



# HEIFER PROJECT INTERNATIONAL

EVALUATION FIELD TEST V

BELIZE

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# HEIFER PROJECT INTERNATIONAL

August 14, 1981

Mr. Terry E. Ford  
Executive Director

Little Rock, AK 72203

Dear Mr. Ford:

The attached document is the report of the fifth evaluation study conducted under USAID Grant # AID/pha-G-1188 as a part of the H.P.I. Design/Evaluation Project. The subject of this study is H.P.I.'s program in Belize from 1974 through 1980, with special attention being given to the Belize 4-H Center activity during 1978.

This evaluation, conducted at your request, took place between December 10, 1980, and March 12, 1981. The final report is based on data collected in the field, the examination of records and documents both in Belize and Little Rock, and discussions of preliminary and first draft reports by the Belize 4-H Center Advisory Committee and the H.P.I. Program staff in Little Rock.

Two major findings emerge from this study:

1. Although the Belize 4-H Center program has shown rapid gains in terms of the number of persons trained at the Center, the technical capability of the center to serve as an effective demonstration, reproduction, and distribution center is quite limited.

See Section VII of the report for further details.

2. The organization, management and livestock production system of the Belize 4-H Center requires an intensive effort on the part of all involved parties in order to assure both continuity and improvement of the program upon the assumption of total responsibility for the program by the Government of Belize on January 1, 1983. (See Section II, III, and IV.)

Prominence in the report is given to the General Conclusions, (Section II), Recommendations to the H.P.I. Program Department (Section III), and Recommendations with regard to the Belize National 4-H Center (Section IV).

Mr. Terry E. Ford  
August 14, 1981  
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In order to ensure the continuity of the Belize program and to determine the advisable levels of any further livestock and financial support for this program, the following timetable for follow-up of the evaluation effort and implementation of the recommendations has been determined.

April - September, 1981	Reduction of young death losses to targeted levels, preparation and submission of necessary reports, and site improvement.
By October 15, 1981	Post evaluation review of progress to date on implementation of recommendations.
By November 15, 1981	H.P.I. decision with regard to livestock shipment and level of support to be supported in 1982.
By February 28, 1982	Pending favorable H.P.I. decision, shipment of additional livestock requested is completed.

Sincerely,



Armin L. Schmidt  
Director of Evaluation

encl.

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AN EVALUATION OF THE H.P.I. PROGRAM IN BELIZE

HEIFER PROJECT INTERNATIONAL, INC.

OFFICE OF EVALUATION

JULY 30, 1981

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## I. PURPOSE

1. The purpose of this evaluation process is to:

- \* "Gather information to be used as a basis for making judgments on the value of the Belize program in terms of its benefits to intended beneficiaries and for decisions on the direction of the program and H.P.I.'s objectives in the long term."

This overall purpose was formulated during a pre-evaluation visit to Belize by the H.P.I. Associate Director of Evaluation in December, 1980. It represents the consensus of the major parties in the program and it reflects the expected result of the overall effort. Evaluation involves data gathering, reporting and subsequent discussion and decision-making by all principal parties. The achievement of this purpose depends upon the actions taken as a result of this report and of post evaluation negotiations.

2. The purpose of this report is to:

- \* Present information and recommendations relative to decisions regarding the H.P.I. program in Belize for the next eighteen months and for future programming.
- \* Briefly describe the scope and nature of H.P.I. involvement in Belize, focusing especially upon the Belize National 4-H Center.

II. GENERAL CONCLUSIONS

- \* Intensive preparation for transfer of all responsibility for the Belize National 4-H Center to the Ministry of Labour, Social Services and Community Development is imperative.

Total responsibility for the administration, management and financing of the National 4-H Center is scheduled to be transferred to the Ministry on or before June 30, 1982. The necessary preparations include:

1. Accelerated upgrading of technical staff.
2. Accomplishment of acceptable levels of livestock production and management.
3. Completion of building and facilities improvements prior to that date.

- \* Plans must now be made for Belizian control of the entire program as of January 1, 1983.

As of December 31, 1982, H.P.I. will no longer have a full-time resident representative in Belize. Therefore a system which ensures the continuity and further improvement of the H.P.I. related livestock work in Belize must be designed, organized and implemented prior to that date.

111. RECOMMENDATIONS TO THE H.P.I. PROGRAM DEPARTMENT

The following recommendations are the result of consultations between the H.P.I. Director of Evaluation and the Resident H.P.I. Representative at the conclusion of the data gathering phase of this evaluation in March, 1981.

It is recommended:

\* That no shipments of livestock to Belize take place until the following conditions are met:

1. Submission of monthly income and expense statements for overall operation of the Belize National 4-H Center.
2. Removal of the present goat and sheep population from the 4-H Center premises during September and October, 1981, in order to establish a disease and parasite free quarantine area.
3. Construction of new, and separate, sheep and goat housing, completion of pasture fencing, establishment of improved pastures, and provision of simple sun shades, feed boxes and waterers.
4. Attainment of targeted reductions in death rates for at least two consecutive months. (See page 5.)

\* That a return visit by Evaluation personnel in October, 1981, be authorized for the purpose of reviewing this report, setting plans for implementation of recommendations and identification of broad options for future H.P.I. work in Belize.

Participants in the recommended post evaluation review and planning sessions should be the 4-H Center Committee and staff, the resident H.P.I. representative and representative of the Ministry of Labour, Social Services and Community Development. Representatives of other groups now receiving assistance through H.P.I. and the 4-H Center should also be consulted during the follow-up phase of this evaluation.

IV. RECOMMENDATIONS WITH REGARD TO THE BELIZE  
NATIONAL 4-H CENTER

RECOMMENDATIONS

The following recommendations incorporate suggestions made by the Belize 4-H Center Advisory Committee, the H.P.I. Representative for Belize and the Executive Director of H.P.I., following their review of a first draft of this report.

MANAGEMENT

It is recommended:

- \* That the H.P.I. Field Staff Representative play a consultative role in all aspects of the management of the 4-H Center with a high degree of involvement in the daily operation of all units for the first two months with decreasing involvement beginning with the third month as the need for daily assistance decreases. Intensified day-to-day assistance of the staff should take place through the months of July and August, 1981. It is expected that by September, 1981, the need for day-to-day assistance will decrease.
- \* That annual audits of the 4-H Center be conducted.
- \* That the Supervisor review daily production records on a weekly basis with the Assistant Supervisor and the staff and assist in the preparation of weekly reports.
- \* That the Supervisor and H.P.I. Representative review all weekly reports and assist in the preparation of monthly reports.
- \* That the Supervisor of the 4-H Center prepare weekly and monthly reports of all income and expenditures related to the Center.
- \* That the Supervisor of the 4-H Center take full responsibility for ensuring that the classroom area, all live-stock facilities, storeroom and feed room are kept clean and hazard free.
- \* That the Assistant Supervisor of the 4-H Center assist the staff in preparing daily inventory and production records.

TRAINING

It is recommended:

- \* That the 4-H Center staff receive continuing education with an emphasis on record-keeping and disease prevention.

