

ENVIRONMENTAL RISKS & OPPORTUNITIES IN HAITI: A BACKGROUND ANALYSIS



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PREFACE

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ACRONYMS

ALERTE	Association pour la Lutte contre l'Erosion et la Réhabilitation Totale de l'Environnement
ANDAH	Association Nationale des Agronomes Haïtiens
ASEC	Assemblée des Sections Communales
ASSET	Agriculture Sustainable Systems and Environmental Transformation
ATPPF	Projet d'Appui Technique pour la Protection des Parcs et Forêts
BAPP	Bureau d'Approvisionnement en Produits Pétroliers
BID	Banque Interaméricaine de Développement
BME	Bureau des Mines et de l'Energie
CAMEP	Centrale Autonome Métropolitaine d'Eau Potable
CASEC	Conseil d'Administration des Sections Communales
CCI	Cadre de Coopération Intérimaire
CIDA	Canadian International Development Agency
CIFOR	Center for International Forestry Research
CNIGS	Centre National de l'Information Géo Spatiale
CNRA	Commission Nationale de Réforme Administrative
CONATE	Conseil National de l'Aménagement du Territoire et l'Environnement
CSC	Cour Supérieure des Comptes
DPC	Direction de la Protection Civile
ECVH	Enquête sur les Conditions de Vie en Haïti
EDH	Electricité d'Haïti
EQPPH	Enquête sur les Perceptions de la Pauvreté en Haïti
ESMAP	Energy Sector Management Assistance Program
FAES	Fonds d'Assistance Économique et Sociale
FAO	Food and Agriculture Organization
FEM	Fonds de l'Environnement Mondial
GOH	Government of Haiti
GRAP	Groupe de Recherche en Administration Publique et Management International
IADB	Inter-American Development Bank
IAEA	International Atomic Energy Agency
ICF	Interim Cooperation Framework
IFAD	International Fund for Agricultural Development
IHSI	Institut Haïtien de Statistique et d'Informatique
IICA	Inter-American Institute for Cooperation on Agriculture
MARNDR	Ministère de l'Agriculture, des Ressources Naturelles, et du Développement Rural
MDE	Ministère de l'Environnement
MEF	Ministère de l'Economie et du Finance
MICT	Ministère de l'Intérieur et des Collectivités Territoriales
MPCE	Ministère de la Planification et de la Coopération Externe
MPECE	Ministère de la Planification, de l'Environnement et de la Coopération Externe
MSP	Ministère de la Santé Publique et de la Population
MTPTC	Ministère des Travaux Publics, Transports et Communications
NEAP	National Environmental Action Plan
ODVA	Organisme de Développement de la Vallée de l'Artibonite

OMS	Organisation Mondiale de la Santé
ONEV	Observatoire National de l'Environnement et de la Vulnérabilité
ONG	Organisation non gouvernementale
OPC	Office du Protecteur du Citoyen
OPS	Organisation Panaméricaine de la Santé
OSAMH	Organisme de Surveillance et d'Aménagement de Morne l'Hôpital
PAGE	Projet d'Appui à la Gestion de l'Environnement
PADF	Pan-American Development Foundation
PAE	Plan d'Action pour l'Environnement
PAHO	Pan American Health Organization
PAM	Programme Alimentaire Mondial
PNUD	Programme des Nations Unies Pour le Développement
PNUE	Programme des Nations Unies pour l'Environnement
PRIGE	Renforcement Institutionnel de la Gestion de l'Environnement
PRODETER	Programme de Développement du Territoire
SEDREN	Société d'Exploitation et Développement Économique et Naturel
SHADA	Société Haïtiano-Américaine de Développement Agricole
SMCRS	Service Métropolitain de Collecte des Résidus Solides
SNEP	Service National d'Eau Potable
SRF	Service des Ressources Forestières
TNC	The Nature Conservancy
TPTC	Ministère des Travaux Publiques, Transport, et Communications
UNDP	United Nations Development Program
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
USAID	United States Agency for International Development
UTSIG	Unité de Télédétection et de Systèmes d'Information Géographique
WFP	World Food Program

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I. INTRODUCTION

This analysis is one element of a longer policy study carried out in response to a Congressional directive that "...after consultation with appropriate international development organizations and Haitian officials, organizations and communities, the Administrator of the United States Agency for International Development shall submit a report to the Committees on Appropriations setting forth a plan for the reforestation of areas in Haiti that are vulnerable to erosion which pose significant danger to human health and safety." USAID has interpreted this mandate broadly to include better management of critical watersheds, improved rural livelihoods, sustainable forest management, and reduction in the vulnerability of Haiti's populace to natural disasters such as floods and hurricanes.

The present background analysis is an updated companion piece to the report entitled, *Environmental Vulnerability in Haiti: Findings and Recommendations*, published in February 2007.¹ These studies of environmental vulnerability also build on an earlier but closely related study, *Agriculture in a Fragile Environment: Market Incentives for Natural Resource Management in Haiti* (July 2005).²

The purpose of this series of policy studies is to assist the USAID Haiti Mission to develop a comprehensive environmental strategy built on technical and policy assessments and participatory consultation with a broad range of stakeholders. By using a comprehensive strategy, the USAID Mission seeks to target its activities with a view to national impact, support for Haitian government priorities, and as a complement to the programs of other donors and non-governmental organizations.

An earlier version of the present background analysis was first issued in March 2006 under the Interim Government of Haiti (2004-2006). This background analysis has thus been revised to take into account Haiti's evolving political and policy environment marked by the November 2006 national and parliamentary elections and the December 2006 local elections of mayors and communal section administrators.

Information on donor programs and funding in Chapter V is drawn primarily from donor web sites, documents, interviews, and contact with donor representatives and other stakeholders in Haiti and Washington in November and December of 2005 under the Interim Government of Haiti, and then again in May, July and August of 2006 under the newly elected government of René Préal. Stakeholders consulted include US government agencies, major bilateral and multilateral donors, Haitian ministries of Agriculture, Environment, Interior, Public Works, and Planning; and non-governmental organizations operating in Haiti (see Bibliography for reports and Annex B for stakeholders consulted). The team contacted all major donors as well as other stakeholders.

¹ Glenn R. Smucker, Editor and Team Leader, and Mike Bannister, Heather D'Agnes, Yves Gossin, Marc Portnoff, Joel Timyan, Scot Tobias, and Ronald Toussaint, 2006, *Environmental Vulnerability in Haiti: Findings and Recommendations*, USAID Haiti Mission.

² Glenn R. Smucker, Editor and Team Leader, and Gardy Fleurantin, Mike McGahuey, and Ben Swartley, (July 2005), *Agriculture in a Fragile Environment: Market Incentives for Natural Resource Management in Haiti*, USAID Haiti Mission.

See Annex A of the present report for a summary of lessons learned from past efforts at natural resource management in Haiti, field observations of small farmer interactions with trees and the land in Haiti's uplands, and common myths regarding Haitian farmers and the environment. Where there have been successes, an important factor has been the use of market-based incentives that link soil and water conservation measures to improvements in farmer incomes. In addition to watershed management, the 2005 assessment noted above identified sectors that have an impact on Haiti's vulnerability to disaster, erosion, deforestation, and associated dangers to human health, safety, and well-being. These sectors include sustainable forest and parks management, disaster preparedness, urban planning; population, environment, and health linkages; institution-building and policy reform; the use of biomass for energy; and trade in agricultural and agroforestry products.

The present background analysis touches on these areas and provides an overview of Haiti's current political status and government roles and capacity. The following report includes a brief review of the environmental situation (Chapter II), the political and policy context of governance, including the National Environmental Action Plan (Chapter III), a synthesis of Haiti's environmental legislation and related policies (Chapter IV), and a review of current donor initiatives and plans including the Interim Cooperation Framework of 2004-2007 (Chapter V).

II. OVERVIEW OF THE ENVIRONMENT

Marc-Antoine Noël

ENVIRONMENTAL DEGRADATION IN HAITI

Degradation. Haiti currently faces an advanced state of environmental degradation. This includes uncontrolled deforestation, overexploitation of the land for agriculture and grazing, air and water pollution, overuse of groundwater, loss of biodiversity, rapid growth of urban slums accompanied by poor sanitation, and degradation of coastal and marine ecosystems. The catastrophic impact of this situation includes a significant increase in the risk of natural disaster, acceleration of soil erosion, and decrease in agricultural production. Severe flooding in Fonds-Verrettes and Mapou (May 2004) and Gonaïves (September 2004), and the growing frequency of landslides in the Port-au-Prince area, including Peguy-Ville, Laboule, Canapé Vert, and Carrefour-Feuilles, bear witness to severe stress on the broader environment of Haiti.

Environmental commitments of the Haitian Government. In the wake of summits on Environmental Protection and Sustainable Management of Natural Resources in Stockholm (1972), Rio (1992) and Johannesburg (2002), the Haitian Government and other sectors of society issued statements favoring protection of the environment and the mitigation of risks to vulnerable communities and the general population. The National Environmental Action Plan (1999) is the most well defined step taken thus far by the Haitian government to define a framework for environmental action; however, implementation of the NEAP has generally been ineffective.

Ineffective responses. In spite of the existence of abundant legislation on this issue (see Chapter IV on environmental law), public action has not favored environmental protection or sustainable management of Haiti's natural resources. Public officials have tended to respond only when disasters strike and then only in the short term. The most visible actions of the Haitian government have been those associated with international projects. Nevertheless, despite numerous field interventions, international institutions and nongovernmental organizations (NGOs) have not adequately addressed Haiti's ecological catastrophe. For example, the Technical Assistance Project for the Protection of Parks and Forests (ATPPF) had limited impact for various reasons including the weakness of the state and poorly adapted efforts by the implementing agencies.

Institutional weakness. Actors in the area of the environment are consistently hindered by barriers that thwart their efforts. This is due mainly to weaknesses in the regulatory framework and the absence of national coordination and mechanisms to fight soil degradation and protect biodiversity. The National Environmental Action Plan is not a detailed plan but does establish broad guidelines for action.

Social framework. Failure to rehabilitate the environment goes beyond those responsible for managing Haiti's natural resources. The population's daily existence follows a predatory pattern of exploiting the natural resource base. Paul Moral described a rural culture of survival or "grapillage" in his landmark work on the Haitian peasant (1961). The rapid and uncontrolled urbanization of the past two decades has

significantly magnified the risk of environmental catastrophe. In short, Haiti's environmental crisis is directly reflected in the country's demographic explosion, anarchic urban growth, acute pressure on the natural resource base, the impact of Haiti's small-scale farm system on steep slopes, and weaknesses in the country's institutional and structural framework.

SECTOR TRENDS IN NATURAL RESOURCE DEGRADATION

WOOD RESOURCES

Before invasion by Spaniards in 1492, trees covered 95% of the Haitian landscape.³ There was a significant increase in deforestation under French colonization (1664 to 1803). On the eve of the Haitian Revolution, Haiti still had 50% of its forest resources. Magny (1991) describes the chronological evolution of Haiti's forest cover (see adjoining text box). According to national air photo coverage of 2003, satellite data show 1.3% forest cover (UTSIG). A 1996 report by UNDP notes that Haiti's annual harvest of firewood largely exceeds the natural regeneration capacity of trees.

Forest cover	
1492	95%
1804	50%
1956	20%
1978	9%
1989	2%
2003	1%

The Pine Forest (Forêt des Pins). This highland national forest is the country's most extensive forest reserve. It is important to the water supply, wood harvest, biodiversity and ecotourism. Exploitation of the Pine Forest began under the Borno presidency (1922-1930). When Sténio Vincent came into power in 1933, cutting pine trees in the forest reserve was forbidden. This decision was reinforced in 1936 with the creation of "reserved areas" in various parts of the country. Under the presidency of Elie Lescot (1941), a contract with the United States government gave the Haitian-American Company for Agricultural Development (SHADA) the right to exploit the Pine Forest.

According to ANDAH (1999), SHADA controlled two-thirds of the Forest between 1941 and 1952. This was 102,000 hectares or four percent of the country's land mass. Operation of SHADA sawmills created demand for labor which brought many workers into the forest from other regions of the country. After the bankruptcy of SHADA in 1950, former logging workers settled permanently in the Pine Forest. Demographic pressure on the Forest also increased following repatriation and resettlement of Haitians expelled from the Dominican Republic. Under the François Duvalier government (1957-1971), concessions to private entrepreneurs further contributed to destruction of the Forest.

Current situation. After the fall of Jean-Claude Duvalier in 1986, the situation worsened due to uncontrolled plundering of high value stands of pine in the forest reserve. The law of 1987 forbidding forest exploitation was never enforced. New waves of small peasant farmers and other outsiders settled in the forest and set up artisanal sawmills, lime kilns, and charcoal pits. Uncontrolled harvest of the Forêt des Pins continues to impose enormous pressure on the forest ecosystem causing soil erosion that contributed significantly to the 2004 flooding catastrophes of Fonds-Verrettes and Mapou. If rigorous corrective measures are not taken to counter the

³ See AlterPresse (October 2004) and MAGNY (1991).

progressive deforestation of the Pine Forest, more devastating catastrophes than those recorded in May and September 2004 will likely occur in the near future.

Weak forest management. The plundering of the Pine Forest testifies to the weak management capacity of the Haitian state. The Haitian government has proved unable to assert its authority to manage wood resources in a sustainable way or to protect the Pine Forest as a national heritage and counter underlying causes of forest degradation. This reflects the considerable institutional and structural obstacles to implementing Haitian laws and regulations for environmental protection. Government agencies are not adequately coordinating local interventions nor following up earlier projects designed to mitigate destructive pressures on the Pine Forest.

MINING RESOURCES

In the past, large scale mining operations included Reynolds Bauxite (until 1982), SEDREN copper mining in Terre Neuve, and Ciment d'Haiti, the parastatal cement manufacturer. Today's mining operations are primarily rock, sand and gravel extraction from destructive hillside quarries such as Boutillier and riverbeds such as the Rivière Grise. Extraction from riverbeds near provincial towns accounts for roughly a fifth of national production of sand and gravel. A study on the evolution of mine exploitation shows that production of sand and gravel was estimated at 455,000 cubic meters in 1973, 935,000 cubic meters in 1983 and 1,700,000 cubic meters in 1993. Growing demand is fueled by high rates of rural-urban migration and the rapid population growth of the Port-au-Prince metropolitan area.

In the area of Port-au-Prince alone (*département* of the West), there are around fifty sand and gravel operations extracting 1.7 million cubic meters of material annually (12% rocks, 15% gravel, and 73% sand). This is 80% of national production estimated at 2 million cubic meters annually. The highly degraded and fragile southern slopes of Morne l'Hôpital (Laboule and Désiré) account for 24% and the northern slopes of Morne l'Hôpital (Sanatorium, Fontamara and Decayette) account for another 16% of annual production. Overall, an estimated 71% of gravel is extracted from fragile mountain slopes and 29% from riverbeds (BME 2004 and MDE 1999).

Impact. Mining of sand and gravel has a significant impact on the country's environment and economy. At the economic level the impact is positive insofar as it generates revenues, creates jobs and increases property tax revenues from new buildings. At the environmental level, the impact is extremely negative and its repercussions will last for generations.

Mines are generally exploited opportunistically without regulation. This causes degradation of the soil and increases vulnerability to tremors and heavy rains. Restrictions issued by the authorities are generally ignored, including one issued by the Interim Government regarding exploitation of Morne l'Hôpital. The main consequences include the following:

- Degradation of the landscape, especially hills;
- Accelerated erosion of slopes and fragile areas;
- Landslides due to the rudimentary technical level of exploitations;
- Erosion of river banks, poor water infiltration, low water levels, and floods;

- Danger to the lives of workers and residents;
- Air pollution.

WATER RESOURCES

According to a United Nations study, Haiti is one of nine countries whose population will suffer from severe water shortages by 2025, i.e., less than 1000 cubic meters of water annually per inhabitant. According to ANDAH (1999), 60% of the 40 billion cubic meters of annual rainfall in Haiti is lost through evaporation, 10% infiltrates the ground, and 30% flows into the sea. Haiti's heightened risk of water shortage is due primarily to deforestation, soil erosion, and severely reduced infiltration capacity of watersheds.

These trends are particularly evident in the Cul-de-Sac Plain. Reliable supplies of groundwater in the Cul-de-Sac are steadily diminishing due to urbanization, heavy reliance on deep wells, factory discharge of pollutants, and growing saline content of groundwater. As with other natural resources, the Haitian government has proved unable to implement public policies and legal guidelines for the use and protection of water resources.

CRITICAL FACTORS IN ENVIRONMENTAL DEGRADATION

The critical factors in Haiti's environmental degradation are poverty, erosive agricultural use of slopes and watersheds, and the demand for energy, especially cooking fuel.

POVERTY

Acute poverty is the pivotal factor. According to a World Bank study, nearly 60% of the population lives in relative poverty. The incidence of absolute poverty affects 83% of the inhabitants of provincial towns and 94% of those of rural areas. Other recent studies find 55% of the population living in extreme poverty with an income under one dollar per capita per day, 57% of urban households as poor, and 38% are extremely poor, while 85.2% of rural households are poor and 65% extremely poor (see Tables 1 and 2 below).

Table 1. Characteristics of poverty and extreme poverty in Haiti

Poverty Threshold	Incidence	Ratio of revenue gap	Estimated population
Extreme poverty (\$1 per capita/day)	55%	0.56	4,419,966
Poverty (\$2 per capita/day)	76%	0.62	6,175,260

SOURCE: November 2003, *La Pauvreté en Haiti: un profil de la pauvreté à partir des données de l'ECVH* (MEF-PNUD-FAFO), based on a 2001 study (ECVH) of poverty using a national sample of 7,186 households) and a 2003 study (EQPPH) of 1,900 households by the Haitian Statistics and Information Institute (IHSI).

Table 2. Poverty by area of residence

Residence	Extreme poverty (%)	Poverty (%)	% Contribution to extreme poverty	Estimated Population	Household samples
Metro area	20	41	9	1,847,302	1,006
Other urban	50	69	14	1,118,758	1,182
Rural area	59	82	77	5,136,695	4,998
Country	55	76	100	8,102,754	7,186

SOURCE: MEF-PNUD-FAFO (*ibid.*).

The incidence of poverty affects 78% of household heads according to the IHSI survey on perceptions of poverty in Haiti (EQPPH, 2003), and 90% of Haiti's poor live in rural areas. To survive, peasant farmers replace coffee with annual food crops and cut trees to increase agricultural surfaces or make wood charcoal for urban markets.

Consequences. Watersheds bear the brunt of poverty-induced pressures on the environment, including the following:

- The farming of marginal land on very steep slopes, including 40 to 80 percent slopes, with little or no investment in erosion control measures;
- Intense pressure on wood resources for charcoal and fuel wood;
- Increased risk of soil erosion and mud or rock slides;
- Destruction of wildlife habitats and reduction of land, water and marine biodiversity;
- Changes in agricultural microclimates;
- Exposure of local populations to heightened risks of natural disaster;
- Degradation of ecologically and economically significant watersheds;
- Disturbance of hydrological regimes resulting in progressive loss of groundwater.

AGRICULTURAL SYSTEMS AND PRACTICES

Steeply sloped hillside agriculture. Land use and farming strategies most commonly practiced on Haiti's slopes are a significant factor in Haiti's environmental degradation. According to ANDAH (1999), over 63% of Haiti's land area lies on slopes that exceed 20%; however, 40% of Haiti's hillside farms are on slopes that exceed 50%.

