People's hydroponics in Latin America

In Latin America urban farming is primarily a survival strategy for the poorest. This usually involves some form of gardening and small-scale animal keeping, but there have also been efforts to introduce hydroponics as a solution for landless people. This account of experience with People's Hydroponics comes from a longer article by Julio Prudencio Böhrt (1994), which gives an overview of urban farming in Latin America.

Julio Prudencio Böhrt

In the later 1980s and the early 1990s a project of the UNDP (United Nations Development Program) promoted People's Hydroponics (PH) in Latin American countries such as the Dominican Republic, San Salvador, Costa Rica and Colombia, mainly in the Jerusalén section of Bogotá (Zapp 1991). The initial results were promising in terms of improved nutrition and income generation (PNUD 1989).

However, interviews with the beneficiaries in mid-1994 revealed that 90% had stopped PH. Common reasons were the poor supply of nutrients and the lack of technical advice and marketing support. The impact of the project at household level was not known, as there had been no follow-up of project beneficiaries and no socioeconomic evaluation.

Cash rather than food

The principal aim of most UA projects is to supply nutritious food for poor families, but if the products can be sold, most of these go to the market and not to home consumption. This was especially the case with PH in Colombia, which produced high-quality vegetables. The producers preferred to sell rather than consume the products themselves, sacrificing family nutrition to get a better income.

The PH activities resulted in high yields and, as almost all the production was brought to market, the oversupply led to a decrease in prices. There had been no complementary marketing studies related to the promotion of PH.

Experimentation for sustainability

In many cases of promoting urban farming, a dependency is created between beneficiaries and project. In the Dominican Republic, for example, one of the reasons why PH was paralysed was the dependency on nutrients supplied by the project. When this supply stopped, PH also stopped. Only those groups continued who had experimented with other ways to make nutrient solutions, using locally-available resources.

In other cases, because of the extreme poverty where various urban farming activities were being introduced, local people's ingenuity was assimilated and the technology was adapted in keeping with their own resources. This is the case of the small family factories which now dehydrate fruit in Santiago de Chile (CET 1991). CET (Center for Education and Technology) is one of the few NGOs which has an integrated vision of development support, giving attention not only to production and training but also to marketing, research and participatory development of technology.

More work for women

Where urban farming is a survival strategy to obtain basic foods, it is implemented by the mother of the family, with only occasional help from her children. It thus increases women's tasks at home. When it becomes more commercial, such as in the case of PH, the husband and children become more involved. But women still play an important role, as they are responsible for seeking markets, transporting products, negotiating prices and quantities, etc. Thus, rather than creating new jobs, this type of urban agriculture demands even more labour from already overworked women.

Tasks ahead

FAO (Food and Agricultural Organisation of the United Nations) is now trying to promote PH in Nicaragua and especially Chile. An audiovisual course (FAO 1993) is given to children, convicts, old people, refugees and suburban dwellers. This will be successful only if the following problems are also addressed:

- the lack of supportive legislation; for example, in Bogotá there are strict municipal laws against using water for agricultural production
- the lack of non-polluted water
- the lack of follow-up extension in production and marketing
- the tendency to transfer instead promoting experimentation with the new technology
- the lack of information exchange about the diverse experiences in promoting PH, which leads to repetition of the same mistakes.

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The AVRDC Home Garden Program

The Asian Vegetable Research and Development Center (AVRDC) is one of few, if not the only, international institutions doing agronomic research on tropical homegardening. The focus of the AVRDC Program, since it started in the early 1980s, has been to develop different types of vegetable gardens with high nutritional value, that can be maintained year-round with few purchased inputs.

Experiments from 1981-1986 demonstrated that mixed vegetable gardens, just 4 x 4 m in size, can supply a family of 5 with over 100% of their vitamin A and C needs, 50% of their calcium, nearly 100% of their iron and 20% of their protein needs year-round. An 18 m² schoolgarden can supply 142 children with half a cup of fresh vegetables every day of the school year.

Since 1987 AVRDC's Garden Program has focused on improving garden design and management under different climatic conditions, and on building a database on garden crops. Research includes experimentation with intercropping, crop rotation, mulching and composting to raise yields at low cost. Results have shown that many vegetables, including amaranth, eggplant, jute, lettuce, okra, shallot, kangkong (*Ipomoea reptans*) and perilla (*Perilla frutescens*), will grow well without the use of agrochemicals. For cost, environmental and health reasons, AVRDC is always seeking nonchemical alternatives to combat pests and diseases and maintain soil fertility, especially in homegardens.

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