Primary responsibility for implementation of such training should be with the resident H.P.I. Representative. Assistance in this area should be recruited from the Ministry of Agriculture. It is anticipated that most of this training will be on site in conjunction with routine operation of the Center.

- \* That the 4-H Center staff receive additional training in non-formal educational techniques.

Training in non-formal educational techniques is ultimately the responsibility of the resident H.P.I. Representative. In all likelihood the identification of persons in-country able to provide such training will require an exhaustive search. It is, however, reasonable to assume that persons connected with the REAP schools could be contracted for assistance in this area.

- \* That new staff be conversant in English.
- \* That recreational facilities and evening activities be planned and provided for the trainees.

PRODUCTION

It is recommended:

- \* That immediate steps be taken to reduce death losses among young animals to the following levels:

Sheep	-	15%
Goats	-	20%
Rabbits	-	15%
Layers	-	10%
Broilers	-	10%

Table 4 on page 16 shows that death rates among young animals and birds greatly exceeded these levels in March, 1981. The above targeted reductions in death rates were proposed by the 4-H Center staff during a discussion of production problems on March 14, 1981. Progress toward achieving these reductions can be brought about through implementation of the recommendations contained in Appendix A on page 32 of this report and by setting monthly goals toward achievement of this end.

- \* That all sheep and goats be removed from the Center for the months of September and October, 1981, in order to provide an acceptable quarantine area and to facilitate pasture improvement and fencing activities.

Authorization of the aforementioned shipment of live-stock will be dependent upon successful progress toward meeting conditions 1 - 4 as shown on page 3 preceeding as of the first part of October, 1981. Verification of such progress will take place during an on site visit by the H.P.I. Director of Evaluation.

Selected breeding stock which has been temporarily located in other areas can be returned to the Center following the quarantine period of the H.P.I. shipment expected to arrive in January or February, 1982.

- \* That the technical recommendations regarding goats and sheep submitted by the H.P.I. Consultant in January, 1981, be implemented beginning June 30, 1981. (See Appendix A on page 32 for a summary of these recommendations.)

V. RECOMMENDATIONS WITH REGARD TO THE YOUTH  
ORGANIZER PROGRAM

The recommendations which follow were largely developed during a one and one-half day workshop held at the Belize National 4-H Center on March 11-12, 1981. Participating in the workshop were eight Youth Organizers, two staff persons from the Ministry of Labour, Social Service and Community Development, 4-H Center personnel, the H.P.I. Representative and the H.P.I. Evaluation Director.

A review of the degree to which these recommendations have been implemented will take place during the October, 1981, scheduled post evaluation visit of the H.P.I. Director of Evaluation. It is recognized, however, that final approval of these recommendations rests with the appropriate office in the Ministry of Labour, Social Services and Community Development.

RECOMMENDATIONS

It is recommended:

	<u>Person Responsible</u>	<u>Date</u>
* <u>That a member of the 4-H Center staff be available to take telephone calls at the Ministry office every Friday afternoon</u>	Jones	March 13, 1981
* <u>That all applications for training and livestock be sent to the Ministry office in Belmopan and copied directly to the 4-H Center by the Y.O.'s</u>	Schmidlapp Jones	March 20, 1981
* <u>That all applications and requests be promptly acknowledged (within 24-28 hours) by the 4-H Center or Ministry Office</u>	Brooks	March 20, 1981
* <u>That refresher courses for former trainees be offered, if funds are available</u>	4-H Center Committee	March 31, 1981 (discussion)
* <u>That more activities, such as evening programs and recreation, be offered to the trainees</u>	4-H Center Committee	March 31, 1981 (discussion)
* <u>That visits by 4-H Center staff to the districts follow a regular schedule and that Y.O.'s be informed of scheduled visits and livestock deliveries in advance</u>	Alpuche Bollenbacher	May 1, 1981

	<u>Person Responsible</u>	<u>Date</u>
* <u>That the Y.O.'s inform the 4-H Center immediately of the birth of offspring in their districts, recommend possible recipients to be selected by the 4-H Center staff</u>	Y.O.'s	Immediately
* <u>That the 4-H Center inform the appropriate office in the Ministry monthly the kinds and numbers of animals available for distribution, and the dates of availability</u>	Alpuche Jones	Immediately
* <u>That offspring be vaccinated, wormed, bred, have their hooves trimmed and be in good health when they are passed on</u>	Alpuche	Immediately
* <u>That all 4-Hers receive training at the 4-H Center or in their own locality prior to receiving animals</u>	Y.O.'s Alpuche Bollenbacher	Immediately
* <u>That a standard agreement form be developed which specifies the requirements for receiving livestock, care necessary and passing on of offspring to be signed by the recipient, 4-H Center and the Y.O.'s. A copy of this form is to be sent to H.P.I./Little Rock.</u>	Bollenbacher Jones	July 31, 1981
* <u>That approved trainees' requests for livestock be filled promptly</u>	Jones Alpuche Bollenbacher	Immediately
* <u>That the Y.O.'s submit H.P.I. Progress Reports for each 4-H Club to the H.P.I. Representative at the middle and end of each fiscal year; that annual H.P.I. Production and Participation Reports be completed for each club member and that an annual Production and Participation Summary for each club be submitted to H.P.I. Representative.<sup>1</sup></u>	Alpuche Bollenbacher	June, 1981
* <u>That a wider variety of learning opportunities be offered by the 4-H Center (eg., feeder pigs or Homemaking skills)</u>	4-H Center Committee Bollenbacher	June, 1982

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<sup>1</sup> Samples of these forms are attached as Appendix D on page 48.

VI. PROGRAM OVERVIEW

H.P.I. involvement in Belize began in the mid-1960's with several shipments of cattle to the Belize Christian Council. Activity increased markedly with the arrival of a resident H.P.I. Representative in 1975. Since that time the Belize 4-H Center has been the primary focus and base of all H.P.I. work in the country, with the exception of the Belize Feedstuffs Research Project which is located at the Belize Central Farm<sup>1</sup>.

In recent years H.P.I. has been working with a number of organizations in addition to the 4-H Center. These are:

- \* The Youth Organizers of the Ministry of Labour, Social Services and Community Development (Y.O.)
- \* The Belize Central Farm.
- \* Rural Education in Agriculture Program schools (REAP).
- \* The Belize Youth Development Center.
- \* The Caribbean Agricultural Research and Development Institute (CARDI).

OVERALL PURPOSE

In a 1979 agreement between H.P.I. and the Government of Belize (See Appendix E on page 52) the purpose is stated as being:

... "TO INCULCATE AN INTEREST IN AGRICULTURE AMONG OUR YOUNG PEOPLE ...."

This purpose is particularly apt due to two characteristics of the Belizian society and economy. First, agriculture and food production are not traditional aspects of the economy of Belize. In the past forest and other non-food products were exported; food was imported. The urgent need for increased domestic food production is well recognized by the Government of Belize as being of prime importance. Second, the population of Belize is young; almost one half of the population is under the age of fifteen. Young people are also those members of a society who are most likely to accept new ideas, such as small scale food production. Thus the Government of Belize has rightly identified this component of the population as the one holding the most promise for increased food production.

