practitioners to identify and prevent relapses into violence.

The four chapters in part 1 provide a comprehensive overview of the evolution of post-conflict assessments, the main trends in direct and indirect environmental impacts from conflict, the available tools and approaches, and finally the key success factors for integrating environment and natural resource needs into peacebuilding frameworks and recovery plans. One of the key messages is that environmental assessments are critical tools for identifying impacts, risks, and opportunities, as well as for costing and integrating needs within peacebuilding plans. Accordingly, environmental assessments should be conducted on a systematic basis as part of the new UN peacebuilding architecture.

Evaluating the impact of UNEP's post-conflict environmental assessments

David Jensen

In a post-conflict situation, some of the immediate challenges for the international community include defining and prioritizing needs, coordinating responses, and sending the right level and type of support to the right place at the right time. All of this must be accomplished in a way that reflects national priorities and helps stabilize and consolidate the peace process. But efforts often take place in a volatile and complex political environment, where national authorities may lack full legitimacy and public support, have low capacity, or be more interested in their political survival and regime security. Prioritizing the management of natural resources is often difficult, given competing priorities, such as security sector reform; disarmament, demobilization, and reintegration; return of displaced persons; and holding of national elections. Yet natural resources are essential to the peace process because they often underpin other peacebuilding sectors. From water for drinking and agriculture, to forests and rangelands that support livelihoods, to high-value natural resources that can kick-start economic growth and become an engine for recovery, the way natural resources are used can influence the success of peacebuilding endeavors. Furthermore failure to effectively manage natural resources, such as land and water, is often one of the most common sources of local-level conflict.

To ensure that natural resource management and environmental governance needs are reflected in post-conflict relief, recovery, and development plans, the United Nations Environment Programme (UNEP) has built new capacity and technical expertise in conducting post-conflict environmental assessments at the request of national authorities and the United Nations system. UNEP's work, which began in 1999, has been part of an overall process to make UNEP more operational and relevant at the field level. There are three situations in which UNEP can be

requested to conduct a post-conflict environmental assessment—first, when national authorities lack the scientific expertise or operational capacity to conduct a field-based assessment; second, when the conflict causes environmental damage that may involve one or more neighboring countries; and third, when political stakes are high and impartiality is needed to objectively analyze environmental drivers and impacts.

Since 1999, UNEP's post-conflict environmental assessment toolkit has gradually expanded to meet various needs and policy processes. UNEP now offers four distinct types of assessments, each with a different scope, objective, and approach. These include needs assessments, quantitative risk assessments, strategic assessments, and comprehensive assessments. The chapter compares the overall impact of the four methods in seven field operations conducted between 1999 and 2007.

The effects of the assessments are first evaluated according to three indicators: policy influence, financing of environmental needs, and media coverage. For each indicator, the level of impact is categorized on a four-point scale in order to provide a standardized framework for comparison. From the country case studies, successes, failures, and lessons learned are drawn. The chapter then considers a number of questions: Are assessments useful and which methods have worked best? What are the conditions for success? Does more time and funding lead to more impact? How can environmental and natural resource management needs be effectively integrated into peacebuilding plans? How can national ownership be maintained when international actors carry out the assessments?

All of the countries where UNEP conducted post-conflict assessments from 1999 to 2007 are covered.[1] These include the Federal Republic of Yugoslavia (FRY), Afghanistan, the occupied Palestinian territories (oPt), Iraq, Liberia, Lebanon, and Sudan. Assessments conducted by UNEP since 2008 have not been included because their full impact could not yet be evaluated at the time of this writing.

POST-CONFLICT ENVIRONMENTAL ASSESSMENT METHODS

UNEP has developed four types of post-conflict environmental assessments to meet the distinct needs of policy processes. A summary of each method and a list of countries where it was applied are provided below:

- **Needs assessments and desk studies:** During or after a conflict, UNEP can collect preexisting secondary information on environmental trends and natural resource management challenges from international and national sources. The information is compiled into a desk study report that attempts to identify and prioritize environmental needs. Limited field visits of one to two weeks are

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[1] For another perspective on UNEP's post-conflict assessments, see Ken Conca and Jennifer Wallace, "Environment and Peacebuilding in War-Torn Societies: Lessons from the UN Environment Programme's Experience with Post-Conflict Assessment," in this book.
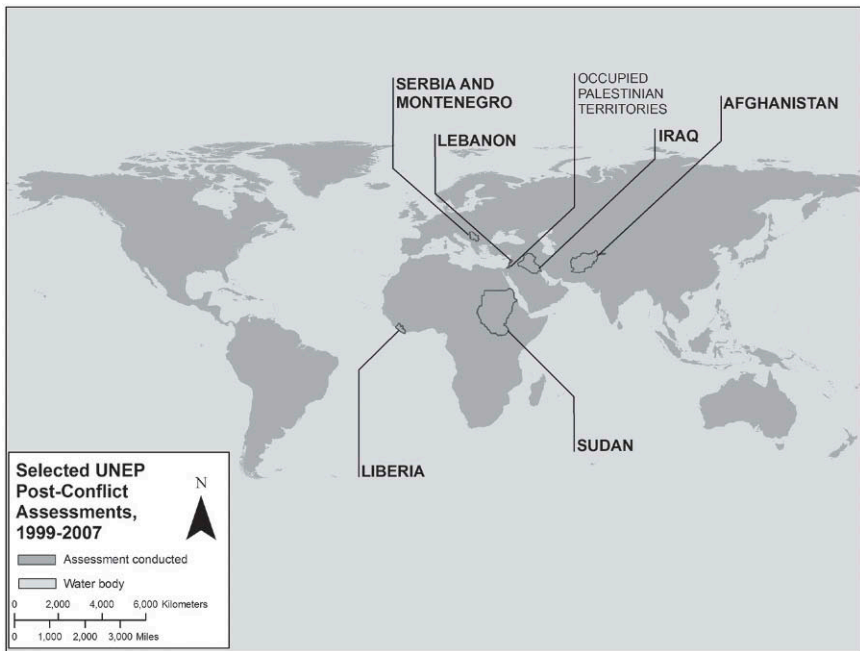
Notes:
1. Post-conflict operations in UN member states are set in bold.
2. At the time of UNEP's respective assessments, the Palestinian territories were known as the occupied Palestinian territories; Serbia and Montenegro comprised the Federal Republic of Yugoslavia; and South Sudan was not yet an independent country.