Unsuitable practices. By agronomic standards, cultivating slopes that exceed 20% require conservation-oriented farm strategies; however, most Haitian hillside farmers rely heavily on erosion-intensive annual crops without investing in conservation. This precipitates loss of arable soils, impoverishes the land, and reduces capacity for water infiltration. Soil erosion also exposes bare rocks and reduces land area available for farming.

Downstream sedimentation of river beds has been the primary cause of frequent and devastating floods, e.g., Gonaïves, Fonds-Verrettes, La Rouyonne, and La Digue. The silt load deposited in coastal areas is destroying Haiti's marine biodiversity and damaging estuaries, lowland agricultural zones, and major infrastructures such as the Peligre Dam, roads, bridges, buildings, and market places. In some areas, these

trends are irreversible. It is therefore imperative to adopt strong legal measures and induce widespread changes in agricultural practices that favor sustainable agriculture and protection of the environment.



Mountain peasants generally farm three or four non-contiguous plots located in a variety of micro-ecological niches. Farmers rely heavily on erosive annual crops planted on slopes, including fragile upper watersheds.

Watersheds as strategic environmental sites. Most Haitian watersheds are degraded due to erosive annual crops planted on slopes. Studies show that 25 of Haiti's 30 most important watersheds are currently unprotected and under unsustainable agricultural use. By some estimates, rainwater washes away approximately 36 million tons of soil per year, equivalent to 12,000 hectares (ANDAH, 1999). According to the UNDP, irreversible erosion has damaged 6% of the country's surface, and 15% of the land is irrecoverable due to severe erosion. Annual soil loss due to erosion is valued at 26% of the total value of agricultural production. Some 85% of this loss stems from cultivating slopes steeper than 50% in the absence of anti-erosion structures.

Interventions and their limits. Many organizations and programs have promoted soil conservation structures in degraded areas and sought to reforest vulnerable sites. These interventions have commonly not achieved their goals due primarily to the limited maintenance of conservation infrastructure. On the whole, watershed interventions in Haiti have had limited impact.

ENERGY

Haiti's energy requirements are constantly increasing. The country's high degree of deforestation is due in part to the growing demand for cooking fuel in urban areas.

Analysis of the national energy sector balance indicates that 80% of the country's energy supply is satisfied from domestic resources, primarily fuel wood and charcoal for cooking fuel (71%). This demand is fueled by high population growth, especially in urban areas.

Growing demand for wood based fuel will undoubtedly impose enormous pressure on the remaining stocks of trees for at least the next two decades. This is due to the growing imbalance between national supply and demand for wood based fuels, the absence of a viable government policy on reforestation, including the inability to regulate tree cutting, the country's dependence on external sources of fossil fuel, and increased levels of poverty in rural areas, the primary supply zones for wood charcoal.

Management of the energy problem. Haiti's National Environmental Action Plan (1999) promotes the use of renewable energies. Important players in energy policy include the Ministries of Environment and Agriculture, the Bureau of Mines and Energy, USAID, UNDP, World Bank, IDB, CARE and Biomass-Haiti. Strategic planning promotes the achievement of a sustainable balance between energy production and consumption as well as conservation of the environment, and suggests the following measures:

- Fuel substitution for charcoal and fuel wood, e.g., propane gas;
- Promotion of a range of alternate sources of energy;
- Research and dissemination of technologies for renewable sources of energy such as solar energy, wind power, and biogas;
- Fuel wood plantations to supply demand for charcoal and fuel wood;
- Alternative sources of energy for laundries, bakeries, and distilleries that still rely on fuel wood;
- The use of improved cook stoves by households and restaurants for more efficient use of wood based fuels.

CONCLUSION

Review of the data suggests that the critical factors underlying Haiti's environmental crisis are poverty, demographic pressures, erosive agricultural practices on slopes, the growing demand for energy, especially cooking fuel, and the failure of Haitian governments to prioritize conservation and investment in the environment. New strategies and sustainable alternatives are needed to confront the environmental crisis. This requires political will and adequate public policies, integration and participation of all sectors, and national mobilization to restore the environment. High priorities include protection of the country's remaining natural resources and biodiversity, improving the social and economic conditions of Haiti's poor majority, assisting vulnerable communities, and restoring the ecological balance.

III. POLITICAL & POLICY CONTEXT

Marc-Antoine Noël

A WEAK STATE

The Haitian state has long been marked by failure to govern or to ensure political participation. Historically, most presidential mandates have come to a tragic end marked by exile, death, and a crisis of succession. Mismanagement of state affairs has generated a longstanding pattern of near constant political instability, marked by the following elements:

- Paucity of long term public investments, especially investments that endure beyond individual terms of office,
- Destruction of public institutions during periods of succession to power, particularly institutions that ensure a balance of power,
- A near chronic quest for absolute power by Haitian heads of state, accompanied by an unwillingness to delegate power or promote government decentralization,
- Old patterns of cronyism and corruption in public administration, including squandering and misappropriation of public resources.

The consequences of this type of mismanagement include the fragmentation and limited impact of international assistance, and direct or indirect foreign occupation at various times in the country's history, including the present era marked by the presence of the United Nations Stabilization Mission in Haiti (MINUSTAH). Political mismanagement has also resulted in capital flight and discouraged private investment in the Haitian economy. Limited economic opportunity has in turn fueled a high rate of out migration among Haiti's best educated professionals in search of better working conditions.

The failure of Haitian public institutions is a critical factor in Haiti's environmental crisis. Public services are inadequate and poorly distributed. The state's limited ability to provide public services means some social sectors are favored over others. This generates social and geographic polarization of society, erosion of national identity, and loss of confidence in the future. In response to these conditions, Haiti's ordinary citizens are inclined to support messianic leaders who gain power with the promise of change but reproduce old patterns of mismanagement. The three branches of government have failed to ensure a balance of power or checks and balances in the exercise of power.

The Haitian government has also proved unable to ensure basic law-and-order. During the past 20 last years, there has been a succession of eight different governments. Near continuous political instability since 1986 fostered the emergence of armed gangs in response to state violence during a three-year period of army rule following the 1991 *coup d'état*. After the restoration of constitutional government in 1994, reigning political forces created a ghetto-based counterforce, a so called "red army" (*lame wouj*), prior to the dismantling of the country's regular army, the Forces Armées d'Haiti. The "red

army” recruited among the young, poor, and unemployed in Haiti’s urban ghettos, especially poor neighborhoods of the Port-au-Prince metropolitan area. Subsequently, other competing gangs emerged, giving rise to violent over turf. In the period following 2000 elections, failure of the Haitian state to ensure law and order gave rise to “lawless zones” such as Cité Soleil and further weakened citizen access to due process, the judicial system and the police.

In the wake of the fall of Aristide, the 2004 report of the Interim Cooperation Framework (ICF) pointed to the weakness of the Haitian state as a major constraint to donor investments:⁴

... implementation [of donor funded programs] was handicapped from the start by the state’s structural weakness and the absence of high level officials. The weakness of national capacities was...a major handicap to achieving sustainable development in Haiti, and was not addressed seriously or systematically. Capacity building remains the ICF’s first and foremost priority for achieving a minimum of success. The absence of [donor] coordination discourages harmonization of actions among different sectors.

ROOT CAUSES

In light of its historical weaknesses, efforts to reform the Haitian state and its capacity for environmental management must address root causes including the following:

1. Long-term continuity of policy and programming is virtually absent in the public sector. For example, in lieu of public investment in road maintenance, Haiti’s governments have repeatedly allowed the country’s most important national roads to completely fall apart. Also, the Péligre hydroelectric dam has always been managed on a day to day basis without long range planning, maintenance, or protection of the upland watershed. Discontinuity in public policy and investment applies generally to the environmental sector.

2. Public administration is highly vulnerable to political risk. Formally, the Haitian state includes a variety of public service ministries and semi-autonomous institutions that are technically insulated from politics and changes in government. These autonomous public institutions include the police force, the judiciary, a citizen ombudsman, a public auditor, regional authorities such as the Organization for the Development of the Artibonite Valley, public water utilities, and a public fund for economic and social assistance (FAES).⁵ In reality, the independent functioning of these public services is limited at best. They are strongly affected by changes in government and discontinuity during periods of transition between governments. In practice, little distinction is made between specific governments with limited terms of office and the apparatus of state as a permanent institution. As a result, when

⁴ See Chapter V for more detailed discussion of the Interim Cooperation Framework.

⁵ The public auditor is called the Cour Supérieure des Comptes. Other semi-autonomous bodies include the OPC (Office du Protecteur Citoyen), the CNRA (Commission Nationale de Réforme Administrative), the ODVA, the public authority governing Haiti’s largest irrigation system (Organisme de Développement de la Vallée de l’Artibonite), CAMEP (Centrale autonome métropolitaine d’eau potable), and FAES (Fonds d’assistance économique et sociale).

governments are immobilized or come to an end due to severe political crisis, public services are also curtailed or completely immobilized.

3. There is a longstanding gap between the Haitian state and the Haitian people, a pattern of exploitation between power holders and ordinary citizens.⁶ This is dramatically illustrated by the Duvalier regime and other dictators and military rulers; however, this type of political domination dates back to the very beginnings of the Haitian state in 1804. Newly independent Haiti's first generation of political leaders copied oppressive elements of the old colonial state. Other leaders more inclined to represent the interests of local citizens were excluded from power or relegated to low level positions in government.

4. Haitian citizens lack a sense of shared ownership or shared responsibility for public resources controlled by the Haitian state. Haitian citizens do not generally view resources that "belong to the State" as a national heritage. This perception is shared by those in power as well as those excluded from power, including the poor majority which has long been marginalized economically as well as politically. Management of public resources is therefore left to the mercy of those in power. This limited perception of publicly owned resources gives license to plunder public resources, a propensity that serves as a major obstacle to environmental protection.

STATE REFORM

Targets. High priority targets include (a) the protection of citizens from arbitrary use of government power, (b) taking concerted measures to ensure long term continuity of public services, and (3) maximizing the long term impact of public investments, including externally funded development programs. To promote genuine reform, the Haitian state should inventory all public assets with a view to more effective use of these assets, including environmental protection and opportunity for an improved livelihood for the poor majority.

Exclusion. The threat that weighs most heavily on Haitian society and its chances for solving political and environmental problems is the exclusion of a large proportion of its citizens from work, property, public services, financial markets, and basic human rights guaranteed by the rule of law. This social exclusion generates explosive conditions that discourage private investment and threaten the efforts of power holders to maintain the status quo.

Exclusion is primarily a political problem.⁷ As long as the excluded population is perceived politically as a dead weight and difficult to mobilize for the public good, the longstanding pattern of exclusion will be an insoluble problem. On the other hand, if the excluded population is viewed as a resource and actively consulted, it will gain a stake in the system and help solve social problems, including protection of the environment.

⁶ See M-R Trouillot, 1990, *Haiti, State Against Nation*

⁷ See M.A. Noel, December 16, 1992, "Un Moment dans le processus de l'auto-education populaire."

GOVERNMENT & ENVIRONMENTAL PROTECTION

Government capacity for environmental management is severely handicapped by the weaknesses noted above; however, the Haitian state also includes formal structures of environmental management. With strengthened institutional capacity and political support, these formal structures have the potential to help protect the environment.

INSTITUTIONAL RESOURCES

Haiti's legal framework includes numerous laws that address environmental concerns, policy, and legal protection of the environment. The legal and policy framework is reviewed in more detail in Chapter IV. In general, Haiti's environmental laws are poorly enforced and widely ignored. The National Commission of Administrative Reform (CNRA) takes note of Haiti's body of environmental law and the role of the Ministry of the Environment as follows:

Although a half dozen articles of the Constitution of 1987 (Articles 253 to 258) and a hundred laws and decrees are devoted to the environment, the legal framework on the environment has serious gaps and inconsistencies. In theory, all sector ministries include functions and activities that overlap with prescribed domains of intervention of the Ministry of Environment...

The main difficulty faced by this Ministry is due primarily to the fact that other institutions are already well established in the Haitian administrative environment but are focused primarily on the exploitation of natural resources [rather than their protection].

The environment is cross-cutting by nature and therefore touches all sectors of public administration. In addition to the Ministry of Environment, six other government ministries directly implicated in the environment include the Ministries of Agriculture, Interior, Planning, Public Works, Public Health, and Culture. Other public agencies of particular interest include the Civil Protection Directorate of the Ministry of Interior (Direction de la Protection Civile) and the Center on Geo-Spatial Information of the Ministry of Planning (Centre National de l'Information Géo Spatiale).

AN EMERGENT NATIONAL SYSTEM OF ENVIRONMENTAL MANAGEMENT

The first Aristide government created the Ministry of Environment in 1995; however, the ministry still lacks an organic law to define its status as a legal entity (see Chapter IV). In 2005, the Interim Government of Haiti promulgated a decree on the environment, including the role and attributions of the Ministry of Environment.⁸ The Decree defines a wide range of government entities that comprise what is identified as a National System of Environmental Management (see Table 3 below).

⁸ See the *Décret sur l'environnement* (June 6, 2005)

Table 3. Environmental Entities of Government and the *National System of Environmental Management*, according to the Environmental Decree of 2005

National System of Environmental Management		
MDE	Ministry of Environment	Ministère de l'Environnement
CIMATE	Inter-Ministerial Council on Territorial Management and the Environment	Conseil Interministériel sur l'aménagement du territoire et de l'environnement
COTIME	High Level Inter-ministerial Technical Commission on the Environment	Commission technique Interministérielle de haut niveau sur l'environnement
CONATE	National Council for Territorial Management and the Environment	Conseil national pour l'aménagement du territoire et l'environnement
UTES	Sectoral Technical Environmental Units	Unités techniques environnementales sectorielles
	Local levels of government	Collectivités territoriales
NGOs	Ecological associations and other organized groups	
Other sector based organs of government related to the environment		
CIMPE	Inter-Ministerial Environmental Policy Commission	Commission interministérielle politique sur l'environnement
	High Level Inter-Ministerial Commission for Environmental Surveillance	Commission Interministérielle de haut niveau sur la surveillance environnementale
CSE	Corps for Environmental Surveillance	Corps de Surveillance Environnementale
SNIE	National Environmental Information System	Système national d'informations environnementales
CNSTE	National Scientific & Technical Council on the Environment	Conseil National Scientifique et Technique pour l'Environnement
FREH	Fund for Env Rehabilitation	Fonds/Réhabilitation de l'Env
CNP	National Heritage Commission	Commission Nationale du Patrimoine
ONAP	Nat'l Office of Protected Areas	Office National des Aires Protégées
SNAP	Nat'l System of Protection Areas	Système Nat'le des Aires Protégées
CNE	National Water Council	Conseil National de l'Eau
CNR	National Residue Bank	Caisse Nationale des Résidus
BME	Bureau of Mines and Energy	Bureau des Mines et de l'Energie
OFATMA	Public Hygiene Division of the Office of Work Related Accidents, Illness, and Maternity	Office d'Assurance, Accidents de Travail, de Maladie et de Maternité, Division d'Hygiène Publique
AGD	General Customs Administration	Admin Générale des Douanes
INARA	Nat'l Institute of Agrarian Reform	Institut Nat'le de la Réforme Agraire
OSAMH	Organism for Surveillance and Management of Morne l'Hôpital	Organisme de Surveillance et d'Aménagement/Morne l'Hôpital
CNIGS (ex UTSIG)	National Center for Geo Spatial Information (Ministry of Planning)	Centre National de l'Information Géo Spatiale (Ministère de la Planification)
DPC	Civil Protection Directorate (Interior)	Direction de la Protection Civile

NOTE: The primary source for this table is PRIGE (2005), "Programme de renforcement institutionnel pour la gestion de l'environnement," prepared by Experco International for the Government of Haiti and the Inter-American Development Bank.

A number of the prescribed entities for this national system do not function in actual practice. Furthermore, the sheer number of governmental units suggests a top heavy administrative structure, difficult to coordinate. In short, the formal superstructure summarized in Table 3 does not translate to effective management of the environment; however, Haiti's public administration is generally paying greater attention to the environment than before due to the severe flooding disasters of 2004, a significant increase in donor investments in the environment under the Interim Cooperation Framework (2004-2007), and the change in government following 2006 elections.

The UNDP is presently assisting the geo-spatial center (CNIGS) of the Ministry of Planning to create a National Environmental and Vulnerability Observatory (ONEV).⁹ This is a significant step toward creation of a national environmental information center (SNIE), as provided by the Decree of 2005. The Decree also transfers responsibility for protected areas away from the Ministry of Agriculture and to an autonomous office (ONAP) attached to the Ministry of Environment; however, this transfer has not yet taken place. In a positive development for protected areas, the Préval government recently created a Corps for Environmental Surveillance, a specialized police corps co-managed by the Ministry of Environment.

Ministry of Agriculture. The agricultural ministry has long been deeply involved in natural resource management, including a major division devoted to forests, parks, soils, and watershed management (AVRN, Direction générale de l'aménagement et de la valorisation des ressources naturelles); and a division devoted to agriculture infrastructure including irrigation works, drainage systems, dams and bridges (OPMA, Direction générale de l'organisation des productions et marché agricoles). The ministry also operates the National Meteorology Center.

Directorate of Civil Protection (DPC) of the Ministry of Interior. The DPC mission is to implement the country's National Risk and Disaster Management Plan. The DPC has not yet been formally established by statute. Because of the flooding disasters of 2004, the DPC attained a high profile and attracted significant funding from the World Bank and Inter-American Development Bank. The DPC maintains close ties to the Ministries of Agriculture, Environment, and Planning, and the National Center for Geospatial Information (CNIGS).

The DCP is presently establishing a national network for disaster prevention and mitigation. This network is based on regional civil protection committees in all ten *départements*, each headed by a *délégué* – the departmental representative of the central government. Departmental DPC committees are linked in turn to local-level civil protection committees including mayors and representatives of civil society organizations, churches, non-governmental organizations, and other sectors. The DCP is supported by donors and NGOs in various areas of the country including 22 communes assisted by OXFAM in the North. The UNDP and PADF helped launch departmental and municipal committees in the South-East. CARE serves as DPC liaison in Gonaïves.

The disaster and risk management plan includes provisions for prevention, response and rehabilitation. In 2003, the national civil protection committee issued an emergency

⁹ Observatoire Nationale de l'Environnement et de la Vulnérabilité (ONEV).

response plan including (i) risk monitoring and early warning during the hurricane season (June-November), (ii) emergency first aid and initial damage assessment (12 to 72 hours following impact) and ongoing emergency assistance (4 to 30 days), and (iii) rehabilitation services (one to three months following impact).

Local levels of government (*collectivités territoriales*). The Decree of 2005 and the National Environmental Action Plan (NEAP) both take note of the special role of regional departments, municipalities (*communes*), and communal sections (rural districts) in environmental planning. This includes watershed planning and the protection and rehabilitation of natural resources including water supplies. Field observations suggest that coastal and riverside towns are located quite literally on the front lines of environmental risk. Local elected officials are critical stakeholders in disaster mitigation and environmental planning.

The Ministry of Environment. According to the 2005 Decree on the Environment, the Ministry of Environment has primary responsibility for coordinating national environmental policy including norms, standards, environmental inspection and audits, and integration of the environment in other policy sectors. The Decree calls for the Ministry to initiate actions focused on water management including inter-institutional collaboration around watersheds and hydrological zones. The Ministry of Environment has departments of sanitation and quality of life, promotion of environmental resources and sustainable development, and soils and ecosystems. The latter includes small agencies devoted to soils and biomass, terrestrial ecosystems, and coastal and aquatic ecosystems.

