

From Conflict to Peacebuilding: UNEP's Role in Environmental Assessment and Recovery

We dismounted from our donkeys near the ancient city of Herat in search of pistachio woodlands. Twenty-three years of war had completely decimated the forests, and our team of experts from the UN Environment Programme (UNEP) had traveled to northwest Afghanistan to determine how such massive deforestation was affecting the lives and livelihoods of local people.

After some initial chitchat about health, family, and Allah, I asked the local village commander, Daolat, if he could lead us to one of the last remaining stands of wild pistachio in the province. He countered by asking if he could first show me his hidden weapons cache, including the firing tube from a Stinger missile that he had used to destroy a Soviet helicopter gunship. I politely declined, since we had little time in the village, but never in my wildest dreams could I have imagined being in such a situation.

However, in the years that followed, I was frequently struck by similar encounters with local people trying to cope with environmental damage and the many ways it affects their lives.

Since that trip to Afghanistan in 2002, I have investigated the environmental consequences of conflict in countries including Iraq, Lebanon, Liberia, Somalia, Sudan, and the Democratic Republic of the Congo (DRC) on behalf of UNEP. Using state-of-the-art science and technology, teams of UN environmental experts identify direct and indirect environmental damage and assess its impact on human health, livelihoods, and security in conflict-affected countries. Our goal is to collect scientific data about the environment and present it in ways that speak to the daily concerns of local people, policymakers, and the international community.

If people cannot find clean water for drinking, wood for shelter and energy, or land for

DAVID JENSEN



David Jensen heads the Policy and Planning Team of the UN Environment Programme's Post-Conflict and Disaster Management Branch in Geneva, Switzerland. Since 2000, he has worked on 10 post-conflict operations either as a technical expert or as a project coordinator. Jensen is now leading UNEP's efforts to provide technical expertise on environment, conflict, and peacebuilding to the Peacebuilding Commission and the UN Development Group. He holds a bachelor's degree from the University of Victoria and a master's degree from the University of Oxford. (Photo courtesy UNEP)

crops, what are the chances that peace will be successful and durable? Very slim. UNEP seeks to ensure that countries rebuilding from conflict identify the sustainable use of natural resources as a fundamental prerequisite and guiding principle of their reconstruction and recovery.

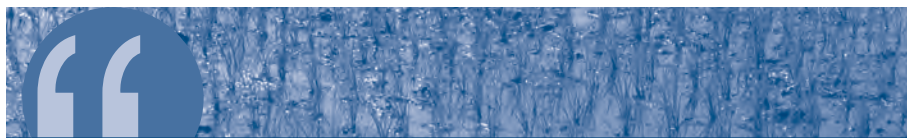
Since these specialized field operations began in 1999, UNEP has learned three critical lessons:

1. Although the types and magnitude differ, conflicts always cause environmental damage, in three primary ways: directly from military activities, such as bombing; indirectly from the coping strategies of local people; and indirectly from the breakdown of institutional infrastructure, which often accompanies conflicts. Conflict-related environmental damage affects people in three ways: It threatens health; it threatens livelihoods; and it threatens human security.
2. Relief and recovery activities often rely on natural resources, causing additional damage to the environment and potentially producing new sources of risk. Yet the recovery process itself can be harnessed to help re-orient conflict-affected countries to more sustainable forms of development.
3. Natural resources and the environment are not only damaged by conflict, they also drive and sustain it. Since 1990, 17 conflicts have been fueled by natural resources, including nine in Africa alone (UNEP, 2008a).

Using case studies, this article explores each of these lessons and presents UNEP's plans and priorities for expanding operations in post-conflict environmental assessment and recovery.

The Birth of UNEP's Post-Conflict Environmental Operations: The Kosovo Conflict

UNEP's post-conflict operations began in Kosovo in 1999. Most readers will recall the



UNEP seeks to ensure that countries rebuilding from conflict identify the sustainable use of natural resources as a fundamental prerequisite and guiding principle of their reconstruction and recovery.

streams of refugees fleeing Kosovo—750,000 in total—but some might also remember the bombing of roads, public infrastructure, and industrial sites that NATO called “strategic targets.” For example, the Pancevo chemical complex was hit 12 separate times during the conflict, releasing 80,000 tons of burning oil into the environment (UNEP & UN-HABITAT, 1999). Black rain fell onto neighboring towns and villages. In addition, a toxic soup of compounds and substances leaked into the air, soil, and water around Pancevo—which was only one of the more than 50 industrial sites that were hit (UNEP & UN-HABITAT, 1999).

