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THE USE OF A PORTABLE VIDEO SYSTEM IN
THE SMALL-SCALE LIVESTOCK PROJECT, HONDURAS:
A WOMAN IN DEVELOPMENT REPORT

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EXECUTIVE SUMMARY

My assignment as a WID Fellow in Honduras with the OEF/AID Small Scale Livestock Project (SSLP) involved 1) introducing the concept of using a portable video system within an ongoing development project, 2) determining whether or not a portable video system, operated by one person, could be used under field conditions to make videotape programs, 3) measuring the effectiveness of such videotape programs as a training tool in teaching technical aspects of pig keeping to rural subsistence women (RSW), and 4) examining the extent to which such women could learn from such videotape programs.

The SSLP is introducing and implementing a new holistic approach to subsistence level pig production on pig farms. This project is specifically designed to help RSW organize themselves into cohesive cooperative groups and to provide them with sufficient technical and administrative support to manage successfully the production and marketing of domestic pigs.

My WID assignment was concerned with increasing the level of technical knowledge about pig keeping among the SSLP RSW through the use of locally made videotape programs, such that the women would be better able to care for their pigs. In collaboration with two local veterinarians, I used a portable video system to make a series of nine short videotape programs on various aspects of pig keeping. Although these programs are technically very simple and not of professional quality, I was able to make these videotapes under field conditions within a week.

I conducted a total of 182 verbal interviews in a two month period with all members of the SSLP groups and also with a random sample from

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among the non-project members in one of the SSLP villages. By giving the women a questionnaire on their knowledge of pig care both before and after they viewed the videotape programs, it was possible to show the immediate learning retention by the women of the technical information presented. This study shows that RSW were not only capable of learning technical information when presented to them in a simple and relevant manner but that these women also had a great desire to learn as much as they could about pig care and pig farm management, even if such information was not currently applicable to their immediate experience. The results also demonstrate that locally-made, practical videotape programs are an effective method for teaching technical aspects of pig keeping. This study suggests that further research should be done to evaluate the use of portable video systems as training tools and for other purposes in development projects.

INTRODUCTION

The purpose of my WID Fellowship was to 1) introduce the concept of using a portable video system within an ongoing development project, 2) determine whether or not a portable video system, operated by one trained person, could be used under field conditions to make videotape programs, 3) ascertain whether such videotape programs, depicting living and working conditions similar to those of the viewers would be an effective training tool in teaching technical aspects of pig keeping to rural subsistence women (RSW), and 4) measure the extent to which such women could learn from such videotape programs.

The SSLP

The ongoing OEF/AID 522-0251 Project, Small-Scale Livestock for Rural Farming Women Project (SSLP) in Honduras, Central America is introducing and implementing a new holistic approach to subsistence level pig production among four groups of rural women in four villages in the Department of Cortes. The SSLP is specifically designed to help RSW organize into cohesive groups and provide them with sufficient technical and administrative knowledge to successfully manage the production and marketing of pure bred pigs in pig farms.

According to "Economic Development of the Swine Industry in Honduras; Problems and Recommended Solutions" (AID, 1982) the swine industry in Honduras is important to the national economy for several reasons: 1) pork is a high quality protein food and the demand for pork among Honduran consumers is increasing, 2) swine production can be an important potential outlet for domestically produced grains, particularly

where the marketing of such grains is difficult, 3) export markets exist if processed pork can be produced successfully, 4) the importation of processed pork could be reduced by increasing domestic swine production, and 5) pork production and processing would provide a source for employment. This report recommended that a commercial farrowing unit and finishing units be established with technical support and training for rural farmers, it specifically referred to male rural farmers.

In the Country Development Strategy Statement (CDSS) for FY 1983, AID Mission defined the main goal in AID activities in Honduras as improving the productivity of the agricultural sector (AID, 1983). In 1974, 70 percent of the population was employed in agriculture (Morris, 1974) and rural women comprised only 6.8 percent of the economically active population in 1974 (AID, 1981). With regard to small producers, the CDSS stated that the small farmers' ability to increase productivity is dependent upon access to land, technological advice and inputs, credit, transportation, and the market. The U.S. Presidential Agricultural Task Force which visited Honduras in October 1982 stated that the problems for commercial livestock producers are primarily market constraints, including a single market outlet (the United States) and periodically depressed world prices (Wheeler et.al., 1982).

As a result of such recommendations and an analysis of the agricultural situation in Honduras, AID Mission has implemented a major livestock project, *Fondo Ganadero* and the SSLP. The latter project is complementary to and compatible with the major livestock project, but it is designed specifically for rural subsistence farm women.

The OEF SSLP does much more than pay "lip service" to women in development issues. The OEF staff, the Project Director and the majority of the SSLP staff are women and the target population are women. Thus, the

OEF SSLP is operating at two levels for women in development. At an administrative level, it is providing an opportunity for women to oversee, supervise and administer a development project. At the same time, the project is providing RSW with an opportunity to produce and market pigs as a commercial enterprise, giving them the opportunity to participate in agro-industry activities and to improve their economic situation and status. AID Mission has recognized the need to encourage women to participate in employment sectors such as agro-industry and to become integrated into such sectors and into the economic market (OEF, 1983). The SSLP is one attempt to provide a model for other similar small-scale projects. It also hopes to develop a reserve of RSW who have technical, administrative and marketing skills and are actively participating in the economic market to provide additional income and food to their families. As quoted in the Operational Grant Proposal (OEF, 1983:14), one of the recommendations that was given at the International Conference on Women and Food was, "If basic food/nutrition needs are to be met, developing nations must take into account the historic role of women in their food production and marketing systems and involve them as equal partners in the development process."

Life of the Rural Subsistence Honduran Woman

All of the women in the SSLP groups are RSW and as such are mostly excluded from participating in the processes which affect the social and economic structures in their villages. The majority of their husbands have a *milpa* (corn field) and/or a *frijolar* (bean plot) in the surrounding mountains. These people produce enough corn and beans

together with a small quantity of rice sufficient for their own subsistence. They sell any surplus to the local store where they have received credit to buy needed goods throughout the year against the sale of their corn, beans, or small cash crop, such as coffee or cacao. Occasionally cash crops such as pineapples, coffee, tomatoes, or yucca are grown and sold at the local market town. With no transport, market monopolies, and low prices received by the farmer for such cash crops, there is little incentive to grow them. Most subsistence households have fruit trees and grow a limited amount of vegetables and herbs for household consumption. Any surplus is almost always sold within the village, although a few women take the vegetables or fruit to Choloma or to San Pedro Sula to sell. Since the women lack their own transport and must carry their produce on the bus, the amount that they can sell at one time is limited.

Traditionally in Honduras, the woman has cared for the small domestic animals, including pigs. Generally RSW will keep chickens and ducks, primarily for their eggs which they eat and sell to neighbors. If the animals are plentiful they will kill them to eat. Sometimes RSW will keep pigs and fatten them to sell but rarely are these animals consumed by the household.

Traditional Pig Keeping

The traditional method for raising pigs is to have one or two pigs tethered near the house or to allow the pig to roam freely. The pig would scavenge on available household scraps or forage on roots, cut grasses or other available plants or foodstuffs. RSW do not have money to feed their pigs concentrate or other supplemental purchased feed. Due

to the lack of sufficient protein and adequate nutrition, pig production and productivity is low. The indigenous *criollo* pig has less genetic potential than European and American breeds but is capable of surviving under subsistence farm living. The *criollo* produces a small carcass with a high percentage of fat, and is slow-growing. Due to its reduced size, quality, and potential diseases, these pigs are often unacceptable to processors. The SSLP has introduced not only a new method of keeping pigs, in pig farms, but has also introduced new varieties of pure-bred pigs which were originally imported from the USA. These pigs are genetically superior, have less fat, and when fed on concentrate, weigh 220-240 lbs. in six months (\$ 1.00/lb. of carcass weight was the 1985 market price). Since the average annual income is \$54/person, the income from the sale of such pigs (\$ 110 per pig) will make a significant difference in the lives of the RSW and their families.

SLP Pig Keeping and Marketing

Another primary goal of the SSLP is to enable RSW in cooperative groups to market pure-bred pigs. Although the women are traditionally responsible for raising the pigs, it is the man who sells the pigs and gains the money from the sale. Domestic animals are generally sold when there is an economic emergency. Most subsistence families do not have any transport or access to transport. Due to this lack of transport, pigs are usually sold at much below the market price to a local middleman who then transports the pigs to market. "Lack of adequate marketing opportunities probably reduces the farmer's income from pigs by as much as 50 percent and in some cases more." (OEF, 1983:12). Unlike many development projects which undercut the traditional domains and roles of

women, the SSLP is attempting to expand the woman's domain of caring for domestic animals by involving the women in an economically viable pig farm production and marketing operation. Husbands are encouraged to participate in the project, and they have often helped with the construction of the pig farms or in growing crops which could be fed to the pigs. Nevertheless, the SSLP directs technical training and the teaching of administrative skills and marketing to its women's cooperative groups so that the women themselves can successfully operate and manage the pig farms and sell the pigs without relying on the technical expertise of others.

The method of handling and raising pure-bred pigs in pig farms is very different to the traditional method of growing pigs. The management of a pig farm requires bookkeeping and record-keeping skills which most RSW do not have. As a result, the first year of the SSLP was primarily devoted to the organization of RSW into cohesive cooperative groups which could work together successfully and efficiently, the establishment of credit for the groups, and the development of managerial and accounting skills. Less than half of the women had participated in some type of cooperative group before, but most such groups had not been able to accomplish anything before they dissolved. As Cecilia Callejas and Christina Gladwin reported in "Examination of Factors Limiting the Organization of Rural Women in Honduras" (1983) it was very difficult to establish and maintain the existence of rural women's groups in Honduras due to a variety of factors, not the least of which are conflicts within groups and a lack of government or private credit facilities for women.

The project staff had supervised the acquisition of land and water supplies for the pig farms and the construction of each pig farm and its drainage system, but the four cooperative groups had received relatively

little information regarding technical aspects of pig keeping. There were several reasons for this lack of information: 1) time and personnel constraints by the SSLP, 2) delays in the project's timetable on the part of two of the groups with their acquisition of land and water supplies, 3) difficulties in organizing and maintaining functioning cooperative groups in two of the villages, 4) a decision on the part of the SSLP administration that the RSW should not receive technical information until they could practically apply it to their situation, 5) a lack of technical expertise on the part of the project personnel (only one out of eight staff members had any experience working with pigs prior to the project, and none had any professional experience of pig husbandry, pig farm management, or pig farm design). A technical advisor, livestock expert, was hired in August 1985, one year after the start of the project. Prior to this time, the SSLP staff relied upon advice and technical assistance from the Ministry of Natural Resources, and the training in pig keeping which staff members had received from OEF. Additionally, even among commercial pig producers in Honduras, pig husbandry practices vary greatly and "standard" hygienic techniques are often not practiced. As stated in a report on the swine industry in Honduras, "Perhaps the area of greatest weakness in the Honduran swine industry is the inadequate technology available to successfully raise swine" (AID, 1982). Only two villages out of four had received technical training in pig keeping from OEF Project staff before August 1985.

WID Fellowship Study and Media Use in Development Projects

This WID Fellowship study used videotape programs locally made on a portable video system to train the four SSLP women's groups in technical

aspects of pig keeping, and measured the effectiveness of the use of such a technique.

Broadcast television and video have been used as communication tools in development programs for the last two decades. In the 1960s broadcast television systems were established as national systems in several developing countries including El Salvador (Hornik et. al., 1973), Mexico (Mayo, McAnany and Klees, 1973), Ivory Coast (Lenglet and McAnany, 1977), India (Shingi and Mody, 1976) and Niger (Egly, 1970) as part of overall development plans to extend formal education. Such mass media systems were viewed as the most cost-effective method of technological transfer and dissemination of information and change within a formal education context. Millions of dollars were spent on establishing sophisticated television systems but such systems and their programming were generally modelled after those of industrialized countries and were slow to adapt to local social and economic needs. Broadcast television was generally restricted to the confines of formal education programming and often directed towards children who had already become a part of the formal education system. Of the 87 developing countries in 1970 who had a national television service, few used broadcast television for other purposes such as to assist agricultural progress or to provide information to rural farmers and urban poor (Reeves, 1970). Such systems were, on a whole, unresponsive to the majority of people and unable to bring about effective change on a mass basis (Lenglet and McAnany, 1977; Johnson-Dean, 1980). These communication strategies had been viewed as a means unto themselves, not as an integral part of the change process. Research has shown that behavior is rarely changed by non-personal sources and that communication dialogue and exchange are essential for behavioral change (Howell, 1970; Chu and Schramm, 1979). Mass media were

incapable of affecting change because there were 1) no concomitant changes within the social, political and economic structures of the developing countries, 2) no personal communication dialogue, and 3) no successful method for integrating input and feedback from the target populations.