In September 2005, during the final year of the Interim Government, the Ministry of Environment had a total of 149 employees. This consisted of 95 permanent employees including less than 20 with university training. Nearly 85% of the ministry's budget consisted of personnel costs (PRIGE 2005, 20-23). The Ministry of the Environment and other ministries are presently undergoing changes introduced by the Préval-Alexis government which took office in mid-2006.

THE NATIONAL BUDGET

The total national budget of Haiti for Fiscal Year 2005-2006 was about 36.5 billion gourdes (870 million US dollars) including external loans, grants, and projects (see Table 4 below). About 48 percent of the resources for this budget, around 413 million dollars, were derived from domestic resources including revenue from customs, the tax office (Direction Générale des Impôts) and dividends from parastatal enterprises.

A large percentage of Haiti's public expenditures are in salaries; however, this cost goes primarily for administrative support staff. An overall shortage of professional staff in Haiti's ministries, including the Ministry of Environment, impedes effective use of public resources.¹⁰ In 2005 the Haitian state had a total of some 47,000 employees, based primarily in Port-au-Prince. Compared to neighboring countries, the Haitian government has long had a very small ratio of public employees to citizens, especially in rural areas. The ratio of public employees to population is only 0.1% in rural areas

¹⁰ For public administration, see G. Smucker, May 15, 2007, "Reviewing Technical Assistance Needs of the Haitian Government," USAID Mission.

compared to 1.2% in urban areas.¹¹ Under the Prével government, Haitian ministries have begun to increase the number of public employees based outside of Port-au-Prince due to deconcentration of central government services including the Ministry of Environment; however, the longstanding pattern of overwhelming urban dominance still holds.

Table 4. National budget of the Government of Haiti, FY 2005-2006, ranked by size of budget allocations to ministries and other public institutions^a

Acronym	Ministry/Other Institution	Gourdes	US dollars ^b	Percent
TPTC	Ministry of Public Works	13,244,442,642	315,343,872	36.26%
MEN	Ministry of Education	3,995,783,203	95,137,695	10.94%
	National debt servicing	3,616,242,201	86,101,005	9.90%
	"Interventions Publiques"	2,993,982,326	71,285,293	8.20%
MDJ	Ministry of Justice	2,560,661,934	60,968,141	7.01%
MEF	Ministry of Finance	2,179,374,993	51,889,881	5.97%
MSPP	Ministry of Public Health	1,267,108,819	30,169,258	3.47%
MARNDR	Ministry of Agriculture	1,225,755,836	29,184,663	3.36%
MAE	Ministry of Foreign Affairs	767,107,139	18,264,456	2.10%
MPCE	Ministry of Planning	638,171,468	15,194,559	1.75%
	Presidency	603,666,219	14,373,005	1.65%
MDE	Ministry of Environment	469,580,339	11,180,484	1.29%
	Office of Prime Minister	429,863,851	10,234,854	1.18%
MDC	Ministry of Culture	371,598,547	8,847,584	1.02%
UEH	State University	327,345,000	7,793,929	0.90%
MCI	Ministry of Commerce	309,062,837	7,358,639	0.85%
	Chamber of Deputies	295,629,752	7,038,804	0.81%
MICT	Ministry of Interior	250,566,279	5,965,864	0.69%
	Superior Council of Magistrates	249,703,264	5,945,316	0.68%
MAST	Ministry of Labor/Social Affairs	202,501,815	4,821,472	0.55%
	Senate	126,952,715	3,022,684	0.35%
	Superior Court of Accounts	111,955,476	2,665,607	0.31%
MDC	Ministry of Religions	75,932,393	1,807,914	0.21%
CEP	Electoral Council	68,610,554	1,633,585	0.19%
MDT	Ministry of Tourism	55,967,500	1,332,560	0.15%
MCF	Ministry of Women's Affairs	40,954,052	975,096	0.11%
MHVE	Ministry of Haitians Overseas	37,289,488	887,845	0.10%
	Citizen Protection Office	7,851,000	186,929	0.02%
	TOTAL	36,523,661,642	869,610,991	100%

^a SOURCE : "Décret établissant le budget général de la République 2005-2006," *Le Moniteur*, 28 octobre 2005, Port-au-Prince. ^b The exchange rate used in this table is 42 *gourdes* for 1 US dollar.

¹¹ IDB, September 2006, Support for Public Sector Human Resource Management: Loan Proposal (page 1).

Budgetary allocations of Table 4 reflect the highly centralized character of Haitian governance. Power and resources are a virtual monopoly of the central government, the executive branch, and Port-au-Prince as the seat of government. On the other hand, according to the NEAP, the municipal level of government is to be the fundamental unit of environmental planning. Yet, in 2005-2006, the budget of the Ministry of Interior & Local Government (Ministère de l'Intérieur et des Collectivités Territoriales) allocated only 3.1 million US dollars – one percent of the national budget – to decentralized levels of government.¹² Local bodies of government include 140 municipalities (*communes*) and 570 rural jurisdictions (*sections communales*). By way of illustration, the current municipal budget (2006-2007) for the northern *commune* of Limbé is 68,000 *gourdes* per month (1,700 US dollars).¹³ This amounts to less than a *gourde* per inhabitant in a *commune* of 70,000 people, and eloquently demonstrates the budgetary constraints currently faced by newly elected local officials – whether for funding environmental plans or any other local public services.

The overall distribution of the budget for the Government of Haiti has never favored environmental protection. In 2005-2006 only 1.29% of the national budget was reserved for the Ministry of Environment and only 3.4% for the Ministry of Agriculture in a country that is still nearly 60 percent rural, including dense patterns of settlement on fragile slopes.¹⁴

INSTITUTIONAL STRENGTHENING

At the ministerial level, the environmental and agricultural ministries continue to share responsibilities related to the environment. Under the Interim Government, the Interim Cooperation Framework (ICF) sought to promote broader donor and inter-ministerial collaboration around environmental matters; however, the ICF Table on the Environment did not function. Subsequently, the Inter-institutional Piloting Committee, modeled on the Dominican Inter-institutional Technical Group, has been more effective. This committee is composed of two representatives from each of five ministries (Finance, Interior, Planning, Agriculture, and Environment) and two representatives from OXFAM and Helvetas.¹⁵

A serious constraint for this committee has been to systematize information. The UNDP Environmental Management Support Project (PAGE) was devised in part to correct this deficiency, including the creation of a national observatory on vulnerability and the environment (ONEV) together with CNIGS, the national center on geo-spatial information of the Ministry of Planning.¹⁶ The project began in September 2005 with a budget of a million dollars for a three year period. Its objective is to strengthen

¹² Under the Interim Government, mayors were appointed rather than elected. In addition to mayors, this line item also funded the cost of locally based representatives of the executive branch – the *délégués* (10 *départements*) and *vice-délégués* (52 *arrondissements*).

¹³ Per field interview with Limbé officials including a newly elected Deputy-Mayor (March 9, 2007). The exchange rate used here for *gourdes* to US dollars is 40:1.

¹⁴ Population data are based on the national census of 2003 (Institut Haïtien de statistique et d'informatique, *Résultats préliminaires: 4^{ème} recensement général de la population et de l'habitat*, August 2003).

¹⁵ See Chapter V for more detailed discussion of the ICF including summary tables on donor investments (see Tables 9 and 10).

¹⁶ See L. Ferroukhi (UNDP) and G. Porcena (UTSIG), March 2005, Vers le montage d'un Observatoire national de l'Environnement et de la Vulnérabilité (ONEV).

environmental institutions that support protection of upland watersheds, natural resource management, and the role of local government in natural resource management. PAGE provides assistance to the National Environment and Regional Planning Council (CONATE) and reinforces municipal capacities in tandem with PRIGE, the Institution Building for Environmental Management project financed by the IDB and housed at the Ministry of Environment. PAGE also provides assistance to a project on soil degradation.

The absence of autonomy, delegated authority, and human and financial resources – especially at local levels of government – is a critical institutional constraint to improved natural resource management. The Constitution of 1987 introduced decentralized bodies of elected government (*collectivités territoriales*); however, the legal framework for decentralization still remains to be defined. The Interim Government issued decrees on decentralization; however, these decrees were never implemented and are presently under review and revision by the Préval-Alexis government and the newly elected parliament. In 2007, an AID funded project, Transparent and Effective Local Governance (TELG), will support decentralized governance including orientation and training of newly elected officials, associations of mayors, local assemblies, and administrators of communal sections (CASEC). Another USAID initiative, the Legislative Strengthening Project, is already working with Haiti's new parliament and is well positioned to provide assistance for decentralization of governance and the institutional strengthening of environmental institutions.

GUIDING ELEMENTS OF ENVIRONMENTAL POLICY

NATIONAL ENVIRONMENTAL ACTION PLAN

The Haiti NEAP (1999) serves as the country's primary policy on overall environmental priorities.¹⁷ The Ministry of Environment is responsible for coordinating implementation of the NEAP. The ten guiding themes and priorities of the NEAP are noted below. They include special attention to the role of local government in watershed planning, alternative sources of energy, promotion of tree planting on slopes, and ridge to reef strategies that take into account coastal and marine life.

1. **Institutional strengthening.** Institutional strengthening at both central and decentralized levels of government; improved capacity for monitoring and evaluation including impact evaluation, norms and standards, and environmental management by municipalities and other bodies of local government.
2. **Energy.** Energy for sustainable development, reduced reliance on unsustainable wood based fuels, increased use of alternative fuels such as cane bagasse, household and agricultural waste, water and wind power, and fuel wood plantations; increased rural access to energy; a fund to promote clean energy and energy conservation.
3. **Environmental education.** Formal and non-formal education for environmentally sustainable development at all levels.

¹⁷ Ministry of Environment, June 1999, *Plan d'action pour l'environnement (PAE)*.

4. **Biodiversity.** Conservation of biodiversity including a national system of protected areas, rehabilitation of ecosystems, promotion of ecotourism, a biodiversity conservation fund, and sustainable harvest of medicinal plants.
5. **Watersheds.** Management of strategic watersheds including development of watershed management plans, promotion of conservation-based agriculture, protection of water supplies, and afforestation.
6. **Coastal and marine life.** Integrated management of coastal and marine resources including pollution control and rehabilitation and protection of marine ecosystems, mangroves and coral reefs; management of shoreline areas and beaches, sustainable tourism, a database on coastal and marine habitats, and ridge-to-reef and regional environmental strategies.
7. **Environmental sanitation.** Environmental hygiene, improved solid waste management, management and purification of used water, and protection of water and air from pollution by toxic waste and chemicals.
8. **Mitigation of the impact of natural disaster.** Prevention, civil protection, and institutional strengthening including support for database management, the Directorate of Civil Protection, a national observatory, and regional cooperation.
9. **Sustainable development.** A coordinated response to problems of over-population including family planning, and education on the interrelation of population-environment-development.
10. **Mining and gravel extraction.** Enforcement of laws on mining and sand and gravel quarries, restoration of mining sites, and a plan for extraction of sand and gravel.

WATERSHED MANAGEMENT POLICY

Policy authority on watersheds is shared by the Ministry of Environment and the Ministry of Agriculture. The 2005 Decree on the Environment (Article 124) calls for the Ministry of Environment to create inter-ministerial and inter-institutional mechanisms for national and watershed level management of water resources. In addition to NEAP policy guidelines, the Minister of Environment issued a policy document (2005) on strategic interventions regarding watersheds and related incentives.¹⁸ This takes into account the following closely related policies of the Haitian government:

- A watershed management policy issued by the Ministry of Agriculture (1999);
- The National Plan for Risk and Disaster Management (Ministry of Interior and Local Government and its Directorate of Civil Protection)
- The Strategy to Decrease Pressure on Wood Resources due to Demand for Fuels (Bureau of Mines and Energy)
- National Biodiversity Management Plan (Ministry of Environment)

The MDE policy on strategic interventions identifies the following high priority targets:

- Environmental planning for watersheds or hydrological districts
- An environmental surveillance corps
- Nursery and grafting professionals
- Springs, river banks, and abandoned mining sites

¹⁸ Ministry of Environment, October 14, 2005, "Document résumé d'orientation: Interventions stratégiques en matière de bassins-versants et incitations y relatives."

- Biomass for energy and lumber
- Lakes, hillside holding ponds, and ravines
- Land in the public domain

The Ministry of Agriculture issued a policy on watershed management in 1999.¹⁹ This policy includes the following overall objectives:

- To rehabilitate degraded watersheds by improving the socio-economic conditions of rural communities with a view to diminishing pressures on the natural resource base,
- To promote socio-economic improvement in upland areas in order to diminish flood risk in lowland plains, especially irrigation works.

The policy promotes interventions oriented to production as well as conservation. Guidelines include prioritization of watersheds based on their social and productive importance and the presence of downstream infrastructures. The policy takes note of three essential pillars to guide watershed interventions:

- Take peasant constraints into account in policy development including the promotion of enhanced opportunity for both agricultural and non-agricultural employment in rural areas
- Use an integrated approach, linking watershed management with the broader agriculture sector and other administrative and sector strategies
- Apply principles of decentralization enabling communal sections, municipalities, and geographic departments to assume primary responsibility for watershed planning and management.

In keeping with the NEAP and the Ministry of Environment, the Ministry of Agriculture views local jurisdictions as the basic building blocks for national watershed management. According to Ministry strategy, all watershed interventions should be compatible with a *commune*'s natural resource management plan and should be rooted in geo-physical, land tenure, economic and social diagnostic studies carried out together with local stakeholders using a participatory approach. Outside watershed interventions are to be based on negotiation between projects or other service providing organizations and the local users of the resource base.

¹⁹ MARNDR, December 1999, "Politique du MARNDR pour la gestion des bassins versants," Ministère de l'Agriculture, des Ressources Naturelles et du Développement Rural.

IV. ENVIRONMENTAL LAW & POLICY

Jean-Andre Victor

This chapter synthesizes environmental legislation and related policies with a view to understanding Haiti's legal framework and its limits for management of the environment. This chapter includes three distinct but inter-related sections. The first deals with the underlying foundations of Haiti's legal and institutional framework. The second section summarizes sector policies and related legislation, and the final section proposes recommendations for the future.

FOUNDATIONS OF THE SYSTEM

The legal framework for the environment is based on the Constitution of 1987, currently in effect, and the national planning system, national institutions responsible for the environment and environmental law.

THE CONSTITUTIONAL FRAMEWORK

The Constitution of 1987 is the country's most important legal instrument of environmental management. The Constitution dedicates an entire chapter solely to the environment including biodiversity, natural resources and pollution.

According to the Constitution, the environment is the natural framework of people's lives and forbids all practices that threaten to disturb the ecological balance (article 253). The Constitutional law on natural resources in Chapter II (Title IX) deals with reforestation, energy and the promotion of ecotourism. Articles 254, 255, 256 and 257 require the state to encourage the development and conservation of natural sites and local sources of clean energy including solar and wind power. The Constitution also strictly forbids the importation of any waste or residues of foreign origin (article 258).

In Chapter IV of Title II, the Constitution establishes a juridical framework for the country's national heritage: "The country's archeological, historical, cultural, folkloric and architectural treasures bear witness to the grandeur of our past and belong to our national heritage." According to Article 215, the State is responsible for the protection of monuments, ruins, the sites of ancestral military feats, centers of African religious belief, and all vestiges of the past.

According to the Constitution, the main source of the Nation's wealth is agriculture (Article 247). According to Article 36.4, property ownership has a social function and landowners are required to work the land and protect it from erosion. To encourage agricultural development, the Constitution offers peasant farmers the right to farm "private domain of the state" (Article 39), creates the National Institute of Agrarian Reform (Article 248), advocates for cooperatives (Article 246) and recommends the establishment of minimum and maximum units of agricultural production (Article 248-1).

Article 37 of the Constitution is generally viewed as promoting modernization and change since it calls for regulating the division and consolidation of land according to the national Land Use Management Plan (Plan d'Aménagement du Territoire) and the well-being of communities involved. This article thus addresses the problem of land use planning in all of its parameters.

In actual practice, insufficient efforts have been made to implement Constitutional principles. Government has never adequately translated into public policy and legal regulation the Constitutional principles of biodiversity conservation *in* and *ex situ*, promotion of clean energy, the social dimensions of land tenure, protection of the national heritage, and land use planning.

Nevertheless, there has been some institutional progress in implementing the 1987 Constitution. For example, the Government of Haiti created the Ministry of Environment, developed the National Environmental Action Plan, ratified a number of international environmental treaties and prepared the National Management Plan for Risks and Disasters. More recently, the January 2006 Decree on Environmental Management and Regulation of the Conduct of Citizens for Sustainable Development is generally recognized as a positive development in Haiti's history of environmental law.²⁰

THE NATIONAL PLANNING SYSTEM

There are close links between the National Planning System, the public policies that serve as a basis for planning, and laws that support public policies. Clarifying the interrelation of these elements is difficult if not impossible until formal changes are made in the structure and functioning of the National Planning System.

Prior to the Constitution of 1987, the National Planning System was operative though thoroughly embedded within a highly centralized power structure. Five-year development plans were drafted on a regular basis by horizontal, vertical and cross-cutting commissions supported by Sector Program Units. Some efforts were made to develop an approach based on land use planning but they failed to produce the results expected (Decree of 1973 and Law of 1982 on Land Use Planning).²¹ Efforts at geo-spatial planning remained strictly theoretical and were never implemented.

The 1987 Constitution then laid the foundations for a new planning model rooted firmly in participation and decentralization. This model takes the form of a pyramid, building up from an underlying foundation of communal sectional Assemblies, mid-range Assemblies at the level of municipalities and departments, and Departmental and Inter-Departmental Councils at the summit of the pyramid. In this model, the central government is to provide technical assistance to municipalities.

According to this system, the Departmental Council (regional) and the Central Government were to jointly prepare a Departmental Development Plan. An Interdepartmental Council is to plan development and decentralization projects (see

²⁰ See the *Décret portant sur la gestion de l'environnement et de régulation de la conduite des citoyens et citoyennes pour un développement durable* (January 2006) as published in Le Moniteur.

²¹ See Le décret de 1973 and La loi de 1982 sur l'aménagement du territoire.

Articles 71-81-87-2 and 87-3 of the Constitution). In actual practice, this bottom up planning model has never replaced the old top down model, due to the absence of enabling legislation, i.e., the laws on decentralization that are required to implement the constitutional system.

The entire period since following publication of the Constitution in 1987 has been a period of political transition and instability (1987-2006). During this period, the functioning of the Ministry of Planning and External Cooperation gradually deteriorated. This led to the emergence of parallel structures initiated by NGOs and donors. Sector planning took place in the absence of guidelines from duly constituted authorities. Nevertheless, the central government since 1987 was able to issue new policies including the National Plan of Education and Professional Training, the National Tourism Plan, urban development plans for the cities of Cap-Haïtien, Gonaïves, and Port-au-Prince, and the National Policy on Population.

As noted in Chapter III, the Haitian government developed three major policy instruments for national environmental planning: the National Environmental Action Plan, the National Management Plan for Risks and Disasters, and the National Policy on Watershed Management.²² These policies were never systematically implemented. The absence of a national directive or orientation hampered the appropriation of these planning tools by the Ministry of Planning, which gradually became dysfunctional.