The adoption of new practices, however, is a step by step process. For the past five years most of the Government's and H.P.I.'s efforts have been directed toward increasing the levels of awareness and interest in agriculture (especially livestock and poultry production) among the youth of the country.

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<sup>1</sup> This project was the subject of a separate H.P.I. evaluation conducted in 1978 and will not be treated in this study.

In a meeting with the Social Development Officer of the Ministry of Labour, Social Services and Community Development on March 10, 1981, it was agreed that the time had now come to start a transition from awareness and interest building to the encouragement of serious and businesslike trials of various new agricultural enterprises and practices leading to the adoption of food production as a vital part of the economy.

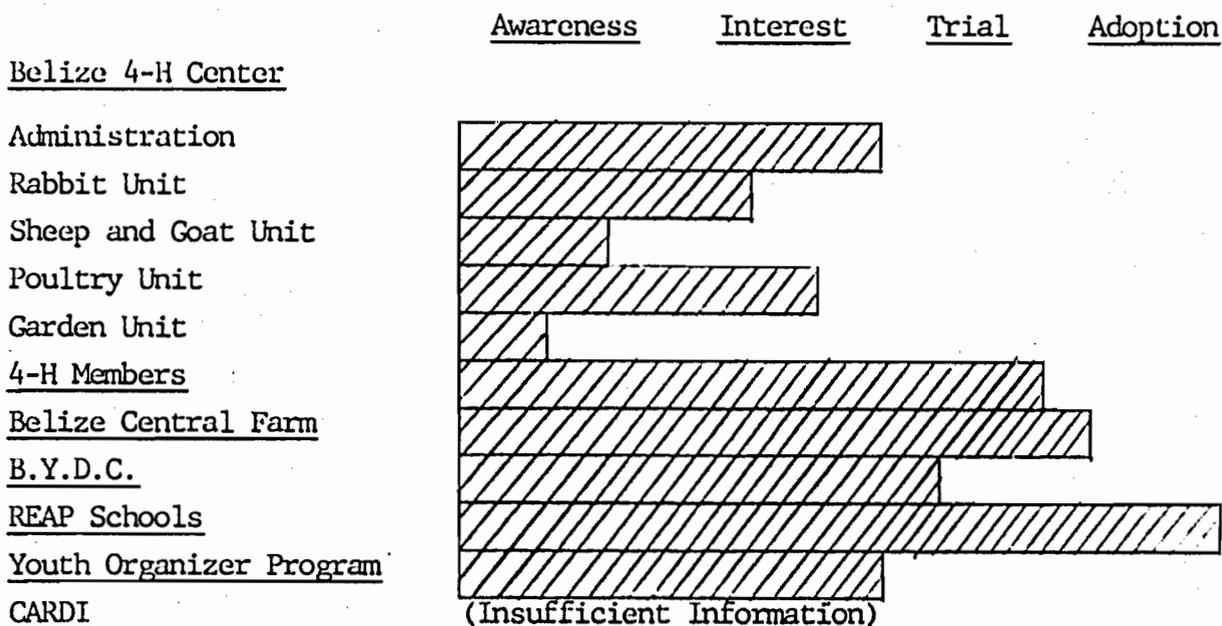
What has been described above is a process involving four general steps: Awareness, Interest, Trial and Adoption. The movement from awareness to adoption of farming and new farm practices, therefore, sets the context in which the details of this evaluation are set.

For the purpose of illustration only, each major component of the Belize program has been placed on a continuum ranging from awareness to adoption. The place of each component represents the informed but subjective and impressionistic opinion of the writer. (See Figure 1 below.)

The impressions illustrated below refer to the overall operation of the various aspects of the program as indicated by evaluation survey results, reports and on site visits.

FIGURE 1

A SUBJECTIVE OVERVIEW OF PROGRESS TOWARD ADOPTION OF IMPROVED FARM PRACTICES BY VARIOUS COMPONENTS OF THE H.P.I. BELIZE PROGRAM - 1980



H.P.I. OVERALL SUPPORT OF THE PROGRAM

As shown below the H.P.I. contribution to the program between 1976 and 1980 is valued at about U.S. \$236,000.

TABLE 1  
H.P.I. INPUTS - 1976-1980

	<u>Total</u>
<u>Livestock (Shipped from the U.S.)</u>	
Rabbits	259
Goats	100
Sheep	125
Turkeys	25
Ducks	50
<u>Livestock - Local Purchase</u>	
Chicks	6,700
Goats	8
<u>Value of Shipped Livestock</u>	\$ 38,961.83
Animal Health	2,467.04
Fund Transfers	92,733.26
Shipping	22,769.35
Personnel	79,316.55
<u>Total:</u>	<u>\$236,248.03</u>

The total 1981 budget for the Belize program is U.S. \$51,272. The key line items are shown below:

Local office expenses	\$ 1,000
Vehicle maintenance	4,000
Travel expenses	2,272
Transportation of livestock	2,500 <sup>1</sup>
Support for 4-H Center	20,000 <sup>2</sup>
Support for REAP program	3,000 <sup>3</sup>
Support for YDC	5,000 <sup>3</sup>
Support for 4-H Extension program (including travel)	3,000
Support for beekeeping project	1,500
Support for training programs	6,000
Extension loans	3,000
<u>Total:</u>	<u>\$ 51,272</u>

<sup>1</sup> Includes salaries, tools, electricity, land development and facility maintenance. See page 17.

<sup>2</sup> Includes cost of broiler chicks, rabbits, equipment and a revolving loan fund. See page 22.

<sup>3</sup> Includes equipment, and operating costs.

VII. THE BELIZE NATIONAL 4-H CENTER

The Belize National 4-H Center, located on the National Agricultural and Trade Show grounds near Belmopan, has been in operation since December 13, 1975. Funding for the Center is provided jointly by H.P.I. and the Ministry of Social Development. H.P.I.'s contribution represents about 29% of the total cost.

OBJECTIVES OF THE CENTER

The following objectives were established at the inception of the Center:

- \* To teach the participants fundamental agricultural techniques in a learn-by-doing situation.
- \* To increase the trainees' leadership abilities and knowledge of the 4-H ideals.
- \* To strengthen and expand the 4-H movement and alleviate the dearth of qualified voluntary leaders.<sup>1</sup>

ADMINISTRATION AND STAFFING

Figure 2 on the following page illustrates the organizational structure of the Belize National 4-H Center.

