

## Environmental Impacts of War

Military conflicts always bring human suffering. They also bring longer-term security threats, such as environmental degradation and new risks to human health. For the past seven years the U.N. Environment Programme (UNEP) has been working in areas of the world where natural and human environments have been damaged as a consequence of conflict. In 1999, as the ruins of targeted industrial facilities in Kosovo, Serbia, and Montenegro were still smoldering, UNEP teams conducted the first “post-conflict environmental assessment.”<sup>1</sup>

The work in the Balkans concluded that there were several environmental hot spots where immediate cleanup action was needed to avoid further threats to human health, such as targeted oil refineries in Pancevo and Novi Sad and industrial facilities in Kragujevac and Bor. The Danube River was at risk due to the leakage of more than 60 different chemicals, including mercury, from Pancevo. These findings led the international community for the first time to include environmental cleanup in their post-conflict humanitarian aid.<sup>2</sup>

After the Balkans, this new environmental tool has been used in Liberia, the Occupied Palestinian Territories, Afghanistan, and most recently in Iraq. Each situation is unique due to the particular nature of the conflict, the society, and the ecology.

In Afghanistan, two decades of warfare have degraded the environment to the extent that it now presents a major stumbling block for the country’s reconstruction efforts. Conflict has put previous environmental management and conservation strategies on hold, brought about a collapse of local and national governance, destroyed infrastructure, hindered agricultural activity, and driven people into cities already lacking the most basic public amenities.<sup>3</sup>

Over 80 percent of Afghanistan’s people live in rural areas, where they have seen many of their basic resources—water for irrigation, trees for food and fuel—lost in just a generation. In urban areas, safe water—the most basic necessity for human well-being—may be reaching as few as 12 percent of the people. Badly managed solid waste sites have contaminated groundwater and spread air pollution, and illegal logging has caused widespread loss of forest cover.<sup>4</sup>

In Iraq, a similar picture can be painted. There, UNEP’s assessment concluded that the conflict in 2003 and looting after the war have added to chronic environmental stresses already in place from the Iran-Iraq war of the 1980s, the 1991 Gulf War, environmental mismanagement by the former Iraqi regime, and the unintended effects of the sanctions.<sup>5</sup>

A major threat to the Iraqi people is the accumulation of physical damage to the country’s environmental infrastructure. In particular, the destruction and lack of investment in water and sanitation systems have led to higher levels of pollution and health risks. When power shortages stop pumping stations, both freshwater supply and wastewater treatment are threatened.<sup>6</sup>

The destruction of military and industrial infrastructure during Iraq’s various conflicts has released heavy metals and other hazardous substances into the air, soil, and water. Smoke from oil-well fires and burning oil trenches during the war, looting, and sabotage have caused local air pollution and soil contamination. Lack of investment in the oil industry has reduced maintenance and raised the risk of leaks and spills.<sup>7</sup>

One of the main projects of Saddam Hussein’s regime—draining the Mesopotamian Marshes and building artificial waterways—has ruined some of the most valuable areas

of biodiversity in Iraq. The water pollution is affecting not only the Euphrates and Tigris Rivers, but also the wider Persian Gulf region.<sup>8</sup>

In Iraq, as in many post-conflict situations, environmental issues are closely linked to humanitarian and reconstruction needs. Priorities include restoring the water supply and sanitation systems, cleaning up pollution hot spots, and cleaning up waste sites to reduce the risk of disease epidemics from municipal and medical wastes. During the 1991 Gulf War and the 2003 Iraq War, weapons with depleted uranium were used in several places in Iraq. To protect the local populace, sites with these remnants of war need to be assessed and cleaned up.<sup>9</sup>

In all conflict areas there are both chronic, long-term environmental problems and problems directly related to military action. Furthermore, UNEP post-conflict environmental assessments clearly demonstrate that military crises are almost always followed by an environmental crisis.

Consequently, a key lesson is the need to minimize the risks for human health and environment during conflict through preparedness and civil protection. And as soon as the conflict is over, proper assessment and cleanup should take place. Support and capacity building of the existing or newly established environmental administration is crucial for long-term sustainability. When considering how to revive the environment after the guns fall silent, a region's entire environmental history must be addressed.

In addition, after conflict ends efforts must

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Unexploded ordnance, Bosnia

be made to reengage the country in regional and international environmental cooperation—especially when dealing with shared resources like water. In spring 2004, for the first time in 29 years Iraqi and Iranian water and environmental authorities together discussed the issue of the shared Mesopotamian Marshes. Old enemies are once again negotiating on

environmental matters. Along with improving the state of these resources, the management of shared resources can serve as an important way to build confidence between formerly hostile countries.<sup>10</sup>

One important way to minimize environmental and health risks is through stricter regulations of warfare by limiting possible targets and weapons. A good example of the legal tools that can be used is the ENMOD convention, which prevents the use of artificial changes in the environment—like human-caused floods—as weapons of war. Since the negative environmental impacts of different types of weapons are known, and since there is enough evidence of the risks that targeting chemical facilities can bring to a population, new international regulations are needed.<sup>11</sup>

Adding environmental costs to the long list of the negative consequences of conflict—human casualties, refugees, economic losses—should make nonviolent solutions even more attractive.

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