During the long period of political transition since 1987, individual initiatives proliferated in the absence of central government authority. The political vacuum was filled by NGOs and development projects of all kinds, particularly at the level of communes and communal sections. As a result, projects created local development plans independent of public authority; however, these planning instruments were generally not implemented.

The executive branch has contributed to the general confusion. The Interim Government established the Interim Cooperation Framework (ICF) in 2004 and later extended it through July 2006 without regard to prospective new policies of the newly elected government following February 2006 elections.²³ Despite its role as a short term government of transition, the Interim Government initiated long term departmental, environmental and sustainable development plans. The Interim Government also took steps to develop a national land use plan and drafted poverty reduction strategy documents (DSRP 1 and 2) for long range planning.²⁴ This may be a case of too much planning that ends up destroying planning.

NATIONAL ENVIRONMENTAL INSTITUTIONS

Haiti's environmental institutions are both public and private. As noted in Chapter III, public institutions responsible for the environment include central government ministries, other agencies operating under their authority, and local level bodies of government. Private organizations include ecological associations and other NGOs. All public institutions are involved in some way with the environment; however, as

²² Plan d'action environnementale (PAE), Plan National de Gestion des Risques et des Désastres (PNGRD), Politique Nationale d'Aménagement des Bassins Versants (PNABD).

²³ The Préval government has subsequently extended the ICF through September 2007.

²⁴ Document Stratégique de Réduction de la Pauvreté (Poverty Reduction Strategy Paper)

noted in Chapter III, the six ministries with primary jurisdiction are the Ministries of Environment, Agriculture, Public Works, Public Health and Population, Culture, and Planning and External Cooperation.

Ironically, the Ministry of Environment (MDE) has less juridical authority over the environment than other ministries. Although created in 1995, the ministry's legal competence was never defined by law. The Decree of January 2006 bestows certain responsibilities on the MDE; however, the January 2006 decree is not the equivalent of an organic law (*loi-cadre*) that defines the organization and functions of the ministry, as required by the Law on Public Administration.

According to the Decree of 1987, the Ministry of Agriculture, Natural Resources and Rural Development (MARDNR) manages forests, soils, protected areas, water, hunting, fishing and agriculture. The Law of 1978 assigns the Ministry of Public Works, Transports and Communications (MTPTC) responsibility for roads, mines and quarries, ports and airports, sanitation and urban planning, energy, potable water, transport and communications. The Law of 1983 assigns responsibility to the Ministry of Public Health and Population (MSPP) for public hygiene, population, and diseases related to the environment. The Ministry of Culture manages cultural heritage, historic sites and monuments (Law of 1995), and the Ministry of Planning and External Cooperation has primary responsibility for national land use planning (Law of 1978). This administrative machinery is often blocked due to overlapping roles and institutional conflicts attributable primarily to poor governance.

Departments, communes and communal sections were elevated to the rank of "territorial collectivities" by the 1987 Constitution. The Constitution anticipates the drafting of laws to define roles and operations of decentralized governance. Up to the present, only communal sections have had the benefit of such a law (Law of March 28, 1976). The roles and responsibilities of *communes* and *départements* have not yet been defined by enabling legislation. The Republic is thus decentralized by law but remains centralized in fact. Decentralized government has responsibility for environmental management but lacks the enabling legislation required to carry out this role.

There are hundreds of semi-public NGOs and dozens of environmental associations. Some are legally recognized but all operate without public coordination or supervision. NGOs operate under the aegis of the Ministry of Planning which estimates the number of development-oriented NGOs at no more than 500. There have been unsuccessful initiatives to modify the legal framework on NGOs to give them greater freedom of movement.

Most environmental associations operate as advocacy groups rather than for direct protection and rehabilitation of the environment. The initial Ministry of Planning report on environment and development was published at the time of the Rio Summit (1991). It created a list of private environmental institutions including commercial firms. The Haitian Environmental Foundation, one of the most recent of environmental associations, was created by the private sector and is the country's only environmental fund despite efforts to establish the Rehabilitation Fund for the Haitian Environment (FREH), as provided by the NEAP. There have been other sporadic initiatives by politically or economically powerful individuals to create reforestation projects, but these efforts have not lived up to their promise.

NATIONAL ENVIRONMENTAL LAW

To understand the legal framework for the environment, it is important to distinguish between legislation and the law. The first refers specifically to the body of legal rules while the second also includes customs, doctrines, legal practice and jurisprudence. Viewed from this angle, environmental law in Haiti is characterized by relatively abundant legislation, poorly known customs, almost non-existent doctrines and jurisprudence, and a legal practice marked by confusion. At the University of Haiti, environmental law was taught for the first time in 2006.²⁵ Finally, environmental law as an objective discipline should not be confused with subjective rights or privileges guaranteed by law. The Haitian Constitution does not specifically recognize environmental rights.

The first annotated code of Haitian environmental laws was published in 1995 (see Victor 1995). Environmental legislation in Haiti consists of a hundred laws covering various sectors including soil, water resources, trees and forests, fishing, hunting, protected areas, energy, mines and quarries, the nation's historic and cultural heritage, agriculture, public health and land use planning. New international conventions ratified recently by the Haitian government have enriched this legislation, particularly in new domains such as pollution, biodiversity and international commerce. There are more executive decrees than laws passed or ratified by parliament. This testifies to the non-democratic character of a body of legislation oriented more to coercion than persuasion or positive incentives.

A historical approach to Haitian environmental legislation serves to clarify the jumble of legislation. Eighty percent of the legislation on environmental norms deals with trees and forests. Four periods mark the evolution of this legislation from 1804 to the present. The first period (1804-1904) coincides with uncontrolled cutting of precious woods. The dominant legislation dealt with export taxes (Law of August 11, 1903). The second period (1904-1960) sought to regulate tree cutting by penalizing those responsible for deforestation (Decree of June 27, 1945, Law of September 26, 1955). The third (1960-1965) corresponds with the promotion of reforestation (Law of July 4, 1960, Decree of November 20, 1972, Decree of July 7, 1987). The fourth period (1995 to the present) covers disaster and risk management (National Management Plan for Risks and Disasters, 2001); however, this is still reactive legislation rather than law oriented to prevention and anticipation.

In general, the best environmental laws are neither applied nor respected, including the Law of February 3, 1926, on National Forest Reserves. This is also the case with the Decree-Law of July 22, 1937, establishing regulations on housing and land use planning in urban and rural areas, the Law of April 23, 1940, on historic, artistic, natural and archaeological heritage sites, the Law of September 19, 1958, protecting soils from erosion and regulating of forestry, the Decree of July 7 regulating the use of wood energy, and the Decree of March 3, 1981, governing waste management and disposal. Furthermore, the government has not implemented domestically the various international environmental conventions that it has signed or ratified including those dealing with climatic change, biodiversity, the law of the sea, desertification, bio-security and persistent organic pollutants.

²⁵ This was in the masters program of the law faculty, la Faculté de Droit et des Sciences Economiques, Université d'Etat d'Haiti.

The primary reasons for non-application of environmental law in Haiti are the low level of education, a lack of political will, the corruption of civil servants, and poor knowledge of the law. According to one survey, 67% of the general population and 80% of non-professionals had little or no knowledge of environmental legislation (Victor 1995).

LEGISLATION AND SECTOR POLICIES

This section deals with natural resource management, agro-forestry, the energy challenge, the national system of protected areas, management of risks and disasters, and problems of the urban environment. Public policies generally precede laws, but when policies are unwritten or otherwise inaccessible, their trace may be found in the law.

NATURAL RESOURCE MANAGEMENT

Natural resources include forests, soils, water, fauna, air, marine and coastal resources, mines and quarries. The following discussion focuses primarily on the inter-related system of forests, soil and water. Flora and fauna are also addressed via biodiversity, national heritage, and protected areas. Mines and quarries are treated primarily in terms of their relation to agriculture and agroforestry.

Legislation on forests, soils and water is relatively abundant in Haitian law. The first rural codes (Boyer in 1926 and Geffrard in 1864) sought to protect springs by protecting forest cover. The historical periods noted earlier demonstrate the evolution of forestry law. The current Rural Code of 1962 includes Law V governing the use and protection of soils, Law VII on water, irrigation and drainage, and Law VIII on forests.

The Decree of 1978 on fishing is the primary point of reference for coastal and marine resources. These resources include 1,500 kilometers of coastline and a relatively narrow continental shelf (about 5,000 square kilometers). Coral reefs are threatened with bleaching due to pollution of telluric origin. The country's 15,000 hectares of mangrove are not managed in a sustainable manner.

Coastal management priorities were identified during preparation for the International Seminar on the Study, Management and Safeguarding of the Coastal Areas of Haiti held in Port-au-Prince in December 1996 (UNESCO, 1998). The seminar proposed integrated coastal management including mangrove forests, coral reefs, flowering plants, and management of fisheries. A Ministry of Environment project co-financed by the IDB has also generated studies and recommendations on integrated coastal management of coasts, but these recommendations were never implemented.

Public policies relating to forests, soils, and water fall into three main categories: basic principles, deforestation, and reforestation. Basic principles stress the social functions of soil, agriculture and landowner obligations to work the land (Law of July 31, 1975) and protect it from erosion (Constitution of 1987). Water resources fall into the public domain according to Article 36-5 of the Constitution of 1987: "Private property rights exclude the coastal littoral, springs, rivers and water courses, mines and quarries. They belong to the public domain of the State."

Policies on deforestation have changed little over time. The system of forest protection has consistently retained licensing requirements for tree cutting. Prohibitions remain in force for cutting certain hardwood species. For reforestation, the state may classify sites as public utility, set aside protected areas, proclaim special days such as the Day of the Tree or Reforestation Week, and create financial mechanisms such as the Special Fund for Reforestation.²⁶

Given that the majority of these provisions emerged in a non-transparent political context, subsequent administrations in the wake of the last Duvalier government have tended not to enforce these provisions on the pretext of fighting corruption. In practice, *laissez faire* has replaced coercion, and corruption has flourished more than ever. Legislation proposed by the National Forestry Project and the Technical Assistance Project for Protection of Parks and Forests (World Bank) never attained its objectives. The Tropical Forestry Action Plan, prepared with assistance from the FAO, was never implemented.

AGROFORESTRY

In Haiti, agroforestry is linked to other closely related issues including the mountainous terrain, small scale agriculture, land tenure and land use planning. As discussed in Chapter II, over 40% of the country is covered with mountains that exceed 400 meters in altitude. From 20 to 30 percent of the land under cultivation is unsuitable to agriculture. About one million hectares of land is suitable to agriculture, but most of this land is also on slopes devoted to tree crops, food crops planted under tree cover, and changing land use patterns including desertification. Under these conditions, agroforestry is a viable alternative to unsustainable hillside farm practices that rely on erosive annual crops; however, there are few or no laws on agroforestry in Haiti, aside from the general laws on forestry.

The word "agroforestry" is not mentioned in the Rural Code of 1962 nor the Coffee Code of 1958 which groups together all laws pertaining to coffee. Law V of the Rural Code deals generally with farming, land use, and protection of the land. This law stipulates certain standards that pertain to agroforestry. For example, Article 66 requires that land cleared on slopes be reforested or planted in forage grasses even if other crops are still present on the land. The Code also prohibits seasonal and semi-permanent crops on slopes that surpass 25 degrees in arid zones, 35 degrees in semi-arid zones and 40 degrees in well watered zones (Article 69).

The Decrees of February 22, 1968 and March 2, 1984 govern the mining and quarry production. The decrees identify measures to limit noise and aesthetic pollution and harmful effects caused by dust, and require replacement of topsoil after mining and quarry operations have ceased.

Despite a half century of national efforts and technical assistance, the Haitian government has never adopted a clear cut policy on watershed management and land use planning related to agriculture and agroforestry. Four critical issues were raised but without a clearly defined response. These issues were land tenure, land use planning, a national strategy for intervention, and the agricultural model.

²⁶ Le Fonds Spécial de Reboisement.

Land tenure. The issue of land tenure was raised by the first United Nations Mission to Haiti (ONU, 1949): "The starting point of all agricultural development projects should be the study of land tenure and land use." At present, Haiti is still at square one on this issue. The National Cadaster Office was created in 1984 but keeps poor land records and is unable to deliver unassailable land titles. Consequently, the system for ensuring land tenure security is defective.²⁷ The Constitution of 1987 requires the National Institute for Agrarian Reform (INARA) to determine minimum and maximum agricultural units and to develop an agrarian policy to optimize production. Instead, in terms of its activities, the INARA has been mired in the rice paddies of the Artibonite Valley but without increasing national rice production. In short, the land tenure question has not budged one iota.

Land use planning. The guiding objective of land use planning is the rational organization of space for infrastructures and economic activities. The government established a land use and environmental management division under the National Council for Planning and Economic Development (CONADEP) in 1973 and a National Commission on Territorial planning in 1982.²⁸ For planning purposes, the Law of September 19, 1982 established four major regions – North, Transversal, West, and South – based on jurisdictional groupings of *arrondissements* and *départements* (CPNAP, 1987).

The 1987 Constitution dropped regional planning units in favor of new bodies of local government (*départements, communes, sections communales*); however, the enabling legislation was never enacted to establish these decentralized jurisdictions as legally functioning units of government. At present, there is an absolute judicial vacuum on this issue.

For purposes of planning, the management unit for area development has never been clearly and precisely defined. The United Nations Mission of 1949 was the first to propose "the topographic unit as a basis for delimiting zones of development" (ONU, *op.cit.*). When the Organization of the American States (OAS) proposed dividing the country into 30 watersheds on the basis of large scale hydrological units, this represented a significant step forward for environmental governance in Haiti.

Evolving national strategies. After the limited success of its Program for Systematic Intervention in Mountains, and the Technical Secretariat for Watershed Management created in 1985, the Ministry of Agriculture settled on the watershed as the strategic unit of planning. As noted in Chapter III, the current policy of the Ministry of Agriculture is a participatory and decentralized approach to watershed management; however, this announced strategy has never borne fruit since the ministry lacks the institutional and legal means to mobilize local bodies of government for direct management of watersheds.²⁹

The strategy of "integrated rural development" was devised as a response to the complex problems of underdevelopment. Thirty years ago, ten integrated rural

²⁷ L'Office National du Cadastre (ONACA).

²⁸ Conseil National de Développement Economique et de Planification (CONADEP) and the Commission Nationale de l'Aménagement du Territoire.

²⁹ MARNDR, 1999, "Politique du MARNDR pour la gestion des bassins versants."

development projects virtually blanketed the entire country including the Artibonite (ODVA), the Plaine de Gonaïves (ODPG), the North-West (ODNO), the North (ODN), the upland Artibonite watershed in the Central Plateau (ODBFA), and rural development projects in the communes of L'Asile, Jérémie, Jacmel, Petit-Goâve and Petit Trou de Nippes, L'Acul, St Raphaël, etc.³⁰

After 1987, a sector strategy gradually replaced the multisector approach. Today only one of the old integrated rural development organizations still survives: the Organisme pour le Développement de l'Artibonite (ODVA) which was conceived on the model of the Tennessee Valley Authority. The assumption was that rural development should be based on agriculture. In Haiti, the presidency of the board of directors of these rural development organizations and projects was usually entrusted to the MARNDR. This formula never functioned properly due to the absence of systematic planning for rural development.

An agricultural model. The Haitian Republic never actively chose an agriculture model. The country's agriculture is neither capital intensive nor organic nor conservation oriented nor respectful of the environment. The technological level is captured by the following equation where output (O) is a function of climate (CL) plus soil (S), plants (PL) and man (M): $O = f(CL, S, PL, M)$.

With regard to climate, agroclimatic and pluviometric stations were installed in the 1930s and reinstalled several times over without attaining a regularly functioning network. For soils, an inventory has never been undertaken, agricultural production has been limited by the absence of technical inputs, and conservation practices have been tied to the ebb and flow of projects without achieving the desired results. With regard to plants, a *laissez-faire* policy opened the door to uncontrolled spread of exotic plants and to the plundering of biodiversity long afflicted by unsustainable management. With respect to human resources, training strategies did not facilitate widespread peasant appropriation of techniques proposed by experts (terraces, contour channels, etc.) despite sustained public financing.

THE ENERGY CHALLENGE

As noted in Chapter I, wood fuels including charcoal account for 71% of the country's consumption of energy. Fuelwood harvest and the clearing of land for agriculture are the main causes of deforestation in Haiti. Fuel wood is generally harvested without payment from woodlands, orchards, agroforestry systems, family woodlots and living fence.

The Law of August 17, 1955, regulated wood harvest, transport and commerce. According to this law, transport of lumber and fuelwood requires a permit from the Ministry of Agriculture, and a license (*patente*) is required for wood commerce. The Decree of July 7, 1987, regulates fuelwood and defines a new stage in energy policy. The decree granted companies using fuelwood a deadline of six months to change their fuel source. The Decrees of February 27, 1968 and October 10, 1974 regulate

³⁰ Organisme pour le Développement de l'Artibonite (ODVA), Organisme pour le Développement de la Plaine des Gonaïves (ODPG), Organisation pour le Développement du Nord-Ouest (ODNO), Organisation du Nord (ODN), and the Organisation pour le Développement du Bassin du Fleuve Artibonite).

the extraction of minerals and other natural resources from the ground, and claim energy resources as public domain: "Geothermal energy, water falls, etc. are the exclusive property of the State and will be exploited by State enterprises."

Petroleum products are governed by the Decrees of 1929 and 1968 on inflammable material and the Decree of 1990 on supplying petroleum products. At the regional level, the government has signed agreements with the Latin-American Energy Organization (OLADE) and the San José Agreement with Venezuela and Mexico. At the bilateral level, Accords of 1929 and 1937 addressed international watercourses but did not include energy aspects.

The energy challenge remains a global problem. The Bureau of Mines and Energy tried a holistic approach but its proposed energy policy was not implemented. ESMAP recommendations on fuel substitution (1991) were also never implemented, including recommendations to substitute petroleum products for wood charcoal and to modernize the charcoal sector. Given this history, is the most recent ESMAP strategy report (MDE, 2005) any more likely to influence public policy?

THE NATIONAL SYSTEM OF PROTECTED AREAS

The National System of Protected Areas (SNAP) includes zones classified as protected areas, reserved zones, forest reserves, national parks and historic parks. According to the Law of August 17, 1955, all forms of production are subject to MARNDP authorization in "protected areas" and completely prohibited in "reserved" areas. The concept of forest reserves first appeared in the Law of 1926 on National Forest Reserves. The first article of this law stipulates "that national forest reserves can be designated on any national land deemed appropriate," and any land designated as a National Forest Reserve is inalienable.

According to the Rural Code of 1962 (Law VIII), "...a forest will be declared a reserved zone if it protects catchment areas for springs, mountain peaks, and slopes in excess of 60 degrees. When catchment areas, mountain peaks and their slopes are entirely or partially denuded, they will be declared reserved zones."

The Decree of March 18, 1968, defines national parks or natural sites as all areas with historic or natural monuments whether or not they are wooded, and should remain intact and under no circumstances be farmed or logged. The Decree of April 4, 1983, created the National Natural Parks of Morne La Visite and Pic Macaya. A separate Decree created the Pine Forest Reserve.

In 1994, the Institute for Preservation of the National Heritage (ISPAN) proposed the concept of "national historic park" as "any area composed of one or more monuments or historic sites of high cultural value along with their natural immediate environment whether or not inhabited by a local population." On this basis, the National Historic Park of the Citadelle, Sans-Souci and Ramiers was later classified as a world heritage site by UNESCO.