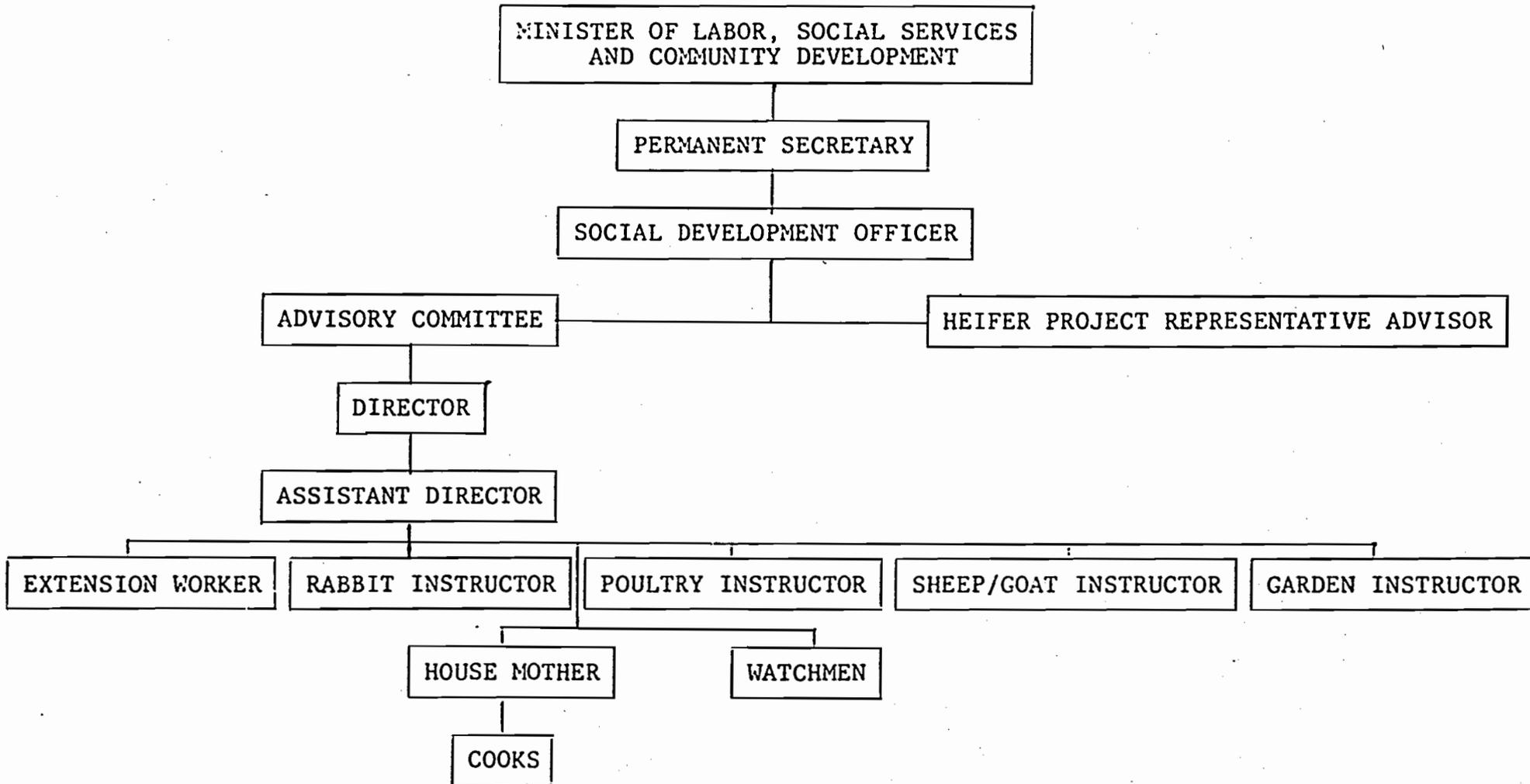
The day-to-day administration of the Center is the responsibility of the Director. The Assistant Director is charged with the overall management of the livestock at the Center. The Advisory Committee, which meets at least monthly, is composed of the Social Development Officer, H.P.I. Representative, the 4-H Supervisor, the 4-H Assistant Supervisor, the Assistant Social Development Officer, the Director of the Center, the 4-H Center Extensionist, and a representative of the Youth Organizer program. The Social Development Officer serves as the Chairperson of this Committee.

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<sup>1</sup> *National 4-H Center File - No. 214/2*

ORGANIZATION CHART - BELIZE 4-H CENTER

1981



SCOPE

The National 4-H Center serves as the base for three major areas of activity: training, small livestock and poultry production, and extension work among 4-H members. Each of these areas will be described in the following sections.

According to the most recent available statistics, the 4-H clubs are the largest youth organization in Belize<sup>1</sup>. In all there are fifty-seven 4-H clubs with a total membership of 1,520. Thirty-eight (67%) of these clubs are located in urban areas and nineteen (33%) are located in rural areas. Assuming that all clubs are roughly equal in size, it can be expected that the rural membership of the 4-H clubs represents 33% of the total membership or approximately 508 young people between the ages of nine and twenty-one. These 508 youths scattered throughout the country comprise the primary constituency of the 4-H Center program. The total number actually served in various ways by the 4-H Center cannot be ascertained from the available data.

TRAINING

Trainees are recommended to the Center by the district Youth Organizer who works with their group. During the five-year period the number and size of groups trained has shown a marked increase as shown in Table 2 below.

TABLE 2  
NUMBER YOUTHS TRAINED AT THE BELIZE NATIONAL 4-H  
CENTER BY YEAR - 1976 - 1980

<u>YEAR</u>	<u>NUMBER TRAINED</u>	<u>NUMBER OF GROUPS</u>
1976	5	1
1977	13	3
1978	15	4
1979	17	4
1980	41	4
<u>TOTAL:</u>	<u>91</u>	<u>16</u>

<sup>1</sup> Ministry of Social Services, Labour and Local Government, Central Planning Unit, IYC Committees, A Study of the Situation of Children in Belize, Belize; November, 1979.

Each group takes a three-month practical course in rabbit, poultry, sheep, goat, bee, and vegetable production. Leadership training is also part of the curriculum (See Appendix G on page 56 for a detailed course curriculum). Prior to 1980 training was provided only to boys. In September-December, 1980, seventeen girls received a special three month training course. Courses are conducted by the managers of the respective livestock units at the Center.

### PRODUCTION

Tables 3 and 4 below indicate that total livestock numbers at the Center have declined during the 1978-1981 period and that the productivity of the livestock held at the 4-H Center was very low during 1980.

TABLE 3

NUMBER OF LIVESTOCK PRESENT AT THE BELIZE NATIONAL 4-H CENTER AND PERCENT CHANGES - 1978 - MARCH, 1981

<u>SPECIES</u>	<u>1978<sup>1</sup></u>	<u>MARCH<sup>2</sup> 1981</u>	<u>PERCENT CHANGE</u>
Rabbits	300	189	- 37
Goats	40	30	- 25
Sheep	60	27	- 55
Chickens	1,000	784	- 22
Bees	6	3	- 50 <sup>3</sup>
Ducks	60	-	-100 <sup>4</sup>
Turkeys	14	-	-100

<sup>1</sup> Source: Bowen, Roy A., A Field Study of the National 4-H Training Center of Belize presented to the Commonwealth Youth Program, Caribbean Center, Belize, 1979. P. 31

<sup>2</sup> See Appendix C Table 2 on page 36 for more detailed information.

<sup>3</sup> Honey production has been de-emphasized over the past year due to the fact that a new National Bee-Keeping Center has been established adjacent to the 4-H Center.

<sup>4</sup> Duck and Turkey production proved to be unfeasible at the 4-H Center. Therefore these units were discontinued.

