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Review of Home-Gardening Projects

Sara J. Schwartz
Office of Development Planning
Asia Bureau
Agency for International Development

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Executive Summary

Home-gardening has caught the attention of major international donors. They have been implementing gardening components in Latin America, Asia, and Africa over the past 20 years with mixed success. The FAO Applied Nutrition Projects introduced vegetable production into communities via school gardens with little success. The World Bank has had mixed results from its projects directed at village women in Latin America. Private voluntary organizations have been successful in implementing small-scale gardening projects which are limited in scope.

Two major obstacles to implementing gardening projects been encountered. The target population has not accepted the new food production and consumption activities in areas where vegetables are not normally consumed. Secondly, the infrastructure within many developing countries has been inadequate to support and maintain the gardens. Seed, tools, and other gardening inputs are not delivered on time and in sufficient quantities. Extension workers are either non-existent or are unable to provide enough information about gardening and nutrition. Soil, water, and climatic conditions are inadequate to support gardening activities. Due to all or some of these constraints, demonstration plots fail and people refuse to invest their time and labor into vegetable production.

There have been some successful projects. The Nigerian Applied Nutrition Project, Oxfam's Nutrition Rehabilitation Units, and the teaching activities of the Mormon Church, Peace Corps, and CARE, have been able to provide variety in the diets of the project beneficiaries. The criteria for success have been:

1. Women are already responsible for producing their families' food.
2. Local vegetables are already a part of the family diet.
3. Soil, land, weather, and water resources are sufficient to maintain gardens in areas accessible to village women.
4. Local seed production and distribution facilities are already present in the target area.
5. Extension agents, knowledgeable in both home gardening and nutrition, can communicate effectively with the rural women.
6. The community and families support the gardening project and are willing to invest time and labor required to maintain the gardens.
7. The communities and families are taught and understand the connection between vegetable consumption and nutritional status.

8. Rural credit facilities are in place to aid the women to purchase seeds and planting materials.
9. Marketing systems are developed to facilitate the sale of surplus produce.

Few of the home-gardening projects have been evaluated. Reports and conversations with donor participants reveal that implementing the projects can be extremely difficult. Not enough is known about the traditional food production and consumption habits of the target group nor the potential for changing those habits. Inadequate attention has been paid to the local infrastructure. Therefore, careful assessments of the local culture, the agricultural infrastructure, and the horticultural potential in the local community must be made before new home-gardening initiatives are designed.

Introduction

As concern for the nutritional status of the rural poor grows, more and more interest in home gardening and its potential benefits in terms of nutrition and increased income is being generated. This paper will review the projects which international donors and private voluntary organizations have attempted to implement.

There have been several successes in villages where the people were familiar with and consumed local varieties of garden vegetables. Adequate land and water supplies were provided and seed distribution and other infrastructural support, such as extension service, were already in place. Projects which introduced home gardening into areas where people neither gardened nor consumed vegetables were less than successful. Some problems encountered were the lack of interest in and incentive for gardening on the part of the instructors and villagers, the absence of infrastructural support to rural areas such as an adequate seed, tool, and information distribution system, and the inappropriate location of the gardens in plots with unsatisfactory soil and water resources.

In the next section of this paper, reports of case studies will be reviewed. Since evaluation reports from donor agencies have been difficult to retrieve, some of the people involved in the projects were contacted. The essence of conversations with these individuals will be summarized here. Home gardening projects have had mixed results in developing countries. It is important to carefully study the experiences of others before new initiatives are designed.

Case Studies Reviewed

Several donor agencies and private voluntary organizations have been involved in home-gardening projects. FAO, the World Bank, and AID have had broad programs during the last 20 years. Oxfam, the Peace Corps, the Mormon Church, and CARE, have had experiences with home-gardening on a smaller scale. The Rockefeller and Ford Foundations have recently begun to study the possibility of implementing home gardening on a small scale in developing countries.

The projects vary in scale and objectives. However, similar problems were apparent in each; and, the reasons for successful implementation resembled each other closely, despite geographical and cultural differences of the beneficiaries.

FAO Applied Nutrition Program. The Applied Nutrition Programs have usually centered around school gardens. The objective was to teach the children basic gardening techniques and to provide the children with nutrition education. It was envisioned that the students would return home, plant their own gardens, and incorporate the produce into the family diet. Home and community gardens were also encouraged in the APNs. In one program, the demonstration gardens were organized at local health clinics.