often conducted to verify data, conduct stakeholder meetings, and validate initial findings. These assessments inform the post-conflict needs assessment (PCNA) process of the UN, World Bank, and European Union (EU). They are also often published as self-standing desk study reports and serve as a basis for further national analysis. The chapter evaluates the impact of UNEP needs assessments and desk studies conducted in the oPt, Iraq, Liberia, and Sudan.

- **Quantitative risk assessments:** These assessments focus on the direct environmental impacts of conflicts caused by bombing and destruction of buildings, industrial sites, and public infrastructure. They were designed to assess environmental damage following short-duration, high-intensity conflicts that often occur in urban environments. Teams of environmental experts conduct rigorous field sampling of possible environmental contamination of water, soil, and air, with a view to identifying serious risks to human health and environmental hot spots. Field missions are conducted in a span of three to four weeks and involve the extensive use of laboratory analysis and satellite imagery. Depending on how soon after a conflict they are conducted, the assessments

can inform humanitarian priorities or early recovery plans. The chapter evaluates the impact of UNEP's quantitative risk assessments conducted in FRY and Lebanon.

- **Strategic assessments:** In addition to the direct environmental effects of conflict addressed by quantitative risk assessments, strategic assessments evaluate the indirect impacts of the survival and coping strategies of local people and the institutional problems caused by the breakdown of governance and capacity. Potential environmental risks to human health, livelihoods, and security, as well as capacity gaps, are then identified. The assessments provide a snapshot of the environmental needs in order to inform larger recovery or peacebuilding strategies. They were designed primarily for use following long-duration, low-intensity conflicts. Strategic assessments are often conducted in two to six months and are based on field missions lasting three to six weeks. They are used when a specific planning or policy process requires updated field information quickly and when there is insufficient time to conduct a comprehensive assessment. The chapter evaluates the impact of a UNEP strategic assessment conducted in Afghanistan.

- **Comprehensive assessments:** When sufficient time and resources exist, UNEP can conduct a comprehensive assessment of the environmental situation. Comprehensive assessments provide a detailed picture of each natural resource sector and the environmental trends, governance challenges, and capacity needs. Based on national consultations with stakeholders, comprehensive assessments attempt to identify priorities and cost the required interventions over the short, medium, and long terms. Comprehensive assessments last from one to two years, depending on the size of the country and area affected by the conflict, the security conditions, and the logistical infrastructure. The assessments contain enough information upon which to build detailed intervention programs. The chapter evaluates the impact of a UNEP comprehensive assessment conducted in Sudan.

The type of assessment used in each case depends on the scope of the request made by the national authority, the conflict, funding, and the time line of the post-conflict policy framework as discussed below. Each assessment is also tailor-made to address the political, security, and logistical conditions in each country. To the extent possible, each assessment methodology involves senior international experts partnered with national experts. UNEP's neutrality and independence are maintained throughout the assessment process, leading to an objective technical evaluation of environmental needs.

POST-CONFLICT POLICY FRAMEWORKS

The findings of post-conflict environmental assessments are used by a number of policy frameworks. This section describes the five post-conflict frameworks used by the UN system and member states where UNEP has taken an active role

Table 1.   UNEP 1999–2007 post-conflict assessments: Methodology and policy frameworks evaluated

Case	Assessment methodology	Flash/ CAP[a]	PCNA[b]	National recovery plan	PRSP[c]	CCA/UNDAF[d] or equivalent
FRY[e]	Quantitative	X				
Afghanistan	Strategic			X	X	X
oPt[f]	Desk study			X		
Iraq	Desk study	X	X	X		X
Liberia	Desk study		X	X	X	X
Lebanon	Quantitative			X		
Sudan	Desk Study/ Comprehensive		X	X		X

a. Flash appeal/consolidated appeal process.
b. Post-conflict needs assessment.
c. Poverty reduction strategy paper.
d. Common country assessment/UN Development Assistance Framework.
e. Federal Republic of Yugoslavia.
f. Occupied Palestinian territories.

in helping national authorities assess environmental issues, identify priorities, and integrate needs. Table 1 summarizes the post-conflict environmental assessment methods and relevant policy frameworks that were used in each of the seven case studies.

- **Flash appeal and consolidated appeal process (CAP):** Following a peace agreement or ceasefire, the UN often issues a flash appeal to respond to urgent humanitarian needs. These usually address food, water, and shelter for refugees and internally displaced persons, as well as other critical services and protection. In some cases, when more planning and analysis are possible, such as during complex emergencies and protracted conflicts, a CAP covers the humanitarian needs for a full year. The flash appeal and CAP are the primary relief instruments used by the international community for identifying needs and coordinating and financing relief efforts. The chapter reviews the impact of environmental assessments on the humanitarian appeals for FRY and Iraq.
- **Post-conflict needs assessment (PCNA):** First used in 2003, PCNAs are undertaken by the UN Development Group, the World Bank, and the EU in collaboration with the national government and donor countries. PCNAs are used for jointly assessing needs, identifying targets, and financing a shared strategy for recovery in post-conflict situations. The PCNA includes the assessment and the national prioritization and costing of needs. Most PCNAs take between two and twelve months to complete and cover two to four years of activities. The chapter reviews the impact of environmental assessments on the PCNA processes for Iraq, Liberia, and Sudan.
- **National recovery plan or development strategy:** In cases when a PCNA was not conducted, or a government chooses to replace the PCNA with a new

strategy, a national recovery plan or development strategy is issued by the transitional or elected national government. The document sets out the costed national priorities and requests assistance from the international community to meet the identified needs. The chapter reviews the impact of environmental assessments on national recovery plans for Afghanistan, oPt, Iraq, Liberia, Lebanon, and Sudan.