TABLE 4

PRODUCTION INDICATORS, BELIZE NATIONAL 4-H CENTER - 1980<sup>1</sup>

	<u>RABBITS</u> <sup>2</sup>	<u>GOATS</u>	<u>SHEEP</u>	<u>BROILERS</u>	<u>LAYERS</u>
Annual Growth Rate %	112	-16	- 7	-	-
Annual Birth Rate (%)	108	28	34	-	-
Young Death Rate (%)	NA <sup>3</sup>	53	33	-	-
Mature Death Rate (%)	NA	3	2	-	-
Total Death Rate (%)	50	12	9	34	31
Sold (%)	4	-	-	56	20
Slaughter (%)	7	-	-	-	-
Removed Other Ways	-	-	-	10	-
Distribution to Projects (%)	7	44	34	-	-

Higher overall numbers of livestock held at the Center in 1978 are due partially to the fact that 4-H Center received a shipment from H.P.I. containing rabbits, goats, sheep, turkeys, and ducks in that year. However, additional goats and sheep were sent in 1979 as well.

The minimal rate of growth among the rabbits and the negative growth among the sheep and goats indicate the need for adoption of improved management practices and for extensive training of 4-H Center personnel.

EXTENSION

Table 4 above indicates that, in addition to livestock received directly from H.P.I., a number of offspring from the 4-H Center are being distributed to projects. No accurate records for previous years are in existence.

Extension services are provided by the Youth Organizers located in each district. These organizers are employed by the Ministry of Labour, Social Services and Community Development. A full-time extension worker was added directly to the 4-H Center staff in January, 1981. The resident H.P.I. Representative is also involved in extension work from time to time. A concentrated effort is now being made to determine the number of animals received in each club, and to implement a system of recording the number of animals born, dead and passed on to others in each 4-H Club. It is expected that

<sup>1</sup> Source: Belize National 4-H Center records.

<sup>2</sup> November, 1980, to February, 1981.

<sup>3</sup> Not available.

this effort will be completed by the end of August, 1981.

### PROGRAM SUPPORT

The 4-H Center program is supported jointly by the Ministry of Labour, Social Services and Community Development and H.P.I. H.P.I.'s contribution represents approximately 29% of the total. The total estimated cost for 1980 was U.S. \$65,284. The Ministry is contributing an estimated U.S. \$46,356 and H.P.I.'s support totalled U.S. \$18,928 exclusive of salary and support of the resident H.P.I. Representative.

The Ministry pays for the following:

- \* Maintenance and upkeep of the Training Center.
- \* Water.
- \* Garden expenses including salary of the Garden Instructor.
- \* Poultry Unit expenses.
- \* Salary and benefits of the Supervisor and Assistant Supervisor.
- \* One half of the salary of the Goat Instructor.

H.P.I. pays for the following:

- \* Full salaries of the Extensionist, Rabbit Instructor, and Poultry Instructor.
- \* One half salary of the Goat Instructor.
- \* Hand tools.
- \* Electricity.
- \* Farm building maintenance.
- \* Fencing.
- \* Roofing.
- \* Tractor costs.
- \* Equipment repair.
- \* Sheep, Goat and Rabbit Unit expenses.
- \* Development of five acres of land adjacent to the current facilities.

### FUTURE DIRECTIONS

According to a 1979 agreement between the Ministry and H.P.I. (see Appendix E on page 52) which was revised on March 11, 1981, (see Appendix F on page 55) the Ministry will assume full financial responsibility for all units of the 4-H Center by June, 1982, according to the following schedule:

- \* Financial management and housing of sheep and goats by June, 1981.
- \* Financial management and housing of rabbits by June, 1982.

It was further agreed that a feeder pig project would be started in the near future and that it would be evaluated in June, 1982, to determine whether the project should be continued.

## RESULTS

In order to arrive at some indication of the results achieved in the field a survey of fifty-nine current 4-H members was conducted in five of the country's six districts by the 4-H Center staff and the Youth Organizers in January and February, 1981. (See Appendix C Table 1 on page 36.) Prior to this survey, a production analysis of six goats sent to Belize in 1978 and all fifty-four goats sent in 1979 was conducted in October, 1980. The following sections discuss briefly the livestock performance reported by the 4-H members and their perception of the benefits received.

The data generated in the field can be related to the objectives of the 4-H Center as follows:

OBJECTIVE 1: To teach the participants fundamental agricultural techniques in a learn-by-doing situation.

FINDING: Survey results show that production levels among 4-H members are generally acceptable and that they have acquired some practical agricultural techniques.

When asked directly 60% of 4-H members surveyed reported that they had learned new knowledge and skills as a result of their 4-H participation.

Table 5 on the following page shows modest herd growth gains among all three species although death losses among young rabbits are extremely high (86%). Death losses among young goats are lower than those realized at the 4-H Center (27% compared to 53%). Death losses among young sheep are roughly equal at the center and at the project sites (33% and 37% respectively). The 4-H members are also engaged in providing offspring for redistribution locally or through the 4-H Center.

TABLE 5  
GOAT, SHEEP AND RABBIT PRODUCTION INDICATORS,  
4-H CLUB MEMBERS - BELIZE, 1980

	<u>GOATS</u>	<u>SHEEP</u>	<u>RABBITS</u>
Herd Growth Rate	1	-33	21
Adjusted Herd Growth Rate <sup>1</sup>	25	8	NA <sup>2</sup>
Crude Birth Rate	62	52	235
Crude Death & Loss Rate	23	37	64
Young Death & Loss Rate	27	40	86
Payback Rate <sup>3</sup>	24	42	-

An analysis conducted by the H.P.I. Goat consultant of fifty-four goats sent by H.P.I. to Belize in 1979 plus six goats sent in 1978 yields the following additional supporting data<sup>4</sup>:

TABLE 6  
PRODUCTION INDICATORS: SIXTY GOATS  
1978 AND 1979 SHIPMENTS<sup>5</sup>

Herd Growth Rate (%)	20
Crude Birth Rate (%)	61
Death and Loss Rate (%)	35
Payback Rate (%)	10

<sup>1</sup> Adjusted herd growth rate includes those offspring paid back in the end of the year total.

<sup>2</sup> Not applicable. No offspring were distributed.

<sup>3</sup> In this instance payback rate =  $\frac{\text{No returned or distributed}}{\text{No at beginning of year}} \times 100$

<sup>4</sup> For inventory and production figures by district see Appendix C Tables 1 through 10 on pages 38 - 41.

<sup>5</sup> Source: Field Survey conducted by T. Stanton, October, 1980.

OBJECTIVE 2: To increase the trainees' leadership abilities and knowledge of 4-H ideals.

FINDING: The majority of former trainees surveyed reported that they had benefitted from the program in the areas of leadership, motivation to become involved in other activities and increased community participation.

An analysis of the responses of thirty-five 4-H members is found in Appendix C Tables 9 and 10 on pages 40-41. Of these thirty-five, six had received both training and livestock, nineteen had received training only, and ten had received only livestock. All three groups cite more intangible benefits (those relating to skills and leadership) deriving from the 4-H program than tangible benefits such as increased meat consumption or income.

OBJECTIVE 3: To strengthen and expand the 4-H movement and alleviate the dearth of qualified voluntary leaders.