The local communities across Serbia and the region demanded to know what was happening to their environment. Bulgaria and Romania expressed their deep concern about transboundary air pollution and the potentially toxic sludge in the Danube River. Meanwhile, NATO argued that they had minimized environmental damage by using sophisticated weapons and selective targeting.

In response to the demand for accurate and objective information, UN Secretary-General Kofi Annan requested UNEP take action. We sent teams of environmental experts to assess the environmental impacts and risks to human health using field samples, mobile labs, and satellite images. UNEP's first report concluded that the damage was not as serious as people first thought (UNEP & UN-HABITAT, 1999).

Mazar-e-Sharif seen from the air (Courtesy UNEP)



High concentrations of chemicals were identified at four main hotspots, but the overall situation was not a catastrophe. These hotspots, however, required restoration to protect human health and the environment from further risks, and clean-up efforts were considered an urgent humanitarian priority.

The situation in Kosovo—a short-duration war that used sophisticated weapons in highly industrialized locations—proved to be a good test of UNEP’s analytical techniques and ability to deploy multidisciplinary teams of experts to the field. However, this approach to post-conflict assessments—focusing on environmental contamination from bombed industrial sites—was fundamentally altered by our next major assessment.

Linking Natural Resources, Livelihoods, and Peacebuilding: Afghanistan

In 2002, the transitional government of Afghanistan asked UNEP to carry out a comprehensive environmental assessment. However,

since the country had virtually no heavy infrastructure, we needed a new approach to gauge the impact of 23 years of conflict on the environment. UNEP launched five parallel teams of experts to assess how natural resources—including land, water, forests, and wildlife—were affected by coping strategies used by local communities during the conflict. We also evaluated the state of water and waste infrastructure, as well as air quality, in five of the main cities. Our aim was to assess potential environmental risks caused by the combined effects of urban growth, migration, and an overall lack of investment and maintenance.

In some areas, we found that up to 95 percent of the landscape had been deforested during the conflict—cut for fuel, bombed to remove cover, or removed to grow crops and graze livestock (UNEP, 2003). Many people were fundamentally dependent on these forests for livelihoods. Without them, and without alternatives, Afghans were migrating to the cities or engaging in other forms of income generation—such as poppy production for the drug trade—in order to survive.



Air sampling along the main street in Kandahar (Courtesy UNEP)



For more than two decades, Afghanistan's natural resources were liquidated and mismanaged, leading to widespread and profound environmental impacts on forests, aquifers, land, and wildlife.

Afghanistan taught us something important about the impact of conflict: Coping strategies used by local people, coupled with the breakdown of governance, can cause more environmental damage than the war itself. For more than two decades, Afghanistan's natural resources were liquidated and mismanaged, leading to widespread and profound environmental impacts on forests, aquifers, land, and wildlife. As the rebuilding process unfolded, restoring these resources became a major government priority in order to restore livelihoods, reduce migration, and promote economic stability—the basic prerequisites for lasting peace.

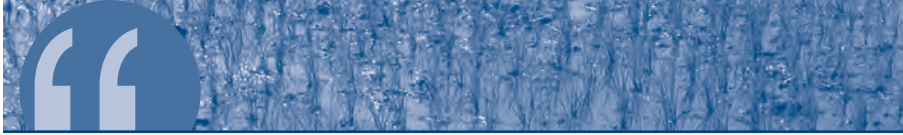
Afghanistan's experience demonstrates that while degraded natural resources can undermine livelihoods and threaten stability, restoring them can also contribute to peace. Large-scale environmental recovery projects can provide immediate employment opportunities and support new livelihoods, especially for vulnerable sectors of the population such as former combatants.