- **Poverty reduction strategy paper (PRSP):** Once a post-conflict country has moved from the transition phase to the development phase, interim or full PRSPs are often developed. Designed by the International Monetary Fund (IMF) and the World Bank in 1999, PRSPs are produced in cooperation with governments, stakeholders, and international partners. PRSPs focus on the economic and financial profile of a country and provide a plan for reducing poverty and supporting the economy through various actions. PRSPs are instrumental for a country to obtain financing and debt relief from the IMF and the World Bank. The chapter reviews the impact of environmental assessments within the PRSPs for Afghanistan and Liberia.
- **Common country assessment (CCA) and UN Development Assistance Framework (UNDAF):** In response to a national recovery plan, development strategy, or PRSP, the UN country team conducts a CCA to determine how the UN can meet national priorities. The CCA attempts to focus UN efforts on three or four pillars, or areas of need. Based on the CCA, an UNDAF establishes concrete outcomes and indicators in each area and provides detailed costing. Specific agencies and partners are listed with a time line. In post-conflict countries, CCAs and UNDAFs are typically conducted once the country has moved from the transition phase to the development phase (e.g., three to five years after the conflict). The chapter reviews the impact of environmental assessments within CCAs and UNDAFs for Afghanistan, Iraq, Liberia, and Sudan.

ANALYSIS METHODOLOGY

The seven case studies are presented in chronological order from 1999 to 2007. The impact of each environmental assessment was analyzed according to policy influence, financing of environmental needs, and media coverage. These indicators were selected because objectively verifiable data were available in all seven cases. For each indicator, a standardized four-point scale ranging from none (0), to low (1), medium (2), and high (3) was used to classify the level of impact. Assessments conducted after 2007 were not included because their full impact could not be evaluated at the time of writing.

   To analyze the policy impact of an assessment, all relevant post-conflict policy frameworks issued after the release of a UNEP report until January 2010 were collected. The environmental content of each policy framework based on the UNEP assessment report was categorized on the following four-point scale: no impact (0) means that environmental issues were not mentioned in the policy

framework; low impact (1) means that a general statement was included on environmental issues, but no specific sectors, targets, indicators, or financial resources were included; medium impact (2) means that environmental needs were included with priorities and sectors, but no targets, indicators, or detailed budget information were included; and high impact (3) means that environmental needs and sectors were included with a detailed budget and targets. To determine the overall policy impact, the individual scores for each policy framework were averaged.

To analyze the financial impact of an assessment, the financial resources that were mobilized by UNEP from donors to address the recommendations of the assessment were calculated. The level of financing raised, compared to the amount requested, was categorized on the following four-point scale: no impact (0) means that UNEP was unable to mobilize any funds for follow-up work; low impact (1) means that UNEP was able to mobilize less than 50 percent of the requested funds for follow-up activities; medium impact (2) means that UNEP was able to mobilize between 50 and 75 percent of the requested funds for follow-up activities; high impact (3) means that UNEP was able to mobilize over 75 percent of the requested funds for follow-up activities. To determine the overall financial impact, the individual scores were averaged. The indicator was restricted to the amount of funding UNEP was able to mobilize for follow-up activities from donors because information on the total amount of funding raised for the environmental sector is not systematically tracked by the UN system or by national governments.

To analyze the media impact of the assessment, four types of media were considered, including print, Web, radio, and television. For each format, the study counted either the presence (yes) or absence (no) of coverage in stream media at the national and international levels. The overall media impact was then categorized on the following four-point scale: no impact (0) means that no coverage was achieved in any media; low impact (1) means that coverage was achieved in only one format; medium impact (2) means that coverage was achieved in two media; high impact (3) means that coverage was achieved in three or four media. To determine the overall media impact, the individual scores were averaged.

Finally, to determine a total impact score, a weighted average calculation was applied to the policy (40 percent), financial (40 percent), and media (20 percent) scores. A weighted process was used because UNEP's objectives relate to the policy and financial impacts, with media coverage a secondary objective. The final impact score was also categorized on the following four-point scale: no impact was 0; low impact was any score less than 2; medium impact ranged from 2 to 2.49; high impact ranged from 2.5 to 3. The scale was arbitrary, rather than robust and quantitative, and was used to compare the cases. Consistent with UNEP's internal categorization, the low category is allocated a wider band than the medium and high categories. A total impact score of 3 means only that the assessment had a high impact within each indicator, rather than a perfect outcome. Following the indicator analysis, each section concludes with a summary of the positive and negative factors that influenced the overall impact of the assessment.

The information presented in this chapter was collected from various public reports and official UN documents, as well as from interviews with UNEP program managers and experts who participated in the assessments.[2] Information on media coverage was collected from UNEP staff and experts who tracked the national and international media coverage of report-launch events and follow-up projects.

The chapter does not attempt to assess subsequent projects developed to address the environmental needs, nor does it analyze the adequacy of the funding allocated or spent in the environmental sector. This kind of analysis would require detailed field-based evaluations and is beyond the chapter's scope. An environmental assessment with a high impact does not automatically translate into a field project with a high impact. Although that may be the case, it is the topic of separate research. Moreover, many of the assessments reviewed occurred before UN reforms were implemented, including the humanitarian cluster system, the UN Peacebuilding Commission, and the environmental toolkit for the PCNA (UN and World Bank 2009). As a result, the possible impact of the reforms on addressing environmental and natural resource needs has not been considered. Not withstanding the limitations, the chapter provides a good opportunity to objectively review and compare the impacts of assessment methods to inform the scope, approach, and substance of future programs.