The evolution of protected areas in Haiti tends to divide public policy into three main categories: (1) those related to significant legislative and regulatory activity resulting in the creation on paper of a nominal national system of protected areas, (2) those

subject to a *laissez-faire* policy, and (3) others characterized by open access and exploitation of natural resources and biodiversity. Phytogenetic and zoogenetic resources are openly taken out of the country or traded, or traded secretly when this involves protected species. The "elements of policy as regards Protected Areas" prepared by the ATPPF project were never implemented.

MANAGEMENT OF RISKS AND DISASTERS

As discussed in earlier chapters, Haiti is subject to high levels of environmental threat and risk including hurricanes. Millenium Development Goals for 2015 highlight landscape conditions that pose an acute environmental threat, particularly the imbalance of agriculture and grazing activities versus tree cover on slopes.

Public sector efforts to manage risk and disaster are recent. The government created the first public sector disaster and rescue agency in 1983 (OPDES).³¹ The Decree of May 31, 1986, subsequently entrusted responsibility for civil protection to the Ministry of Interior, including OPDES. In 1997, coordination of disaster response was assigned to the ministry's Directorate of Civil Protection (DPC).

In 2001, the government announced the National Plan for Management of Risks and Disasters (PNGRD), including the strengthening of disaster response capacity at the central government, departmental, municipal and local levels. A National Committee for Management of Risks and Disasters is responsible for maintaining contact with departmental and local committees.³²

URBAN ENVIRONMENTAL ISSUES

Haiti's urban system includes a network of 85 cities and towns in coastal plains and a second network of 9 border cities (Berrouet, 1998). Haiti's degree of urbanization remains low by Caribbean standards; however, the degree of urbanization increased rapidly increased from 8% of the population in the 1950s to 40% of today's population of 8.5 million people (see Chapter V for more on urbanization).

The earliest and most important regulations on urban planning were established by the Law of July 18, 1923, including the conditions to be met for private efforts to open new streets and roads. The Law of July 25, 1924, established rules of construction in urban areas. The Decree of July 22, 1937, laid down rules on dwellings and land use in rural and urban areas: "Any city of at least 2000 inhabitants is required to prepare a proposal for management, beautification and extension."

Urban infrastructure has not kept pace with accelerated urbanization. Consequently, there is an enormous gap between the supply and demand of public services resulting in acute deterioration of the urban fabric. The Decree of November 27, 1987, prohibited housing developments without ministerial authorization; however, this has not prevented the rapid urbanization of the Cul de Sac plains. Similarly, the Decree of August 23, 1995, classified the historic town center of Cape-Haitian as a national

³¹ L'Organisation Pré-Désastre et de Secours (OPDES).

³² See earlier description of the DPC in Chapter III, and the text of the PNGRD (DPC, 2001).

heritage site; however, this has not prevented growing deterioration of the urban infrastructure of this historic city.

POPULATION, ENVIRONMENT AND HEALTH

The population of Haiti went from 3 million in 1950 to approximately 8 million in 2002. During the past 20 years, the country has been undergone a severe economic depression due to political instability and the crisis in governance. The lack of economic growth in tandem with high rates of population growth has increased poverty and unemployment and has had a negative impact on child malnutrition and mortality.

Demographic trends have exerted a significant impact on the natural resource base, rates of soil erosion, loss of biodiversity, and the water supply. Water borne diseases such as typhoid, malaria, and diarrhea are a constant source of concern. Pollution of fecal origin is increasing both in rural and urban environments. The major water utility of Port-au-Prince (CAMEP) has had to disinfect several major sources of water due to high rates of fecal *E. coli*.³³ There has been limited success in efforts to eradicate major epidemics during the past fifty years.

The population policy issued three years ago has not overcome societal inertia and the ingrained taboos on family planning. Support from the United Nations Population Funds (UNFPA) over the past 20 years has improved the data base for governance through demographic studies and the national census (2003). Mother-child protection programs have had some success at improving the quality of life.

In terms of the legal framework, there has been little improvement. Proposed legislation on public hygiene, intended to replace the 1954 decree on hygiene, has not been adopted. There are no national norms and standards for drinking water, and regulations on urbanization and urban planning are not respected.

GUIDELINES FOR THE FUTURE

GENERAL RECOMMENDATIONS

The general recommendations that follow fall into four main areas of interest: political governance, the national planning system, public policies and the legal and regulatory framework.

POLITICAL GOVERNANCE

There is a close link between the functioning of the public institutions and an internally well integrated governmental system. Projects focused on institutional strengthening should avoid creating new, partial structures that weaken agencies instead of strengthening them and should build directly a ministry's formal enabling legislation (*loi-cadre*). For institutional strengthening to be effective, it should also be carried out in tandem with standardization of wages, the opportunity for a career path in government, and working conditions consistent with the laws on public administration.

³³ The water utility is the Centrale Autonome Métropolitaine d'Eau Potable (CAMEP).

The fact that government encompasses a range of sectors should not obscure the overall character of government as a single entity. Overlapping functions and intra- and inter-institutional conflicts within government should be resolved by the Prime Minister whose primary role is to coordinate governmental actions. At present, there is a tendency for ministries to depend primarily on the minister's personal staff who seek to do everything while accomplishing nothing. The office of Prime Minister requires its own services and bureaus. A special need for future technical assistance is the restructuring and institutional strengthening of the Office of Prime Minister.

THE NATIONAL PLANNING SYSTEM

The current government has committed itself to governing according to the Constitution of 1987 including a national system of socio-economic planning that builds from the bottom up. Therefore, current planning instruments must be inventoried, evaluated, brought up to date, standardized and approved in keeping with clearly defined national directives.

As noted earlier, important national directives in the environmental sector include the National Environmental Action Plan and the National Plan for Managing Risk and Disaster (PNGRD). In addition, an Action plan for the Environment and Sustainable Development (PADEDD) has been issued for the North-East department. Similar plans are underway for the departments of the Center and the Artibonite.³⁴ These are operational plans derived from the NEAP, a strategic plan. For this departmental planning process to be valid, the central government will need to integrate plans from all 10 departments as building blocks for an integrated national plan.

The national planning system should also be organized hierarchically to arbitrate disputes. For example, the Constitution takes precedence over the national socio-economic development plan which in turn takes precedence over the national land use plan and sector plans. Environmental policies are cross-cutting. Therefore, all levels of planning should take into account national environmental policies. Other formulas may be adopted but the national planning system must adhere to a hierarchical process.

PUBLIC POLICIES

The most significant public policies relating to forestry and watershed management are those dealing with social and economic development, and decentralization, and other closely related priorities. For example, should local development be privileged over a centralized model? Should agricultural development focus on capital intensive or organic strategies? How far can the framework on decentralization be extended, for example, inter-communal arrangements or local public enterprises, etc.? What should be the division of labor among departments, communes and communal sections as decentralized bodies of government?

All ministries apply government policy as it applies to their respective sectors. The system in place prior to 1987 functioned satisfactorily in this respect since the Ministry of Planning was the sole cross-cutting ministry. It had the authority to conceive and

³⁴ Plan d'Action Départemental d'Environnement et de Développement Durable (PADEDD).

impose national directives on planning and public policy. Three significant changes were introduced into the system after 1987: the post of Prime Minister as head of the government, three levels of decentralized government, and the Ministry of Environment as a new ministry with cross-cutting objectives.

Presently, the Ministry of Planning no longer has free rein to play its role in coordinating the process of national planning. If the Prime Minister does not play the coordinating role, the system may grind to a halt. Since 1987, the office of prime minister has not issued a single written directive on subjects of national interest aside from declarations of general policy.

THE LEGAL AND JUDICIAL FRAMEWORK

Hierarchy of laws. The hierarchy of laws is the key to understanding the pivotal role of the Prime Minister. The Constitution takes precedence over laws, laws over decrees, decrees over *arrêtés*, *arrêtés* over directives, and directives over administrative circulars. The first three are laws in the broad sense of the term while the last three (*arrêtés*, directives, administrative circulars) are regulations. Whereas the first three refer to general issues, the last three deal in-depth with particular problems.

For example, the Constitution provides for decentralization. Enabling legislation is required to define the duties and functions of departments, communes, and communal sections. Directives issued by the Prime Minister specifies how, when, and where to establish public enterprises and inter-communal and area projects, etc. Finally, local bodies of government issues ordinances on specific aspects of local governmental enterprise. This hierarchy of laws then functions without generating conflict among the various legal instruments. A similar hierarchy and separation of powers applies to energy, watersheds or agroforestry.

Recommendations. Undertaking the following actions would improve Haiti's overall legal and regulatory framework, including the environment:

- update and harmonize enabling legislation (*lois-cadres*) for various ministries;
- the new parliament elected in 2006 should ratify last minute decrees issued by the outgoing Interim Government on public administration, decentralization, the functions of local bodies of government, and the environment;
- strengthen the capacity of government to exercise its regulatory powers by implementing a comprehensive program of institutional strengthening, including the office of prime minister, ministries, and decentralized government;
- inventory, revise, and harmonize various sector and sub-sector laws in light of new public policies, for example, the forestry code;
- modernize the current body of legislation by updating laws not in force as well as laws that cannot be implemented;
- identify sectors of special interest for new laws including hillside agriculture, agro-ecotourism, agroforestry and watershed management, in keeping with the National Land Use Plan (*Plan national d'aménagement du territoire*).

RECOMMENDATIONS FOR SPECIFIC SECTORS

Natural Resources. The Title IV provisions of the Decree of January 2006 on the environment should be implemented (declaration of public utility, environmental quality standards, support for private initiatives).

The Technical Assistance Project for the Protection of Parks and Forests (ATPPF, 1998-2001) proposed legislation that was never issued as law. Draft legislation on forests and protected areas should be reviewed once again with a view to implementation.³⁵

Protected areas. The National Agency for Protected areas should be established in keeping with the Decree of January 2006 on the Environment. Special attention should be given to the 1985 recommendation of Ehrlich *et al* to create marine parks at the Bay of Labadie, Cadrasse, Ile à Vache, the Bay of Baradères and Cayemites archipelago, and the Arcadins.³⁶

Risk and disaster management. The law on decentralization should take into account the need for local bodies of government to have well defined authority over local risk and disaster management. All coastal cities located downstream from mountain slopes should have special statutes, such as the one recommended for the city of Cap-Haitien (Victor, 2005).

Urban planning. Management plans for the country's principal cities should be inventoried with a view to preparing a global action plan in keeping with the National Land Use Plan (Plan d'aménagement de territoire). The housing sector should be addressed by a comprehensive national plan consistent with the national land use plan.

Sustainable energy. The proposed energy policy prepared by the Bureau of Mines and Energy should be reviewed and updated to take into account new developments in the field of energy. Priority should be given to energy plantations, biodiesel and biogas, and promotion of solar and wind energy and hydroelectric power.

Agriculture, agroforestry, and commerce. Constitutional provisions for minimal and maximum of farm units should be implemented without delay. It is urgent to write a law on agriculture as a profession including the protection of farming units by revising the law on inheritance (succession) of the Haitian civil code

A law is required specifically to regulate upland areas with a view to protection of water resources, fragile ecosystems, and their potential for agriculture, mining, ecotourism and biodiversity.

Trade in agricultural products should be rationalized including adoption of norms and standards, application of the law on food production, standardization of weights and

³⁵ The ATPPF project was funded by the World Bank.

³⁶ See the landmark study prepared by the USAID Haiti Mission in 1985, the Haiti Country Environmental Profile: A Field Study (Ehrlich *et al*, 1985).

measures, and standards for conditions of storage, packing, labeling, preservation and transport.

Coastal and marine resources. The Haiti government should adhere to international treaties regulating the development and protection of the Caribbean Sea (three protocols of the Convention of Cartagena) and marine pollution in general (Marpol 71/78).

The government should apply internally the international conventions on the environment that have been signed and ratified by the Haitian State (Decrees on implementation including the publicizing of information, translation of texts into Creole, teaching and research, etc).

The economic incentives to harvest mangroves, presently an over-harvested resource, should serve as a basis for working with local populations to establish sustainable management of mangroves as a natural resource.

Strong measures should be taken to end the illegal trade in endangered maritime species. To do so will require revision of the Decree of 1978 on fishing.

Population, health and the environment. The draft population policy developed three years ago should be officially adopted. Environmental policies should be integrated into the national health plan in keeping with the national policy on population.

OTHER ISSUES OF SPECIAL INTEREST

What policy and institutional reforms are required to strengthen Haiti's ability to rehabilitate denuded landscapes?

The resolution of political problems is a precondition for solving technical problems. If the state and its institutions are not operational, it is difficult if not impossible to build capacity.

A precondition for rehabilitating degraded zones is to assure adequate protection of zones that are not already degraded. Likewise, strengthening of national capacity to rehabilitate degraded zones is directly tied to the ability of decentralized governance to manage local environments ("gestion de proximité"). This in turn requires full implementation of decentralization and its enabling legislation, and the full exercise of regulatory authority by local bodies of government.

Would municipal land use planning reduce impacts of disaster and lead to reforestation or improved environmental conditions?

According to the theory of central places, judicious management of urban areas is directly linked to problems of urban growth and high rents. In theory, the most profitable companies cluster in areas close to their markets. This provides incentive to pay higher rents. Accordingly, taking measures to ensure land tenure security in urban areas can help solve problems of urban planning and improve environmental management.

When the law and regulations on urban planning are not respected, people build anywhere including ravines, flood plains, coastal wetlands, dumping grounds, and high voltage towers. Therefore, simply enforcing the regulations would significantly reduce environmental risks.

Degradation of the urban environment stems in large part from growth in the demand for urban public services that far surpasses the supply. Growing demand is fueled by high rates of rural-urban migration precipitated by loss of arable land due to erosion, deforestation, and unsustainable agricultural practices. This argues for modernization of the agricultural sector as a key to reducing urban environmental risk.

What policy measures can be introduced to improve the efficiency of charcoal production and also to enhance the viability of alternative fuels?

These policy measures are well known. It would be useful to promote energy plantations, more efficient charcoal kilns, credit for efficient charcoal producers, and more efficient charcoal distribution systems. Reducing the tax on alternate fuels would tend to make them less expensive than wood charcoal and therefore reduce demand for charcoal.

On the other hand, improving the efficiency of charcoal would also tend to lower the price of charcoal. Therefore, simply lowering the tax on petroleum products would not have the desired impact in the long run since the price of petroleum tends to rise over time. Furthermore, lowering the tax on petroleum would also result in the loss of needed tax revenues. So, what is the point in doing so? Common sense would suggest moving away from longstanding efforts to reduce taxes on petroleum products and to concentrate instead on more efficient management of locally renewable energy resources.

V. DONORS, POLITICS, AND THE ENVIRONMENT

Glenn R. Smucker

INTRODUCTION

This chapter reviews current environmental donor programs in Haiti. This overview focuses primarily on major donors, particularly non-USAID funding for protection of the environment and prevention of natural disaster. The basic purpose is to better understand other donor commitments and strategies in light of government priorities, and to identify critical unmet needs and prospective areas of interest to the USAID/Haiti Mission. The following discussion also picks up on themes addressed in earlier sections of this report.

The July 2004 report of the Interim Cooperation Framework (ICF) serves as a point of reference for updating and understanding the current status of environmental donors.³⁷ Therefore, the following discussion makes repeated reference to donor commitments established by the ICF in the months following the fall of Aristide on February 29, 2004. The ICF consultation process between the Interim Government and donors initially identified priorities and financing to support Haiti's economic, social and political recovery between July 2004 and September 2006. The World Bank report on the bank's Transitional Support Strategy (December 10, 2004) is another critical point of reference for understanding donor strategies and investments during the post-Aristide transition period. This chapter also takes into account current trends and the changing political environment since the Préval government took office in May 2006

What follows is a description and brief analysis of donor investments in the Haitian political context, review of the Interim Cooperation Framework, discussion of current donor programs relating to the environment, and summary findings and recommendations including prospective areas of program interest.

DONORS AND THE POLITICAL CONTEXT

Discontinuity and decline of donor financing. Recent donor investments have closely tracked Haiti's turbulent political environment marked by intense polarization, political violence, abrupt shifts, alternating periods of

TABLE 5. EXTERNAL AID TO HAITI, 1994-2002

<u>Year</u>	<u>US\$ Million</u>
1994-1995	611
1995-1996	427
1996-1997	378
1997-1998	371
1998-1999	330
1999-2000	266
2000-2001	170
2001-2002	136

SOURCE: Interim Cooperation Framework 2004, 3

³⁷ See Republic of Haiti, July 2004, Interim Cooperation Framework, 2004-2006, United Nations, World Bank, European Commission, Inter-American Development Bank. Also see The World Bank Group, December 10, 2004, Transitional Support Strategy for the Republic of Haiti, Report No. 30541

constitutional and non-constitutional government, and a longstanding history of weak governance. As a result of this unstable political environment, donor investment tended to decline over an eight year period between 1994 and 2002 (see Table 5 above). Donors withdrew assistance following the 1991 *coup d'état* and throughout the subsequent three year trade embargo directed at the illegal military government. The harsh international embargo proved ineffective from a political perspective, and it had a devastating and long term negative impact on the Haitian economy. In the last quarter of 1994, international donors once again ramped up their investments following restoration of constitutional government by external military forces; however, the trend in external aid to Haiti after 1994 showed a conspicuous decline.

Parliamentary deadlock. In the late 1990s, political division within Lavalas generated a severe crisis within the Haitian government. In 1997, ex-president Aristide broke with the Organisation Populaire de Lavalas (OPL), the political alliance that had initially brought him to power, and created a separate political party in his own image. This precipitated a parliamentary deadlock in 1997-1998. President Préval eventually suspended the parliament in 1999. Presidential decrees were issued, but new and pending parliamentary legislation was not passed for a period of five years due to the protracted political crisis. The backlog of unapproved legislation included reforms, national budgets, and ratification of international loans approved by the World Bank and the Inter-American Development Bank. Consequently, proposed governmental reforms and sizeable multilateral loans that required parliamentary action were not implemented.

Disputed 2000 elections. The May 2000 parliamentary elections were marked by strong voter turnout; however, both the Haitian opposition and the international community strongly contested the election results, primarily on the grounds that the electoral commission violated constitutional requirements to hold runoff elections for posts without a winning majority. In November 2000, Aristide was again elected president by overwhelming margins but with an extremely low voter turnout.

The dispute over May 2000 parliamentary elections continued into Aristide's second term of office. In response to the disputed elections, major bilateral donors either suspended their programs or redirected assistance to non-governmental channels. The major multilateral donors froze their assistance programs due to the unresolved electoral dispute as well as a growing accumulation of arrears. In 2002 the OAS called on international assistance agencies to renew financial assistance in anticipation of new elections to be held in 2003. In July 2003 the Haitian government cleared its arrears to the Inter-American Development Bank, thereby unfreezing some 200 million dollars in loans.³⁸

Fall of Aristide. Growing demonstrations against the Aristide government in late 2003 and early 2004 led to armed insurrection in the North, and Aristide's departure on February 29, 2004. The head of the Supreme Court was sworn in as Interim President and the United Nations authorized the deployment of a Multinational Interim Force, replaced later by the United Nations Stabilization Mission in Haiti (MINUSTAH) on April 30, 2004. The departure of Aristide left a power vacuum marked by a period of chaos in many towns and cities. This included looting, destruction of public and private

³⁸ New parliamentary elections in 2003 never happened. See OAS Resolution 822, Support for Strengthening Democracy in Haiti, September 4, 2002, and the review in World Bank (2004, 2).

property, and armed rebel attacks on police stations and other local government buildings, especially in northern regions of the country. During this period, international aid including humanitarian assistance virtually ceased to function.