The ANPs were instituted in Africa, Asia, and Latin America. While no formal evaluations have been retrieved, project reports and personal communications with donor participants have provided information regarding the progress and impact of programs in India, Sri Lanka, Nigeria, The Sudan, and the Carribean.

India. Two reports were analyzed, the first written in 1966, the second in 1970. The project began in 1963. By 1966, 2,300 school gardens (1/4 acre), 29,000 home gardens (1/20 acre) and 1,000 community gardens (1 acre) had been planted in 10 states. Problems which were noted in 1966 were still prevalent in 1970. The school gardens were more successful than home and community gardens. However, the teachers were not adequately trained and remained uninterested, with no material incentives to teach the extra subject matter. A gardener was often hired. As a result, the children did not participate. The land and water supply was often inadequate or located too great a distance from the village. Seeds, tools and other planting requirements were not supplied in time or in great enough quantity. The community gardens were "poorly planned, poorly kept, (and) hardly used." Noone took responsibility for the gardens; no economic incentives were provided; the gardens were not integrated into other community activities; and the land and water resources were inadequate, leading to low yields and very poor demonstration plots. Nutritious vegetables were introduced into kitchen gardens, but the people stopped growing them when the free inputs were no longer available. Even the free inputs were not sufficiently distributed or utilized. The main problems identified in 1970 were the lack of motivation, initiative, and self-reliance on the part of the villagers due to the welfare distribution approach used by FAO and UNICEF.

Sri Lanka. The ANP began in 1966 in Sri Lanka and little evaluation had taken place when the 1967 report was written. However, potential problems of inadequate facilities, and lack of marketing systems to provide economic incentives were already identified.

The program was discontinued after three years due to the lack of allocation of Sri Lankan funds needed to provide the infrastructure required to distribute planting materials, and to provide extension and marketing services. 1/

Nigeria. A relatively successful ANP was instituted in Nigeria with 243 functioning kitchen gardens in eight villages. Well-known vegetables were planted which were hardy enough to withstand neglect and moisture during the rainy season and direct sun without shade during the dry season. The gardens were introduced in health and maternity clinics. Strong nutrition education programs were taught at a well-established central hospital and subsidiary clinics and dispensaries in the villages. The families with gardens consumed 60% of their normal vegetable consumption using home produce, purchasing the rest in local markets. Families without gardens bought 90% of their vegetables in the market. The Nigerian ANP was successful because it taught families how to grow the vegetables which they would normally purchase in the market.

The Sudan. The ANP projects were limited to school gardens in The Sudan. However, the same problems which occurred in India were apparent in The Sudan. Teachers were inadequately trained; actual gardening practice took place only outside of normal school hours with no incentives for the teachers or the students; land and water access was not sufficient; and proper inputs were not delivered on time or in sufficient quantities.

The Caribbean. The Caribbean ANP focused on school gardens. As in the Indian and Sudanese programs, the gardens failed due to a lack of enthusiasm on the part of the teachers and students. The gardens withered during school vacations and were vandalized during evenings when no students and teachers were present. 2/

The majority of the FAO Applied Nutrition Programs did not succeed because inadequate internal support systems existed in the countries where the projects were implemented. Even if the appropriate infrastructure and extension services had existed, new food consumption habits had to be introduced into the community. The benefits of gardening had to be clearly demonstrated to villagers before they would contribute their time and labor to the new gardening activity. When demonstration plots produced small yields or when school gardens were neglected, no change in behavior or consumption patterns could be expected. It is significant that the most successful ANP in Nigeria was simply geared to provide people with information about how to grow their own produce which they normally purchased in the markets. Other successful projects which will be discussed below had similar modest goals.

1/ Telephone conversation with Emmy Simmons, (Program and Policy Coordination AID) July 14, 1980. Simmons stated that the reason for Sri Lankan reluctance to allocate funds was that the government gave low priority to this type of nutrition projects.

2/ Telephone conversation with John Nickigny (Development Support - Nutrition, AID), July, 1980.

World Bank Projects

World Bank projects have been implemented in Brazil, Mexico, Colombia and Sri Lanka. However, no evaluations of these projects have been located, and only one woman who was involved in the Brazilian project could be contacted. Carmen Hamann of the World Bank described the Brazilian project which was designed for village women. 3/ The women grew and processed vegetables where land, water, seed and planting inputs were available. When these inputs were unavailable, inaccessible or inadequate, the project was less than successful.