CASE STUDIES

Case studies that follow are those conducted between 1999 and 2007, and include the Federal Republic of Yugoslavia, Afghanistan, occupied Palestinian territories, Iraq, Liberia, Lebanon, and Sudan.

Federal Republic of Yugoslavia

During the Kosovo conflict in 1999, bombing of industrial sites, military bases, and public infrastructure raised concern about a potential environmental catastrophe from the release of toxic chemicals. The North Atlantic Treaty Organization insisted that sophisticated weapons and targeting minimized collateral damage, yet the government of FRY claimed extensive environmental destruction.[3] Neighboring countries also expressed concerns about possible transboundary water and air pollution.

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[2] Technical and policy input was provided by Henrik Slotte, Asif Zaidi, Belinda Bowling, Silja Halle, Andrew Morton, Aniket Ghai, Maliza van Eeden, Koen Toonen, and Hassan Partow. Additional research and reviews were conducted by Dennis Hamro-Drotz, Renard Sexton, Fanny Rudén, Divya Sama, and Abigail Sylvester.

[3] On February 4, 2003, the Federal Republic of Yugoslavia changed its name to Serbia and Montenegro. Montenegro became independent on June 3, 2006.

A UN interagency needs assessment mission was deployed May 16–27, 1999, to assess damage and identify humanitarian needs (UN 1999a). The mission, headed by UN Under-Secretary-General Sergio Vieira de Mello, stated that a detailed assessment of the full extent of the environmental impact was urgently required.

To determine the extent of the damage and risks to human health, the UN Secretary-General supported UNEP and the UN Centre for Human Settlements (UNCHS) Programme to undertake an independent, scientific assessment of the effects of the conflict on human settlements and the environment. The scope of the assessment, which started in May 1999, focused on five conflict-related impacts: pollution from bombed industrial sites, damage to the Danube River, harm to protected areas and biodiversity, impacts on human settlements, and the use of depleted uranium weapons (UNEP and UNCHS 2009). A quantitative risk assessment was used to detect contamination and hot spots. The assessment also considered the existing legal and institutional framework for environmental management and national capacity for implementation and enforcement. The joint UNEP/UNCHS environmental assessment report was an input to the UN Consolidated Inter-Agency Appeal for Southeastern Europe Humanitarian Operations in 2000.

Assessment impact

The UNEP/UNCHS assessment report was launched through a series of press conferences in Geneva and Nairobi in October 1999 (UNEP and UNCHS 1999). It consisted of 104 pages detailing the environmental impacts of the conflict and thirty recommendations for addressing risks and building governance capacity. Overall the report concluded that the conflict had not caused an environmental catastrophe. Although some serious pollution and environmental damage had occurred, it was largely limited to four environmental hot spots and did not represent a national or regional threat. Still the hot spots required urgent cleanup on humanitarian grounds in order to prevent health risks and further environmental degradation. The assessment received widespread press coverage at the national and international levels in all media. Local media ran extensive articles about the environmental hot spots, and BBC's *Earth Report* ran a special segment on the environmental consequences of the conflict. A number of television interviews were also conducted by the chairman of the assessment, Pekka Haavisto, former minister for environment and development cooperation in Finland.[4]

The UNEP environmental assessment report was used in the UN Consolidated Inter-Agency Appeal for 2000 (UN 1999b). The UN appeal identified nearly US$200 million of urgent needs in FRY and US$250 million in Kosovo. It

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[4] Pasi Rinne, UNEP program manager for FRY, personal communication with the author, December 2009.

included US$1.5 million for environmental assessment and further feasibility studies at the four hot spots identified by UNEP. The cleanup of environmental hot spots at bombed industrial sites was seen as an urgent humanitarian priority. This was the first appeal ever to include financing for mitigating environmental risks and set an important precedent for how humanitarian needs were defined. For the first time, human health was directly tied to environmental contamination. Because the UNEP assessment was directly referenced by the appeal, including detailed priorities and budget estimates, the policy impact of the report was considered to be high.

Following further feasibility studies conducted by UNEP and local author-ities at the hot spots, US$20 million of cleanup needs were identified. Based on this analysis, an additional US$7 million for hot spot cleanup was included in the 2001 humanitarian appeal and US$5.5 million in the 2002 appeal (UN 2000, 2001). Even though the US$12.5 million raised fell short of the US$20 million of cleanup projects identified, the money did allow the most urgent risks to be addressed. Cleanup financing was provided by a coalition of nine donors, including Denmark, Finland, Germany, Ireland, Luxembourg, the Netherlands, Norway, Sweden, and Switzerland.

UNEP conducted cleanup operations at the four hot spots from August 2000 to December 2003. The primary objective was to reduce the most significant risks to human health and the environment at Novi Sad, Pancevo, Kragujevac, and Bor. It was accomplished through a combination of field-based remediation and rehabilitation projects and complementary capacity-building activities in hazardous waste management, cleaner production practices and technologies, direct foreign investment, sustainable consumption, and multilateral environmental agreements.

In 2003, the UN system decided not to issue an additional humanitarian appeal for Southeastern Europe. The decision reflected a wide consensus that the region was by and large in a phase of increasing stability and was transitioning to development. Moreover donors were shifting their emergency support to other parts of the world. Because the program had cleaned up the environmental hot spots, UNEP closed its field office.

The effect of the assessment was evaluated according to the three indicators in table 2. The weighted average score for all three indicators was 2.8, showing a high overall impact, divided between policy (3.0), financial (2.5), and media (3.0) impacts.

