

The Agroecology Movement in Puerto Rico

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Introduction

Puerto Rico is the smallest island of the Greater Antilles in the Caribbean and has an area of 8,795 km². Three-quarters of its topography is mountainous, and it has a sub-tropical climate with average temperatures of 22C in the winter and 28C in the summer. Annual rainfall ranges from 1900 mm in the northeastern tropical forests to 90 mm in the southwestern coastal dry areas. The population of the island is 3.4 million, one of the highest population densities in the world.

Puerto Rico was a Spanish colony from its discovery in 1493 until 1898, when it was invaded by the United States in the war against Spain. Presently it is a territorial possession of the United States, with a pseudo-autonomous status. The economy, citizenship, army, immigration and customs are U.S. controlled. Consequently, Puerto Rico has had to rely on U.S. capital to promote economic activity. However, the economic situation has become rather acute in recent years because of reduced subsidies authorized by the U.S. Congress. Thus, the need for new economic strategies is apparent.

Until the 1950's, agriculture was the most important segment of the Puerto Rican economy. At that time, industrialization began and since then agriculture's contribution to our national income and employment has steadily declined as shown in Table 1. During this time there has also been a concomitant increase in food imports (mainly from the USA) compared with the amount produced locally.

Table 1. Change in Income and Employment in Puerto Rico from Agricultural Production between 1950 and 1990, and in the Amount of Food Derived from Local Production Compared with Imports.

Category	Years (%)		
	1938	1950	1990
Total income	-	25.6	1.7
Total employment	-	36.2	3.7
Local production	65	-	15.0
Imports	35	-	85.0

Sources: N. Alvarez Febles, 1986, Estudio comparativo entre los cambios en la alimentación y las causas principales de mortalidad, Puerto Rico 1940-1980. Unpublished Thesis, Spanish Naturopathy Institute, Barcelona. Junta de Planificación de Puerto Rico. 1990. Informe económico al gobernador.

Because of the high population density and the trend toward industrialization, Puerto Rico has developed some very serious socioeconomic and environmental problems including water pollution, solid waste and hazardous waste disposal, extensive deforestation, erosion of agricultural lands (especially steeply sloping lands), loss of biodiversity, intensive use of chemical fertilizers and pesticides, and uncontrolled urban and industrial development.

Currently, the government is promoting the purchase and import of advanced agricultural technologies (chemical fertilizers, pesticides, and machinery) for the production of cash crops for export. Only recently has agriculture once again been viewed as a potentially important activity that could help to resolve the country's economic problems.

All of this means that great efforts will be needed to provide environmentally-sound, economically-viable, and locally-proven alternatives especially to small- and medium-size farmers who are reluctant to use the imported technologies, or who can't afford them.

Agroecology and the Agro-Organic Project

Background

The Agro-Organics Project in Puerto Rico began in April 1990 as a rural economic development project in an effort to rehabilitate small- and medium-size family farms into viable economic production units based on sound agroecological practices. Research and education programs on organic farming techniques and soil conservation methods were essential to restore the severely eroded, steeply sloping hillsides to an economic level of production and to develop an acceptable alternative to the costly, imported technology package promoted by the government.

During the past 50 years, self-sufficiency in food production in Puerto Rico has declined dramatically. Today, more than 85 percent of the total food consumed is imported, mainly from the USA (Table 1). Even the production of fresh fruits and vegetables for local consumption has decreased. It is also alarming that the diet of most Puerto Ricans has become progressively higher in fat and red meat, and lower in fiber and complex carbohydrates. Health authorities continually remind us that this is not a healthy diet. Thus, the Agro-Organics Project was seen as a way to increase the production and marketing of healthy and nutritious food (grown without chemical fertilizers and pesticides), to improve the local diet, and to preserve our traditional crop cultivars.

Funds to establish the Agro-Organics Project were obtained through the efforts of two non-profit organizations, i.e., (1) the Institute for Community Economic Development and Self Help, Inc. (IDECA), a non-profit corporation that has been active in Puerto Rico since 1987, and (2) Producir, Inc., a non-government community development organization that has been active in the Cubuy area with an office in Cañovanas.

Goals and Objectives

The Agro-Organics Project was founded to develop methods and techniques that would allow organic farming to become a competitive, profitable and sustainable agricultural production system. A high priority for the project is to establish a model organic farm to (a) conduct research to determine the most cost-effective, safe, efficient, and environmentally-sound methods for producing fruits and vegetables, and (b) train farmers to make a successful transition from a chemical-based, high technology agriculture to a productive and profitable organic farming system.