FINDING: No direct evidence to support the achievement of this objective was in the data. However by citing leadership development as one of the benefits received, it can be inferred that the 4-H Center has increased the level of leadership in Belize and has tended to strengthen the 4-H movement.

### PROBLEMS WITH REGARD TO THE BELIZE 4-H CENTER

#### Management

- \* The roles and authority of the Supervisor and Assistant Supervisor of the Center need to be clearly specified.
- \* The current situation requires day-to-day supervision and instruction of the 4-H Center staff by the Assistant Supervisor and the H.P.I. Representative until improved management practices become routine.
- \* Livestock records at the 4-H Center are not being kept and the recently initiated record system for field projects needs to be completed.

#### Training

- \* The classroom/office area is in need of major cleaning and regular maintenance.
- \* The training facilities are currently underused .

- \* The course syllabus is well planned but limited  
(See Appendix G on page 56.)
- \* The instructors need intense in-service training in all areas of livestock care and management.
- \* Recreational facilities and evening activities for the trainees should be provided.

#### Production

- \* Death losses among young stock of all species at the Center are high. (See Table 4 on page 16.)
- \* Goat and sheep pastures contain no improved grasses and are not fenced properly.

#### Problems Related To The Youth Organizers Program

- \* The lack of transportation severely hampers the program.
- \* Filling of requests for livestock is too slow.
- \* Communication between the Y.O.'s and the 4-H Center is poor.
- \* More visits to the districts by the 4-H Center staff are needed.
- \* The Y.O.'s need more training in livestock disease prevention and treatment.
- \* Many 4-H members regard the livestock as pets rather than as productive enterprises.
- \* Trainees need more communication and contact with the 4-H Center staff during and after their course.
- \* Veterinary services and supplies in the districts are inadequate.

#### RECOMMENDATIONS

See Sections IV and V preceeding.

## VIII. THE RURAL EDUCATION AND AGRICULTURE PROGRAM (REAP)

The REAP program is a collaborative program supported by the Government of Belize, CARE, Peace Corps and H.P.I. for the development and implementation of a rural education and agricultural curriculum for upper primary public schools. This program is directed by a Steering Committee composed of a representative of each supporting organization.

### SCOPE

The REAP program is operative in seventeen of the 200 upper primary public schools in the country. Program emphasis is on broiler, rabbit and vegetable production. In all 118 teachers, 2,700 primary students and 160 student teachers at the Belize Teachers College are involved. In addition, one-day REAP training courses for teachers, and two-three week courses for REAP school students were held at the National 4-H Training Center during the 1979-1980 summer vacation period.

### H.P.I. SUPPORT OF THE PROGRAM

From 1976 through 1980, H.P.I. provided funds for the purchase of 5,651 broiler chicks for the REAP schools. Each school also received a pair of rabbits and water bottles through the National 4-H Center. An undetermined number of children are also engaged in home production of sheep and goats through the schools and the National 4-H Center.

### SHARING OF BENEFITS

Each participating school is provided with broiler chicks and feed on a loan basis by H.P.I. After marketing each batch of broilers the expenses are to be refunded to H.P.I./Belize. In addition, two rabbits from the first litter are to be returned to the National 4-H Center for re-distribution to other projects. Exact figures regarding the rate of repayment of funds and offspring are unavailable.

### RESULTS

According to Mr. David Eck, coordinator of the REAP program, the major accomplishments are:

- \* Children in the REAP program schools scored significantly higher in Mathematics, Social Studies, and English than did students from rural schools not participating in the program.

This finding is contained in a recent evaluation of the REAP program by CARE (copy unavailable at the time of this writing).

- \* Broiler mortality has been reduced from 35% in 1976-1977 to 0% in 1980. The overall broiler mortality rate is 27%.
- \* The REAP program seems to encourage parents and children to undertake broiler, sheep and goat production at home.

Exact figures regarding the number of broiler, goat and sheep enterprises undertaken are unavailable.

#### PROBLEMS AND DIFFICULTIES

- \* The major constraints to continued poultry production is the periodic unavailability of chicks and funds after the two-year support period from H.P.I. ends.

A key factor in this problem is that of obtaining transportation for chicks and feed from the supplier to the remote schools.

- \* Several schools reported difficulty in raising New Zealand White rabbits.

It was also reported that the schools depend on expensive commercial feed rather than utilizing local grasses and by-products.

- \* In several instances lack of teacher interest was reported as being a limiting factor.

#### RECOMMENDATIONS

- \* It is recommended that H.P.I. continue its relationship with the REAP program.

Although beset by difficulties with transportation and reporting the program seems to be achieving positive results among an important sector of the population (rural youth). The nature of this continued relationship should include assisting in the targeted expansion of the program to twenty-three schools in 1981 and in helping the local Parent Teachers Associations develop means of overcoming transportation difficulties.

- \* It is recommended that the H.P.I. Representative establish a system for periodic reporting of broiler production, income and expenses and loan repayment for each participating school.

Although the coordinator of the program reports that broiler production is perceived to be a profitable enterprise under Belizian economic conditions, opinions to the contrary have been received from other sources (eg., the Youth Organizer from the Toledo District and the Central Farm feed research project). Therefore, it is in the interest of all farm

families to have clear indicators of small scale broiler production from seventeen different localities.

- \* It is recommended that the H.P.I. Representative institute a system for receiving semi-annual reports of rabbit production at the REAP schools and of the number and destination of all rabbits returned to the program by the REAP schools for redistribution.

This endeavor is especially important inasmuch as the students and teachers in the participating schools should demonstrate the importance and value of accurate record-keeping for livestock enterprises. Further, rabbit production is a relatively new area of production in Belize. Therefore, records of flock growth rate, death rates, home consumption, sales and profitability are vital for decision-making with regard to continued promotion of rabbit production in Belize.

## IX. THE BELIZE YOUTH DEVELOPMENT CENTER (BYDC)

The Belize Youth Development Center was inaugurated in 1978 under the Social Development department of the Ministry of Social Services. The Center, located on the Western Highway at Gracie Rock, Belize District, is staffed by a Director, Assistant Director and two Peace Corps volunteers. Other funding sources include the British Development Agency and H.P.I.

### OBJECTIVE

The objective of the Center is to train unemployed young men between the ages of sixteen and twenty in basic vocational skills such as agriculture, carpentry, mechanics, electricity, masonry and plumbing in order to enable them to secure gainful employment and become more productive citizens.

### GOALS

The overall goals of the Center are:

- \* To increase enrollment from twenty-four at the present time to 150 by the 1983-1984 school year.
- \* To establish income generating bee, swine, goat and poultry, garden and crop enterprises.
- \* To expand the facilities to include additional classrooms, livestock facilities and living quarters for students and staff.

### SCOPE

The BYDC currently includes between twenty and twenty-five young men from all districts of the country in its program. The number of applicants far exceeds the capacity of the facility. During the past year several graduates of the 4-H Center program have been enrolled at the BYDC for further training.