With the advent of low-cost, portable audio and video equipment in the 1970s, a new interest arose in the use of such technological tools in development projects, particularly the use of audio cassettes (Colle, 1977; McAnany, 1980). These systems were much less expensive and much more portable, compact, rugged, and easier to carry and operate than their predecessors. Their primary function was to transfer technological information on a small-scale basis so that feedback from the target population could affect the production process of materials. This use avoided the pitfalls of broadcast television and radio where program usage was restricted by inflexibility of timing, allocation of time, absence of quick feedback and passivity on the part of the recipient. Audio cassettes, which were much less expensive than broadcast radio or portable video systems have been used in many countries, in conjunction with development projects and other media strategy as in the Basic Village Education Project in Guatemala (Ray, 1978), as a one-way information source by missionaries in Ethiopia (Colle, 1977), and as a two-way communication method as in the Tabacunda project in Ecuador (Berrigan, 1979) and as a catalyst for community development and involvement as in the Audio Cassette Listening Forums in Tanzania (Stanley and Lundeen, 1979).

Portable video systems were also being used in the 1970s in conjunction with national development programs and extension efforts.

and as a development medium intended to activate community groups and help such groups define problems and establish a dialogue between similar groups and government officials. Although audio cassettes and portable video systems have been used for the last decade, little critical evaluation of the effectiveness of such media for such diverse purposes has been undertaken.

In the Tanzanian Year 16 Project (Berrigan, 1979) and the Audio Cassette Listening Forum, the media became a means of expression of the members of the community rather than solely a mechanism for information transfer to the target population. They were also utilized to try to establish upward vertical communication channels and horizontal communication among target populations. The use of media as community communications (where communication media are utilized to provide two-way communication) has met with variable success. The Tanzanian projects were particularly successful because they were able to involve the target population and let them define their situation and needs and determine their ability to change the situation, within a context where change was possible and encouraged by government officials.

Communication media have been used as a forum for Paulo Freire's concept of consciousness-raising and self-promotion among marginal groups (groups of people of varying numbers who do not generally participate in social, political and economic decisions). There have been occasions when radio, (Movimento de Educacao de Base, in Brazil [O'Sullivan-Ryan and Kaplun, 1981]), television (Sheda TV [Karnik, 1978]) audio cassettes (Ecuador, [Colle, 1977]) and video (Gambia [Jacobs, 1977]) have been used to stimulate consciousness-raising and politicization in communities in Third World countries. In most of these examples, media were provided for the expression of the community, not as an integral part to a

development program. This use of media has generally not been successful. The concept of community communication is in direct opposition to the policies of ruling elites who are concerned with social, economic and political stability. Consciousness-raising activities are likely to lead to frustration, civil unrest and government reprisals. As O'Sullivan-Ryan and Kaplun (1981:88) concluded in their analysis of twenty-two participatory communication projects, "sooner or later they must face the rigidities of socio-political constraints."

Studies must be made which will explore ways in which media may effectively be used in developing countries. In developing countries that are not yet prepared to accept social, political and/or economic changes, media should not be used in a direct way to foment such change. Yet, there is clearly an important need to inform and train people from marginal groups and provide an opportunity for community exchange within and among such groups.

The development of communication strategies within development projects (development communication) may provide one mechanism whereby the efforts and ideas of people from marginal groups are actively sought and meaningfully integrated into development programs (Crawford and Ward, 1974). This kind of integration is occurring in projects in many countries, including video use in 1) Indonesia (Stuart, 1980), 2) Sri Lanka to improve the government's family planning program (Berrigan, 1979), 3) Guatemala to promote soya cultivation (Berrigan, 1979), 4) the Philippines in conjunction with family planning (Berrigan, 1979), and 5) Peru where Centro de Produccion Audiovisual para la Capacitacion (CEPAC [Audiovisual Production Center]) for CENCIRA, the National Center of Training and Investigation for the Agrarian Reform System, is training

rural subsistence farmers in production technology and co-operative management (Balit, 1977, Berrigan, 1979). In these projects video or radio has been used to meet certain defined goals in conjunction with a project. Media have not been used as a stimulus directly to promote social, economic or political change, but by using the media as a training tool and a mechanism for vertical and horizontal information exchange, it is providing the groundwork for such change to occur.

Portable video systems have not been used as extensively as audio cassettes and other audio-visual materials in development projects due to their cost, sophistication, lack of trained personnel to operate and utilize the equipment and lack of imagination on the part of project administrators. Video equipment is becoming progressively less expensive, more rugged, smaller in size, and less complex to operate. It is as flexible as audio cassettes and does not suffer from the numerous disadvantages which plague broadcast television and radio. Video is able to communicate visually, aurally, authoritatively and attractively. According to Contado (1984), people retain 20 percent of what they hear, 50 percent of what they see and hear. Portable video systems have a tremendous potential for providing communication channels to, and from, and among illiterate populations.

This WID study attempted to integrate the use of a portable video system within an ongoing AID project, the Small-Scale Livestock Project. Given time and personnel constraints, it was not possible to establish the video system as a two-way communication channel. It served as a communication channel from the SSLP to the RSW and provided them with technical information. This study measures the effectiveness of its use in training rural subsistence women.

METHODOLOGY

The research for this study was undertaken over a period of four months, from July through October 1985, in four rural villages in Honduras, Central America. The first three weeks of the study were spent familiarizing myself with the Small-Scale Livestock Project (SSLP), the women in the SSLP groups, and the staff of the project. Background information was collected during this time, on the project and the four villages in which the groups were established. I also visited two pig farms which were not part of the project, in addition to all of the pig farms within the project. I discussed the proposed content of the videotape programs with project staff and veterinarians, and designed and field-tested the questionnaires.

Background Information

The Small-Scale Livestock Project Villages

The four villages which formed the basis for this study, San Jose de los Laureles (Laureles), La Nueva Jutosa (Jutosa), Los Caraos (Caraos) and Los Jardines del Norte (Jardines) were selected by the SSLP and their counterpart Honduran institution, *Horizontes de Amistad*. The villages are located in the Department of Cortes in the northwest region of Honduras about 50 kilometers from the Caribbean, close to the Puerto Cortes to San Pedro Sula highway (see Figure 1 and 2). Although the villages are only 15 kilometers from San Pedro Sula, they are considered rural areas and the population of the largest, Jutosa, does not exceed 1400 people. The other villages contain less than 500 people in each. From the study area east extends the alluvial valleys of the Chamelecon

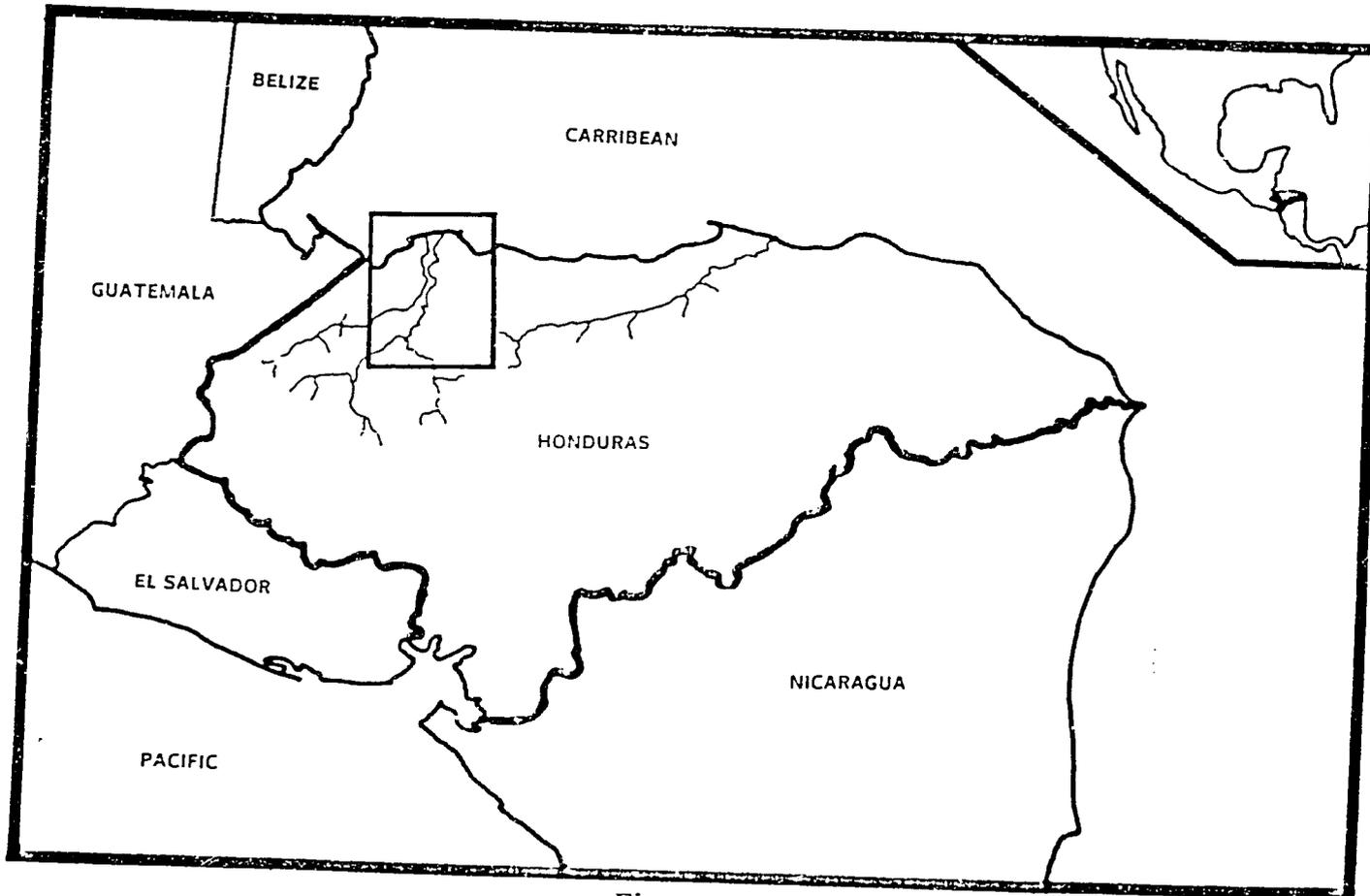


Figure 1
Map of Honduras
The box indicates the study area enlarged in Figure 2.
(From Dean, n.d.)

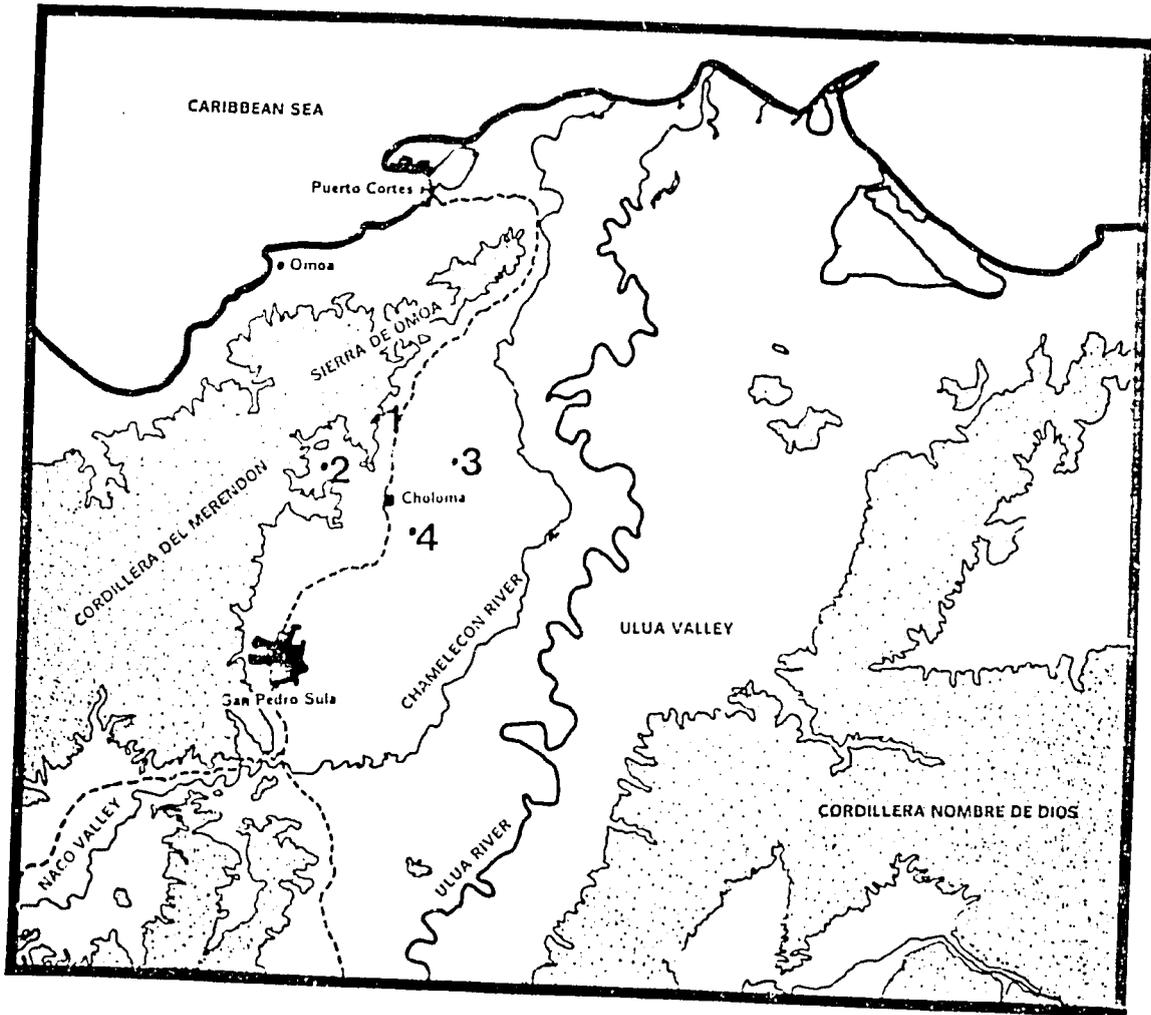


Figure 2
 Map of study area showing the locations of the study villages.
 1 = San Jose de los Laureles, 2 = La Nueva Jutosa,
 3 = Los Caraos, 4 = Los Jardines del Norte.
 ---- = Highway, — = Rivers,
 Shaded area corresponds to land over 330 meters.

and Ulua rivers which are bounded on three sides by mountains and on the fourth by the Caribbean. a large part of this low-lying plain is swampland with numerous lagoons. Caraos is located on the flat plain to the west of the River Chamelecon, Jardines is situated on rolling land just above the plain and Laureles and Jutosa are further west in the foothills of the Cordillera del Merendon.