AID Projects

Over the past 20 years, AID has used gardening components in a number of nutrition, agricultural, and extension projects. These projects were implemented in Laos, the Philippines, Thailand, Chile, Nicaragua, Panama, Upper Volta and Jamaica. However, the evaluations of these projects contain little or no reference to the gardening components. There is not enough data available to measure the impact of these components or even to determine whether or not the proposed gardens were planted and their produce consumed.

Elsa Chaney was able to provide information regarding the AID-WID project in Jamaica. 4/ While there has been no formal evaluation performed yet, initial reports indicate that the target women are successfully growing and consuming vegetables. The women were already producing their families' food. Soil, water and climatic conditions are "perfect" for the vegetables being grown in the gardens. The vegetables are nearly all locally produced and sold in local markets already; seed is available within the country; and, the government and local community support the project. Extension services are offered to the women, and local women are trained in gardening techniques. The combination of sufficient inputs and a strong supporting infrastructure has made this project viable. Replication in a different environment could produce substantially different results.

Private Voluntary Organizations

Oxfam. Oxfam has introduced Nutrition Rehabilitation Units into villages in Burundi, Pakistan, and South Africa. Nutrition Rehabilitation Units which involve home gardening and nutrition education were installed in clinics which treated children for malnutrition. Oxfam found that nutrition education alone was inadequate to induce mothers to begin gardening and feeding their children vegetables. When mother brought her child into an Oxfam clinic, she was asked to live-in with the child until it had recovered. She would work in the clinic garden and feed her child with the garden produce, there by learning the connection between her labor, the produce and her child's health. The mother would then return home and apply the methods of growing and processing the vegetables which she had learned in the clinic. However, the mothers did

3/ Telephone conversation with Carmen Harmann, World Bank, July, 1980.

4/ Telephone conversation with Elsa Chaney, July 11, 1980.

need loans to buy seeds, planting materials, and tools. Oxfam rejected the "free input method" used by FAO in their ANPs. The major problem associated with this project was convincing the mother to remain in the clinic with her child. Often, mothers could not neglect the needs of the rest of her family or would be too preoccupied to learn gardening techniques. Oxfam stressed the need to locate the clinic close to the mothers' homes. The gardens were most successful in areas where mothers were already producing their families' food.

Peace Corps. Peace Corps volunteers are encouraged to plant home gardens and to teach people how to grow vegetables. No evaluation of Peace Corps projects have been located but conversations with former Peace Corps volunteers revealed what they considered the "typical" experience. 5/

The Peace Corps volunteers had a garden in their own yard in the Dominican Republic. Their neighbors began gardening after seeing the successful outcome of the volunteers' work. On the other hand, a community demonstration garden in another village failed due to a lack of interest on the part of the agronomists in charge. The yield was poor and the demonstration plot convinced few villagers of the garden's viability.

Ezra Taft Bentsin Agriculture and Food Institute - Brigham Young University. This research institute works closely with Mormon volunteers in Latin America. The institute develops production techniques to maximize nutritional value of local crops on small plots. The volunteers teach these techniques to local people who in turn teach home gardening and food processing to the women in their communities. This education program has been successful in that home gardening training continues after the volunteers leave the area. Seeds and tools are locally available; villages are taught to garden only on plots with adequate soil conditions and where there is access to sufficient amounts of water. The Ezra Taft Bentsin Agriculture and Food Institute is also conducting research in Hawaii on tropical vegetables. So far, no projects have been implemented in Asia or the South Pacific because of the additional disease and pest constraints present in tropical climates. Some experimental plots are being planted in Egypt and, if successful, volunteers will begin introducing home gardening into Egyptian villages.

The training program has been successful, but no infrastructural or cultural constraints have been encountered. Access to inputs has not been a problem in Latin America and production and consumption of vegetables have been culturally accepted by the people.

CARE. CARE, like the Peace Corps, encourages staff members to incorporate gardening components into their projects. No formal evaluations have been found, but a former staff member was able to describe a successful project in Bangladesh. 6/ Villages were encouraged to substitute nutritious vegetables for less nutritious vegetables, such as radishes, in their already established home gardens. some vegetable varieties

5/ Telephone conversations with Wm. R. Garland, USDA and Gail Garland, Peace Corps, July, 1980.