Conclusions and lessons learned

Drawing upon the three indicators selected, the review demonstrated that the post-conflict environmental assessment following the Kosovo conflict had an overall high level of impact. Based on the findings of the UNEP assessment, environmental needs were included within the three humanitarian appeals from 2000 to 2002, and 63 percent of the needs were funded by international donors.

Table 2. Evaluation of assessment impact indicators for the Federal Republic of Yugoslavia

Indicator	Categories	Policy frameworks		
		Humanitarian appeal (2000)	*Humanitarian appeal (2001)*	*Humanitarian appeal (2002)*
Policy impact	**No impact (0):** Environmental needs not mentioned **Low (1):** Environmental needs mentioned at a general level, but no detail provided **Medium (2):** Specific environmental needs and sectors mentioned **High (3):** Specific environmental needs and sectors mentioned with budget	 3	 3	 3
Average policy impact:				3.0

Indicator	Categories	Environmental needs	
		Cleanup phase 1 (2001–2002)	*Cleanup phase 2 (2003)*
Financial impact	**No impact (0):** No financing raised for UNEP follow-up program **Low (1):** Less than 50 percent of UNEP follow-up program financed **Medium (2):** From 50 to 75 percent of UNEP follow-up program financed **High (3):** Over 75 percent of UNEP follow-up program financed	 3	 2
Average financial impact:			2.5

Indicator	Categories	Media coverage	
		National	*International*
Media impact	**No impact (0):** No coverage achieved in any media format **Low (1):** Coverage in only one media format **Medium (2):** Coverage in two media formats **High (3):** Coverage in three or four media formats	 3	 3
Average media impact:			3.0
Weighted total impact:			2.8

Extensive national and international media coverage was also achieved in all types of media. Four factors likely account for the high impact.

First, rather than conducting a broad-based study of all environmental issues, the assessment focused on environmental threats to human health and successfully argued for hot spot cleanup measures on humanitarian grounds. By classifying the cleanup of the environmental hot spots as a humanitarian priority, a high level of visibility was given to the issue with immediate financial support. Timing the findings of the assessment to inform major donor conferences and international assistance frameworks maximized the policy impact.

Second, although the post-conflict environmental assessment was implemented by UNEP in a scientific and impartial manner, a number of national experts and the FRY Ministry of Environment, Mining and Spatial Planning were involved in the process, leading to a high level of national ownership of the findings and interest in follow-up.

Third, UNEP's project office in Belgrade played an important role in disseminating the results of the assessment to decision makers and advocating for cleanup measures to be integrated within the three humanitarian appeals. UNEP also briefed the donor community in Geneva and selected donor capitals to ensure financing was mobilized to meet needs. The briefings included political advocacy by Pekka Haavisto, the chairman of the assessment.

Finally, UNEP's communications strategy was an important factor in the overall impact. By identifying immediate health risks from environmental contamination, the assessment helped to define *environment* in real terms that made sense to people and decision makers alike. The use of photos, maps, and satellite imagery in the final report also helped to maintain reader interest and stimulate media attention.

Afghanistan

Afghanistan has been affected by waves of violence and conflict for decades. When the Bonn Agreement was signed on December 5, 2001, the international community committed to long-term reconstruction support. In terms of assessing and addressing environmental needs, the situation in Afghanistan differed vastly from that in FRY. Before the decades of conflict that began in the 1970s, there was little industrial infrastructure. Therefore few industrial sites could be bombed and become environmental hot spots. Nevertheless the environment was severely damaged by military activities, human displacement, intense exploitation of natural resources, and inadequate institutional capacity for natural resource management. The national government was in disarray and had no capacity to conduct an environmental assessment.

In order to determine the short- and long-term environmental needs of Afghanistan, UNEP developed a new methodology focused on assessing not only the direct environmental impacts of military operations but also the indirect effects of survival and coping strategies and the institutional impacts of the breakdown

of governance. Potential environmental risks to human health, livelihoods, and security, as well as capacity gaps were then identified. The new framework was a strategic assessment in that it selected the environmental issues and natural resources that were most relevant to peacebuilding. They included fertile land, rangelands, woodlands, protected areas, water resources, urban environmental infrastructure, waste management, and institutional capacity for environmental governance. The assessment was designed to provide a snapshot of environmental needs that could inform recovery priorities. The national partner in conducting the assessment was the Ministry of Irrigation, Water Resources, and the Environment. The assessment was timed to support the national recovery plan, Securing Afghanistan's Future (SAF) (TISA et al. 2004). But it also provided input into the CCA/UNDAF process and a second national recovery plan, the Afghanistan National Development Strategy (ANDS).

Assessment impact

The assessment report was launched at a press conference in Kabul in January 2003 and the UNEP Governing Council in February 2003 (UNEP 2003a). It consisted of 176 pages of findings with sixty-three sectoral and area-based recommendations. The conclusion was that the environmental degradation of forest, soil, and water resources was so extensive and severe that it threatened to undermine the peace process by contributing to displacement, disease, poverty, and economic instability. The recovery and reconstruction process would need to go hand in hand with sustainable management and restoration of the natural resource base. Although the assessment received widespread press coverage at the international level, national media were still emerging and provided only limited coverage.[5]

The UNEP assessment was primarily designed to identify environmental needs and priorities that could inform a national recovery plan. The SAF presented a broad vision for the reconstruction of Afghanistan, totaling US$27.8 billion for the period 2004–2011 (TISA et al. 2004). A nationally led process with support from international agencies and experts, the plan reflected the findings of the UNEP assessment. In particular, it called for US$1.8 billion of investments in the natural resource sector over the seven-year reconstruction period, approximately 6 percent of the reconstruction budget. The government advocated an integrated approach to natural resource development and management, with efficient and sustainable use of natural resources by communities and the private sector to achieve economic growth and support peacebuilding, security, and equity. Priorities focused on improved management and rehabilitation of fertile land, water, forests, and rangelands; institutional strengthening and capacity building; and development of new supporting policies and laws. The SAF was the first

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[5] Asif Zaidi, UNEP program manager for Afghanistan, personal communication with the author, December 2009. Information, unless cited otherwise, was obtained from this personal communication and internal project documents.

national reconstruction plan to explicitly link natural resource management and rehabilitation to peacebuilding and security, thus setting an important precedent. An additional US$612 million of investments were included for water supply and sanitation in urban environments. Therefore US$2.4 billion covered natural resource management and related environmental infrastructure, representing 8.6 percent of the entire reconstruction budget.