The central market town for all four villages is Choloma which is located on the road between San Pedro Sula and Puerto Cortes. The metropolis of San Pedro Sula is the second largest, but busiest, city in Honduras and is located on the Ulua River valley 60 kilometers from the Caribbean port of Puerto Cortes. San Pedro Sula is located 15 kilometers south of Choloma and the study area.

All four villages were established and settled after Hurricane Fifi in 1974 and are comprised mostly of rural subsistence farmers. Jutosa has a Catholic church which the priest visits once a month, and an Evangelical church. None of the other villages has a church. Each village has a primary school while the *colegio* (high school) used by students from all four villages is located in Choloma. Jutosa has a health clinic attended by a nurse twice a week, who gives advice and vaccinations but who has few other medicines. Jutosa also has a representative of the national family planning organization who provides contraceptive pills and condoms at a heavily subsidized price. No medical check is required for the purchase of pills (Dean, n.d.). This service is not available in the other three villages. The nearest health clinic for the other villages is in Choloma; there are other health facilities in San Pedro Sula. The nearest telephone exchange, post office, agricultural store, bank, and hardware stores are in Choloma.

Jutosa is the only village with electricity to most of the

households and water taps in most of the yards. In all four villages, houses are usually wattle and daub with palm-frond roofs, although there are also a number of two-room cinder block houses with asbestos or tin roofs. Water in Caraos is obtained from wells or from nearby streams. In Laureles, and Jardines water is brought from streams to the houses. None of the villages has a treated water supply. There is no sanitation service or "garbage pick-up" in any village. There are no toilets in any village, but a percentage of people from each village has latrines (Dean, n.d.).

Other Development Projects

As part of background information for the study, I was concerned with the history and current state of other development projects, besides the SSLP, which existed in the four villages. I believe that previous successes or failures and other development efforts could affect the SSLP. There had been throughout the time of the study, various other cooperative women's groups in all four of the villages. These groups had been organized primarily by Government of Honduras institutions such as *Instituto Nacional Agraria* (National Agrarian Institute) the *Ministerio de Recursos Naturales* (Ministry of Natural Resources [MNR]) and CARITAS (sponsored by the Catholic church). Although such groups had imparted some human relations and group dynamics training and consciousness-raising, none of these efforts had been coordinated with each other. Funds were very limited and no real income-producing activities resulted.

In only one village had there been any attempt to help women raise pigs before. Two of the women in Jardines had participated two years ago in a Food and Agricultural Organization (FAO) Pig Project. Each woman had been given three pigs to raise in a corral next to her house; a total

of 15 pigs were given to five families. Within three months, all of the FAO pigs had died of cholera, even though the people had been told that the pigs had been vaccinated against the disease prior to their arrival.

In Caraos, Justosa and Jardines an epidemic of pig cholera had killed all pigs two years before this study. For no clearly discernible reason, Laureles did not suffer from this epidemic. Despite an intensive vaccination promotion program by MNR, pig cholera remains the most significant limiting natural factor to rural pig production in Honduras.

In Jardines, MNR sent an extension agent to organize women from Jardines into a cooperative group to produce pigs. This occurred several months after the SSLP had already organized their cooperative group. The result was a loss of membership in the SSLP group, a great division in the community, bad feeling between the MNR extension agent and SSLP staff and a delay in the SSLP timetable. Six months later the MNR women's group was told by MNR that they would not be able to get funds from MNR to raise pigs and in the absence of alternative credit sources the group decided to grow vegetables instead.

Technical Training Prior to the Use of Videotape Programs

Each of the four SSLP groups were at a different stage within the project's training schedule despite the original intent for all cooperative groups to proceed at more or less the same rate. Prior to the first week in August, when I began my study, the eight Laureles women had received numerous talks on pig keeping from the OEF Project and from an advisor from the Ministry of Natural Resources who was collaborating with the project. The SSLP *entrenadora* for this village had given three talks which dealt with breeding and the care of pregnant sows and piglets. The Laureles group had, by this time, kept pigs on their own

pig farm for four months and had already had two litters of piglets. They had approximately 20 pigs, sows and piglets at the time of the first questionnaires. Also within this group were two women who had previously been employed as workers on pig farms which are located close to their village. One woman's husband was in charge of one of these pig farms. The Laureles group was comprised of eight members.

In Jutosa, the SSLP group of 11 members had received by the beginning of August only one of the three talks on breeding, which had been given by the same OEF *entrenadora* in Laureles. They received their first pigs three months before the first questionnaires were given. Their pigs had not had any pig litters. Of their three original pigs, one had fallen when it was taken out of the truck at the pig farm and had to be destroyed, and a second had fallen and aborted. They had approximately eight pigs but no piglets by the first week in August.

In Caraos, the group of 14 members had not received any talks on breeding, the care of pregnant sows or piglets. Before they received their first pigs, approximately 18 pigs for fattening, they received only one talk on sanitation, feeding and general care of pigs. They had received their first pigs two weeks before the first questionnaires were given.

In Jardines the SSLP group of 15 members, at the beginning of the study, had not received any specific talks on pig keeping from the project. They had just started construction of the pig farm when the first questionnaire was given.

The Study

Study Population

At the time of the study the SSLP had formed groups of rural subsistence women (RSW) in Caraos, Jutosa, Jardines and Laureles. These four groups were comprised of 14, 11, 15 and 8 members, respectively, giving a total of 48 members. Due to illness and absence from the village, the population of the study at Time 1 (T1), when the questionnaire was first given, was 14 in Caraos, 9 in Jutosa, 14 in Jardines and 8 in Laureles, a total of 45.

By Time 2 (T2), when the questionnaire was given for the second time, the study population had been reduced to 40: 11 in Caraos, 8 in Jutosa, 13 in Jardines, and 8 in Laureles. Three women did not view the second series of videotape programs, although several opportunities were provided to them, and two women had been asked by their respective groups to leave the project. As a result, these five women did not take the questionnaire at T2 and are not included in any comparisons of change.

Nine women were randomly selected from Laureles and are included within the study population as a control group. Although this group was randomly selected, if the woman selected was in the SSLP group, she was excluded and another woman was randomly selected.

Within the SSLP groups, there are 2 sub-groups (Trip 1 and Trip 2) of eight members each who went to the United States of America (USA) for 12 days during the study period. The trips were financed by an Agency for International Development Peace Scholarship Program and the women visited numerous pig farms and received training in pig keeping and management while there. The two groups followed essentially the same program and received similar training, although some of the women from

Trip 2 not only saw how to care for the piglets, but were given "hands-on" training, including being permitted to cut the piglets' teeth, inject and castrate them. The lack of such participatory training was one of the criticisms made by the first group. Unfortunately, neither I nor the SSLP was aware of the prospective trip when my study was designed or initiated.

Trip 1 was comprised of two people from Jardines, two from Laureles, three from Caraos and one from Jutosa. Trip 1 went to the USA from September 8 to September 20, 1985. All of the women who went to the USA on Trip 1 or 2 were given the questionnaire at T1, the second week in August. Since Trip 1 women left for the USA before they saw the videotape programs, they have been excluded from any analysis involving change caused by the videotape programs. Their scores are, however, included in the comparisons of scores with Trip 2 women.

Trip 2 was comprised of one person from Jardines, two from Laureles, two from Caraos and three from Jutosa. Trip 2 left for the USA September 29 and returned October 11, 1985. These eight women were included in all comparisons, since they saw the videotape programs at the same time as the women who did not go on a trip and their interviews at T2 were completed before they left for the USA.

Questionnaires

Encuesta de Manejo # 1

A general questionnaire (*Encuesta de Manejo*) of 38 questions was devised in order to test the knowledge of RSW on several aspects of pig keeping. This questionnaire was essentially divided into three major subject areas: 1) aspects of pig breeding, 2) sows and the care of pregnant pigs, and 3) the care of piglets. The questions on aspects of

breeding were used as a control to measure the questionnaire testing procedure at T1 and at T2. To the best of my knowledge, no information on aspects of breeding was given to or received by the women between T1 and T2; no information on breeding was included in the videotape programs.

After giving this questionnaire to SSLP women in one village, one question was deleted because no one had understood it. For subsequent analysis of the study results, five additional questions were excluded either because they were repetitive or because they did not fit in well with the above categories. A total of 32 questions (9 on breeding, 11 on sows and 12 on piglets) were thus used for analysis. When the initial knowledge questionnaire was given at T1, additional questions were also asked of the women regarding their present or previous involvement in cooperative groups, and whether or not they kept pigs elsewhere, if so what types, and for how long they had kept them (see Appendix A1 for a copy of the questionnaire).

Encuesta de Manejo # 4

The same 37 questions were asked of the control group, the random sample of women from Laureles, with additional questions relating to whether or not they kept pigs, their involvement in women's cooperative groups and demographic questions (see Appendix A2).

Encuesta de Manejo # 2

The questionnaire, comprised of the same 37 questions, was asked again at Time 2 (T2) after the women had seen the videotape programs. Additional questions were also asked at this time about the SSLP, other information on pig keeping which the women might have received since T1, and information on the pig practices which the women used with their

criollo (native) pigs (see Appendix A3).

Encuesta de Manejo # 3

The questionnaire, together with the additional questions given to the other women at T2, was given a third time (T3) to each of the two groups of eight women who went to the USA, after they returned (see A4).

Demographic Data

As background information, demographic data were also collected on each woman in the study population using a separate questionnaire (see Appendix C). Combining the three knowledge and the demographic questionnaires, a total of 164 verbal questionnaires, of approximately 50 questions each, were conducted over a three-month period of time beginning in the first week of August, 1985.

Administering the Questionnaire at T1

A little more than half of the SSLP women could read although only 21 percent have above a first-grade education. Since the functional illiteracy rate was so high, I gave the questionnaires to the women verbally each time and wrote down their answer, as well as any other comments they may have made. I personally conducted each interview, often accompanied by my infant son and/or my four year-old-daughter. I believe that having my children with me helped me to gain the trust and confidence of the SSLP women. These women could more readily identify with a mother and her children than with just a "foreign interviewer". I explained that I was working in collaboration with the SSLP but that I was not one of their staff. I also explained that the intent of the questions was to determine what the women did not know about pig keeping so that the SSLP could improve its technical training program and help

the women further on those aspects. The majority of the SSLP women had never been formally interviewed before.

Individuals in the SSLP groups in the four villages, including Trip 1 and 2 women, were given their first questionnaire (*Encuesta de Manejo #1*) to determine their base level of knowledge on pig care and management.

Control Group

After this first questionnaire was given, it was noted that the women in Laureles had a very high basic knowledge relating to pigs and pig keeping. This, in part, was to be expected since the group in Laureles had received the most information on pig care from the SSLP staff and *entrenadora* and also had the most experience in raising pure bred pigs in the SSLP pig farm. Since there were four pig farms, besides the SSLP's pig farm, in and around Laureles, I felt that there may have been other factors which could have increased the women's general pig knowledge. To determine whether or not this was the situation, I included a control group in the study population. These nine women, who were not associated with the SSLP, were each given the *Encuesta de Manejo #1* and the Demography *Encuesta* questionnaires. It was not possible to include these women in the rest of the study due to their disinterest. Although the control group was not a true control in that they only answered the questionnaire at T1 and did not view the videotape programs nor answer the questionnaire at T2, their answers at T1 proved that the SSLP women in Laureles had not gained their knowledge of how to keep pure bred pigs by living in that particular village.

