The Haiti Research and Policy Program

A review of past projects makes it clear that sustainable development in Haiti must tackle a minimum core of interconnected issues simultaneously: agricultural productivity, watershed management, energy options, healthcare, education, and poverty.

The **Port-à-Piment** Watershed-- challenges

The Port-à-Piment watershed is located in the Département du Sud, more than 150 miles away from the capital city. This watershed was selected as a pilot project because of its high poverty rates, a history of extreme flooding and erosion risks, and proximity to one of the few forest spots left, yet with a strong array of local and regional institutional capacities and pre-existing community efforts to pursue transformational strategies. This map presents a summary of the main challenges affecting Port-à-Piment dwellers.

The white dots on the map represent the distribution of built structures in the watershed

Erosion is a big threat to sustainable livelihoods. Eroded land often lacks the necessary nutrients for sufficient yields. In the watershed, farmers often practice agriculture and grazing without proper soil conservation measures. Chronic deforestation also contributes to erosion.

Almost three quarters of the total energy sources come from biomass (trees and vegetation collected from the hillsides). In the upper watershed, the remaining forested land usually gets harvested for charcoal production at a young stage, when growth is not yet complete, thus eliminating the chance for sustainable replenishment.

Eroded hillsides and farming by hand are typical features of Port-à-Piment's upper watershed.

Evidence suggests that each year the Port-à-Piment riverbed is widening. Its river banks are becoming less stable for supporting houses and farmland. More than half of the watershed's population who dwell along the banks of the Port-à-Piment River are at risk.

The rural environment in Haiti is severely degraded. Low yield production and crop diversification is common in this area. Because of insufficient food production, inhabitants of Port-à-Piment are unable to meet their basic food requirements. Income poverty levels in the Département du Sud are estimated at below national levels.

Fieville
Randelle
Cavalier
Dussable
Balais
Guillaume
Graplain
The Port-à-Piment River
Phillipaux
Delior
Sèche
Potu
Grand Passe
Port-à-Piment

Map not to scale

Grand Passe is where the two main streams of the Port-à-Piment River converge to continue flowing down toward the sea. It is also the area that connects all the villages from the upper watershed with the town of Port-à-Piment. This photo was taken during the dry season of 2009 (May-July); however, when an extreme rain event takes place, the whole riverbed gets flooded.

In general, roads in Haiti are not well--planned and managed. When strong weather events occur, the roads are often affected by floods and landslides. Communications, trade, and eventually development are often hampered due to the poor conditions of roads.

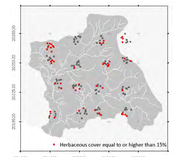
The **Watershed Development** Program

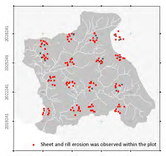
One of the main components of the Port-à-Piment watershed pilot project is the watershed development program. The first stage of this program is the launch of test plots covering different areas of the watershed. The results from these test plots will be translated into specific recommendations for a scale-up phase, engaging more communities into enhanced agricultural and soil conservation practices.

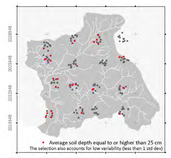
Several preliminary research outputs are being used in the selection of the test plots sites. Those are described below.

Land Degradation Surveillance Framework (LDSF)

The Land Degradation Surveillance Framework (LDSF) is a comprehensive field survey of terrain, vegetation, and soil conditions. It provides a spatially explicit layout for landscape characteristics and soil data. Observations include data on percent and type of vegetation cover, infiltration rates, and visible erosion among others. The maps describe some of the preliminary results from the LDSF soil survey on herbaceous cover, soil erosion, and depth. These and other features are being used to select the site location of plots that best represent the agro-ecological conditions of the watershed.

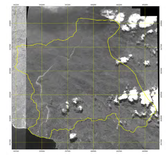


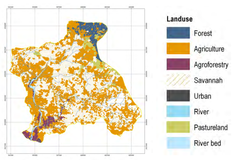




Land Use/ Land Cover

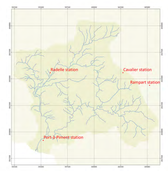
A preliminary land use map was produced using remote sensing tools. Visible objects from high resolution satellite images were extracted and arranged using Haiti's national land use classification. Field observations from the LDSF were incorporated to validate all land use classes. In addition, selected features from the LDSF were overlaid on the land use map to select plot sites that fell within agricultural and agro-forestry classes.



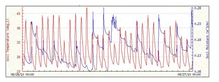


Rain Monitoring and Climate Stations

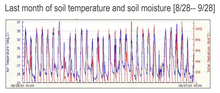
The HRI has installed four rain gauges in strategic points across the watershed, including one climate monitoring station in Port-à-Piment village. This station collects and reports hourly data on wind speed and direction, relative humidity, ground and air temperature, solar radiation, precipitation, and soil moisture. It is operated with solar panels and sends all the data via satellite to a server in real time. This and other regional data are being used for the selection of test plot sites and crop varieties, as well as program planning and management.



Location of rain monitoring and climate stations



Last month of soil temperature and soil moisture [8/28– 9/28]



Last month of air temperature and solar radiation [8/28– 9/28]

Agricultural Test Plots

The objective of the agricultural test plots is to assess best agricultural practices to significantly increase yields across the watershed. The main activities include the testing of improved seed varieties and best suitable fertilizers, according to specific soil types and conservation measures. The program will incorporate local knowledge within communities and promote crop diversification.

promote sustainable watershed and land use management

Sept 2013