Environmental Vulnerability in Haiti

A Stakeholder Workshop to Discuss Findings and Recommendations with USAID's Technical Assessment Team

August 02 2006, 9:00 a.m. - 5:00 p.m.

Event Summary

Glenn R. Smucker, Assessment Team Leader
Michael Bannister, Center for Subtropical Agroforestry, University of Florida
Julie Kunen, USAID Forest Team
Marc Portnoff, Center for Advanced Fuel Technology, Carnegie-Mellon University
Gaël Pressoir, Institute for Genomic Diversity, Cornell University
Rochelle Rainey, Global Health Bureau, USAID
Joel Timyan, Team Ecologist
Ronald Toussaint, Team Biodiversity Specialist
Andy White, Rights and Resources Initiative
with opening remarks by
Beth Cypser, Acting Deputy Assistant Administrator,
USAID Latin America and Caribbean Bureau

Decades of unplanned and unsustainable timber harvesting, agricultural clearing, and livestock cultivation have thrown Haiti's environment into crisis, exacerbating the effects of hurricanes and floods on the already unstable country. Under Congressional directive, the U.S. Agency for International Development (USAID) is formulating a plan to help improve the country's watershed management, forestry and agriculture practices, and rural livelihoods, and thus reduce its people's vulnerability to natural disasters. Presenting the preliminary findings of a recent environmental vulnerability assessment, USAID's multi-disciplinary team gathered at the Woodrow Wilson Center on August 2, 2006, to hear feedback from a wide range of experts at a meeting sponsored by the Environmental Change and Security Program. The panelists and participants discussed whether the plan's environmental objectives are sustainable and could improve the nation's future.

Assessing the Situation

"Haiti is in the midst of a devastating environmental crisis," said **Beth Cypser**, acting deputy assistant administrator of USAID's Latin America and Caribbean Bureau. Often beset by hurricanes and heavy rainfall, Haiti has become increasingly vulnerable to catastrophic flooding, largely due to the loss of topsoil and forest cover—only 3 percent remains, according to current estimates. Additionally, the country's rapid population growth (roughly 2 percent annually) has pushed people to settle in marginal areas like floodplains, as well as profitable land, she said: "Most fertile land areas are often used for slums, while hillsides and steep landscapes are used for agriculture."

Past assessments and treatments of these problems have had little impact. Confronting the ghosts of previous efforts, the USAID assessment team was tasked with creating a fresh plan, said **Julie Kunen** of USAID's forest team: "We were aware of the heavy burden that we faced in trying to take a new approach to this issue, and to offer up something new." With the green light from Congress, the team set out to compile concrete recommendations for scaling up small projects to the landscape level, in the hopes of creating a holistic, national-level approach to managing a complex environmental system. "We were given a broad mandate to review [Haiti's environmental vulnerability] in many different frames; and asked to think about achieving national-scale impact," she said. The resulting assessment covered many sectors:

- Agroforestry;
- Watershed management;
- Forests and parks management;
- Population-health-environment linkages;
- Disaster preparedness and urban planning;
- Policy and institutional reform;
- Energy alternatives, such as biofuels; and
- Value-added agricultural commodities.

Helping Haiti's Watersheds

Healthy watersheds are critical to abating the impact of natural disasters—such as flooding—and are essential components of the country's agricultural economy. The assessment team determined that successful interventions require addressing the watershed as a whole, rather than one stream or lake at a time. But lacking sufficient funding to restore all of Haiti's watersheds at once, the team focused their efforts on the most critical systems. Enlisting the help of geographic information specialists from the University of Florida, USAID identified three criteria for ranking watershed vulnerability: (1) soil erosion, (2) population density, and (3) vulnerability of critical infrastructure. The study was the first to rank Haitian watersheds in terms of their relative vulnerability.

USAID's research revealed that the Cayes, Cap-Haitien, La Quinte, Cul-de-Sac, and Tru du Nord watersheds were among the most vulnerable due to their high coastal population densities, high risk of flooding, and elevated risk of infrastructural vulnerability. In addition, the study identified densely populated Port-au-Prince—located in a coastal plain—as the country's most environmentally vulnerable area. Panelists proposed a multi-donor strategy for the city focusing on urban planning measures to reduce loss of life and property damage. Finally, USAID Team Ecologist **Joel Timyan** stressed the need to increase Haitians' understanding of how their lives and work affect a whole watershed: "We all live downstream."