Videotape Programs

After completing *Encuesta #1*, I visited two local pig farms and

discussed with the owners, and with the veterinarian employed by one of them, what they considered to be the most important aspects of pig keeping. After several visits to these farms and after discussions with the staff of the SSLP, I videotaped these people as "actors" demonstrating several aspects of pig keeping. The videotape was then rough-edited and these segments assembled together to make a series of videotape programs on pig keeping.

The videotape programs were made in Honduras on pig farms similar to the ones which exist in the SSLP villages. The content of the videotapes was based on brochures produced by the OEF SSLP, which covered various aspects of pig keeping and management and on discussions with two veterinarians. The videotape programs were narrated by these veterinarians, one of whom owns and manages his own pig farm (100-200 pigs) and also acts as a consultant to the OEF Project.

These programs were viewed first by the two veterinarians and owners of the pig farms and then by the SSLP staff. Two series of programs were approved by the Project Director for use in the field with the SSLP groups. The first series was comprised of two programs (approximately seven minutes each) on care of pregnant pigs and care of piglets immediately after birth. The second series was divided into three parts (approximately six minutes each) on feeding and fattening young pigs, sanitation in the pig farm, and castrating piglets.

Portable Video System

The videotape programs were made using a JVC Video Home System HR2200U videorecorder and a Hitachi GP5AU camera. It took me two days to videotape. I also used a Slik tripod, Bogon monopod, a Calrad 10-4

lavalier microphone, and a MURA WMS-49-T wireless microphone for recording. Since this equipment is lightweight and portable, it can easily be transported by one or two persons and operated by one.

The programs were assemble-edited with a tabletop VHS videorecorder and the portable videorecorder in one afternoon. The videotape programs were played back in the field on either a 10" Panasonic CT-110M color video monitor or a 5" color JVC CX-610US monitor/receiver with the portable, battery-operated videorecorder. When the 10" monitor was used, it was necessary to use a portable generator. The 5" monitor operated from its own battery pack but could only be used with small groups. Although the technical quality of the videotape programs was not professional, it did not seem to distract the viewer from the content of the programs.

One of the aims of this study was to demonstrate that relevant and effective videotape training programs could be made in the field by one person with a minimum investment in time, energy and money. The portable video system used, including all accessories and two monitors, cost approximately \$4500 (basic camera, videorecorder and one monitor - \$2500, 1985 retail prices).

Presentation of the Videotape Programs

The videotape programs were shown in all four villages; one series of programs on one day and the second series on a subsequent day. Prior to showing each series, I gave a brief introduction to the videotape programs and asked that if anyone had any questions, that they address such questions to the OEF project staff. During the playback of the first series, I paused the videotape eight times (at logical stopping points) and repeated the most salient points which had just been

covered. In the second series, I paused the videotape six times, again to repeat the most important points. There was also a short five-minute pause in the middle of each series to drink Coke, eat cookies and relax. This was done so that the women would not become bored with the videotape programs, and that their learning retention would be increased.

Each series was shown on a separate day under approximately the same conditions. The videotape programs were viewed on a 10" monitor, which was powered by a portable generator in three villages where there was no electricity. In Caraos the videotape programs were shown at the pig farm and on the second day, in the school building (the school was closer to town). In Laureles and Jardines the members watched the programs on porches outside the houses of SSLP members. In Jutosa, the videotape programs were viewed inside my house. Jutosa was the only village that had electricity. All women in the study population viewed the videotapes together, except for the Trip 1 women who had left for the USA.

Since not all of the women in Jutosa could attend the two presentations of the videotape program, I showed the programs two additional times using the 5" battery-operated monitor. Since only two people were watching at one time, it was felt that the use of a smaller monitor would not significantly change the presentation.

Administering the Questionnaire at T2

Within two weeks after the women had viewed the videotape programs, before the women in Trip 1 returned, all of the women were given *Encuesta de Manejo # 2* and the Demographic Questionnaire. Again, I personally interviewed all of the women individually in their own houses, with verbal questionnaires and wrote down their answers.

Trip 1 Women

When the Trip 1 women returned from the USA, they were individually given Encuesta de Manejo # 3 to ascertain the knowledge which they had acquired on their trip on three aspects of pig keeping: breeding, care of sows, and piglets. When these were completed, the women were shown the videotape programs under similar conditions to those used for presentation to the majority of the SSLP women. The only difference was that these women viewed the videotape programs on the 5" monitor in smaller groups (maximum of five). They were then given the questionnaire again (*Encuesta de Manejo #2* at T3) and the Demographic Questionnaire.

Trip 2 Women

When Trip 2 women, who had already seen the videotape programs before the trip, returned from the USA, each member was given *Encuesta de Manejo #3* at T3.

These two groups of eight women each of which travelled to the USA (Trip 1 and Trip 2) are considered separately for some of the analyses of the results of this study.

Seminar

At the conclusion of my field research, I conducted a seminar in Spanish for the SSLP staff. In this way, I was able to provide some immediate feedback from the women in the SSLP groups to the project staff regarding their perceived needs in technical training on pig care. In this seminar, I discussed the level of knowledge of the women in different areas of pig keeping as demonstrated by the preliminary results of the questionnaires. Some of the comments which had been made to me by the women during the course of my study were also discussed. As a result

of this study I made the following recommendations to the SSLP: 1) the videotape programs should be combined with the SSLP staff's technical talks and reshowed to the SSLP groups and repeated at regular intervals; 2) technical information should be solicited for the SSLP staff on all aspects of pig keeping, pig farm design and farm management and this information should be transferred to the RSW of the SSLP groups and repeated at intervals to facilitate learning; 3) members of the SSLP groups should be given questions on a regular basis covering the technical information that they are being taught and that the answers to such questions should be used as a guide in planning and revising the training schedule; and 4) that the SSLP accept an invitation from a local veterinarian who had invited RSW from the SSLP to come to his pig farm and stay for a week in order to learn more about pig husbandry and to practice working with pigs under his supervision. These recommendations were acknowledged and I was told that they would be given serious consideration.

FINDINGS

Results of the Study

The results of this study strongly suggest that videotape programs, which are made in the field under conditions similar to those encountered by the viewer, and which present technical points in a clear and simple manner, are very effective in teaching certain practical, technical aspects of pig husbandry to rural subsistence people. The results of the study indicate the following: 1) a significant increase in the change in the total scores by part and total, although the breeding scores were somewhat less significant than the other parts; 2) a significant increase in the change in scores for sows and piglets in Jardines, Jutosa and Caraos, and a significant increase in the change in breeding scores for Caraos; 3) a significant increase in the change in total score for Laureles, but not consistently for other parts; 4) no significant difference in the amount learned among the women from Caraos, Jutosa and Jardines; 5) a significant difference, substantially more, in the amount learned by women from Caraos, Jutosa and Jardines over women from Laureles; 6) women from the Laureles SSLP group knew significantly more at T1 than the women from the other villages, and the control group; 7) all of the SSLP women knew significantly more at T1 than did the women in the control group; 8) the order of viewing the videotape programs did not significantly affect the amount learned on the trip to the USA; 9) the Trip 2 women scored significantly higher on the breeding, sows and total scores, but not on piglet scores; 10) the trip women had the highest mean scores on all parts and total; 11) women who keep, or have kept, domestic pigs did not have significantly higher scores at T1; 12) literacy or amount of education seemed to have no significant effect on the scores at

T2, on the ability of women to learn technical aspects; 13) pure bred pig practices are accepted by the RSW for their domestic pigs, but the women are limited by their economic resources; and 14) SSLP women learned not just the facts of how to care for pigs, but also demonstrated an understanding of the concepts underlying the questions on pig care (Johnson-Dean, 1986).

Knowledge of Pig Keeping

All statistical analyses were made on SAS version 0.5, using a two-way analysis of variance, *t*-tests and paired *t*-tests. For original data and analyses see Johnson-Dean, 1986. The questionnaire was given to the SSLP women in all four villages twice: Time 1 (T1), at the beginning of the study as a measure of their initial knowledge; and at Time 2 (T2), after viewing the videotape programs. The control women were given the questionnaire only at T1. The 16 SSLP women who went to the USA were given the questionnaire at a third time (T3) after the trip. The questionnaire had a total of 32 knowledge questions which were analyzed (ATCT at T1 and BTOT at T2). The questionnaire was divided into three sections: "breeding" (ATB at T1 and BTB at T2) with nine questions, "sows" (ATS at T1 and BTS at T2) with 11 questions, and "piglets" (ATP at T1 and BTP at T2) with 12 questions.

Learned Knowledge

With respect to individuals, one person had a lower score (31-29) at T2 after seeing the videotape programs, one person had the same score (13-13), and 38 women had a higher score after seeing the videotape programs.

The mean score for the total questionnaire is 15.91 at T1, and 23.66 at T2

out of a total score of 32 for the study population minus the women who went on the first trip to the USA (Trip 1) and the control group. The total mean scores for each of the three sections of the questionnaire at T1 and T2, respectively, are "breeding" = 4.91 and 6.13, "sows" = 5.25 and 8.28, and "piglets" = 5.75 and 9.25. The *t*-tests were used to evaluate the scores at T1 and T2 by part and total and this showed that the increase in scores for sows (DTS), piglets (DTP) and total (DTOT) are significant ($p < 0.0001$, and that the change in breeding scores (DTB) are also significant (0.0004).

Learned Knowledge by Village

In order to determine the amount of knowledge learned by the women in the SSLP groups, a one-sample paired *t*-test was used to evaluate the difference in total score (B-A=D) and difference by part by village (see Table 1). The women who went on Trip 1 were excluded since they went to the USA before they saw the videotape programs. The women who went on Trip 2 were included since they saw the videotape programs before they went to the USA and at the same time as the women who did not go on any trip. In addition, since the control group did not see the videotape programs, they were also excluded.

There was a significant difference in the change in the total scores (scores at T2 - scores at T1) on the questionnaire between T1 and T2 ($p < 0.001$) for all four villages (see Table 1). All four villages learned significantly from watching the videotape programs (see Figure 3). There was no significant increase ($p > 0.05$) in "breeding" scores for the Laureles or Jardines groups. There was a significant increase ($p < 0.05$) in the Jutosa group scores and in the scores from Caraos ($p < 0.01$ [see Table 1 and Figure 4]). The strength of the relationship is not as strong on the "breeding" scores, as it is for the other sections.

Table 1

The Probability Values of the Differences in Scores (Time 2 - Time 1)
When One is Correct

Laureles

Difference in Scores	Probability
Breeding	1.0000
Sows	0.0250 *
Piglets	0.1438
Total	0.0001 ****

Jutosa

Difference in Scores	Probability
Breeding	0.0454 *
Sows	0.0003 ***
Piglets	0.0003 ***
Total	0.0001 ****

Caraos

Difference in Scores	Probability
Breeding	0.0142 **
Sows	0.0003 ***
Piglets	0.0007 ***
Total	0.0001 ****

Jardines

Difference in Scores	Probability
Breeding	0.0669
Sows	0.0173 **
Piglets	0.0004 ***
Total	0.0004 ***

a. The level of probability is indicated by * when $p < 0.05$,
** when $p < 0.02$, *** when $p < 0.001$, and **** when $p < 0.0001$