Building on the recommendations contained in the post-conflict environmental assessment,

UNEP is helping the Afghan government develop its environmental institutions. UNEP has established a program office within the compound of the National Environmental Protection Agency (NEPA) and is helping to build its capacity with a seven-year program from 2003 to 2010—the largest of its kind for UNEP.

UNEP's Latest Post-Conflict Environmental Assessments: Lebanon and Sudan

During the 34-day conflict between Lebanon and Israel in 2006, UNEP tracked environmental impacts on both sides of the Lebanon-Israel border. Within 24 hours of the ceasefire agreement, an expert from the Joint UNEP-OCHA Environment Unit was on the ground to assess acute environmental risks to human health. The major concern was the potential environmental damage and health risks from the bombing of fuel storage tanks at the Jiyeh thermal power plant, which spilled some 10,000-15,000 tons of heavy fuel oil into the sea, affecting approximately 150 km of Lebanese coastline, as well



Any future peace in Darfur must find ways to address the critical gap between pastoralists' and farmers' demands for fertile land and water resources and the limited supply.

as part of Syria's coast (UNEP, 2007a). The Joint Unit worked closely with the Ministry of Environment and international actors to establish an Oil Spill Operations and Coordination Centre, which coordinated equipment, monetary contributions, and staff in the spill's aftermath. The Joint Unit also monitored public sources to gather information on other environmental impacts of the conflict.

To conduct a wider assessment of the environmental damage and associated risks, UNEP assembled a team of 12 scientists with expertise in solid and hazardous waste management, freshwater resources, land-based contamination, marine and coastal management, and military weaponry. The UNEP team visited more than 100 sites throughout the country and took close to 200 samples of soil, surface and groundwater, dust, ash, seawater, sediment, and marine animals. Fifteen Ministry of Environment staff members and volunteers, as well as a scientist from the Lebanese Atomic Energy Commission, accompanied the assessment team in the field.

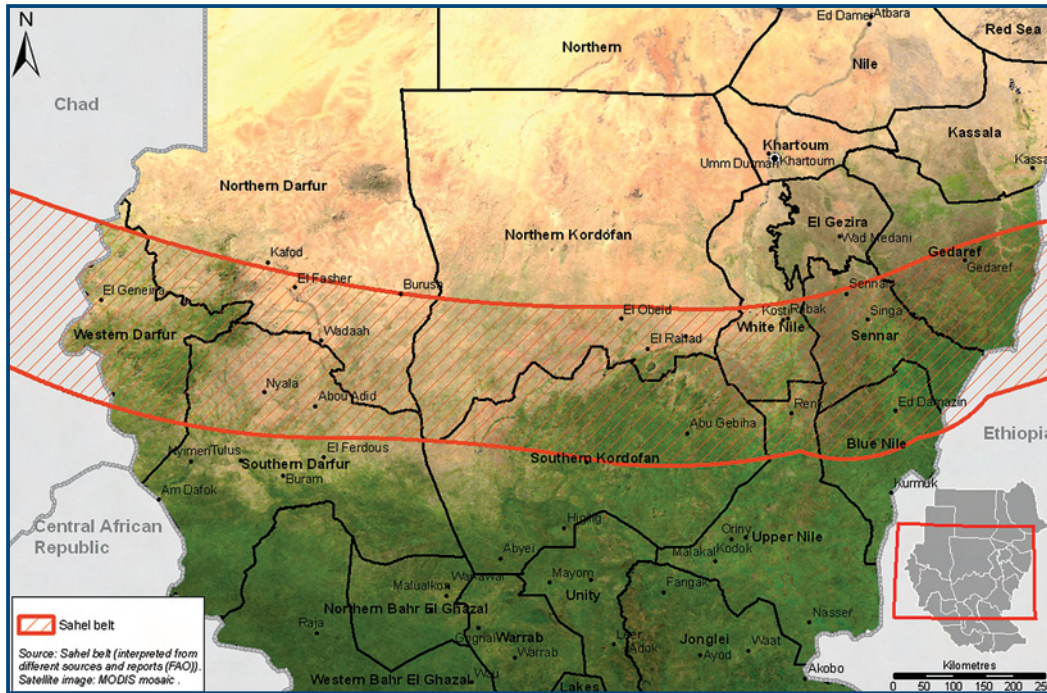
The final assessment report concluded that the oil pollution to the marine environment was largely contained by the rapid response, as contamination levels appeared to be typical for coastal areas in that part of the Mediterranean—good news for the country's economically important tourism and fisheries sectors (UNEP, 2007a). The report also verified that none of the weapons used in the conflict were made from depleted uranium or any other radioactive material. The major environmental risks gener-