In addition to the SAF, the UNEP assessment also acted as a critical input to the 2004 CCA and the 2006–2008 UNDAF (UN 2004, 2005a). The CCA emphasized that the contested allocation of natural resources, decades of unsustainable use, and a lack of governance institutions were major risks to peace, security, economic development, and social well-being. Consequently the CCA recommended that the UN focus on three pillars of support to Afghanistan: human rights and peacebuilding; good governance and participatory development; and basic social services and environmental sustainability. It was the first time that environmental sustainability was identified as a critical priority in a post-conflict country.

Based on the analysis contained in the CCA, the 2006–2008 UNDAF recognized the fundamental importance of natural resources to Afghan livelihoods and the economy: roughly 80 percent of Afghans remained dependent on natural resources for income and sustenance. The UNDAF further mentioned that, in order to achieve sustainable development, enhanced natural resource management and environmental governance had to be national objectives. As a result, of the six UNDAF objectives, one addressed environment and natural resources; and a second, sustainable livelihoods. Priorities were developing a legal framework and effective institutions for natural resource management at the national and community levels, and resolving issues related to ownership of and access to land.

Finally the environmental assessment was also used to inform the ANDS (IRA 2007). The ANDS served as Afghanistan's PRSP. Within this strategy, natural resource management needs were divided along two of the eight pillars: infrastructure and natural resources, and agriculture and rural development. Environment was identified as one of six crosscutting issues underpinning the social and development framework of the entire country. For the five-year period of the ANDS, the budget was US$50.1 billion of which 34.1 percent (US$17.1 billion) was dedicated to the infrastructure and natural resources pillar and 8.8 percent (US$4.4 billion) was allocated to agriculture and rural development.

To help respond to the natural resource management and environmental governance needs identified in the SAF, CCA/UNDAF, and ANDS, UNEP designed a multiphase capacity-building program for the Environment Department of the Ministry of Irrigation, Water Resources, and Environment. The proposed program focused on five pillars: institutional development, environmental law and policy, environmental impact assessment and pollution control, environmental education, and community-based natural resource management. Phase 1, covering 2003–2004, was budgeted at US$1 million of which US$936,528 was mobilized (94 percent). Based on this initial work, the Environment Department was eventually transformed into the self-standing National Environmental Protection Agency (NEPA) in 2005.

Therefore Phase 2, covering 2005–2007, focused on extending the capacity-building efforts to NEPA. It was budgeted at US$7 million of which US$6,856,288 was mobilized (98.6 percent). Phase 3, covering 2008–2010, was budgeted at US$7 million of which the full amount was mobilized. The European Commission (EC), government of Finland, and the Global Environment Facility financed the phases. At the time of this writing, a fourth phase for 2011–2014 was being discussed.

The effect of the assessment was evaluated according to the three indicators in table 3. The weighted average score for all three indicators was 2.9, showing a high overall impact, divided between policy (3.0), financial (3.0), and media (2.5) impacts.

Conclusions and lessons learned

The analysis revealed that UNEP's post-conflict environmental assessment of Afghanistan had a high impact based on the three indicators evaluated. The findings of the UNEP assessment were reflected in the SAF, CCA/UNDAF, and ANDS. Within all four documents, the natural resource management and rehabilitation pillar was listed as a major priority for reconstruction and development. To help build national and local capacity for environmental management, UNEP requested US$15 million of which US$14,792,815 was raised (98 percent). Three factors account for the high impact.

First, UNEP's assessment was the first environmental study conducted in the country in over thirty years. In most cases, the environmental degradation was worse than expected, natural resource management capacity was nonexistent, and community management structures had collapsed. The report convinced the national authorities, the UN country team, and donors that long-term peace and security would depend on sustainable management and restoration of natural resources, including land, forests, soils, and water, given that 80 percent of the population was directly dependent on them.

Second, the findings of the UNEP environmental assessment had a direct effect on the priorities and programming of the EC. Within their country strategy papers for 2003–2006 and 2007–2013, the EC recognized the need to establish and support an environmental authority and invest in natural resource management policies and programs (EC 2003, 2007). UNEP was provided seed funding to support the fledgling environmental administration and help navigate it through the national reform process. With this critical support, the NEPA was able to build its internal capacity and effectively advocate elevation of environmental issues and natural resources on the political agenda.

Finally, UNEP's project office in Kabul played a major role in coordinating the environmental sector, strengthening the hand of NEPA, and advocating an environmental agenda. UNEP's approach was inclusive, focused on rebuilding local capacities, empowering communities, and demonstrating the value of sustainable resource management through pilot projects. National ownership and handover were core management principles from the outset.