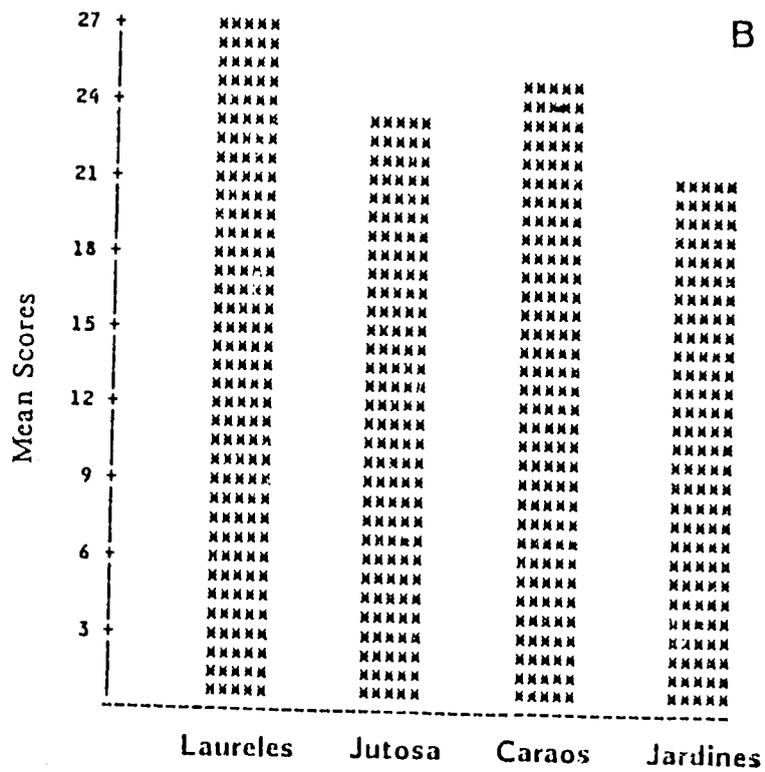
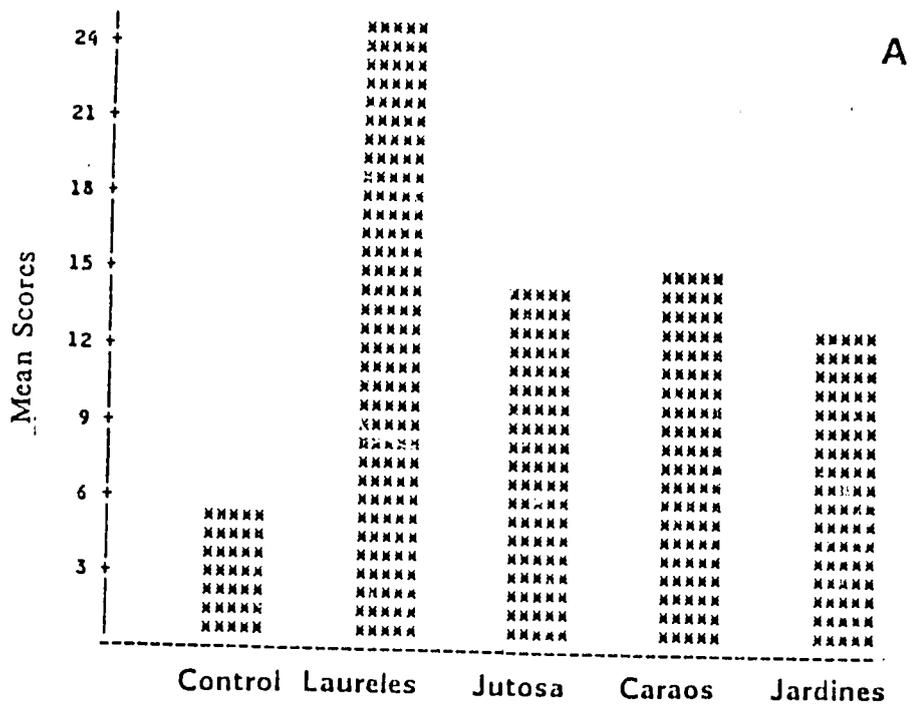


Figure 3
 Mean scores from the total questionnaire
 A at Time 1 and B at Time 2, by village.

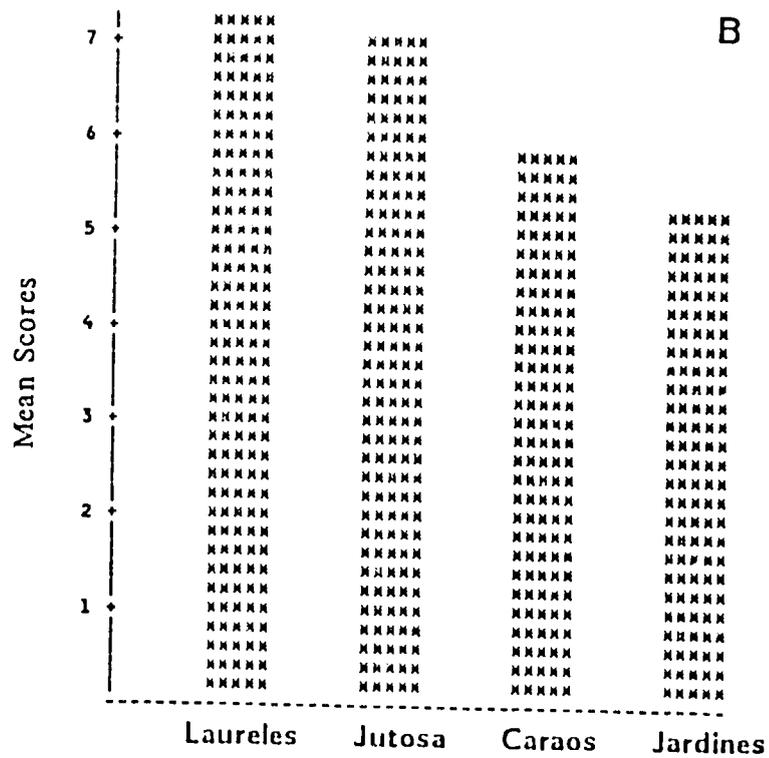
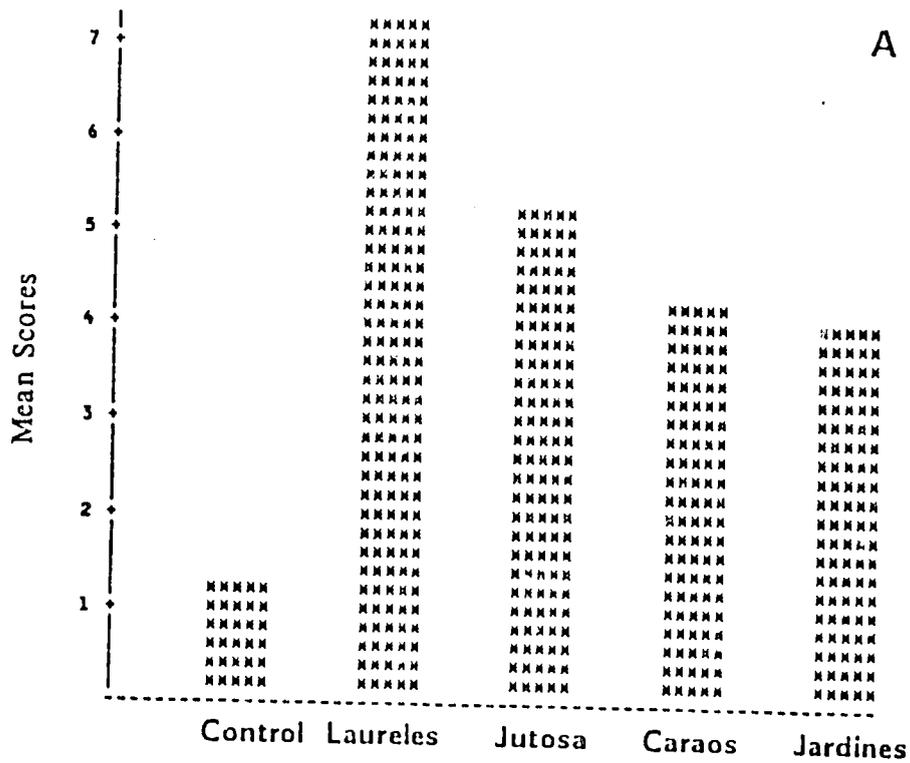


Figure 4
 Mean scores from the breeding section of the questionnaire
 A at Time 1 and B at Time 2, by village.

On the "sow" part of the questionnaire there was a significant upward change ($p < .0003$) in the scores from the Jutosa and Caraos groups. There was also a significant ($p < 0.05$) change in the scores in the Laureles and Jardines groups, albeit not as much increase (see Table 1 and Figure 5). With regard to change in scores on the "piglet" part of the questionnaire there was a significant increase ($p < 0.0007$) in scores in all groups except Laureles (see Table 1 and Figure 6).

An analysis of variance of the difference in scores ($B-A=D$) between T1 and T2 was made, to determine if there was a significant difference in the change in scores, by questionnaire part and total, among the villages. The results were as follows: 1) there was no significant difference in the amount of change (or the amount learned) among the SSLP villages with respect to the "breeding" questions ($F = 1.40$, $df = 3$, $p < 0.2643$); 2) there was no significant difference on "sows" ($F = 1.85$, $df = 3$, $p < 0.1613$); 3) there was a significant difference on piglet care ($F = 4.44$, $df = 3$, $p = 0.0113$); and 4) there was a significant difference on the total score ($F = 6.53$, $df = 3$, $p < 0.0017$ [see Table 2]).

When *t*-tests were made on the mean difference between the scores, by part and total and by group, the change in the groups' score when compared to each other showed that the mean score of the Caraos women changed the most on piglet questions and total means, but the change was about the same as for the groups in Jutosa and Jardines. The three groups' scores changed significantly more than the Laureles women (see Table 2).

Initial Knowledge

An analysis of variance of the scores on the questionnaire at T1 was made to determine if there were significant differences among the

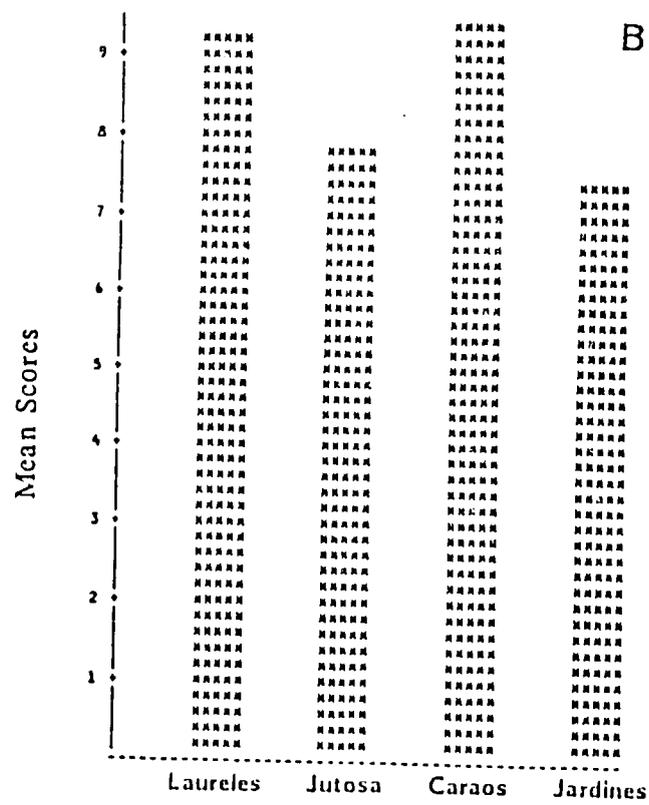
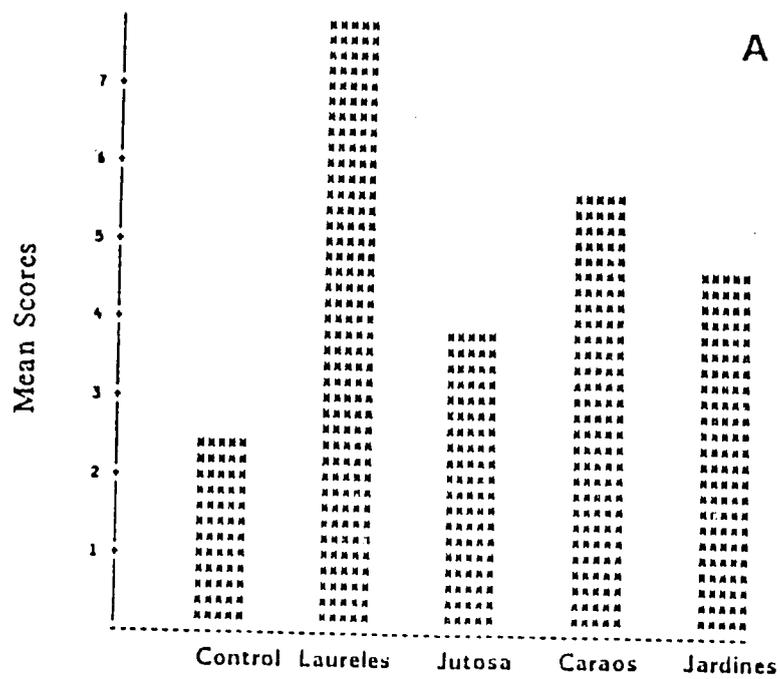


Figure 5
 Mean scores from the sows section of the questionnaire,
 A at Time 1 and B at Time 2, by village.