Electoral mandate of transitional government. A new Transitional Government was established on March 17, 2004, with the naming of Gérard Latortue as Prime Minister by a seven member Conseil des Sages representing key sectors of Haitian society. The primary mandate of the Transitional Government was to hold local, legislative, and presidential elections by the end of 2005, and to ensure orderly succession to a constitutionally elected successor by February 2006.

New elections. In actual fact, elections were repeatedly postponed; however, presidential and parliamentary elections were held on February 7, 2006. René Préal won despite initial controversy over whether or not he had attained the simple majority required to avoid run-off elections. Runoff elections for parliament were held on April 14, 2006, followed by peaceful succession from Interim Government to the newly elected government of President René Préal on May 14, 2006, and the installation of a new parliament. On December 2, 2006, the Préal government held elections for local government officials including mayoral and communal sectional councils and local assemblies.

New beginnings. Completion of a full cycle of elections in 2006 was a major achievement. It enhanced prospects for political stability and government decentralization. It also set the stage for a significant increase in donor investments. The 2006 elections took place in a political context marked by the continued presence of MINUSTAH peacekeepers. The newly elected Préal government requested that the UN Mission be continued.

In the latter part of 2006, the political situation remained tenuous due to the growing incidence of violent crimes especially kidnapping-for-ransom, gang domination of various slum districts in Port-au-Prince identified by the media as “lawless zones,” and the inability of government to ensure law and order. In early 2007, national police and MINUSTAH forces embarked on a campaign to reduce street violence and eliminate or reduce the influence of armed gangs. The first six months of 2007 have seen a perceptible improvement in the problem of violence.

THE INTERIM COOPERATION FRAMEWORK OF 2004

Economic reform mandate of transitional government. In addition to holding elections, a second mandate of the March 2004 Transitional Government was to support reform and promote economic, social and political recovery. In April 2004, the newly formed Transitional Government and four multilateral donors – The World Bank, the United Nations System, the Inter-American Development Bank and the European Commission – embarked on a consultative process to identify priorities for donor financing under the two-year mandate of the Interim Government. This process resulted in the Interim Cooperation Framework (ICF) as a basis for coordinating donor

assistance between July 2004 and September 2006.³⁹ In October 2005, donors and the Interim Government extended the ICF through the end of 2007.

By the end of 2005, some 780 million dollars of donor support had been disbursed since 2004 under the terms of the Interim Cooperation Framework. After the presidential and parliamentary elections of February 7, 2006, international assistance entered a new phase of planning. Donor governments and financial institutions agreed on a strategy for rapid engagement with Haiti's newly elected officials, including development of a National Strategy to Reduce Poverty.⁴⁰

In July 2006, donors committed another 750 million dollars of assistance to the Haitian government at the International Conference for Social and Economic Development of Haiti in Port-au-Prince. In November 2006, donors and the Government of Haiti met in Madrid to monitor donor commitments in light of government efforts at reform including security, a more favorable investment climate, and protection of the environment.⁴¹

The Interim Cooperation Framework. The ICF process is coordinated by the Haitian Ministry of Planning and External Cooperation together with The World Bank. It includes four strategic axes or pillars and ten thematic groups (ICF 7, 11). The four strategic pillars of the framework are the following:

- Strengthening political governance and promoting national dialogue
- Strengthening economic governance and institutions
- Promoting economic recovery
- Improving access to basic services

The ten thematic groups are as follows:

1. Political governance and national dialogue including (a) security, police, and disarmament and demobilization, and (b) justice, corrections and human rights,
2. Economic governance and institutional development
3. Rapid job creation, safety nets, and social protection,
4. Protection and rehabilitation of the environment,
5. Regional, urban and local development and decentralization,
6. Health and nutrition
7. Education and culture, including (a) education, youth and sports, and (b) culture, media, and communications,
8. Agriculture and food security,
9. Infrastructure including (a) roads and transportation, (b) electricity, (c) water and sanitation, (d) and upgrading slums and solid waste collection,
10. Private sector development including small and medium size enterprises and industries.

In addition, the ICF report took note of cross-cutting themes such as crisis prevention, human rights, gender, and HIV/AIDS programming. The ICF report emphasized

³⁹ The Interim Cooperation Framework (2004) is also known as the Cadre de Coopération Intérimaire (CCI).

⁴⁰ See Jackson (2006).

⁴¹ See GOH, November 29-30, 2006, Programme cadre de gouvernance et réforme de l'état, and, GOH, November 2006, La gouvernance démocratique, Madrid.

“strengthening national capacities” as a high priority, noting that the Haitian state has been weakened over the past 20 years and constitutes a “bottleneck for providing public services, democratic consolidation, and economic recovery.”⁴² Finally, the ICF anticipates a poverty reduction strategy as the next and longer term stage of donor assistance (ICF 2004, 8).

ICF and the environment. The ICF theme of environmental protection and rehabilitation (point 4 above) includes three priorities (*ibid.*, 28-29):

- Energy substitution for wood and charcoal in urban areas (cooking fuel) and small and medium size enterprises,
- Enhanced natural resource management to combat degradation of the land and other natural resources, including biodiversity and protected areas,
- Strengthening of risk and disaster management, including support for the National Risk and Disaster Plan and the Civil Protection Directorate (DPC).

ICF funding levels. The ICF cost estimate for its overall program of 2004-2006 priorities came to 1,212.4 billion dollars.⁴³ This included 26.3 million for environmental protection and rehabilitation. The environmental portion was only two percent of overall estimated costs for the transition program, and suggests that the environment was not a high priority for donors. Furthermore, ICF donors pledged only 2.7 million dollars, about 10 percent of ICF-estimated requirements to address environmental priorities (*ibid.*, 43).⁴⁴

Who are the principal donors in Haiti? ICF donor pledges of 2004 reflect the major players in Haiti’s donor network (see Table 6). According to the ICF pledges, the big four are the EU, IDB, US, and World Bank. This is for all categories of assistance and not just the environment.⁴⁵

Table 6. ICF Donor Pledges for All Sectors in July 2004

<u>Donor</u>	<u>US\$ M</u>
European Union	288.2
Inter-American Dev Bank	263.0
United States	206.6
World Bank	155.0
Canada	88.4
France	33.2
Other	16.3
Germany	13.5
IFAD	12.0
Spain	6.6
Sweden	1.8
Total pledged	1,084.6

SOURCE: World Bank 2004, 37

ICF environmental donors. The largest donors in the ICF environmental donor group (*table sectorielle*) are the IDB, EC, and Canada. Other members of the ICF

⁴² It should be noted, however, that the Haitian state was also a bottleneck even prior to 20 years ago. The underlying issue is less one of *strengthening* national governmental capacity than *transforming* the Haitian state which has always tended to be predatory and never provided much in the way of public services.

⁴³ As noted earlier, The World Bank reports that some 780 million dollars of donor support were disbursed in 2004 and 2005 under the terms of the Interim Cooperation Framework.

⁴⁴ Updated analysis of donor resources presently being disbursed (2006) indicates that some donors have significantly increased their investments in the Haitian environment since 2004.

⁴⁵ These figures reflect pledges made in 2004. Actual expenditures are a different story. Furthermore, the ICF program is still underway and extended to the end of 2007.

environmental group include the FAO, Brazil, France, IICA, UNICEF, UNIDO, PAHO/WHO, and the WFP (World Bank 2004, 23, 39).

In actual practice, according to field interviews, some sector-based ICF donor groups (*tables sectorielles*) did not function well, including the Environmental Protection and Rehabilitation table (as noted earlier in Chapter II). On the other hand, the very existence of the ICF – including a series of major consultations with the Haitian government – reflected a whole new level of donor coordination which was traditionally difficult to achieve. Furthermore, the ICF has successfully used a strategic approach to planning, including major sector studies on the economy, rural development, poverty alleviation, commodity value chain analysis, energy, institutional reform, and natural resource degradation.⁴⁶ There also tends to be broad donor consensus on the need to use livelihood approaches (revenue generation), multi-sector strategies (e.g., linking natural resource management, revenue generation, and disaster mitigation), and landscape level approaches (going beyond the individual parcel approach and linking upland and lowland interventions).

CURRENT DONOR PROGRAMS IN THE ENVIRONMENTAL SECTOR

DONORS

Current and planned donor investments for environment and disaster mitigation are summarized in Table 10 at the end of this chapter. This table profiles the range and relative magnitude of current donor investments in the environmental sector; however, the table does not show environmental or NRM activities that operate independently of major donors, including NGOs such as Agro-Action Allemande or The Nature Conservancy. Currently, the most significant environmental donor is far and away the Inter-American Development Bank (IDB). Other major environmental donors include USAID, CIDA, The World Bank, and also the FAO, including short and medium term post-disaster assistance.

The World Bank contribution is mainly to strengthen national and community-level preparedness for natural disaster. The World Bank's current and planned investments in rural infrastructure (16M\$) and "community driven development" (38M\$) may also have an impact on natural resource management, but these programs are not formulated as environmental projects.

CIDA and FAO tend to focus on local level efforts including environmental planning, agroforestry, and improved farming practices to protect the production base on slopes. CIDA is also one of the few environmental donors with an interest in the energy sector, including renewable forms of energy. The World Bank plans to invest in energy, but this will be limited to support for Electricité d'Haiti and the urban grid.

The current IDB portfolio touches on a wide range of critical environmental issues in Haiti. The IDB is heavily vested in rehabilitating the Artibonite irrigation works, the country's largest and most productive irrigation system; however, it is not working in the upper reaches of the watershed above Peligre Lake. This constitutes a serious risk

⁴⁶ For example, see World Bank/MARNDR (2005), ESMAP (2005), PNUD (2005), IDB (2005, 2006), and GOH (2006).

to the investment. CIDA and others are working in the Artibonite basin upstream and on both sides of the Haiti/Dominican border; however, the Artibonite border zone constitutes a limited proportion of the overall drainage system affecting Peligre Lake and the lower Artibonite.

IDB has also worked with smaller irrigation works in the Ennery/La Quinte river basins (Gonaïves), including some watershed stabilization. IDB activities complement USAID-funded rehabilitation of irrigation systems in the Gonaïves plain and along the Trois Rivières. This is very positive targeting of investments by two major donors in the wake of severe flooding due to Tropical Storm Jeanne. Overall, there tends to be more emphasis on downstream irrigation works than upstream catchments, although the Ennery/La Quinte project (IDB) does include 6 million dollars for uplands compared to 8 million for downstream irrigation. The IDB also plans to invest in national watershed management planning, and targeted interventions in the highlands of the Grande Rivière du Nord (north) and watersheds with an impact on the plains of Les Cayes (south) including the Grande Ravine du Sud, L'Acul, and Cavaillon.

IDB is also providing support for new and more autonomous institutional arrangements for national forest and parks management in keeping with the environmental decree of January 2006. The IDB strategy includes the reactivation of regional agricultural centers of the Ministry of Agriculture, public-private boards representing both farmers and agribusiness (for example, mango exporters), and the use of centers as a research and training resource for commodities and productive systems that protect the resource base.

The other major area of IDB interest is the rural supply chain for various agricultural commodities including export crops such as coffee and mangos. This builds on USAID success in this sphere via the Hillside Agriculture Program, albeit with a contrasting strategy. Given the growing volume of trade between Haiti and the Dominican Republic, the European Union has also funded studies of cross-border flow of commodities including coffee, eggs, congo peas, plantains, mangos, and avocados.

SECTORS

Post-disaster assistance. Post-disaster assistance in the wake of May and September 2004 floods precipitated a significant donor response (see Table 8 below for donor activities by sector). In addition to relief and rehabilitation activities in Gonaïves, Fonds-Verettes and Mapou, the severe natural disasters also generated support for local and national disaster preparedness. Accordingly, World Bank funding for the Directorate of Civil Protection and a national network of civil protection committees complements IDB support for early flood warning systems in critical watersheds.

Protected areas. UTSIG geo-spatial data show a 50 percent decrease of dense forest cover in the Pine Forest Reserve between 1978 and 2003. According to UTSIG data of 2003, only 1.3 percent of Haiti's total land area still remains in dense forest cover.⁴⁷ Nevertheless, there is little donor investment in sustainable forest management or protected areas, thereby excluding support for Haiti's crown jewel, the Pine Forest

⁴⁷ Interview with Gina Porcena Meneus, Coordinator of UTSIG, November 2005.

Reserve, and the country's two major national parks, Parc La Visite and Parc Pic Macaya; however, national parks may benefit from a proposal for funding from the Global Environmental Facility (GEF).⁴⁸ Major donors are also not generally targeting Haiti's valuable but threatened stands of coastal mangroves that are beneficial for flood control, although USAID included protection of coastal and marine resources as one element of the DEED project, to be implemented in 2007 in two watersheds, the La Couline (Montrouis) and Limbé.⁴⁹

Urban environment. In the aftermath of Tropical Storm Jeanne, Gonaïves has had the benefit of significant donor investment in urban neighborhoods. Ironically, despite the volatile political climate and insecurity of Port-au-Prince, no major donor is investing in macro-level urban planning or broad-based urban development. When interviewed in March 2005, private citizen René Préval described Port-au-Prince as a “cancer” on the Haitian body politic.⁵⁰ USAID, CIDA, and the IDB are funding certain public services, labor intensive employment, solid waste collection, and the cleaning of drainage canals in urban slum districts. IDB urban rehabilitation (50M\$) is focused on Cité Soleil and includes co-financing from CIDA (8M\$). The motivation for these efforts is in part to diminish the threat of violence in volatile urban neighborhoods from politicized but chronically unemployed young people including gang members and a new generation of young men with limited education who have grown up in the slums.

Creating employment in volatile neighborhoods is without a doubt an extremely important initiative in the near term, but such programs are inherently temporary and they do not add up to urban planning or longer term prevention of natural disaster. In general, this sector is extremely difficult for a variety of reasons. These reasons include a long term trend toward increased poverty, particularly in the last 20 years (see adjoining Table 7); the growing specter of violence in the last 10 years, including more sharply defined urban gangs with a quasi political role, particularly since 2001, and the phenomenon of kidnapping for ransom as a growth industry between 2004 and 2006; the prevalence of squatterization and uncontrolled urban growth; and the limited presence of government with few public services, especially in the burgeoning slum districts of Port-au-Prince.⁵¹

Table 7. Haiti's Negative Growth in Per Capita GDP, 1981-2003

<u>Period</u>	<u>%</u>
1981-1990	- 2.3
1991-2000	- 3.1
2001-2003	- 2.6

SOURCE:
World Bank 2004, 5.

⁴⁸ Personal communication (June 2006), Diego Arias, IDB.

⁴⁹ Economic Development for a Sustainable Environment in Haiti, or, Développement Economique pour un Environnement Durable (DEED).

⁵⁰ March 2005 interview with René Préval in Marmelade during fieldwork for the report entitled *Agriculture in a Fragile Environment* (Smucker *et al*, July 2005).

⁵¹ During the first six months of 2007, a concerted campaign by the police and MINUSTAH forces has significantly decreased the incidence of violent crime, including kidnapping, accompanied by growth of donor funded public services in Cité Soleil and other hotspots.

Table 8. Sector Summary of Current and Planned Donor Activities

Sector	Donors
NRM/Watershed management	AID, IDB, WB, CIDA, FAO, OAS, GTZ, EU, OAS
Sustainable forest management	
Protected area management	GEF
Disaster preparedness	
Early warning (flood)	IDB, EU
Civil protection committees	AID, WB, EU, GTZ
Strengthen DPC	WB, EU, UNDP
Urban public services & hotspots	AID, CIDA, IDB
Energy	CIDA, WB (electricity only)
Agriculture, agroforestry, trade	AID, IDB, CIDA, FAO, EU
Coastal forest resources	USAID (DEED)
Cross-border initiatives	CIDA, OAS, GTZ, EU, UNEP
Local government	CIDA, USAID (decentralization)
Policy/Institutional reforms	IDB, WB, CIDA, UNEP, UNDP
Post-disaster assistance	USAID, WB, IDB, GTZ, FAO

SOURCE: This table synthesizes information by sector from the summary of donor activities in Table 10 at the end of this chapter.

Unmet urban priorities. On the other hand, from a strictly technical point of view, it could be argued that the greatest threat to human life from future environmental disasters will largely be in urban areas. Another Gonaïves scale flooding disaster is not only possible but almost certainly inevitable in view of the sheer scale of uncontrolled and growing human habitation in urban flood plains. For example, targets of geographic interest for disaster prevention in the Port-au-Prince metropolitan area include ravine dwellers largely hidden from public view, anarchic construction on peri-urban slopes, and vast shoreline slum districts in flood plains. Cité Soleil and La Saline are built to a significant extent on old garbage dumps chronically vulnerable to flooding, poor drainage, and recurrent deposits of silt and upstream garbage that pose serious health risks. Similar conditions apply to other urban centers such as Raboteau in Gonaïves and La Faucette in Cap-Haïtien. The issue is not just major flood disasters such as Hurricane Jeanne in Gonaïves, but also the chronic flooding that accompanies every rainy season, and nearly every rain.

These environmental threats would argue in favor of upland/lowland and urban/rural linkages such as CARE pursued in the Projet d'Assainissement de Port-de-Paix, or that PADF undertook on the slopes above Cap-Haïtien. In Port-au-Prince, and strictly from an environmental and disaster prevention perspective, there is an inescapable logic that links lowland urban drainage and water with upland erosion control structures in critical zones such as Morne l'Hôpital. Lessons learned from the Asian experience argue strongly in favor of such an integrated approach, including upland stabilization efforts together with lowland forestry, and concerted efforts to prepare lowlanders to live with rivers and floods (as noted in the text box below).

For example, according to field interviews, there is a growing shortage of water supply for the CAMEP system in Port-au-Prince. There is also growing reliance on private supplies of water drawn from deep wells with growing salinity in the Cul-de-Sac Plain. This would certainly argue, among other things, for concerted hillside efforts to protect mountain springs that supply the CAMEP system in Carrefour and Pétion-Ville. Review of current donor programs suggests that no major donor is investing in this sector.

Energy. Aside from CIDA, there is little current donor interest in the energy sector except for the electrical grid; however, there is an important environmental link between urban planning and the energy sector. This might include, for example, renewable production of fuel wood and charcoal as well as substitution of alternative forms of energy for wood-based fuels – both of which have been featured in earlier USAID investments and then discontinued. Promoting both sectors may seem inherently contradictory, as noted in Chapter IV, but pursuing both simultaneously is imperative due to pressing needs for both short term and long term responses to Haiti's growing needs for urban cooking fuel, and the continuing demand for wood fuel from various small scale industrial operations in urban areas. The characteristic features of the Haitian energy sector also argue for investigating the economic and technical feasibility of biodiesel production and processing in Haiti. No major donors are presently investing in this area, although Brazil has shown some interest, and USAID is willing to fund pilot efforts as an element of watershed interventions.

***LIMITATIONS OF FORESTRY
TO PREVENT CATASTROPHIC FLOODS***

...scientific evidence clearly indicates that forests cannot stop catastrophic large-scale floods, commonly caused by severe meteorological events – the type of events that are often blamed on forest harvesting or conversion to agricultural uses.