### H.P.I. SUPPORT OF THE PROGRAM

In 1980 H.P.I. provided U.S. \$8,634 in support of this program. In 1979 and 1980, four La Mancha goats and eight Saanen goats were received from the 4-H Center. Three Hampshire Large White crossbred swine were provided by the Belize Central Farm from offspring of H.P.I. provided animals.

### PRODUCTION

Production data obtained from the goat and swine held at the BYDC reflect additional inputs through H.P.I. during the year. (See Table 7 on page 26.) High death losses in young pigs (42%) were the

result of nine deaths from being laid on by the sow and of five runts being killed.

TABLE 7

PRODUCTION INDICATORS BYDC - 1980

	G O A T S		SWINE
	Saanen	La Mancha	(Hampshire X-Large White)
Growth Rate (%)	167 <sup>1</sup>	400 <sup>1</sup>	33
Birth Rate (%)	114	50	1,650
Young Death Rate (%)	25	-	42
Overall Death Rate (%)	13	-	-
Sold or consumed (%)	-	-	36
Payback rate (%)	33	25	17

At the time of the evaluation, measures were being taken to prevent death losses from crushing of baby pigs.

POULTRY

The broiler operation at the Center experienced a deficit in 1980 due to the fact that B.H. \$3,000 was lost due to meat spoilage as a result of poor transportation. The laying operation, with a maximum laying rate of 83% per day, realized no profit or loss during the year.

SHARING OF BENEFITS

In 1980 the BYDC returned two Saanen and one La Mancha kid to the 4-H Center for redistribution. In addition, six pigs were provided to local projects. These represent payback rates of 29%, 25% and 17% respectively. (See Table 7 above.)

RESULTS

Due to the newness of this project, the impact on the lives of individual graduates or their communities are not yet discernible. Of the twenty students who most recently completed the course at the Center, one has become a teacher in his home village, one has joined the 4-H Center staff, two are continuing their formal education and two have returned to the BYDC for further study.

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<sup>1</sup> High overall growth rates reflect additional animals received through H.P.I. during the year.

PROBLEMS

- \* Parasites and lack of books and training materials are the major production related problems reported by the BYDC staff.

Future problems could be created by the low productivity and elevation of the soil. The BYDC is located in a low lying area where flooding is a common occurrence. Sparse grass and mangrove are the major forms of vegetation in the area, thus the feasibility of raising vegetables and feed grains remains to be demonstrated.

- \* Swine received from Central Farm were reported to be of poor quality.

RECOMMENDATION

It is recommended that:

- \* H.P.I. work closely with the livestock aspect of the BYDC program in the area of herd and flock production recording.

As of June, 1981, the Peace Corps volunteers originally associated with this project were replaced by two new volunteers. In order to assure continuity of management information the new staff should be thoroughly versed in the use and importance of livestock and poultry production records. Reports on at least a quarterly basis should be received by the Belize H.P.I. Representative.

- \* That continued financial and livestock support of the BYDC be contingent upon the receipt of accurate and timely reports.

Although the BYDC has been conscientious in attempting to provide offspring for distribution to other projects, the relatively high death rates among young pigs and goats warrant close monitoring and assistance by the H.P.I. Representative until the situation is stabilized.

## X. BELIZE CENTRAL FARM

The Belize Central Farm, located in Cayo district, is operated by the Ministry of Agriculture for research, production and training purposes. This facility is the base for a wide range of activities including those related to H.P.I.

### SCOPE

The focus of this section is on the swine distribution activities recently entered into by the Central Farm, the Agricultural Extension Service and the Belize Agricultural Society. This project is an outgrowth of the Belize Feedstuffs Research Project which received H.P.I. support from 1976 through 1979. (For further information see the H.P.I. evaluation of the Belize Feedstuffs Research Project, October, 1978.)

Since mid-1979 one of the objectives of this project has been the distribution of offspring of H.P.I. provided swine in lots of ten feeder pigs for each participating farmer. In addition to feeder pigs the Central Farm provides trucking services to and from the participants farm, construction materials, extension services, and marketing services on credit. Repaying takes place at the time of sale of each lot of pigs. In 1980, five farmers participated in this program.

### H.P.I. SUPPORT

Fifty-two head of swine were sent to Central Farms by H.P.I. in 1976. Another thirty-five head of swine were sent by H.P.I. in 1978 giving a total of eighty-seven head in all. In addition, H.P.I. funding for supplies, feed and equipment totalled \$21,719 during the 1976-1979 period.

### SHARING THE BENEFITS

Central Farm is partially fulfilling its commitment to H.P.I. by providing offspring to participating farmers at a subsidized price which covers the cost of raising the pigs to feeder size. To date fifty head of pigs have been supplied to small scale farmers by the Central Farm. Each farm, by paying a subsidized price, enables Central Farm to include additional farmers in the project.

### RESULTS

In the absence of Progress Reports and usable Production and Participation data from the Central Farm management the results of this project cannot be determined. On site visits to two of the five cooperating farmers revealed that each realized a profit of approximately B.H. \$1,500 from two groups of feeder pigs during 1980. Each of these farmers is now progressing from a feeder pig operation to a full production enterprise.

PROBLEMS

The major problem associated with swine production is the low domestic price of pork. The farmers who cooperate in the project were able to realize a profit only by receiving the export prices arranged for by the Belize Agricultural Society for their animals. Thus, although the project generates a net profit for the cooperating farmers, the total food supply in Belize has not increased.

RECOMMENDATIONS

- \* It is recommended that the H.P.I. Representative develop, in cooperation with the management of Central Farm, a system whereby semi-annual Progress Reports are received from Central Farm and forwarded to H.P.I./Little Rock - US.

The key factor in continued service to small scale farmers is continuity of the organizational, training and extension services provided to the farmers. This project contains most of the elements needed for success. It is therefore essential that this project be well documented so that other projects in other countries may make use of this model

- \* It is recommended that a system whereby accurate and complete Production and Participation reports be submitted by the Central Farm and each participating farmer be submitted to the H.P.I. Representative for discussion and transmitted to H.P.I./Little Rock - U.S. be developed.

This project is based on the assumptions that swine will reproduce at economical levels in the Central Farm environment and that it is possible to realize a project from swine production at the small farm level. Good record-keeping is as important as good genetics to a profitable venture. Therefore accurate, complete and timely reporting of production, costs, and income are essential to this project. Such information is needed for the purposes of determining possible future support by H.P.I.

XI. THE CARIBBEAN AGRICULTURAL RESEARCH AND  
DEVELOPMENT INSTITUTE (CARDI)

In the Evaluation Plan developed in December, 1980, by representatives of H.P.I. and related organizations in Belize, CARDI was requested to provide a Progress Report Form, an Annual Production and Participation Form and a Performance Assessment Form to the H.P.I. Representative by January 15, 1981. As of March 15, 1981, these reports had not been submitted. Therefore, accurate information regarding the history, organization, scope, H.P.I. support, livestock production and problems of this aspect of the entire program are not available.