Another priority of the project will be to train farmers in strategies for marketing organically-grown produce, both indirectly through retailers and directly to consumers. The project will also develop and circulate educational materials to create consumer awareness of the quality and availability of organic produce. Information on the advantages of organic farming, including food safety and quality, human and animal health, environmental quality, and the long-term sustainability of Puerto Rican agriculture, will be disseminated through the mass media. The project will also help to establish quality standards for organically-grown foods and certification procedures for organic farmers. Finally, the project will provide technical, administrative, and financial services to farmers on a continuing bases.

Achievements and Progress

In only a short time, the Agro-Organics Project has established itself as an important entity in promoting alternative, sustainable, and ecologically-based agriculture. Two acres of the model organic farm have been developed to demonstrate how traditional Puerto Rican crops can be grown successfully on sloping lands using organic methods of production. Several workshops on the application of organic farming techniques for production of fruits and vegetables have been held for farmers in Cubuy and in other mountainous regions, and several more are scheduled. Dr. Roberto Sanchez, a Mexican agronomist, and one of the foremost authorities on organic farming, conducted a five-day intensive workshop for 35 participants at the Project Farm in February 1991.

The project has received wide exposure on its organic farming program through radio, television, newspapers, and talks. Project leaders were invited to participate in the first organic agriculture forum in Puerto Rico which was held on May 17, 1991 at the local experiment station of the University of Puerto Rico.

A preliminary marketing study was conducted by students of the Universidad del Sagrado Corazon,

with very encouraging results. Another group of marketing students plans to organize and conduct a public relations campaign early in 1992 on strategies for marketing organic foods. Several consumer groups have been contacted to explore direct marketing techniques. Also, a committee has been appointed to develop quality standards for organically-grown fruits and vegetables, and certification guidelines. Several farmers have already made plans to shift part of their operations to the production of organic fruits and vegetables.

The Agro-Organics Project has established cooperative relationships with a number of institutions and agencies including several Puerto Rican universities, ecological organizations, the USDA Agricultural Extension Service, the University of Puerto Rico Agricultural Experiment Station, and the Caribbean National Forest Service under the U.S. Forest Service (USDA). The project is also a member of IFOAM, VIDA SANA (Spain), APROVECHO (USA), and the Institute for Alternative Agriculture (USA). The project is active in organic farming and alternative technology networks in the region, and is a member of the IFOAM/Latin America Regional Group. Because of its geographical location, and unique socioeconomic and political situation, Puerto Rico is in an ideal position to serve as an information center on alternative agricultural technologies for the Central America/Caribbean area.

Institutional Status

In May 1991 the Agro-Organics Project was officially designated as a non-profit corporation under the laws of Puerto Rico. The project has a board of directors whose members represent a wide range of interests and experience in agroecology and socioeconomic development. Steps will soon be taken to secure a tax-exempt status under the U.S. Federal Internal Revenue Service.

Present and Future Perspectives

Today, Agro-Organics, Inc., is a reality and moving forward to accomplish its stated goals and objectives. Probably the biggest accomplishment to date is that organic farming is now recognized as a feasible, practical alternative to chemical-based, conventional agriculture. This has also been acknowledged by the official agricultural establishment.

During the next two years, our extension, training, and outreach activities will have to increase considerably if we are to maintain our goals for expanding the scope of organic farming and alternative agriculture in Puerto Rico. The areas we need to focus on are participatory research, on-farm production, and marketing strategies.

The total value of the fruits, vegetables, and farinaceous crops produced for market in 1989 was \$ 137.9 million. If organic production could gain 10 percent of that market in the next five years, it would provide a substantial return to our small- and medium-size farmers. In addition to the production of traditional Puerto Rican crops for the local market, our farmers need to consider the production of (a) tropical and sub-tropical fruits for both local and export markets, (b) organic eggs and chickens, and (c) fresh herbs and spices. Farmers should consider combining several of these enterprises to minimize risk and to maximize their operational stability.

Conclusions

The agroecology movement in Puerto Rico has gained considerable support in the last few years from all segments of our society. Some aspects of this movement including organic and sustainable food production is increasingly viewed as a viable alternative to chemical-based, conventional agriculture. More specifically it is viewed as an opportunity to (a) revitalize Puerto Rican agriculture as an important enterprise that can help to strengthen the economy, (b) promote the production of traditional crops, (c) improve the health, safety and nutrition of local people, (d) protect and restore our fragile and degraded ecosystems, (e) reduce the dependency of farmers on costly, imported technologies, including chemical fertilizers and pesticides, and (f) promote stability and sustainability in the farming community. The Agro-Organics Project is dedicated to achieving these goals for the betterment of our entire society.