ated by the conflict were related to the disposal of debris and hazardous waste generated by the destruction of industrial sites and the demolition of buildings. The sheer scale of the debris overwhelmed municipal dump sites and waste management systems, potentially contaminating groundwater and air. UNEP made recommendations for addressing these risks and prepared to provide further technical assistance, if requested.

In contrast, the assessment in Sudan was the largest and most complex ever undertaken by UNEP, requiring 10 separate field missions over 12 months, more than 12,000 km of road travel, and more than 2,000 interviews. The final assessment report, released in June 2007, is the most comprehensive that UNEP has ever produced, covering water, agriculture, forests, desertification, natural disasters, wildlife, the marine environment, industrial pollution, the urban environment, environmental governance, and the role of environmental pressures in Sudan's conflicts. The report offers 85 recommendations and outlines a detailed government action plan with a total estimated national cost of \$120 million over 3-5 years (UNEP, 2007b)

One of the report's most critical findings is that scarce natural resources such as land and water are inextricably linked to the conflict in Darfur. Any future peace in Darfur must find ways to address the critical gap between pastoralists' and farmers' demands for fertile land and water resources and the limited supply. However, just as environmental stress can help trigger and perpetuate conflict, the sustainable management of natural resources can provide the basis for long-term stability, sustainable livelihoods, and development, the report concluded.

Building on the post-conflict environmental assessment, UNEP has developed a Sudan program with a pipeline of projects, including building capacity for the environmental ministries in Khartoum and Juba, and implementing field-based projects in Darfur that promote reforestation and alternatives to timber use for energy and construction. The program is also conducting technical assessments of water



The Sahel, which extends from Senegal eastward to Sudan, forms a narrow transitional band between the arid Sahara to the north and the humid savannah to the south. In its natural state, the Sahel belt is characterized by baobab and acacia trees, and sparse grass cover. Since the late 20th century, it has been subjected to desertification and soil erosion caused by natural climate change, as well as overgrazing and farming. The countries of the Sahel zone also suffered devastating droughts and famine in the early 1970s, and again in the 1980s. Apart from long-term droughts, the Sahel is prone to highly variable rainfall, with associated problems for livestock- and crop-rearing. (Courtesy UNEP)

resources and seeking to improve governance and sustainable management of groundwater. UNEP will also engage the international community in Sudan to develop environmental and natural resource management as a critical component of conflict resolution, recovery, and development.

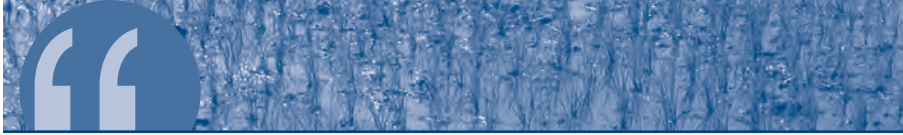
Post-Conflict Assessments in Progress: Rwanda and the Democratic Republic of the Congo

In the eastern DRC, high-value natural resources are fueling conflict and prolonging instability. Various militias fight with each other, local communities, and the government for control of minerals and timber. The resources themselves fund arms and armies, thus threatening peace. The immediate management of these resources is fundamental to building peace and stability. UNEP is launching a comprehensive assessment in the DRC, seeking to determine how the country’s great natural resource wealth can be used in sustainable ways and contribute to—rather than hinder—the peacebuilding process.

In neighboring Rwanda, UNEP and the Government of Rwanda will embark on a major study to identify the post-conflict environmental challenges facing the country. The partners will develop a forward-looking action plan outlining priorities and costs for the next three to five years.