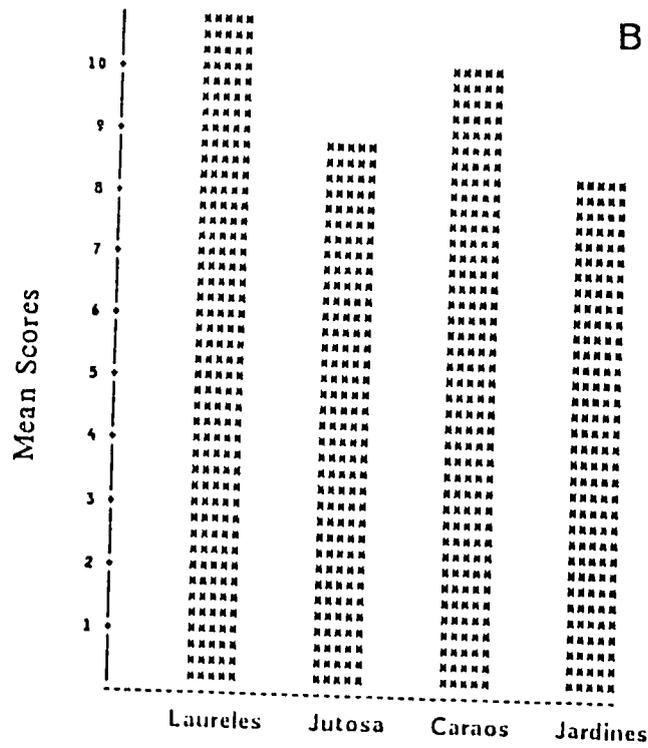
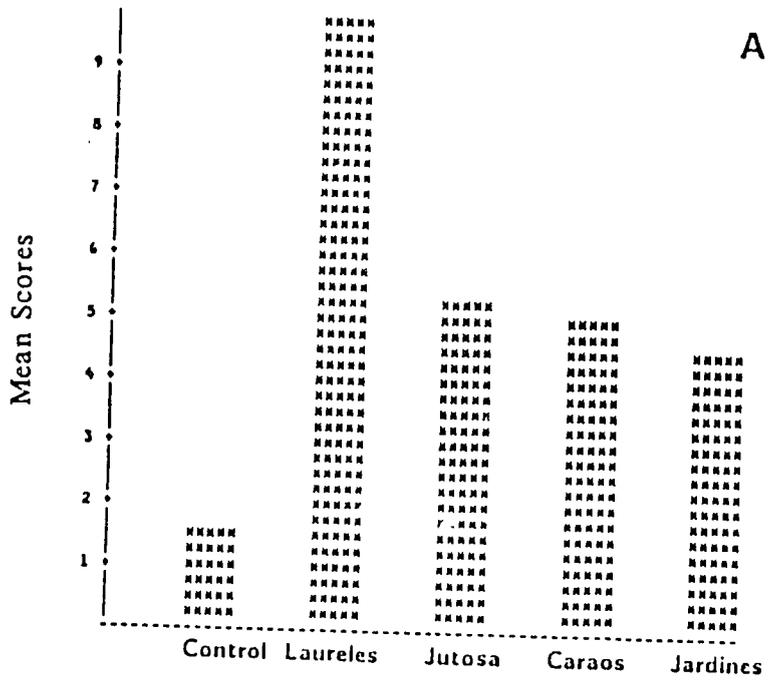


Figure 6
 Mean scores from the piglets section of the questionnaire, A at Time 1 and B at Time 2, by village.

Table 2

Difference in Mean Scores between Time 1 and Time 2 by SSLP Group

<u>Village</u>	N	Breeding	Sows	Piglets	Total
Laureles	6	0.000 A	1.333 A	1.000 A	2.333 A
Jutosa	7	1.857 A	3.857 AB	3.571 B	9.286 B
Caraos	8	1.500 A	3.875 B	5.000 B	10.375 B
Jardines	11	1.273 A	2.818 AB	3.727 B	7.818 B
MSE		2.966	5.096	4.211	12.653

- a. Means indicated by the same letter are not significantly different at the 0.05 probability level.
- b. MSE = mean square error.

SSLP women, by village, in their scores on the initial knowledge questionnaire, by part and total. The difference was significant on all parts: "breeding" ($F = 3.50, df = 3, p < 0.0252$), "sows" ($F = 8.92, df = 3, p < 0.0001$), "piglets" ($F = 13.75, df = 3, p < 0.0001$), and total ($F = 14.07, df = 3, p < 0.0001$). Paired t -tests on the scores showed that there was a significant difference on the T1 scores ($p < 0.05$) between the mean scores of the women from Laureles and those from Jardines, Jutosa and Caraos (see Table 3).

Another analysis of variance of the difference of the scores, on the questionnaire by part and total, at T1 was made to determine if there were significant differences in knowledge, as indicated by the scores, between the SSLP women, by village, and the control women. On "breeding" ($F = 9.30, df = 4, p < 0.0001$), "sows", ($F = 8.50, df = 4, p < 0.0001$), care of "piglets" ($F = 14.89, df = 4, p < 0.0001$), and total ($F = 18.83, df = 4, p < 0.0001$), there was a significant difference in initial knowledge among all the women, SSLP groups and control group (see Table 3).

Paired t -tests were made on the initial knowledge scores, by part and total, by village. All four SSLP groups scored significantly higher ($p < 0.05$) than the control group on "breeding" and "piglets" questions and total scores (see Table 3). On "sows", the control did not significantly differ from Jutosa women ($p < 0.05$), but did significantly differ ($p < 0.05$) from the other three (see Table 3).

Laureles women scored significantly higher ($p < 0.05$) than the control group by part and total score (see Table 3). Laureles women had a mean total score of 25.00 out of 32 on the questionnaire given at T1 as compared to the control's mean total score of 4.9.

Table 3
Mean Scores on Questionnaire at Time 1, By Village

<u>Village</u>	N	Breeding	Sows	Piglets	Total
Control	9	1.111 A	2.333 A	1.444 A	4.889 A
Laureles	8	7.000 C	8.125 C	9.875 C	25.000 C
Jutosa	8	4.875 B	3.875 AB	5.250 B	14.000 B
Caraos	11	4.000 B	5.182 B	4.909 B	14.091 B
Jardines	13	4.462 B	4.385 B	4.385 B	13.231 B
MSE		4.114	3.192	3.705	18.093

- a. Means indicated by the same letter are not significantly different at the 0.05 probability level.
b. MSE = mean square error.

Caraos and Jardines women when compared to the control women (when 1 is correct) had significantly higher mean scores on "breeding" ($F = 8.49$, $df = 2$, $p < 0.0012$), "sows" ($F = 5.59$, $df = 2$, $p < 0.0086$), "piglets" ($F = 8.61$, $df = 2$, $p < 0.0011$), and total ($F = 12.77$, $df = 2$, $p < 0.0001$).

No Significant Difference in Scores at T3 for Trip Women

To determine if the order in which the trip women saw the videotape programs had an effect on the total amount learned (scores at T3), by part and total, an analysis of variance was conducted on the scores of the Trip women at T3. There was no significant difference except on the mean scores on the "sows" ($F = 4.95$, $df = 1$, $p < 0.0430$) (see Table 4).

Final Mean Scores Trip 2 Women to No Trip Women

An analysis of variance was made to examine differences between the final scores of the Trip 2 women (who went on the trip to the USA after they saw the videotape programs) against the women who did not go on any trip to the USA. There were significant differences ($p < 0.05$) between the scores on "breeding", "sows", and the total (see Table 5).

Women Who Have or Had Pigs Compared to Women Who Have Not Had Pigs

There was no significant difference ($p < 0.05$) between the initial knowledge scores of women who kept pigs against those who did not keep pigs. Neither was there any significant difference ($p < 0.05$) between women who had kept pigs against those who previously did not keep pigs, nor between women who had kept pigs at some time against women who have never kept pigs (see Table 6). An analysis of variance was made on the scores with the control group women included and excluded and the results were the same (see Table 6).

Table 4

Significance Levels on Comparison of Mean Scores on Questionnaire
at Time 3, for Trip 1 and 2

<u>Trip</u>	N	Breeding	Sows	Piglets	Total
Trip 1	8	6.875 A	8.000 A	10.625 A	25.500 A
Trip 2	8	7.250 A	9.625 A	10.375 A	27.250 A
MSE		0.884	2.134	1.125	7.534

Table 5

Significance Levels on Comparison of Mean Scores on Questionnaire
at Time 3, for Trip 2 Women and No Trip Women

<u>Trip</u>	N	Breeding	Sows	Piglets	Total
Trip 0	24	6.000 A	7.875 A	9.083 A	22.958 A
Trip 2	8	7.250 B	9.625 B	10.375 A	27.250 B
MSE		1.717	3.617	4.457	17.015

Table 6

A Comparison of Scores on Questionnaire at Time 1 by
Whether or Not Pigs are Kept
Control Group Included

<u>Have</u>	N	Breeding	Sows	Piglets	Total
No	34	4.088 A	4.382 A	4.971 A	13.441 A
Yes	15	4.533 A	5.467 A	5.067 A	15.067 A
<u>Had</u>					
No	11	3.545 A	4.000 A	3.545 A	11.091 A
Yes	38	4.421 A	4.921 A	5.421 A	14.763 A
<u>Have Had</u>					
No No	7	3.571 A	3.571 A	3.857 A	11.000 A
No Yes	27	4.222 A	4.593 A	5.259 A	14.074 A
Yes No	4	3.500 A	4.750 A	3.000 A	11.250 A
Yes Yes	11	4.909 A	5.727 A	5.818 A	16.454 A
MSE		7.206	6.070	9.771	52.430

- a. Means indicated by the same letter are not significantly different at the 0.05 probability level.
b. MSE = mean square error.

The initial scores (at T1) of the control group women who had kept pigs at any time were significantly lower ($p < 0.05$) on all parts and total from the SSLP women, whether or not the SSLP women had ever kept pigs, except for the "sows" part of the questionnaire. SSLP women who had never kept pigs did not have significantly different ($p < 0.05$) initial scores on "sows" from the control group women who did keep pigs (see Table 7).

Literacy

An analysis of variance on total scores by literacy was made. There was no significant difference ($p < 0.05$) in the final score by all the SSLP women with respect to literacy level. There were 19 illiterate women out of 40, equal to 47.5 percent illiteracy. The two women who were attending *colegio* (high school) had the lowest total mean score in each part of the questionnaire. There were no significant differences ($p < 0.05$) in the literacy levels by villages.

Demographic Information

The largest age brackets, (29.26 percent) were for SSLP women between 31-35 years of age and at ages 26-30 years 14.6 percent. The overall age range was from 16-60 years. At T2, 75.61 percent of the women were living in a permanent relationship with a man, (married or accompanied), 19.51 percent of the women were heads of households (no man who was economically responsible for the household was present). Of 41 women, 26.8 percent had children under the age of two which they were breast feeding, an additional 7.3 percent were taking care of children

Table 7

A Comparison of Scores on Questionnaire at Time 1 by
Whether or Not Pigs are Kept

<u>Pig</u>	N	Breeding	Sows	Piglets	Total
Control	9	1.111 A	2.333 A	1.444 A	4.889 A
Never	5	4.800 B	4.600 AB	5.400 B	14.800 B
Some	35	4.943 B	5.343 B	5.857 B	16.142 B
MSE		4.947	4.980	7.255	34.956

- a. Means indicated by the same letter are not significantly different at the 0.05 probability level.
- b. MSE = mean square error.
- c. Control = control group members who have kept pigs at some time
 Never = SSLP members who have never kept pigs
 Some = SSLP members who have kept pigs at some time

under the age of two, which were not theirs. From the total population of SSLP groups, 56.1 percent had at least one child between the ages of three and five, and in 55 percent of the households there was at least one other female over the age of 10 living in the house, who could help with the domestic work.

Other Activities

Of 44 women, 77.3 percent were not currently members of any other group in their community, 43.2 percent had never belonged to any group. Of the SSLP women, however, 58.97 percent participated in activities in addition to the work required by the SSLP. Of this percentage, two women (5.1 percent) attended *colegio* (high school), 46.15 percent were engaged in some sort of work to earn money, and 17.95 percent were engaged in more than one economic activity.

Disease

At T1, 97.8 percent of the women answered that pigs should be deparasitized, 38.9 percent said when to deparasitize the pigs and 82.1 percent told why they should be deparasitized. At T2, 100.0 percent of the women answered that pigs should be deparasitized, 47.59 percent answered correctly as to when to deparasitize the pigs and 97.5 percent told why they should be deparasitized.

When asked if they should deparasitize their pigs which are kept at home, 37 women responded positively, and none negatively. Seven women out of 12 routinely deparasitize their own pigs at home (see Table 8).

At T1, 97.7 percent of the women said that pigs should be vaccinated, 73.2 percent answered that pigs could be vaccinated against cholera, 11.1 percent listed diseases that can not be vaccinated against,

Table 8

Pure Bred Practices with *Criollo* Pigs

	Keep In Corral	Deparasitize	Cut Teeth	Vaccinate
ANSWER				
NO	2	0	11	1
YES	38	37	27	36
DON'T KNOW	0	3	2	3
YES & DO	6	8	4	7

a. Twelve women kept pigs when yes & do question was asked.

24.4 percent answered correctly when to vaccinate the pigs, 20.0 percent knew that pigs should be vaccinated but did not know when to vaccinate, 13.3 percent responded with one correct time but did not say that the pigs must be vaccinated more than once, and 42.1 percent answered incorrectly or did not know. At T2, 100 percent of the women answered that pigs should be vaccinated, 95.0 percent answered that pigs could be vaccinated against cholera, 5.0 percent listed diseases that can not be vaccinated against, 25.0 percent answered correctly when to vaccinate the pigs, 37.5 percent knew that pigs should be vaccinated but did not know when to vaccinate, 12.5 percent responded with one correct time but did not say that the pigs must be vaccinated more than once, and 25.0 percent answered incorrectly or did not know.

When asked if they should vaccinate their pigs which are kept at home, 36 women answered yes. Only 7 women out of 12 who keep pigs, however, have actually vaccinated their pigs (see Table 8).

SSLP women (29.6 percent) had experience with pig cholera, and 68.9 percent were aware of pig cholera by name.