Better Lives, Better Environment

Assessing Haiti's vulnerability to natural disasters requires examining the inter-relationships among population, health, and environmental factors, asserted **Rochelle Rainy** of USAID's Global Health Bureau. Not only does Haiti's growing population stress the environment, environmental degradation negatively impacts human health. Lack of clean water, poor food security, and indoor air pollution help explain why Haiti has the lowest life expectancy and highest child and maternal mortality rates in the Western hemisphere. Since the country's health infrastructure is not robust, it requires complete rehabilitation after each disaster, further exacerbating the cycle of vulnerability. Rainey urged policymakers and donors to pay particular attention to improving access to family planning, as 40 percent of Haitian women expressed an unmet need and the prevalence rate of modern contraceptive methods is only 23 percent, contributing to a total fertility rate of 4.9 children per woman. In light of the links connecting population, health, and environment, she recommended integrating the provision of health and family planning with interventions to conserve natural resources.

Ronald Toussaint, the team's biodiversity specialist, pointed out that environmental vulnerability is not caused by a single factor, but rather a host of societal and environmental weaknesses: "We should qualify [environmental vulnerability] as a mosaic of vulnerability." Socio-economic factors, particularly population and poverty, are the driving forces behind vulnerability, he said: "If we don't address population issues, it is like the Creole phrase, 'wash your hands and then rub them in the dirt.'" He argued for setting reasonable population targets to reduce Haiti's high population growth rate and to spur progress through the demographic transition.

Considering the country's growing population and diminishing availability of agricultural land, the assessment team focused on improving natural resource management to increase food security. The Center for Subtropical Agroforestry's **Michael Bannister** said that interventions should not rely on intensive hillside agriculture: "It is too expensive and too risky to do so on a degraded resource base." Rather, he supported the implementation of long-term agroforestry projects that would promote soil conservation, create jobs, and shift from annual to perennial cropping on hillsides.

Homegrown Energy

As the price of petroleum products has risen, some Haitians are logging their already-devastated

forests for firewood and plant-based charcoal. The assessment team explored high-value fuel substitutes that not only offer a fair return, but also require minimal agricultural input and could reduce soil erosion. **Marc Portnoff**, co-founder of the Carnegie Mellon Center for Advanced Fuel Technology, assessed the potential of biofuel crops, such as *Jatropha curcus*, for which Haitian citizens have expressed "great excitement," he said. "Homegrown energy—a renewable energy source—burns cleaner and can be used with the existing petroleum infrastructure," Portnoff said. *Jatropha*'s ability to grow on marginal lands, combined with Haitians' experience harvesting it, makes it a potentially attractive fuel alternative. But before proceeding with wide-scale cultivation, Portnoff recommended conducting a risk assessment study to ensure that it will not threaten the Haitian ecosystem.

Despite the promise offered by biofuel crops, promoting them requires capacity that Haiti does not have, said **Gaël Pressoir** from the Institute for Genomic Diversity at Cornell University. Building the proper structures to support a new crop, from education to delivery mechanisms, often takes years of planning; Brazil's success with ethanol, for example, is the result of 20 years of planning and careful selection of outstanding sugarcane varieties. Haiti, he noted, also lacks capacity at the university level, where students who are sponsored to study abroad rarely return to use their knowledge: "That is very little return on investment." Following Brazil's formula, he argued for extensive study of potential varieties that would work in Haitian soil, as well as proper investment and capacity building in education, delivery, and technology: "If you are moving toward promoting a new crop, make sure you have the right varieties…and the science behind it to sustain that program."

Toussaint also addressed capacity building, citing the importance of national-level environmental policy combined with municipal-level enforcement. "Governance is critical to have success," he said. "We need to strengthen regional associations, and ask municipalities to implement disaster-preparedness and risk management plans." Toussaint's recommendations included the creation of reforestry and land use plans, as well as policies to address energy, population, and health concerns.

Scaling Up, Moving Forward

The effectiveness of the team's sustainable development strategy is contingent on economic growth: "Unless the interventions can be accompanied by broader-scale economic development, they will have a very limited impact," cautioned USAID's Assessment Team Leader **Glenn Smucker**. Haiti must also surmount its long-running governance problems. "Good governance has not been a feature of Haitian government in its history," noted one attendee. According to several panelists, the inability to rely on government has impeded the flow of international aid.

Despite Haiti's history of poor leadership, the country is experiencing relative stability under the leadership of President Réne Préval, an agronomist by training. The current political climate offers a genuine opportunity for international donors to establish cooperative relationships at both the national and grassroots levels. While the assessment team was somewhat skeptical that the national government could effectively cooperate with international projects, since they are seeking to achieve national-scale impacts, they must work with all levels of Haitian government.

The team concluded by calling for "thinking outside the box"; specifically, they recommended finding additional ways to engage Congress in improving trade policy toward Haiti, as well as working to secure longer-term appropriations for development projects. "We need to be thinking more broadly to achieve the long-term goals we are seeking," said **Andy White** of the Rights and Resources Initiative, noting that current 2- to 5-year funding cycles are not long enough to address problems that could take a generation or more to solve. Finally, establishing relationships with emerging ministerial leaders and international donors could also offer opportunities to bring new ideas and insights into Haiti's environmental issues.

By Ken Crist