USE AN INTEGRATED APPROACH

Integrate upland land management with lowland planning, engineering measures, and flood preparedness.

Work with natural processes and not against them.

Use forest conservation in lowlands as well as uplands, including river basins where forests form an important component of wetland ecosystems.

Maintain forest cover on targeted, critical sites to reduce sediment problems, e.g., slip-prone soils and riparian zones.

SOURCE: CIFOR/FAO 2004, 13-14

Agriculture and NRM. As shown in Table 8, most international donors are funding some type of activity to enhance natural resource management or protection of watersheds. These same donors also tend to support activities in agriculture or agroforestry. The International Fund for Agricultural Development (IFAD) has invested in agriculture and small-scale irrigation works.⁵² Some donors have supported trade in agricultural commodities including new markets for perennial crops on slopes, especially USAID, including its new project entitled MARCHE, also FAO to some

⁵² As retrieved from the IFAD web site on February 22, 2006, IFAD reports ongoing projects for small-scale irrigation first approved in 1989 (16.75 M\$) and food crop intensification approved in 1998 (20 M\$).

extent, and IDB which is currently preparing a twelve to fifteen million dollar project on “rural supply chain development.”⁵³

Cross-border programs. A few donors have shown an interest in cross-border issues related to watersheds, particularly CIDA, OAS, GTZ, and UNEP. The European Union has been monitoring cross border trade in particular commodities.⁵⁴ Targeted border areas include four points of interest: The Artibonite River where it defines the border between Haiti and Dominican Republic (Central Plateau), the flood zone linking Fonds Verettes and Jimani (DR), and a prospective biological corridor linking Barahona (DR) with the Pine Forest along the La Selle ridge. OAS is also considering the protection of border groundwater linked to the Artibonite and Massacre Rivers in the central plateau and the northeast. Border initiatives discussed in donor interviews have not advanced far enough to have a perceptible impact. In terms of funding level, the most significant cross-border target is the CIDA project focused on the Artibonite River. NGOs working on cross-border issues include Agro-Action Allemande (agroforestry), The Nature Conservancy (protected areas), and PADF (grassroots organizations, local development, border governance, and trafficking).

Institutional reforms. Some watershed-oriented activities focus on institutional strengthening of government agencies rather than protection of specific watersheds. This includes improved knowledge management, UNEP support for establishment of a national watershed “observatory” (Office National d’Observation de Bassins Versants), and promotion of a national watershed management policy – one element of an IDB project under preparation that targets protection of watersheds in the area of Les Cayes and Grande Rivière du Nord. This raises the question of adequately ranking and prioritizing watersheds by vulnerability to risk.

CRITICAL WATERSHEDS

Fifteen priority watersheds have been identified by the Civil Protection Directorate (DPC) of the Ministry of Interior on the basis of their vulnerability to natural disaster (see Table 9 below). The DPC director has stated that listed watersheds may not all be equally vulnerable to flooding and should be reviewed and re-assessed.

It is not clear from available documentation and interviews what criteria were used to identify watershed priorities. Furthermore, there are various lists of critical “watersheds” in government and donor documents, but these lists are not consistent and not always defined by the watershed as a catchment area and primary unit of analysis. Some use rivers, hydrological zones, and communes or other place names as the unit of analysis. The DPC added Mapou and Fonds-Verettes to its list of priorities following the severe floods of May 2004. According to the biodiversity specialist at the Ministry of Environment, watershed prioritization takes into account both demographic and ecological criteria along with economic risks, including the presence of roads and downstream irrigation works.

⁵³ See IDB (2005), Documents de Travail sur l’Economie Rurale Haïtienne, for reports on national production of certain agricultural commodities.

⁵⁴ See cross-border commodity reports by LAREHDO (Laboratoire des Relations Haïtiano-Dominicaines) funded by the European Union.

Table 9. List of Activities in 15 Priority Watersheds per Ministry of Agriculture

River	Area (km ²)	Activities	Donors & other operators
Artibonite	9,500	Watershed mgmt – ravines, trees. Revenue generation, vegetables, ag prod value added	GTZ, CIDA, Helvetas, UNDP, PADF, World Vision, FAO
Trois Rivières	897	Watershed mgmt, ravines, trees	MARNDR, AAA, FACN
L'Estère	834		
Gde Rivière du Nord	699	Revenue generation, ag product value added	Coopération Française
Grand' Anse	556	Revenue generation, ag product value added	CARE, MARNDR, PDR
Cavaillon	380		
Rouyonne & Cormier	180	Watershed mgmt, ravines, trees	USAID
Rivière Grise	1,377	10 km riverbank protection	MARNDR
Rivière Blanche	700		
Grande Ravine du Sud		Revenue generation, value added, agroforestry	PDR
Acul		Watershed mgmt, agroforestry	PDR
Grande Rivière de Nippes	459	Agroforestry	MARNDR, CIDA
Momance	380	Watershed mgmt (ravines)	MARNDR
Grande Rivière de Jacmel	535	Watershed mgmt, ravines, trees	MARNDR, AECI
Fonds-Verettes	190	Watershed mgmt, house relocation, revenue generation (commerce), agroforestry	MARNDR, UNDP, IOM, PADF, FACN, FAO, Caritas, World Vision
SOURCE: MARNDR, Direction Générale Adjointe aux Aménagements et à la Valorisation des Ressources Naturelles. No date, received from IDB February 2007.			
Other principal watersheds & hydrological zones per Ministry of Agriculture (MARNDR 2000): Môle St. Nicolas/Moustique, Bombardopolis/Gonaïves, Port-de-Paix/Port Margot, La Quinte, Limbé, Cayes-Jacmel/Anse à Pitre, Léogane/Carrefour, Corail/Anse à Veau, Les Cayes, Roseaux/Voldroque, Cap-Haïtien, Limonade/Ouanaminthe, St. Marc/Cabaret, Cul-de-Sac, Côte de Fer/Bainet, Petite Rivière de Nippes/Grand Goâve, St. Louis du Sud/Aquin, Tiburon/St. Jean, Ile de la Tortue, Ile de la Gonave, Jérémie/Les Irois			
Priority watersheds per Direction de la Protection Civile: Camp-Perrin, Mapou, Fonds-Verettes, Artibonite, Maribaroux, Gonaïves, Jacmel, Port-au-Prince, Cap-Haïtien, St. Marc, Les Cayes, Léogane, Petit-Goave, Port-de-Paix, Limbé. SOURCE: A draft report by World Meteorological Organization including watersheds identified by the Direction de Protection Civile (Camp-Perrin, Fonds-Verettes, Mapou) and the Ministry of Agriculture (according to a personal communication from Ana Maria Linares).			

According to GOH officials interviewed, there are certain differences in strategy between MARNDR and MDE approaches to watershed prioritization. The Ministry of Agriculture views the watershed itself as the optimum unit of program intervention. In contrast, the Ministry of Environment focuses on local government jurisdictions (watershed planning by “local proximity”), including local action plans that take into account watershed protection in keeping with the national environmental action plan (NEAP).⁵⁵ According to the Ministry of Environment, the entire Southeast department should be a high priority for watershed interventions due to the presence of major

⁵⁵ MDE, Plan d'Action pour l'Environnement (June 1999). Also, MDE, October 14, 2005, Document Résumé d'Orientation: Interventions Stratégiques en Matière d'Aménagement de Bassins-Versants et Incitations y Relatives.

protected areas (Pine Forest, La Visite Park), the proximity of this department to the Dominican border, and the emerging prospects for tourism as an offshoot of the Dominican tourist industry.

Haiti does not have a Tropical Forestry Action Plan. For the Ministry of Environment, high priority targets for reforestation include catchment areas related to springs, riparian zones, rehabilitation of gravel quarries, town squares and other public areas, protected areas with biodiversity, and roadside tree planting in areas targeted for tourism development.

Current efforts devoted to watershed stabilization tend to be in post-disaster areas; however, there is no evidence of landscape-level shifts underway in these areas. USAID and the IDB will undertake new program interventions in six targeted watersheds in the near future. USAID has had success in promoting agroforestry and environmentally-friendly niche crops. This is also an emerging trend with other donors; however, virtually none of these efforts have focused on whole watersheds or even entire micro-catchments or slopes.

Watershed scale intervention is inherently difficult to achieve in view of the fragmentation of the agricultural landscape so characteristic of Haitian peasant farming. Despite a reverse tendency in some local areas, the longstanding trend away from perennial crops such as coffee, to erosive food crops such as corn and beans planted on slopes, is still underway.⁵⁶

In sum, the Government of Haiti has sought to identify critical watersheds, but there is no clearly defined consensus based on comparative risk assessment. Areas of high risk include densely populated urban neighborhoods in flood plains.

SUMMARY FINDINGS AND RECOMMENDATIONS

DONOR FINANCING IN RETROSPECT

Discontinuity and decline of donor financing. Donor investments increased significantly in the wake of environmental disasters and the fall of Aristide in 2004; however, historically, donor investments have been notably discontinuous and intermittent due largely to Haiti's turbulent political environment. An initial, precipitous increase in donor investments in 1994-1995 was followed by gradual decline in the years following Aristide's restoration in 1994. The overall funding pattern is one of precipitous increase and gradual decline. In short, there has been poor absorptive capacity for donor funding and only limited impact. This is due largely to the protracted institutional crisis that has prevailed since the fall of Duvalier in 1986.

A project orientation to donor financing. Another critical limiting factor in donor impact is a common institutional practice of intermittent financing defined by short term project cycles rather than a long term financial and policy commitment to fundamental change. Structural transformations and landscape level shifts require strong economic incentives and a decade or more, perhaps an entire generation, rather than two to five year project cycles.

⁵⁶ See Mats Lundahl (2004).

Micro versus macro-level impact. The project orientation of many donor programs results in scattered interventions with limited impact, e.g., an environmental fund resulting in widely dispersed micro-projects with no geographic or sector focus. A particular project may well have a genuine, sustainable micro-level impact, but this does not add up to structural change or fundamental shifts unless such micro-level changes are widely replicated, e.g., scaling up within a watershed, or behavioral changes by a critical mass of farmers, or changes in whole systems, sectors, or the apparatus of state; or intrinsic rather than artificial economic incentives to shift out of erosion-intensive production into perennial crops on slopes, or an economically broadened menu of livelihood choices that alleviate pressure on the resource base.

Lack of donor coordination. Another limiting factor in donor impact is the absence of coordination, especially for macro-level impact. Donor coordination is difficult to achieve due to diverse strategies, contrasting institutional cultures, domestic political pressures on donors, and inherent donor resistance to external restrictions on their autonomy. Nevertheless, donors clearly have a greater impact when they act as a united front. This in fact happened to a large extent with the creation of the Interim Cooperation Framework. Donor coordination has proven somewhat easier to achieve at least initially in the wake of major political crises.

Donor coordination is particularly useful to exert pressure for fundamental change in governance, e.g., decentralization, economic and sector policies, and the creation of an enabling environment for public and private investment. Furthermore, donor coordination is essential to making an impact at the level of whole sectors, geographic targeting, pursuit of complementary rather than competing strategies, and avoiding duplication of effort.

Money and other powerful levers. Fundamental change requires money, lots of money, and consistency of funding over time, perhaps a long time; however, prospects for change are not defined simply by access to donor funds. A dependent island economy is highly vulnerable to global economic forces as well as the specific trade policies and internal agriculture subsidies of its major trading partners. What defines the terms of trade for Haitian agricultural products that have an impact on the Haitian environment? In what spheres or niches can Haitian farmers truly compete on the American market or other markets? To what extent is Haiti's cheap labor market a comparative advantage in today's economic environment, including local transformation of agricultural products? What other buttons besides money could the US Congress or other external policy-makers push that would have a beneficial effect on Haitian livelihoods and the natural environment of Haiti?

Economic decline. Haiti's environmental crisis is framed by poverty. The country's natural and political disasters are intimately interconnected and are mirrored in an unrelenting decline in the GDP that has marked an entire generation of Haitians since 1981. This has had a profoundly negative impact on the environment as well as people's lives. Haitian vulnerability to the risk of natural disaster will only increase unless basic livelihood issues can be addressed. The long term solution is economic development that benefits the poor while protecting the resource base.

DONORS AND THE HAITIAN STATE

The state as a bottleneck to donor assistance. The Haitian political system is marked by chronic problems of succession to power. These problems are rooted to a large extent in acute class stratification and a deeply polarized society. According to the World Bank, the poorest 20 percent account for 1.5 percent of incomes, and the wealthiest 20 percent for 68 percent of incomes.⁵⁷ In a social context of extreme inequality, *authoritarian populism* has emerged as a political expression of this polarization, along with urbanization, the rapid growth of slum districts during the past two decades, and the downward spiral of the Haitian economy since 1981.

Secondly, the Haitian political system is rooted in an archaic apparatus of state marked by a powerful executive, weak public administration, and few public services. Power sharing, decentralization, and democratic provisions of the Constitution of 1987 have been only partially implemented, and outward appearances of power sharing such as the role of prime minister have been deceptive.⁵⁸ The only civilian post that has ever really mattered is the presidency. The Haitian apparatus of state has all the outward trappings of a modern state but functions inwardly more like a traditional monarchy. Fatton (2002) calls this “presidential monarchism.”

Thirdly, as discussed in Chapter III, with some 47,000 employees, the Haitian state is by far the country’s largest employer; however, government expenditures have only been 10 to 12 percent of GDP compared to 21 percent in other developing countries.⁵⁹ This reflects the limited public services offered by the Haitian state, the feeble development of local levels of government, and the low ratio of public employees to citizens compared with other countries in the region.

Finally, the internal administration of state agencies is fraught with opportunity for corruption and mismanagement. The World Bank (*ibid.*) notes that Haiti operated without a national budget for a five year period prior to 2002 and that 60 percent of public expenditures were disbursed through “discretionary accounts” in 2003. In recent years, Haiti has consistently ranked high in Transparency International rankings on perceived levels of corruption. There appears to be recent improvement in this area as donors including USAID, The World Bank, and the IADB and the current Government of Haiti are presently investing in improved economic governance. As a result, for example, there has been a dramatic decline in the use of discretionary accounts, and a perceptible increase in the collection of tax revenues.

The dilemma of funding the Haitian state. Since the 1990s, USAID and other donors have provided significant levels of electoral assistance to Haiti with a view to political normalization and stability. Under the appointed Interim Government and the current elected government of Préval, USAID increased financial support for other purposes including improved economic governance, technical assistance to Haitian ministries, and assistance to the newly elected parliament.

⁵⁷ The World Bank Group (2004, 11). According to the World Bank, this is three times higher than the average for the region, a region generally marked by very high levels of inequality.

⁵⁸ The Transitional Government has been an exception in that the interim prime minister exercised more power than the interim president – all under the military umbrella of MINUSTAH.

⁵⁹ World Bank (2004, 18), and ICF (2004, 19), also IDB (2006, 1).

Historically, the archaic nature of the Haitian state has tended to be a bottleneck to the flow of donor assistance based on Euro-American models of planning, management, and public administration. Since the late 1970s, bilateral donors such as USAID shifted funding away from the Haitian state. Up until recently, the USAID/Haiti Mission channeled the bulk of its assistance program through non-governmental entities including local and international NGOs, contractors, and the private sector. Some have referred to such quasi-public service roles as the “Republic of NGOs” in which USAID and other donors constitute a “shadow government” for basic public services. It is commonly argued that this policy has had the effect of weakening the Haitian state and its administrative capacity.

This poses a conundrum. Institutional strengthening of the Haitian state is essential to ensure sustainability, but such efforts run a high risk of strengthening an archaic system vulnerable to corruption and unlikely, based on historical precedent, to provide heightened levels of service beyond the life of externally funded projects. The premature demise of the Forest and Parks Protection Technical Assistance Project in 2001 is a case in point.⁶⁰ Provision of sustainable environmental services will require the political will to do so, a coherent public policy on the environment, the institutional arrangements and long term financial commitment resources required for continuity of action, and continuity of well qualified environmental personnel despite rotation of governments and the likelihood of periodic political crises. These enabling conditions require a fundamental transformation of the state that goes beyond superficial efforts at reform.

As noted in Chapter IV, the national budget of Haiti has never favored environmental protection. Annual budgets for the Ministries of Environment and Agriculture primarily cover administrative and personnel costs and cannot possibly address Haiti’s environmental crisis nor adequately protect Haiti’s parks and forest reserve from illegal logging and agricultural uses.⁶¹

Are there prospective points of entrée into the state system? Donor coordination and the conditions that accompany donor funding are essential but certainly not sufficient to bring about fundamental changes in the system. As discussed in Chapter IV, past donor efforts to strengthen central government capacity have often been counter-productive due to poorly adapted assistance strategies. Furthermore, serious efforts at reform require unwavering political will and strong domestic support for the environment in both public and private sectors, including civil society. These conditions have never previously been met, particularly the political will, although this is now a time of new beginnings with an elected government and a new parliament.

For purposes of the present study, the question might be asked, is it in the manageable interest of the USAID Mission to promote public sector reform or public environmental services in view of (a) the Mission’s longstanding orientation to the private sector, non-governmental organizations and grassroots development, and also (b) the current and emerging investments of IDB and World Bank focused on the public sector? The short

⁶⁰ The Forest and Parks Protection Technical Assistance Project was a five year project funded by the World Bank and operated by the Ministry of Environment.

⁶¹ The 2005-2006 national budget totaled some 870 million dollars, not including parastatal operations. See Décret établissant le budget général de la République, 2005-2006 (Le Moniteur, October 28, 2005).

answer is yes. The need for reform of the Haitian state cannot simply be ignored. There now appears to be a greater opening for reform in the wake of 2006 elections and the consequent heightened availability of donor financing. The question is how to promote reform in what has proved historically to be an intractable system. Another question is how long will this historically more open period remain.

Institutional strengthening of government is a traditional role of development banks; however, development banks cannot unilaterally engineer a transformation of the Haitian state. Therefore, the USAID Mission and other donors should actively support fundamental reform of the system and public policies that favor improved management of the environment, sustainable production, and reduced environmental risk.

There are certain points of *entrée* worthy of USAID consideration. First of all, local government bodies, in contrast to the central government, are a practical and flexible point of *entrée* for environmental work and readily allow opportunity for public-private partnerships. Secondly, donors should actively promote government actions that serve to create an *enabling environment* for both public and private investments. Thirdly, USAID investment in governance, including support for the newly elected parliament, should include technical assistance to parliamentary commissions dealing with the environment and disaster mitigation. Fourth, support for improved governance should prioritize decentralization as the critical element in transformation of the Haitian state and of its capacity for environmental governance. Fifth, the Mission should identify valid interlocutors and establish limited partnerships within the central state that are focused on specific, well defined issues and critical public policies.

Donor collaboration with the central government should include special efforts to share project reports, including reporting on development programs and projects not channeled through the government.⁶² This includes technical information, research findings, and lessons learned from project experience. USAID and other donors should also make a special effort to link their investments, to the extent possible, to public priorities and sector policies that have been defined by the state. Finally, USAID and other donors should actively collaborate together around well defined issues such as the environment with a view to maximizing impact and promoting fundamental reform.