Table 3. Evaluation of assessment impact indicators for Afghanistan

Indicator	Categories	Policy frameworks		
		SAF[a] (2004–2011)	CCA/UNDAF[b] (2006–2008)	ANDS[c] (2008–2013)
Policy impact	**No impact (0):** Environmental needs not mentioned **Low (1):** Environmental needs mentioned at a general level, but no detail provided **Medium (2):** Specific environmental needs and sectors mentioned **High (3):** Specific environmental needs and sectors mentioned with budget	3	3	3
Average policy impact:				3.0

Indicator	Categories	Environmental needs		
		Follow-up phase 1 (2003–2004)	Follow-up phase 2 (2005–2007)	Follow-up phase 3 (2008–2010)
Financial impact	**No impact (0):** No financing raised for UNEP follow-up program **Low (1):** Less than 50 percent of UNEP follow-up program financed **Medium (2):** From 50 to 75 percent of UNEP follow-up program financed **High (3):** Over 75 percent of UNEP follow-up program financed	3	3	3
Average financial impact:				3.0

Indicator	Categories	Media coverage	
		National	International
Media impact	**No impact (0):** No coverage achieved in any media format **Low (1):** Coverage in only one media format **Medium (2):** Coverage in two media formats **High (3):** Coverage in three or four media formats	2	3
Average media impact:			2.5
Weighted total impact:			2.9

a. Securing Afghanistan's Future.
b. Common country assessment/UN Development Assistance Framework.
c. Afghanistan National Development Strategy.

Occupied Palestinian territories

From the outset of the second intifada in 2000, the capacity of the Palestinian Authority to manage and maintain basic infrastructure for water, energy, and waste virtually collapsed. International funding for water and waste management projects evaporated because of donor fatigue and concerns that new infrastructure could not be protected. As public concern over groundwater quality and waste management mounted, there was a need to determine how the environment had been affected and identify risks to human health.

In 2002, UNEP's Governing Council requested that the organization conduct a desk study as a step toward assessing the state of the environment in the oPt. The scope of the assessment was broad, covering water, waste, biodiversity, institutional capacity, and international cooperation. It involved collecting secondary sources of information and traveling on short field missions to hold stakeholder meetings. The assessment was accomplished in close cooperation with the Palestinian Environment Quality Authority and the Israeli Ministry of the Environment. At the time the study was commissioned, it was not designed to inform a specific policy process.

Assessment impact

The UNEP desk study was released at the UNEP Governing Council in Nairobi in February 2003 (UNEP 2003b). It was 188 pages in length and contained 136 recommendations on environmental needs. The conclusion was that institutional collapse from decades of protracted conflict had led to severe declines in environmental quality, especially of water and land. The study flagged the need to increase cooperation on environmental issues between Israelis and Palestinians and to invest in water and waste management infrastructure to protect groundwater resources from contamination. National and international Web, print, and radio media covered the desk study, so the media impact was deemed to be high.

Because the UNEP desk study was mandated by the UNEP Governing Council to provide an overview of the environmental situation, it was not designed to inform a specific policy process. The first opportunity to influence UN recovery policies was the CCA in 2004. Within the draft document, the findings of the desk study were strongly integrated into the needs analysis. Environmental health and water and waste management, which the Palestinian Authority identified as priorities, were addressed in a section of the CCA. But the CCA was never published because of various political events and continued conflict.[6]

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6   Aniket Ghai, UNEP program manager for oPt, personal communication with the author, December 2009. Information, unless cited otherwise, was obtained from this personal communication and internal project documents.

The next opportunity for the desk study to influence national planning was the 2005–2007 Medium Term Development Plan (MTDP), within which water and sanitation were identified as the core needs (PNA 2005). The planned budget for water infrastructure, including the installation of desalination facilities and waste management, amounted to US$337 million out of over US$5.6 billion (6 percent of the total). The need for environmental governance was also mentioned. Based on the findings of the desk study and other international reports, emphasis was placed on managing groundwater and land pollution resulting from the unmanaged disposal of wastewater and solid waste and intensive use of hazardous agricultural chemicals. The need for standards, regulations, and monitoring systems for conserving environmental resources, such as water, land, plants, and animals, was also identified. But there was no budget for developing them.

A second MTDP, covering 2006–2008, was also developed, using the desk study. The environment was acknowledged as important for the Palestinians' quality of life (PNA 2006). Of the six national priorities, the last focused on the protection and development of natural resources and recognized the necessity of improving waste and sewage management and neutralizing environmental and health hazards. The required total budget for the three years was estimated to be US$7.2 billion, with US$2.1 billion allocated to "infrastructure support" (including water, energy, and solid waste), and US$40 million to "cultural heritage/ natural resources."

To help build the capacity of the Palestinian Authority to address environmental risks, UNEP initially designed a US$3.5 million capacity-building program for 2004–2006. The proposed program focused on water and waste management, hot spot remediation, and regional cooperation. But given the ongoing conflict, donors were reluctant to invest in capacity building. As a result, UNEP could only mobilize US$157,855, representing only 4.5 percent of program needs. Therefore, although the desk study had a high media and policy impact, it generated little financing.

The effect of the assessment was evaluated according to the three indicators in table 4. The weighted average score for all three indicators was 2.1, showing a medium overall impact, divided between policy (2.7), financial (1.0), and media (3.0) impacts.

Conclusions and lessons learned

Although the CCA and both MTDPs reflected many of the environment and natural resource management issues identified by the UNEP desk study, recurring bursts of violence and insecurity in the area prevented donors from investing in environmental capacity-building programs and remediation efforts. Most funding was channeled into emergency projects and meeting humanitarian needs. The priorities primarily explain the poor financial impact of the assessment. Despite the outcome, identifying the factors that account for the report's relatively high policy impact is important.