The Environmental Impact of Relief and Recovery

Relief and recovery operations themselves can have an environmental impact. In the DRC, for example, recent fighting in northern Kivu displaced around 60,000 people into five camps near the border of Virunga National Park. Virunga is one of the last two places on Earth where mountain gorillas still live in the wild. While relief agencies provided food, water, and shelter to the displaced, they failed to provide energy for cooking. As a result, camp inhabitants were left with no choice but to collect wood from the park itself. While conservation needs may be less of a priority than human survival, these impacts could have been easily avoided by supplying the camp



Environmental needs must be considered in the humanitarian phase; if we wait until recovery starts, it is already too late.

with energy-efficient stoves and sustainably produced wood from woodlots.

In Darfur, UNEP's post-conflict assessment noted that some groundwater aquifers were being pumped above sustainable levels to meet urgent humanitarian needs. While this may be a short-term solution, the medium-term implications for local communities that rely on the groundwater are grave. The loss of those aquifers could lead to another crisis or potential conflict. One of the key humanitarian principles, "do no harm," should apply equally to the environment; therefore, monitoring the extraction and recharge rates should be a basic prerequisite for all groundwater pumping.

The recovery process faces similar challenges. The post-conflict period witnesses a massive injection of capital and a flurry of rebuilding activity. About 6-20 times more aid per capita is received following a disaster or conflict than during "normal" times. As a result, natural resources normally consumed over a 5-10 year period are consumed in a year in frenzy of post-crisis "hyper-development." While it is not yet fully quantified, I believe that more environmental damage actually happens during the reconstruction process than in the conflict or disaster itself. In the rush to rebuild infrastructure and restore economies, there is little time for planning, environmental safeguards, or wise decisions on the sustainable use of resources. Political pressure dictates immediate and visible progress.

As a result, environmental needs must be considered in the humanitarian phase; if we

wait until recovery starts, it is already too late. The Post-Conflict Needs Assessment and Post-Disaster Needs Assessment are critical UN tools for defining early recovery needs, including environmental issues, from the outset of a crisis. Ideally, these tools will help countries build back better, reduce underlying vulnerabilities, and move them toward more sustainable forms of development. UNEP is working with a number of partners to ensure these tools are systematically applied in post-crisis situations.

Priorities, Partners, and Plans for UNEP in Addressing Environment and Conflict

UNEP is going through an exhaustive—and overdue—internal reform process. These reforms will focus our work on six core areas (see box), instill a results-based management approach, and strategically strengthen UNEP's presence in countries with major environmental challenges. UNEP is now working with member states and other stakeholders to define priorities, identify partners, and explore options for expanding its work in assessing and addressing the environmental causes and consequences of conflicts and disasters, which is one of the six core areas. In my personal vision, UNEP could consider expanding operations in the following five ways:

Create viable early warning systems:

First, UNEP should begin with prevention and risk reduction. We need to start identifying, on a more systematic basis, countries that are vulnerable to conflicts and disasters due to poor natural resource management—particularly fragile states where we can strengthen natural resource management capacity and crisis preparedness. We also need to understand which regions will be most affected by climate change and how it will amplify conflict and disaster vulnerability.

Further develop early response capabilities:

Second, if a conflict or disaster does occur, UNEP should conduct its assessment in two phases. In the first phase, UNEP and the

UN Office for Coordination of Humanitarian Affairs will conduct a rapid environmental assessment of critical threats to human life and health from the release of hazardous substances. To do this, UNEP will need to systematically deploy environmental experts on UN Disaster Assessment and Coordination teams with clear mechanisms in place to provide emergency clean-up assistance. In the second phase, UNEP will perform more detailed environmental assessments integrated within the UN needs assessment process, which looks at environmental damage and risks to health, livelihoods, and security. The assessments should also look ahead at rebuilding better, as well as look to the past to understand the root causes of the event.

Build national and local capacity for environmental governance:

Third, where key environmental risks are identified, UNEP should be available to establish an in-country recovery program to help national environmental authorities with clean-up and rehabilitation, as we have done in Afghanistan, Iraq, Liberia, Sri Lanka, and Sudan. UNEP has played a key role in assessing their capacity, strengthening their hand, and providing technical and political support in the weeks, months, and years following a crisis. Many member states are asking UNEP to expand this kind of service.

