



## **Success Story – Animal Waste Management Training Initiative in Puerto Rico**

### **Situation**

Many farms with animals in confinement in Region 2 are small farms and do not fall under the category of Concentrated Animal Feeding Operations (CAFO's). Therefore, they are not covered by federal regulations. However, the waste from these farms has a potential detrimental effect on the quality of surface and groundwater if it is not handled properly.

Animal operations in Puerto Rico are well regulated, especially with the recently-established regulations that set specific requirements for implementing best management practices (BMPs). The regulations also require the industry to obtain certifications for the creation and proper implementation of an animal waste management plan system. Certification will be subject to administrative review both initially and on a recurring basis. Small farmers cannot afford the economic burden of implementing an adequate waste management plan. Economic incentives are limited, and the technical resources offered through the University of Puerto Rico (UPR) Agricultural Extension Service (AES) and the Natural Resources and Environmental Conservation Service are not enough to meet the demand. It is only a matter of time before New York and the Virgin Islands follow suit with similar regulations; New Jersey has recently proposed regulations for Animal Feeding Operations (AFOs). The need in Region 2 is to educate the farmers and regulators, to construct demonstration projects that follow the new regulations, and to help farmers to comply with these regulations.

### **Actions**

The UPR has been working closely with small farmers to help them implement appropriate animal waste management systems. These systems are designed to be protective of the environment, while being cost effective. Rutgers, Cornell and the University of the Virgin Islands are also participating in this effort. The following actions have been taken throughout Region 2 in response to the above concerns:

- The UPR AES has developed an animal waste management design tool (i.e., a spreadsheet model) for agricultural agents to use to design animal waste management practices. This allows all the agricultural agents to follow a standard methodology and quickly arrive at solutions for the farmer. The tool assists agricultural agents in designing BMPs based on input data about an operation and an integrated database of climatic, hydraulic and soil parameters.
- The UPR AES has developed and conducted animal waste management *train-the-trainer* sessions that focus on the new animal waste management regulations for small confined animal operations. The training sessions are conducted around the Commonwealth and are attended by county agricultural agents and regulatory agents from the environmental and

agricultural sectors. The sessions also provide training for the use of an animal waste management design tool.

- The UPR AES has provided technical assistance to the livestock industry for the development and implementation of waste management plans. The AES is focusing on working with the small farms that are underserved by the Natural Resources Conservation Service (NRCS).
- The UPR AES, along with faculty from Cornell and Rutgers, has been conducting research on anaerobic digestion to produce methane from animal waste on small farms. Cornell has had some success in this field on large farms. The AES and Rutgers are exploring if the technology can be economical at a small farm scale. Several proposals have been prepared to fund this effort. Both UPR and Rutgers have funded small projects to collect preliminary data for use in preparing larger proposals.
- Rutgers has taken the lead on creating an Environmental Management Demonstration Facility at the Equine Science Center. This project integrates research, education and extension to help the small horse farm owner address pressing environmental issues, particularly animal waste management.
- The USEPA Liaison has taken the lead on working with the Land Grant Universities and USEPA Region 2 to plan and host regional CAFO training. Efforts are currently underway to offer AFO training particularly in Puerto Rico and New Jersey where there are existing regulatory pressures.

### **Impact**

The success of the animal waste management efforts in Puerto Rico will translate to broader success throughout Region 2. The efforts in Puerto Rico will be adapted for New York, New Jersey and the Virgin Islands, allowing land grant partners to be one step ahead of imminent regulations for small animal operations like those in Puerto Rico. Puerto Rico has prepared 11 animal waste management plans for small farms and has helped design and has constructed several demonstration facilities. In New Jersey, the Regional Water Coordination Project (RWCP) has played an important role in negotiations with the New Jersey Department of Agricultural on the newly proposed AFO regulations. This helps align the RWCP to provide training to the small farmers to help them comply with new regulations.