Practices with Pure Bred Pigs

The women in Laureles and Jutosa were told (before T1) that they should not let a pregnant sow wander around outside of the corral because the sow might be hurt. At T1, 55.5 percent of the women said that a pregnant sow should not leave the corral, 31.07 percent said it could leave the corral if she were watched and 13.3 percent said it did not need to be watched. At T2, 65.0 percent said that a pregnant sow should not leave the corral, and 32.5 percent said it could leave the corral if she was watched. No one said the sow could leave a corral without being

watched. About two months after the questionnaire at T2 was given, a pregnant sow which was due to deliver in six weeks was let out of its corral. It fell into the open biodigester settling tank and drowned.

The SSLP *entrenadora* told the women in Laureles, before T1, that they should cut the eye teeth of piglets, so that the piglets would not bite each other or the sow when nursing. At T1, 53.3 percent of the women said that the eye teeth of baby pigs should be cut, 62.2 percent answered correctly as to when it should be done, and 66.7 percent responded correctly as to why it should be done. At T2, 97.5 percent of the women said that the eye teeth of baby pigs should be cut, 97.5 percent answered correctly as to when it should be done, 2.5 percent knew that the eye teeth should be cut but they were not sure when it should be done, and 100 percent responded correctly as to why it should be done.

When asked if the eye teeth of pigs kept at home should be cut, 27 of the women responded "yes" and 11 "no". Only 4 out of 12 women that keep pigs at home, do cut the eye teeth (see Table 7).

Piglets should be castrated from three days to two weeks of age so that they will fatten more quickly and not suffer from hemorrhage. At T1, 20.0 percent of the women answered correctly as to when to castrate a pig, 28.9 percent knew to castrate a pig but did not know when to castrate it, and 75.6 percent answered correctly as to why pigs should be castrated. At T2, 70.0 percent of the women answered correctly as to when to castrate a pig, 7.5 percent knew to castrate a pig but did not know when to castrate it, 22.5 percent answered incorrectly or did not know when to castrate a pig, and 92.5 percent answered correctly as to why pigs should be castrated.

Of the 32 SSLP women who did not presently keep pigs at home, 43.2 percent said they did not have enough money to keep pigs, 18.2 percent

said they did not have enough money to feed a pig.

At T1, 13 women kept pigs (7 for fattening), and 32 women had no pigs. Thirty-seven women used to keep pigs (17 for fattening). Eight women out of 45 have never kept pigs.

ANALYSIS OF DATA

Learned Knowledge

The results of this study demonstrate that the SSLP women did learn a range of technical points on the care of sows and piglets by watching the videotape programs. There was a significant increase in the change in scores on aspects of breeding, sows and piglets and total scores between T1 and T2, although the change in breeding scores was less significant than the change in sows and piglet scores. As a result of the videotape programs, the women in Caraos, Jutosa and Jardines significantly increased their knowledge on technical aspects of pig keeping relating to sow and piglet care. The groups from these three villages did not differ significantly, between groups, in the amount of knowledge that they acquired. The women from these three villages, Caraos, Jutosa and Jardines, learned significantly more from the videotape programs than the women in Laureles.

The Laureles women learned significantly more about sows from the videotape programs than they had previously known but their initial knowledge about pigs, in all areas, was much higher than the women in other SSLP groups. Since members of the Laureles group scored very high on the initial questionnaire, the change between T1 and T2 was not generally significant, particularly if the answer was scored correct if the women understood the concept of the question (mean total score at T1 where 1 and 2 were correct = 28.0 out of 32, mean total score at T2 = 28.0 out of 32).

The individual questionnaire scores demonstrate that all but two out of the 40 SSLP women scored higher on the questionnaire at T2 than at T1.

Of the two non-learner women, one had a very high score on the initial questionnaire which did not significantly change at the second time, and the other woman is sixteen-years-old, in school and the daughter of one of the SSLP women. Her sister, also in the same SSLP group, did not participate in the study because she was never available.

Research Bias

As with any field research, there were several threats to the internal validity of the study population. Always, there exists interviewer bias but this was hopefully kept to a minimum in that the questions were asked in the same manner by the same person, over the same period of time. With a pre-test, post-test questionnaire, the women may have felt more at ease during the second interview and thus answered more questions correctly, or they may have become sensitized to the questions and sought to obtain the answers in the interim time period.

The videotape programs provided information on the care of sows and piglets but did not include any information on aspects of breeding pigs. There was a significant increase in the total mean of scores at T2 over T1 on questions relating to the knowledge on the care of sows and piglets. There was also an increase in the change in total scores on breeding at T2 but the relationship was much less. When this change in breeding scores was examined by village, Caraos was the only village which showed a significant increase in the breeding scores, although the relationship was not as strong as for the other parts. This would seem to suggest that for Laureles, Jardines and Jutosa there were no significant external factors to the study which were affecting the results of the questionnaire on the basis of outside acquired knowledge. It also suggests, however, that the women from Caraos did acquire

information about pig keeping from sources other than the videotape programs during the study. Between T1 and T2, the women could have talked among themselves about the questionnaire and the answers to the questionnaire, and they could also have asked other people for information about pig keeping. These actions could have affected their scores at T2. As a result, the amount of increase in learning which is due to the videotape programs is suspect, but not the fact that the women in Caraos did learn from the programs.

Initial Knowledge

The women in Laureles initially knew significantly more about all aspects of pig keeping than the women in the three other villages. This higher level of knowledge was probably accounted for by several factors. The Laureles women had received more technical training from the SSLP staff than any other village and had the most experience with handling project pigs, sows, and piglets. Two of the women had extensive experience handling pigs in commercially owned pig farms before they joined the SSLP and the husband of one of these women was the manager of a commercially owned pig farm in the same community at the time of this study. He would often help the women and advise them on problems. There are four commercially owned pig farms in the Laureles community. There are no commercial pig farms in any of the other communities.

The results indicate that there was no significant difference among the initial scores of the women from Caraos, Jutosa and Jardines. Women from Jardines at T1, did not know anything more about keeping pigs than women in Caraos or Jutosa, despite the previous presence of the FAO SSLP. This may be a result of the two projects using different methods in

handling the pigs, although FAO had also used imported pure bred pigs. It seems more likely that because the FAO project had been so unsuccessful and so short, the women learned little from the project regarding the care of pigs.

In order to determine if there were additional factors in Laureles that might affect the level of pig knowledge in the community, a control group was randomly selected from Laureles and given the same knowledge questionnaire at T1. The scores, by part and total, are significantly lower for the control group compared to the women in the Laureles SSLP group. Women in Laureles did not therefore learn about pig keeping just from living in the village.

All of the SSLP groups knew significantly more about keeping pure bred pigs than the control group. The women from Laureles scored significantly higher on the questionnaire at T1 than the other SSLP groups and they scored significantly higher than the control group at T1 on every part and the total score. Although the women in Caraos and Jardines had received no specific information regarding technical aspects of pig keeping from the SSLP, they still knew more than the control group. The difference in their initial knowledge to that of the control group's knowledge must be due, at least in part, to the fact that they had gained some knowledge of pure bred pigs as a result of being members of the OEF Pig Project.

Combination Effect of Videotape Programs with Trip to USA

There was no significant difference in the final scores on the questionnaire, by part and total, between the women who saw the videotape programs and then went to the USA (Trip 2 women) and the women who went

to the USA and then saw the videotape programs (Trip 1 women). Although the difference in final scores was not significantly different, the group which saw the videotape programs before the trip scored a higher mean score, by all parts and total, on the questionnaire. This difference may indicate that the videotape programs were a stimulus for learning. The Trip 2 group, however, may have learned more because they received some "hands on" experience in working with piglets, and some of the recommendations that had been made at the end of the first trip were heeded during the second trip.

Knowledge Gained on Trip

The results show that the women who went to the USA after watching the videotape programs (Trip 2) learned significantly more about breeding pigs and the care of sows than the women who did not go. There is, however, no significant difference between the two groups with regard to their knowledge about piglets. The women who watched the videotape programs and did not go to the USA learned as much about piglets by watching the videotape programs as the women who watched the programs and then went on the trip. If the purpose of the trip was to provide technical training to the RSW, as the women were told, it did not increase the knowledge of the Trip women on care of piglets.

To Have or Not to Have Pigs

The initial knowledge level among women in SSLP groups does not differ significantly according to whether or not a woman keeps or has previously kept pigs. Perhaps this is true because the methods involved in keeping pure bred pigs in pig farms are substantially different from

the traditional way of keeping pigs.

The SSLP women who had never kept pigs of their own scored significantly higher on the initial knowledge questionnaire on breeding and piglets, than the control women who kept pigs. There was no significant difference between the two groups regarding knowledge on sows, although the SSLP women had a higher mean score. Whether or not a woman has had experience keeping pigs in the traditional manner does not mean that she knows more, or less, about keeping pure bred pigs in a pig farm.

Literacy

Literacy is not a determining factor in how much a SSLP woman can learn from videotape programs. There was no significant difference in the final scores between women who could read and write and those who could not (47.5 percent). Although five women had been to school (two to first grade and three to second or third grade), they considered themselves functionally illiterate. (The fact that a person can graduate from third grade in Honduras and still not read or write should be considered when devising questionnaire forms which cover literacy.) Only 20 percent of the women in the SSLP groups have been beyond the first grade or received adult education.

Demographic Information

Almost 20 percent of the SSLP women were heads of household, which compares to a 21.6 percent national average (DGEC, 1978). Young children and infants did not seem to be a deterrent to women participating in the

SSLP. Over 50 percent of the SSLP women had young children and 27 percent were breast feeding at T2. Since only 55 percent of the women had another woman (over the age of ten) in the household to help with the domestic work, whether or not there is an older female to take care of the house and household did not seem to be a factor in the decision of a woman to join the SSLP.

The women who participated in the SSLP seemed to be economically active women. Of the total, 46 percent of the women in the SSLP were engaged in some sort of work to earn money, in addition to the work required by the SSLP. These additional sources of income include sewing, washing and ironing, selling fruits and vegetables, baking and selling bread, making food items for sale, midwifery, and agricultural work (Appendix D). Seven women were engaged in more than one of these activities, as well as the SSLP work. The women normally spent at least fourteen hours per week on SSLP activities, which included 1) cleaning the pig corrals twice a day, 2) watering and feeding the pigs, 3) purchasing food and supplies, and 4) attending meetings (at least three hours per week). In Jutosa and Laureles where they were running farrowing units, the work also included the following: 1) tending to the birth of pig litters, 2) cutting the tails and teeth of piglets, 3) castrating the piglets, 4) injecting the piglets with iron twice and giving them vitamins. At the end of this study, Laureles had approximately 16 sows, one boar and 30 piglets.

Disease

One hundred percent of the women (at T2) stated the importance of deparasitizing and vaccinating pigs, but a large percentage of them could

not remember when to deparasitize (61.1) or to vaccinate (75.0) the pigs. This is an excellent example of learning by rote. The women had been told they must deparasitize and vaccinate their pigs but most of the women did not fully understand against which diseases they could vaccinate, or when they should vaccinate. This deficiency demonstrates the value of using a questionnaire where one has the opportunity to examine the extent of understanding the concept of an answer as well as the answer itself.

Practices with Pure Bred Pigs vs. Criollo Pigs

Pure bred pigs (originally imported from the USA or Europe), such as those being used by the SSLP, are very different from the *criollo* native domesticated pig. The former are much more susceptible to certain diseases, much less tolerant of the tropical climate, require a great deal of water, and must be fed concentrate if they are to fatten to sufficient market size in six months. When pig keeping practices for the project's pure bred pigs differ from traditional methods practiced with the *criollo* pig, there seems to be an almost complete acceptance by the SSLP women, at least at a conceptual level, that these pigs "are different" and must be cared for in a different way. Project women do transfer some of the practices with pure bred pigs to their own *criollo* pigs, at least in theory. Over 90 percent of the women said that one should keep pregnant *criollo* pigs in a corral and also deparasitize and vaccinate such pigs. Of the 12 women who were keeping pigs at the time of the questionnaire, many had not deparasitized or vaccinated their pig because they did not have the money to do so. As to whether they should cut the eye teeth of *criollo* pigs, 27.5 percent of the women said "no" because the *criollo* was "a different type of pig".

The SSLP women have a very humanistic, as opposed to commercial, attitude towards the pigs. When the women were originally asked how much a piglet should weigh at birth in order to keep it, the women did not understand the question. Out of some 25 women, all of them said that the piglet should not be destroyed no matter what its weight. If a sow produces more piglets than she has teats, the women nurse the extra piglets by bottle. When asked if a pregnant pig (pure bred) could leave her corral, 32.5 percent at T2 said "yes, if she is watched", many went on to explain that the pig would become bored with the corral and that the pig enjoyed foraging. This attitude must be respected and taken into account when teaching the women aspects of pig husbandry.