LOOKING TO THE FUTURE

CURRENT DONOR TRENDS

- Recent history suggests that natural disaster more successfully leverages donor assistance than other sectors; however, it is clearly more efficient to anticipate risks and take advance measures to prevent or mitigate natural disasters.
- Donors have shown a growing interest in cross border initiatives including watershed management, but these efforts are not well coordinated.
- Watershed interventions are trendy with donors, but such interventions appear to lack focus and have not demonstrated their ability to attain a critical mass of the land and its residents and the users of any given watershed.

⁶² This point regarding the need for more open sharing of information was repeatedly mentioned in interviews with government ministers and ministry staff.

- Clearly, risk analysis and the setting of watershed priorities require further review and need to be updated, particularly in light of the heightened risk of urban disasters in Haiti.
- Donors are committed to promoting local civil protection committees and early flood warning systems; however, it is imperative to more closely link lowland and upland initiatives, including long range planning for flood plains.
- There is growing donor interest in the supply chain for agricultural commodities including cross border trade and export crops. This should be better leveraged for maximum environmental impact.
- There is a great deal of interest and investment in the restoration of irrigation works but inadequate attention to protecting these investments via ground cover or forest cover in critical areas, including both riparian and upland portions of watersheds. No one appears to be working with the numerous artisanal scale irrigation works and their related catchment areas that are unmapped and virtually unknown outside of their local areas.
- At present there appears to be only limited donor interest in Haiti's high value protected areas including Pic Macaya and La Visite Parks and the Pine Forest Reserve.

PROSPECTIVE PROGRAM AREAS

The preceding review of donors by sector and watersheds points to specific areas that are under-funded but could have a significant impact on the environment and prevention of disaster. These suggest prospective areas of program interest to the USAID Mission.

Build on Haiti's comparative advantages. The ICF (2004, 26) takes note of certain agricultural advantages that can be leveraged by donors. This includes organic practices in small-scale agriculture. In general, Haitian production has not generally been "certified" organic except for a few HAP-related producer groups producing organic mangos for export. The ICF report also notes that Haiti's ecological diversity is a production advantage. This includes small scale irrigation works, a potential that remains under exploited. Haiti's geographic proximity to North American markets is favorable to exports and to Haiti's emergent comparative advantage for niche markets.

Sustainable forest management. Other donors have not taken a strong interest in sustainable forest management, especially the Pine Forest Reserve and coastal mangroves. Both are highly vulnerable to the tragedy of commons. Both highland forests and mangroves are of special interest in view of their role in flood control. Mangroves are also a valuable source of rot-resistant poles and a critical habitat for biodiversity. The harvest values of both coastal mangroves as well as upland Occidental pine would be an incentive for their management as a renewable resource.

Urban interventions. There is no macro level urban planning presently underway despite the high risk of natural disaster in urban flood plains. In general, the degree of poverty is higher in rural areas, but the risk of large scale disaster is higher in urban areas due to the dense concentration of economically marginal people living in flood plains. This is a high priority sector for more systematic donor assistance. This would also argue for linking upland and lowland watershed and disaster prevention plans.

Renewable energy. There is little current donor investment in renewable energy such as charcoal or biodiesel production. Brazil has shown some interest in biodiesel production. Representatives of the Ministries of Agriculture and the Environment have expressed a strong interest in promotion of biofuels, especially biodiesel. This meshes well with the goal of expanding perennials on slopes; however, this merits further investigation. Is biodiesel feasible in Haiti from both a biological and technical perspective, including the technology for processing? Is there a potential domestic market for biofuels as an incentive for production by small farmers, especially on drier slopes?

Scaling up. NRM donors have not had much success at scaling up to achieve landscape-level or watershed-wide impact. This is a challenge that merits closer examination. Is it feasible to implement a watershed-wide program that diminishes the risk of natural disaster while building on the inherent economic incentives of local residents? One possible answer might be that it depends on the watershed. This would argue for selecting a watershed where such an approach is deemed feasible in order to develop a replicable model for watershed management. This might include watershed planning that targets critical sites, including lowland areas, rather than seeking to reforest whole watersheds occupied by small agriculturalists.

Commodity supply chains. There is growing donor interest in commodity supply chains, including export markets. USAID has been the leader in this area and retains this as a comparative advantage for further program assistance. Linkages with proposed IDB funding in this area should be further investigated. It would be useful to explore the wider potential for Haitian organics, organic certification, and the North American and perhaps European markets for organics. Given Haiti's comparative advantage for other niche markets, it would be useful to carry out an inventory of Haitian fruits and assess their potential for North American niche markets.

Cross-border programming. Given the return to power of Presidents Préval and Fernandez, there are renewed opportunities for cross-border collaboration and programming. Areas of environmental interest shared by both neighboring countries include watersheds and protected areas with cross-border ecological links.

Critical watersheds. There needs to be a more clearly defined and updated assessment of risk. The existing prioritization is subject to revision due to heightened awareness of risk in the wake of disastrous flooding in Gonaïves, Fonds Verettes, and Mapou. It should be a high priority for the Mission to assess and compare risk and opportunity in Haiti's watersheds, including the identification of high risk urban zones as well as uplands vulnerable to riparian disaster such as Fonds-Verettes.

Irrigation works and uplands. Targets of special interest should include upland portions of watersheds where donors are presently investing heavily in lowland irrigation works, including the Artibonite basin, Peligre Lake, and the Trois Rivières. Given the production potential and level of investment in such engineering works, these watersheds merit heightened NRM protection.

Artisanal irrigation. There appears to be little donor interest in artisanal-scale irrigation works and related microcatchments. Such targets would be a very accessible point of entrée into locally self-sustaining NRM with bright prospects for a rapid return on investment.

Table 10. Current and Planned Donor Activities in Disaster Mitigation and Other Sectors Related to the Environment

Donor	Project	Description	Funding (US\$M)	Date
IDB	Agricultural Intensification	Artibonite irrigation works, flood control (below Peligre only)	46.6	2003
	Ennery-Quinte Ag Intensification Proj	Rehabilitation of small irrigation systems; stabilize watershed.	27.4	2005 – 2010
	Support for the Competitive Haitian Coffees	Improve quality control, support market mechanisms that promote coffee quality	1.14	2005
	Flood Early Warning System	Targeting priority watersheds	5.0	2005
	National Watershed Management Program	Promote national policy; targeting watersheds of Grande Riviere du Nord & Cayes plain, Limbé Center	28.5	2008
	Environmental Management (PRIGE)	Environmental regulation & monitoring, re-structuring protected area mgmt (parks)	5.045	2005
	GEF proposal	Parks, watershed mgmt	1.0	Future
	Rural Supply Chain Development	EG: Coffee, vetiver, mangos, maize, vegetables; activate MARNDR centers & promote public/private partnerships	circa 12.0-15.0	circa 2006-2011
USAID	Tropical Storm Jeanne Rehabilitation	Gonaïves and the Trois Rivières including small scale irrigation works and civil protection	34.0	2005 - 2006
	Hillside Agriculture Program	Commercialization of perennial crops and some NRM	25.0 +	2001-2006
World Bank	Emergency Response & Mgmt of Risks/Disasters	Response to May 2004 floods, strengthen DPC, est. local protection committees	12.0	2005
	Energy	Support for EDH (electricity)		Projected
CIDA	Artibonite River Watershed Mgmt Project	Border project for poverty reduction, NRM, protection of environment, bi-nat'l dialogue	10.0	2004-2011
	Environmental Fund	Energy, sanitation, NRM, EAPs, institutional strengthening	5.0	

(Table 10 – continued)

Donor	Project	Description	Funding (US\$M)	Date
(CIDA)	Local development projects	Local agroforestry and NRM planning: Nippes, Marmelade (FAO), local gov'ts in Nord-Est	13.0	Future
IFAD	Small-Scale Irrigation	Irrigation rehabilitation project	16.74	Since 1989
	Productive Initiatives in Rural Areas		28.15	Since 2002
FAO	Various emergency response projects	Post-disaster assistance to small farmers, Nord-Ouest, Gonaïves, Rivière La Quinte	3.179	2004-2006
	Local natural resource mgmt & agriculture project	Integrated NRM/agricultural development in Marmelade, some fuelwood	1.087	2003-2006
	Local development II	Marmelade & Plaisance including NRM	3.992	2005-2010
OAS	Transboundary groundwaters of Hispaniola	Project development underway to protect border-area aquifers, Artibonite & Massacre Rivers	1.0 (est.)	Future
UNDP	Inst strengthening for environmental mgmt (PAGE)	MDE, including environmental action planning	1.0	2005 - 2008
	DPC risk mgmt	Nat'l flood early warning prog	0.5	Current
GTZ	Emergency aid	Post-disaster assistance Gonaïves		
	Artibonite River	Cross-border conservation, Artibonite Watershed upstream		
	Cross-border Disaster Prevention	Fonds-Verettes (Haiti) and Jimani (DR) disaster prevention		Future
	Disaster prevention & risk management	Sud-Est including Fonds Verettes, Thiotte, Pine Forest		Future
EU	Cross-Border Environmental Project (PET)	Planning, agricultural development, Enriquillo/Azuei Lakes.		2001-2006
	Cross-Border Environmental Project (PET)	Project renewal including prospective biological corridor, Barahona/Pine Forest		Future
	Risk management	DPC, early warning	8.0	Future
UNEP	Office National d'Observation de Bassins Versants	Institutional strengthening, MARNDR, knowledge mgmt, including cross-border issues		

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 - Le foncier, rapport préparé par Olivier Delahaye
 - Les services financiers en milieu rural rapport préparé par, Emmanuel Pic
 - Le marché de travail rural, rapport préparé par Emmanuel Pic
 - La protection sanitaire de la production agricole, rapport préparé par Alain Barbet
 - Une présentation générale du secteur agricole aujourd'hui, rapport préparé par Gilles Damais
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- Loi organique de la Régie du Tabac et des Allumettes. Règlements généraux et documents annexés (1967)
- Textes régissant l'hôtellerie et le tourisme en Haïti (Hudicourt Ewald, 1981)

ANNEX A. TREES & SMALL FARMERS IN HAITI

Glenn R. Smucker

There is a heavy press of people on the land in Haiti's upland watersheds. The following points summarize some of the lessons learned from post project review of past USAID and other donor investments in natural resource management, and field study of small farmer interactions with trees and the land.⁶³

1. The fundamental cause of environmental disaster in Haiti is acute poverty and the paucity of economic investment in both rural and urban sectors.
2. It is unrealistic to unilaterally reforest Haiti's watersheds. The primary reason is not land tenure insecurity or charcoal production, as journalists almost invariably report, but the sheer press of marginal farmers on mountainous slopes – farmers whose primary survival strategy is to plant most of their land in annual food crops that cause erosion.
3. Furthermore, these farmers work fragmented, dispersed holdings that do not encompass whole slopes or whole watersheds. This makes it very difficult to intervene programmatically to curtail let alone eliminate the erosion and downstream flooding that result from the stripping of upland groundcover.
4. Fewer farmers on slopes – or no farmers – would make all the difference in the world, but it is neither feasible nor humane to “remove” the farmers.
5. It is not far fetched to envision alternatives to erosion-intensive agriculture on Haiti's slopes, for example, significantly increasing the proportion of the landscape devoted to perennial crops rather than erosion-intensive annual food crops, or promoting heightened employment in the transformation of agricultural products, or increasing lowland employment in irrigated agriculture or other non-agricultural pursuits.
6. Whatever the modes of intervention, they must attain a critical mass of farmers and land within a watershed, and such interventions must result in landscape-level changes in land use in order to reduce vulnerability to natural disaster.
7. Myth: *Charcoal is the primary cause of natural disaster in Haiti.* Response: Charcoal contributes to deforestation but Haiti's environmental crisis cannot simply be attributed to charcoal.
8. Furthermore, the decentralized, artisanal manufacture of charcoal is based in part on the production of charcoal as a renewable resource. This practice points to charcoal as opportunity as well as liability.
9. *So what are the primary causes of deforestation in Haiti?* At present, erosion-intensive agriculture is the primary reason for the removal of trees and other ground cover from Haiti's slopes.
10. The most important macro-level causes are acute rural poverty, widespread reliance of mountain farmers on the production of annual or seasonal food crops, extensive de-capitalization of the rural sector, and the overall absence of viable livelihood alternatives.

⁶³ See Smucker *et al.* (2002, 2005), Smucker & Gaddis (1988), Smucker & Timyan (1995), Smucker (1981, 1988, 2001, 2002, 2003).

11. It can readily be demonstrated from land use data that demographic pressures in rural Haiti have far surpassed the carrying capacity of the land.
12. These features are exacerbated by a longstanding history of predatory politics and extraction with little reinvestment in the rural sector.
13. Myth: Peasant farmers do not plant trees. Response: The evidence shows unambiguously that peasants plant trees and have always done so on their own land, although traditionally in relatively small numbers.
14. Furthermore, peasants with access to “project” trees through agroforestry extension services have planted large numbers of trees with great enthusiasm. In the 1980s, newly planted trees on peasant farms were so popular that they were sometimes stolen out of the ground by other farmers.
15. Myth: Peasants must be paid to plant trees: Response: The lessons from the last 25 years of program experience are very clear on this. Peasants are willing to plant project trees without being paid to do so. They do so because of their *intrinsic vested interest in the trees or tree products as a harvestable crop*.
16. The evidence suggests that it is both unnecessary and counterproductive to pay farmers to plant and protect their own trees, particularly if those trees are
 - (a) planted by the farmers themselves,
 - (b) at their own expense,
 - (c) on land that they own or control,
 - (d) on condition that they retain harvest rights over the trees planted.
17. Myth: If the USAID Mission invested so heavily in trees in the 1980s and 1990s, why are there no project trees left? and why is Haiti such an environmental disaster?
Response:
 - There continue to be large numbers of project related trees in areas served by earlier USAID projects. Some such areas show landscape level impact.
 - The project trees that small peasant farmers planted *on land that they owned or controlled* had high survival rates.
 - Haitian farmers planted project trees in order to harvest them, and many of these trees have in fact been harvested.
 - Farmers did not plant project trees to “save the environment.” Farmers could ill afford to cover entire plots let alone whole farms or catchment basins.
 - Project trees never attained a critical mass of farmers or watersheds nor were project trees ever targeted at watersheds at the unit of program intervention.
 - The overall rate of tree harvest in Haiti has always been far higher than the number of trees planted by AID projects.
 - As noted earlier, for short term economic reasons, a far higher proportion of land on Haiti’s slopes is devoted to erosion-intensive annual crops rather than trees or other perennial crops.
13. Myth: Farmers are unwilling to purchase tree seedlings; therefore, tree planting projects are inherently unsustainable and should not be undertaken.
Response:
 - It is true that farmers are generally unwilling to purchase tree seedlings, especially forest species.
 - Small farmers, particularly those more affluent, have shown some willingness to purchase high value fruit seedlings though rarely more than a few seedlings at most.
 - If a project relied solely on the willingness of Haitian farmers to purchase seedlings, relatively few additional trees would be planted.

- From an environmental and disaster mitigation perspective, farmer willingness to purchase trees should not be the sole litmus test determining whether or not tree seedlings should be made available to farmers.
 - On the other hand, farmers have shown great enthusiasm for planting large numbers of wood trees at their own expense (land, labor, transport), if they received the tree seedlings free of charge.
 - This behavioral response points to an effective point of entrée into the system – *insofar as the purpose of tree planting is to maximize the number of trees planted and protected in actively farmed agricultural areas.*
 - To have a discernible impact on the environment, however, such trees would have to be planted on contiguous plots throughout the watershed, i.e., scaling up from individual plots.
14. Furthermore, a watershed-oriented program of this sort – in an agricultural landscape occupied by small peasant farmers – would undoubtedly require a range of tree species adapted to the agro-ecological zone including high value fruit trees or other perennials in addition to wood species, e.g., biofuel species, organics, forage crops.
15. To have an impact on the watershed, planting trees is not enough. A watershed-oriented program requires other NRM measures and such measures must be economically justified, such as ravine treatments based necessarily on *inherent, self-sustaining economic incentives*, e.g., wood and fruit harvest or increased crop production and increased revenues.

ANNEX B. STAKEHOLDERS & CONTACTS

Name	Title	Institution
Government of Haiti		
Philippe Mathieu	Cabinet Minister	Ministry of Agriculture (Interim Government)
François Séverin	Cabinet Minister	Ministry of Agriculture (Préval Government)
Jean Arsène Constant	Advisor to the Minister	Ministry of Agriculture (Interim Government)
Ogé Jean-Louis	Director	Forest Service (MARNDR)
Bernard Etheart	Director General	National Institute for Agrarian Reform
Yves-André Wainwright	Cabinet Minister	Ministry of Environment (Interim Government)
Jean Marie Claude Germain	Cabinet Minister	Ministry of Environment (Préval Government)
Ronald Toussaint	Ministry Advisor	Ministry of Environment
Dieuseul Anglade	Director General	Bureau of Mines and Energy, Ministry of Public Works (TPTC)
Wilfrid St. Jean	Executive Director	Bureau of Mines and Energy (TPTC)
Roland Pierre	Minister	Ministry of Planning (Interim Government)
Jean-Max Bellerive	Cabinet Minister	Ministry of Planning (Préval Government)
Gina Porcina	Coordinator	Remote Sensing and Geo-Spatial Unit, Ministry of Planning
Alta Jean-Baptiste	Director	Directorate of Civil Protection, Ministry of Interior
Gabriel Verret	Special Advisor	Ministry of Finance (Interim Government) & the Presidency (Préval Government)
Henriot Nader	Coordinator	Project Coordination Unit, PL 480
Non-Governmental Organizations (Haiti)		
Ute Braun	Regional Director	Agro-Action Allemande, Deutsche Welthungerhilfe, e.V.
Florence Sergile	Director	Haitian Environmental Foundation
Pierre Chauvet	President	Fédération des Amis de la Nature
Michaelle A. Gédéan	President	Haitian Red Cross
Chavannes Jn-Baptiste	Coordinator	Papaye Peasant Movement (MPP)

Name	Title	Institution
Donor Representatives in Haiti		
Joelle Dehasse	Operations Officer	World Bank/Haiti
Jean Sylvio Etienne	Economist	World Bank/Haiti
Denis Corrales	Agriculture, NRM	Inter-American Dev Bank
Marc Josué	Rural Development	Cooperation Canadienne (CIDA)
Suze Youance Lubin	Environment and Infrastructure	Cooperation Canadienne (CIDA)
Patrick Herlant	Food Security, Environment	European Union
Volny Paultre	Program Manager	FAO
Lyès Feroukhi	Resident Rep.	UNDP
Private Sector (Haiti)		
Ann Bayliss Hauge	Vice President	Agri-Supply Co., SA (essential oils)
Claude Derenoncourt	Vice-President	Société d'Exportation de Fruits et Légumes (mango exports)
Joel Ducasse	President	Permagri, SA
U.S. Government (Washington)		
Antoine Michon	Haiti Desk	State/WHA
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Tim Rieser	Legislative Aid	Office of Senator Patrick Leahy

Name	Title	Institution
Other Donors (Washington)		
Mark Lambrides	Project Manager	OAS/REIA
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Michaela Moletto	NRM Specialist	OAS
Diego Arias	NR Economist	IADB/Env & NRM Division
Nadim Khouri	NRM Specialist	World Bank/LAC
Sophie Herrman	Consultant	World Bank/LAC
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Ben Vitale	Senior Director, Ecosystem Markets	Conservation Int'l, Center for Environmental Leadership in Bus.
Mike Jenkins	President	Forest Trends
Andy White	President	Rights & Resources