Disseminate environmental technical expertise and assistance:

Fourth, UNEP should ensure that environmental technical assistance is available to government and UN agencies struggling with environmental issues in post-crisis settings. We need to be able to identify the specific environmental technologies that can be used, the key risks to be considered, and the best practices to follow. To do this, UNEP would need to maintain a trained roster of experts and deploy specialists on an as-needed basis.

Capitalize on the linkages between environment, peacebuilding and conflict prevention:

Finally, UNEP should build greater capacity to help conflict-affected

UNEP’s Medium-Term Strategy for 2010–2013 proposes that the organization focus on six core priority areas (UNEP, 2008b):

- Climate change
- Disasters and conflicts
- Ecosystem management
- Environmental governance
- Harmful substances and hazardous waste
- Resource efficiency and sustainable consumption and production

countries use natural resources as platforms for peacebuilding through dialogue, confidence building, and cooperation. In the European region, UNEP has led the Environmental Security Initiative, which has used common environmental threats as opportunities for transboundary collaboration and cooperation. Now is the time to scale up such services to the global level, starting with countries in Africa most affected by conflict.

To implement this vision, UNEP will need political, technical, governmental, and financial partners. Some of these partnerships are already being forged. For example, one of our senior staff members is providing guidance on natural resources and environmental management in post-conflict countries to the support office of the UN Peacebuilding Commission. Other partners—including the Earth Institute, Global Witness, the Environmental Law Institute, Adelphi Research, the Woodrow Wilson Center, and the International Institute for Sustainable Development—are helping us analyze case studies, develop tools, conduct field missions, and recommend how the UN system can help prevent resource-based conflicts and use the environment as a platform for dialogue, cooperation, and confidence building.



REPORT ONLINE

All of UNEP's reports on disasters and conflicts, including the assessments of Kosovo, Afghanistan, Lebanon, and Sudan, are available online: <http://postconflict.unep.ch/publications>

The Sudan Environmental Database includes the data collected by UNEP experts in the field, as well as hundreds of photos, maps and satellite images, field video, bibliographic information, and technical studies: <http://www.unep.org/sudan/>

Scarred Lands and Wounded Lives: The Environmental Footprint of War, a documentary by Alice and Lincoln Day featuring an interview with David Jensen, was released in April 2008 at the Environmental Film Festival in the Nation's Capital: <http://www.fundforsustainabletomorrows.org/film.htm>

The need for this work is amplified by the potential implications of climate change, which is expected to change the distribution of critical resources such as water and fertile land—potentially leading to new sources of conflict. While the task may seem overwhelming at times, I take inspiration from the Afghan saying, “If you want to go fast, go alone; if you want to go far, go together.” We welcome the best and brightest minds from around the world to join us on this journey.

References

- UN Environment Programme (UNEP). (2003). *Afghanistan: Post-conflict environmental assessment*. Geneva: UNEP. Available at <http://postconflict.unep.ch/publications/afghanistanpcajanuary2003.pdf>
- UNEP. (2007a, January). *Lebanon: Post-conflict environmental assessment*. Geneva: UNEP. Available at http://postconflict.unep.ch/publications/UNEP_Lebanon.pdf
- UNEP. (2007b, January). *Sudan: Post-conflict environmental assessment*. Geneva: UNEP. Available at http://postconflict.unep.ch/publications/UNEP_Sudan.pdf
- UNEP. (2008a). *From conflict to peacebuilding: The role of natural resources and the environment*. A PBSO Briefing Paper prepared in cooperation with UNEP. Available at <http://www.un.org/peace/peacebuilding/Working%20Group%20on%20Lessons%20Learned/environmentConflictPB/08.05.2008%20WGLL%20Background%20Note.pdf>
- UNEP. (2008b). *Medium-term strategy for 2010-2013: Environment for development*. Nairobi, Kenya: UNEP. Available at <http://new.unep.org/PDF/FinalMTSGCSS-X-8.pdf>
- UNEP & the United Nations Centre for Human Settlements (UN-HABITAT). (1999). *The Kosovo conflict: Consequences for the environment*. Nairobi, Kenya: UNEP & UN-HABITAT. Available at <http://postconflict.unep.ch/publications/finalreport.pdf>