Summary

The results of this study could be used by the SSLP to ascertain the areas in which each group requires more technical assistance and information. It is important to consider the answers to questions such as "when and how" (one deparasitizes, vaccinates, and injects iron) in order to tell if the RSW have a complete understanding of the process. This study has utilized questionnaires as a method for evaluating the effectiveness of videotape programs and the amount learned by the RSW. This method or other methods should be continued in order to evaluate the successfulness of transfer of knowledge on pig keeping, marketing and administrative skills.

CONCLUSIONS AND RECOMMENDATIONS

The Use of Video in the SSLP

The results of this study show that a portable video system is an effective tool in transferring technological information about pig husbandry to rural subsistence women (RSW) in the Small-Scale Livestock Project (SSLP) in Honduras. Locally-made videotape programs proved an effective method of teaching RSW practical techniques in how to keep pure bred pigs. This AID-funded project seeks to raise the standard of living of these women who are part of a large marginal group, by providing them with the technical advice and financial assistance necessary to commercially produce and market pigs. The SSLP is a small-scale regional project but if it proves successful, it may be expanded to a national program. Should this project be extended throughout other regions in Honduras, it is hoped that careful consideration will be given to the uses of portable video systems within the project. The concept of using portable video systems to produce locally-made videotape programs to technically train rural subsistence people in other areas should be explored in other development programs and the integration of portable video systems as a communication tool in development work should be further examined.

Although beyond the scope of this study, a portable video system, if integrated into the SSLP, could be used in numerous ways. The videotape programs prepared in this study could be used as a supplement to the technical talks given by the OEF project staff. They could also be used by staff or *promotores* who have not been trained in the more technical aspects of pig keeping, thus obviating the need for a "technical expert"

to always be present. Additionally, the videotape programs could be used directly by the RSW themselves to learn something which they may have missed or not understood, to refresh their memory, or to review facts or procedures. As groups became more experienced in the handling of pigs and proficient in pig care and pig farm management, they could teach particular techniques or aspects of pig care to other groups. In addition to providing specific technological information, the portable video system could be used in many other ways, including 1) to promote a communication exchange among the groups where the groups shared problems and solutions, 2) to communicate with project staff, administrators, AID Mission personnel, Honduran Ministry personnel and other persons interested in the project, and 3) to videotape group meetings and discussions and to utilize the playback of these to discuss group dynamics and problems within the groups. The use of a portable video system in the training of RSW has proven very successful within this pilot project. There are also many other possible uses for a portable video system in a project such as the SSLP. Unfortunately, the SSLP does not now have access to a video system. It is hoped that they may be able to acquire such a system or borrow one from time to time so that at least the videotape programs which they presently have could be used.

Video in Technology Transfer

Although only 20 percent of the SSLP group women completed more than first grade in formal education, the women proved that they were very capable of learning technical aspects of keeping pure bred pigs when the information was presented to them in a clear, practical and direct way. In two villages the SSLP women initially knew nothing about

keeping pure bred pigs. This was not due to any cultural, social, or psychological reasons. It was simply a result of not having received any information. As the results of this study demonstrate, once the women were given the technical information in a form to which they could relate, they learned a great deal from it.

Although this study only measured immediate learning retention of the material presented in the videotape programs, and technical knowledge gained by some of the women during their trip to the USA, specific behavioral changes based on the information in the videotape programs did occur. It is interesting to note that when the SSLP women were answering the questionnaire at T2, after the women had viewed the videotape programs, they mentioned a fact in the same terminology as was given in the videotape program 66 times. When answering a question on the gestation period of a sow, 19 women out of 32 responded with "three months, three weeks, three days" (the exact phrase used in the videotape program). The videotape programs suggested that lime be mixed with disinfectant and painted on the walls of the corral into which a pregnant sow was to be moved, so that one could see if any part of the wall had not been covered. This suggestion had not been made by the SSLP before the videotape programs, nor after. Two weeks after viewing the videotape programs, the women in Caraos and Laureles met independently and decided that they would put lime in the disinfectant. One month after viewing the videotape programs, it was reported that the women in Jutosa and Laureles were cutting the tails of the piglets to prevent cannibalism, a practice which was introduced in the videotape programs, independent of SSLP recommendations. The videotape programs induced behavioral change in some of the SSLP women. This study only measured the immediate learning retention of RSW on aspects of pig husbandry from one to two

weeks after viewing the videotape programs; however, behavioral changes, such as those mentioned above, indicate that there may be some long-term effects of the videotape programs.

Development Projects

The Integration of Women

Traditionally many development projects have not been concerned with integrating women from the target populations. The SSLP is a development project specifically for RSW, administered primarily by women. As a result, women are completely integrated into the project, to the exclusion of men and other family members. Although the project is for women, by women, that does not necessarily mean that chauvinistic attitudes and prejudice against women do not exist on the part of some staff members, it only means that such attitudes are based on social and economic class instead of sex.

Ecological and Social Impacts

There are at least three other aspects besides the integration of women from target populations, that development projects tend to overlook. The ecological and social impacts of such projects on the target population, both short and long-term, and input from the target population during all phases of development projects. Although there is a statement in the OEF proposal which addresses ecological and social impact concerns, there is no methodology whereby the SSLP staff can examine, analyze and evaluate ecological and social conditions which have occurred as a result of the project, or affect the impact of such changes on the target population during the duration of the project. An

examination of long-term ecological and social changes and impacts are beyond the scope of this particular project and most development projects, yet such changes are vital to the RSW's abilities to successfully continue the production and marketing of pigs in pig farms.

Input by the Target Population

There is little recognition in the OEF Project Proposal of the importance of input or feedback from the RSW who comprise the target population. Such communication is, however, vital to the success of the project and essential in understanding the problems, limitations and needs of the women. Although the SSLP is small and the staff work closely with the RSW in the cooperative groups, the only mechanism for the RSW to input into the decision-making processes of the project or to give feedback to the project is by talking to the staff and particularly to the *entrenadoras* (trainers). This method is limited to the sensitivity of the *entrenadoras* to the women and is subject to censorship. If a development program is to genuinely help its target population, there must be a method whereby the target population can input directly into the project.

Administrators often do not realize the capacity of target populations (by definition from a lower social and economic class than project administrators and staff) to learn technical information, implement changes or define their own needs. One way to avoid the situation where project administrators and staff are defining the "needs" of the target population is for the project to incorporate some mechanism whereby the target population can communicate their felt needs and make inputs to project decisions. One such mechanism could be the use of a

portable video system where members of the target population are recorded expressing their needs, just talking or answering questions. Such a videotape could then be viewed by project staff and administrators and their reply could also be recorded and taken back to the target population. This would be one method for creating a dialogue. Of course it would be better to have this two-way communication directly between people but most development projects are unable to do so because of time, transport, and personnel constraints.

The SSLP, A Development Project

While a development project is in the planning stages, research must be done to examine the social, economic, and political structures which would affect such a project and the potential social and ecological changes which may result from such a project. This project was preceeded and, in part, based upon an AID Report (AID, 1982) on the swine industry in Honduras. Several of the conclusions of this report are suspect. The report suggests that there is an increase in the demand for pork among Honduran consumers. I would suggest that this increase in demand is only from a small segment of the Honduran population, the urban middle class. Although the production of beef has increased by 200 percent over the past two decades, the consumption of beef in Honduras has decreased by 20 percent (DeWalt and Pelto, 1985). Most Hondurans can not afford to buy meat, beef or pork. The report also suggests that domestically-produced grains can be fed to the pigs. In a country where basic grains must now be imported, this suggestion seems misplaced. It is hoped that there may be a potential export market for processed pork, but I would suggest that this not be a major factor in promoting the production of pure-bred pigs

in the SSLP in that processed pork for export must meet stricter requirements than domestically consumed pork, and is subject to the price fluctuations of the world market. The report also recommended that technical support and training be given to male farmers, even though traditionally the raising of small animals is the woman's domain. It is hoped that such reports, which do not accurately reflect the conditions in Honduras, have not been used as a basis for this or other development projects. Background research is essential in the formulation and implementation of every development project, but such information must be accurate.

Before any development project is initiated, it is essential to consider the social, economic, and ecological impact of the project upon its target population to insure that the project is beneficial and not a waste of time, energy, or money, or harmful to the target population or their environments. The target populations of many current development programs are from marginal groups on the edge of subsisting, for whom a misguided development project may well have catastrophic results.

One assumes that the SSLP planners and staff have considered and researched a number of factors before they began this project, such as 1) the marketing aspects to assure that there is, and will continue to be, a market which can handle the increased pig production in the area without a concomitant drop in market price; 2) the ability of the cooperative groups to purchase or have access to transportation for taking their pigs to market in three years time; 3) a mechanism whereby the women (and not their husbands) will be able to remain in control of the pig farm and its profits, when the project ends; 4) the disposal and/or utilization of pig effluent and overspill and the effect of pig waste on the environment, particularly with regard to contamination of

the local water supply; 5) the water needs of the pig farm and whether or not it can be met without detrimental effect to other persons or concerns within the same village; 6) the availability and current and future cost of concentrate (which may be imported) which is fed to the pigs; 7) an awareness of how locally grown crops may be added to the pig feed and the constraints of using such a mixture; and 8) the availability of technical advice and veterinary care when the project involvement with the groups terminates in the next two years. Such considerations and resolutions to potential problems are essential if the SSLP is to bring about a long-term change in the lives of the RSW. All development projects face similar concrete concerns which must be resolved within a framework of responsible action and an acknowledgement of social, cultural, and ecological impacts.

Although this document has attempted to isolate operational problems in some areas of the SSLP, this was done with the intent of helping project staff identify problem areas so that they may be corrected, and with the knowledge that every development project faces similar problem areas. I firmly believe that the SSLP is providing an opportunity for the RSW through its cooperative groups to improve their living conditions and status in the community and marketplace, through the economic gain which will come from selling pigs. It is one of the most successful development projects that I have heard about or with which I have personally been in contact.

At the conclusion of my study in Honduras, I gave a seminar to the SSLP Project Director and staff and presented preliminary results of my study and made certain recommendations regarding the SSLP. I should also like to make the following recommendations to AID Missions and to those

involved in designing and implementing development projects. I recommend that project designers consider 1) the integration of women into development projects, 2) the social impacts of projects on target populations as they affect individuals and the basic societal unit, the family, 3) the ecological changes caused by projects and the impacts of such changes on the target populations, region and country. Also, that project proposals and project papers incorporate a methodology which will permit an ongoing examination and analysis of such factors during the implementation of projects. Before projects are concluded, an evaluation should be made which seriously examines ecological and social changes already caused by the project and an analysis of the potential short and long-term effects of such changes.

Communication in Development Projects

Communication in development projects should be changed from a one-way, vertically downward transmission of information to target populations, to a two-way communication model which promotes an information exchange. Such a model should include communication from target populations to project staff and administrators, national government ministries and project planners, and horizontal communication within target populations and among similar socio-economic and cultural groups. Portable video systems are one mechanism for such communication and a tool which can be used not only by development project staff but by target populations as well, as other case studies have shown (O'Sullivan-Ryan and Kaplun, 1981). Through such communication strategies, marginal groups may be able to become involved in the social, economic and political processes on a local, regional, and national scale.

The world in which we are living is becoming increasingly smaller as

the technological means for communicating become more numerous. The ability to communicate and understand each other, however, seems to lag behind. Through communication media we have been offered ways in which to communicate -- now we must learn how to communicate.

Portable Video System

This research study was an adjunct to an ongoing project. To test the use of a portable video system, it would be necessary to incorporate and integrate the use of such a system from the project proposal stage onwards. To integrate the use of a portable video system in a development project the following commitments must be made: 1) time on the part of the project staff to collaborate in the production of programs, 2) time for staff to be trained in the operation and utilization of the equipment, 3) time and resources devoted to the production of programs and the utilization of such programs, 4) local facilities available for the maintenance and repair of the equipment, and 5) an advisor proficient in the use of portable video equipment and the production of programs, who could work with the staff from six weeks to three months to train them in the production of programs and the operation and utilization of the video system.

Portable video systems could also be used as an effective horizontal communication tool among like socio-economic groups and as a vertically upwards (from target populations to project staff and administrators) communication tool. If a study were made to test this assumption, there would need to be additional commitments to those components mentioned above, on the part of the development project: 1) time and project resources would need to be made available for the target population to

learn how to operate and use the equipment; 2) the target population would need access to the equipment on a regular basis; 3) there must be an acceptance on the part of project personnel that members of the target audience are capable of effectively transferring technical information; and 4) project administrators and staff must believe that technical training and transfer of information can be accomplished through horizontal and upwards vertical communication as opposed to the traditional downward hierarchical transfer. For the concept of horizontal communication to be practically applied to teaching technical aspects within a development project, it would also be necessary to have members of the target population with sufficient experience and knowledge of technical skills and ability to convey such skills to others.

Although it was not possible to use a portable video system as a horizontal communication tool within this particular project, the concept of such use as a form of participatory communication should be explored in other development projects.

Additional studies should be made to determine the extent to which portable video systems could be effectively integrated and utilized in development projects. Where development projects are working specifically with marginal groups which are primarily illiterate, locally made videotape programs may prove to be one of the most effective and cost-efficient methods of providing information and training to the target population.

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