Table 4.   Evaluation of assessment impact indicators for the occupied Palestinian territories

Indicator	*Categories*	*Policy frameworks*		
		CCA[a] *(2004)*	*MTDP*[b] *(2005–2007)*	*MTDP (2006–2008)*
Policy impact	**No impact (0):** Environmental needs not mentioned **Low (1):** Environmental needs mentioned at a general level, but no detail provided **Medium (2):** Specific environmental needs and sectors mentioned **High (3):** Specific environmental needs and sectors mentioned with budget	3	2	3
Average policy impact:				2.7

Indicator	*Categories*	*Environmental needs*
		Capacity-building program
Financial impact	**No impact (0):** No financing raised for UNEP follow-up program **Low (1):** Less than 50 percent of UNEP follow-up program financed **Medium (2):** From 50 to 75 percent of UNEP follow-up program financed **High (3):** Over 75 percent of UNEP follow-up program financed	1
Average financial impact:		1.0

Indicator	*Categories*	*Media coverage*	
		National	*International*
Media impact	**No impact (0):** No coverage achieved in any media format **Low (1):** Coverage in only one media format **Medium (2):** Coverage in two media formats **High (3):** Coverage in three or four media formats	3	3
Average media impact:			3.0
Weight total impact:			2.1

a. Common country assessment.
b. Medium term development plan.

First, the fact that the UNEP Governing Council mandated the desk study elevated its political profile and generated interest and momentum in addressing environmental needs. Over 120 countries and ninety ministers participating in the session, including observers from the Palestinian Authority and the Israeli government, unanimously supported the decision for UNEP to conduct a desk study. Klaus Töpfer, executive director of UNEP, held high-level meetings in Ramallah with Yasser Arafat, president of the Palestinian Authority and chairman of the Executive Committee of the Palestine Liberation Organization, and in Jerusalem with Ariel Sharon, prime minister of Israel. Both Middle Eastern leaders backed the assessment process. All parties accepted Pekka Haavisto, former Finnish minister of environment and development cooperation, as chairman of the desk-study team.

Second, the presentation of the desk study at the UNEP Governing Council was an excellent opportunity to attract national and international media coverage. Hundreds of journalists from around the world attended the session to write articles and conduct radio interviews.

Finally, while maintaining strict political neutrality, UNEP conducted the assessments in close coordination with the Palestinian Environment Quality Authority and the Israeli Ministry of the Environment to encourage dialogue and technical cooperation between environmental agencies and ensure transparency. The draft of the desk study was shared with both sides for technical review. The rigor, balance, and transparency of the assessment process led Palestinians and Israelis to support release of the report.

Iraq

Iraq has seen three major conflicts in the last thirty years. Following the U.S.-led military intervention in Iraq in 2003, an environmental-assistance standby group was established by UNEP, at the request of the government of Switzerland, to monitor potential environmental impacts and identify needs. As part of the process, UNEP undertook a desk study of environmental issues. It was released in April 2003, while military operations were ongoing. It included all available information on the environmental impacts of the Iran-Iraq War and the 1990–1991 Gulf War. The study was meant to provide background on environmental needs and isolate priorities that could contribute to an eventual field-level environmental assessment. It was also designed to inform the 2003 humanitarian appeal and the post-conflict needs assessment—the first PCNA ever conducted by the UN system and the World Bank (UN and World Bank 2003).

As part of the desk study, UNEP held three information-sharing sessions in Geneva during the conflict to identify and involve regional experts and organizations that had worked on environmental projects or had collected environmental data in Iraq. The aim of these meetings was to share datasets on environmental quality and identify experts who could participate in a future field assessment. Because of the ongoing conflict, insecurity, and limited lines of communication, authorities in Iraq could not participate.

Assessment impact

The desk study was released at a press conference in Geneva in April 2003 (UNEP 2003c). The ninety-six-page study included twenty recommendations. The most critical issue identified by the study was the need to minimize and mitigate immediate environmental threats to human health from disrupted or contaminated water supplies, oil leaks, and inadequate sanitation and waste systems. Media coverage at the national and international levels was restricted to the Web.[7]

The 2003 Humanitarian Appeal for Iraq directly referenced the UNEP desk study and included a specific section on the need to assess environmental damage, pollution, and risks to human health (UN 2003). A total of US$850,000 was sought to meet the need.

Following the release of the humanitarian appeal, the desk study was used by UNEP to integrate environmental needs into the PCNA process (UN and World Bank 2003). But because Iraq was the first country to utilize the new PCNA methodology, there was no standard approach for addressing environmental issues. Environment was treated as a crosscutting issue, and resource management needs were addressed in the infrastructure sector as well as the agriculture, water resource, and food-security sectors. Of the overall budget of US$35.8 billion, US$6.8 billion was included to address water and sanitation infrastructure, and US$3 billion was included for agriculture and water resource management needs. A number of environmental priorities were also mentioned in the document, including strengthening the Ministry of Environment and environmental governance at all levels, building capacity for environmental impact assessments, cleaning up environmental hot spots, and building public awareness of environmental issues. But addressing these needs was not directly budgeted. Although an estimate of US$3.5 billion by the Coalition Provisional Authority was included for environmental governance and rehabilitation needs, it was not included in the final PCNA budget because there was no agreement on the costing methodology.

The PCNA was the international reconstruction framework for only one year. It was seen as lacking national ownership and not fully reflecting national priorities. It was replaced by the 2005–2007 National Development Strategy (NDS) (MPDC 2005). An approach like that of the PCNA was used to address environment and resource management. Within the budget of US$34.3 billion, US$2.6 billion was included to deal with water and sanitation infrastructure, and US$1.8 billion was included for agriculture and water resource management. Other environmental governance needs were broadly reflected in the NDS but not budgeted. The strategy aimed "to accelerate reconstruction and make [the] citizens [of Iraq] measurably better off, whilst assuring that [the] priceless heritage of natural resources has proper stewardship" (MPDC 2005, viii). A ministry of

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7   Koen Toonen, UNEP program manager for Iraq, personal communication with the author, January 2006. Information, unless cited otherwise, was obtained from this personal communication and internal project documents.