



Adaptation of LEAPE in Puerto Rico



Agricultural and Biosystems Engineering Office, University of Puerto Rico, Río Piedras

Introduction

Non point sources (NPS) pollution has increased significantly in recent years causing serious environmental problems. As a result, regulatory agencies have to adopt and implement educational programs and suitable management options to reduce the impairment of surface and subsurface water bodies. The need for effective and efficient decision-making and management options has ignited the search for new technologies.

As a result of the Region 2 Water Quality Coordination Project, the Agricultural Extension Office of the University of Puerto Rico, the Puerto Rico Water Resources & Environmental Research Institute and the Puerto Rico Department of Natural and Environmental Resources (DNER), started an initiative to adapt an educational and interactive program developed in Cornell University by Deborah G. Grantham. The program titled Locally led Education an Action for Protecting the Environment (LEAPE) focus in the protection of water resources and tries to reduce the negative impact of human activities giving management alternatives. The program uses resource information technologies to convey the information to help develop suitable management options in accordance with the necessities of the community in which you wish to establish LEAPE. New technologies should be validated under local conditions prior to their implementation in order to guarantee their effectiveness. This work presents the results of the adaptation phase of LEAPE program, to the conditions of Puerto Rico.

This program focuses on water resources and issues that specific communities want to address. Basic NPS information is provided and five specific topics were chosen based on the communities' needs. These are: on-site wastewater treatment systems, stream side management, local roads management and marinas.

The adaptation phase consisted in the following steps:

I. Selection of a representative municipality in the Island. The municipality had to have a significant amount of digitalized data. The Planning Board of Puerto Rico has developed an extensive GIS database.

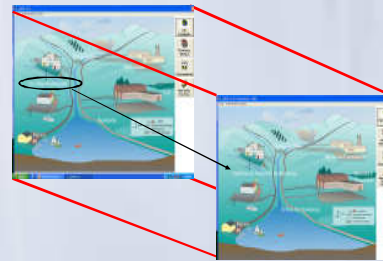
This database includes the following layers:

Municipality of Patillas	Hospitals	Solid Waste Facilities
Patillas wards	Land Authority fields	Public buildings
Watersheds	Power lines	Schools
Aquifers	Filtration plants	Gas station
Rivers	Tanks for drinking water	Main drinking water pumps
Lakes	Registered Septic Systems	Wells
Wetlands	Streets and Roads	Airports
Aqueducts	Sewer System	
Springs	Soils	



These layers facilitate the identification of environmental sensitive areas, allowing the community leaders to extrapolate the human activities with the impact that these have.

II. Translation and adaptation. The LEAPE program was translated into Spanish in addition a series of parameters had to be analyzed and adapted to Puerto Rico's laws and regulations.



III. Search for examples. Because LEAPE is an interactive educational program, all the presented examples had to be related to the community in which LEAPE is going to be presented.

IV. Workshops. LEAPE implementation is Through workshops, focused on community leaders and local government personal. These workshops are developed in a comprehensive and interactive way, allowing people to discuss the NPDS issues that affect their community, helping them to find different alternatives to handle the water pollution.

The workshops are coordinated through the county agent, which organizes the personnel that are going to implement LEAPE in the municipality. In this way, the program can be channel through key people using the available resources in an efficient and effective way.