6/ Conversation with Walton North, AID, July, 1980

could not withstand the climatic and soil conditions, others required too much labor. However, many vegetables did survive and were readily accepted by the people. No new techniques were taught. When CARE distributed the seeds, the people were willing to plant them and consume the produce.

Rockefeller and Ford Foundations. 7/ Both Rockefeller and Ford Foundations have begun to investigate the possibility of implementing home gardening projects in developing countries. The Ford Foundation is funding anthropological research in the Philippines and Indonesia to discover why people do not already produce vegetables in home gardens. The Rockefeller Foundation is enthusiastic about the idea of home gardening but, so far, has been unwilling to invest the money and people needed to implement a gardening project. Neither foundation had plans to initiate projects of any scale in this field.

The reasons for their reluctance to begin gardening projects are that implementation would be extremely expensive; it would require high labor intensity on the part of the donor; the supporting infrastructure is "non-existent" in most developing countries (especially in Asia); and, there is little to indicate that similar projects implemented in the past have had positive impacts on the diet and nutritional status of the participants. An appropriate methodology to introduce home gardening and vegetable consumption where it does not now exist must be developed before new projects are designed.

The Asian Vegetable Research and Development Center has also been reluctant to begin emphasizing home gardening in its research efforts. Home gardening research must center around the nutritional content of the vegetables and simple production techniques. Commercial vegetable production research focuses on balancing traditional economic and farm production costs and benefits. The differences between the scale and objectives of home gardening and commercial vegetable production are too great for the center to deal with both effectively.

Conclusions

There are severe implementation problems involved in introducing home gardening into communities where vegetable production and consumption is uncommon. However, some projects which began with limited objectives have been very successful. There are common factors in most of these projects.

1. Women are already responsible for producing their families' food.
2. Local vegetables are already a part of the family diet.
3. Soil, land, weather, and water resources are sufficient to maintain gardens in areas accessible to village women.

7/ The following is based on information given during telephone conversations with John A. Pino, Rockefeller Foundation and Lowell Hardin, Ford Foundation.

4. Seed production and distribution facilities are already present in the target area.
5. Extension agents, knowledgeable in both home gardening and nutrition, can communicate effectively with the rural women.
6. The community and families support the gardening project and are willing to invest the time and labor to maintain the gardens.
7. The communities and families are taught and understand the connection between vegetable consumption and nutritional status.
8. Rural credit facilities are in place to aid the women to purchase seeds and planting materials.
9. Marketing systems are developed to facilitate the sale of surplus produce.

The projects which were not successful, such as the FAO ANPs, often neglected one or more of these criteria. Soil and water conditions were inadequate; seed distribution was uneven or non-existent; the level of interest on the part of participants and extension workers, where present, was generally low; the local infrastructure and follow-up system were inadequate to maintain the gardening projects.

The potential impact of home gardening has been well-established. However, there is a need to concentrate on implementation strategies. If the objective of a home-gardening project is to introduce vegetable production and consumption into communities, then obtaining social science data may be more important than agronomic research. In areas where the people are already consuming vegetables, projects should be designed to teach gardening techniques and basic nutrition. In these areas, providing the families with different varieties of local vegetables and teaching the women how to process them may have a considerable impact on the families' nutritional status.

Improving seed varieties and training extension workers continues to be an important aspect of food production. However, convincing people to change their food production and consumption habits provides a greater challenge to program designers.

Bibliography

Food and Agriculture Organization. Horticulture Through School Gardens In Applied Nutrition and Agricultural Education Programs, Report to the Government of Ceylon, Rome, 1967.

. Horticulture Development in the Applied Nutrition Program. Report to the Government of India, FAO No. TA 2249, Rome, 1966.

. Horticulture in the Applied Nutrition Programme and its Relation to Horticultural Development. Report to the Government of India, FAO CEP Report No. 62, 1970.

. Home Gardens for Improved Nutrition, First Phase, Report to the Government of Nigeria, FAO No. 39, Rome, 1969.

. Home Gardens for Improved Human Nutrition 1968-1970 (Second Phase). Report to the Government of Nigeria, FAO No. 75, Rome, 1971.

. School Gardening and Nutrition Project. Report to the Government of The Sudan, FAO No. TA 2886, Rome, 1970.

Pacy, Arnold. Gardening for Better Nutrition. Oxfam Document, London: Intermediate Technology Publications Ltd., 1978.