TENTATIVE FINDINGS

In a December, 1980, pre-evaluation visit it was learned that CARDI was involved in two goat production projects, one at Bullet Tree Falls and one at Lucky Strike. This project received twenty-two does through the 4-H Center in 1979. As of October, 1980, six of these had died thus giving a mortality rate of 27%. An extension person is assigned to each of these localities. The extension agent assigned to Bullet Tree Falls spends from two to three days a week working with the eight cooperating farms in the locality. This project was reported to be relatively successful. A review of goat production in this area conducted by an H.P.I. consultant in October, 1980, indicates that mortality rates were generally low, rates of gain were acceptable (70 lbs at seven months), milk production averaged one to two quarts per day per doe and that all eight families drank goat milk but none of them had eaten goat meat.

Data regarding the project at Lucky Strike has not been received. It was learned during the pre-evaluation visit in December, 1980, that high level of goat mortality was experienced in this locality.

PROBLEMS

The major problems reported were high mortality at Lucky Strike and overlong delays in re-breeding of does at Bullet Tree Falls.

RECOMMENDATION

It is recommended:

- \* That H.P.I. discontinue support of the CARDI project until regular and accurate reports of the performance of the goats are received by the H.P.I. Representative for a period of one year.

Given the fact that applied research is one of the emphases of the CARDI program it seems reasonable to expect that vital information regarding the technical and economic feasibility of goat production at two locations should be forthcoming on a regular basis. This is especially true inasmuch as one extension worker has been assigned to each of the two localities mentioned above.

APPENDIX ASUMMARY OF CONSULTANT'S RECOMMENDATIONS REGARDING SHEEP  
AND GOATS AT THE BELIZE 4-H CENTER

1. The breeding ewe flock and milk goat herd with their weaned offspring should be kept relatively isolated from other small ruminants.
2. No temporary animals should be put into the breeding ewe and milk goat pastures.
3. No butcher animals should be held at the Center.
4. Offspring should be distributed directly from village to village and not be brought onto the Center facilities.
5. New animals brought into the Center should be wormed immediately and isolated in individual pens for at least three days prior to their introduction into the herd.
6. Housing for animals being held for short period should be located where drainage will not contaminate pastures and where there is no contact with the permanent herds.
7. Vaccinate young goats for sore mouth yearly.
8. The milking herd should be kept on a relatively high grain diet, starting with four pounds of 16% C.P. daily<sup>1</sup>.
9. Milk all nursing does twice daily.
10. Kids should be weaned between three-four months of age or when they weigh thirty-forty pounds.
11. For best production goats should be milked at twelve hour intervals.
12. Pastures: Improve drainage, replant with improved grass/legume mixture.
13. Foot Rot: Provide sleeping benches or pallets to keep feet out of mud; use foot baths during rainy season; isolate affected animals, use antibiotic injections, foot salves (cooper sulphate ointments), formalin dip, and sprays.
14. Worms: Rotate pastures; worm every three weeks, quarantine new stock; construct water and feed containers to prevent fecal contamination; run

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<sup>1</sup> See Tatiana Stanton, "Recommendations for the 4-H Center, Belize," January, 1981, transcript.

tests on fecal samples immediately on any animal that appears sick or depressed; weigh young stock regularly to be sure that growth is constant.

15. Pneumonia: Keep animals free of worms and other parasites; lambing and kidding should take place in a dry bedded, draft free area during rainy season or in enclosed pasture during dry season. Dry lambs and kids immediately following birth; keep the young out of the rain for the first week of their life; provide dry shelter in each pasture during rainy season; monitor temperatures of any animal that is chilled, depressed or that is suspected of having pneumonia; keep a fresh supply of antibiotics; isolate sick animals in bedded, draft free individual pens and keep them warm; inspect herd every day for weak or depressed animals.
16. Breeding: Isolate breeding buck from herd until five months before optimum kidding date.

APPENDIX BMETHODOLOGY

The basic methodological feature of this study is the emphasis on a high degree of participation by the field level staff of the Belize National 4-H Center and the Youth Organizer program.

Detailed planning for the study took place during a preliminary visit by the H.P.I. Associate Director of Evaluation from December 7-11, 1980. At that time report forms appropriate for each component of the program were selected and a field survey questionnaire was devised. Field data collection took place during the months of January and February, 1981. Fifty-nine 4-H club members were interviewed by the Youth Organizers in five of the six districts. 4-H activity in the remaining district (Toledo) was minimal and no livestock or poultry projects were located there.

The program was reviewed in the field by the H.P.I. Director of Evaluation from March 9-15, 1981. Production information for the 4-H Center was collected; and interviews with the 4-H Center staff; staff persons of the BYDC; Central Farm; Ministry of Labour, Social Services and Community Development; and the Ministry of Agriculture were also conducted.

On March 11-12, 1981, a workshop was held for the purpose of identifying the strong points and the problem areas of the 4-H Center for the purpose of formulating recommendations for improving the program. Participating in the workshop were eight Youth Organizers, two staff persons from the Ministry of Labour, Social Services and Community Development, four 4-H Center staff members, the H.P.I. Representative and the H.P.I. Director of Evaluation. Participation and interest during the workshop was high.

In general it can be stated that staff participation in the evaluation provided a learning experience.

STRENGTHS OF THE METHOD

- \* Staff had the opportunity to work together in recommending solution to problems. The interchange of ideas and perspectives helped broaden the participants' understanding of each other's problems.
- \* Recommendations and findings were not imposed by an outside "expert."
- \* The study provided experience in working with livestock production numbers.
- \* Interviews with 4-H members provided opportunities to engage in informal discussions of progress and problems on an individual basis.

WEAKNESSES OF THE METHOD

- \* The sample of 4-H members interviewed was not carefully selected.
- \* Questionnaire and production forms were often incompletely filled out.
- \* The amount of data collected varied widely from district to district.
- \* Accuracy of the data was not verified.
- \* Training and guidance of the surveyors was not provided.

CONCLUSION

In this study a high degree of staff participation and involvement was achieved. However, complete, accurate and reliable survey data was not obtained. At this point it seems that the value of high levels of involvement does not outweigh the need for more accurate data. Future participatory evaluations which also include field surveys should have a provision for orientation, training and on-site direction of the surveyors during the data gathering phase.

APPENDIX CTABLE 1NUMBER OF 4-H MEMBERS REPORTING PRODUCTION SURVEY DATA,  
BY DISTRICT AND SPECIES - 1981

	<u>GOAT</u>	<u>SHEEP</u>	<u>RABBIT</u>	<u>TOTAL</u>
Belize	1	11	11	23
Cayo	-	7	4	11
Corozal	1	1	2	4
Orange Walk	10	1	1	12
Stann Creek	4	4	1	9
<u>TOTAL:</u>	<u>16</u>	<u>24</u>	<u>19</u>	<u>59</u>

APPENDIX CTABLE 2LIVESTOCK INVENTORY, BELIZE 4-H CENTER - MARCH, 1981

Rabbits (3/10/81) 189

Goats (3/12/81)

Mature Male 1  
 Young Male 1  
 Mature Female 13  
 Young Female 5  
 Kids with Mothers 10

Total: 30

Sheep (3/12/81)

Mature Male 1  
 Young Female 15  
 Lambs 11

Total: 27

Layers (3/14/81)

Chicks 100  
 Growers 41  
 Hens 42

Total: 183

Broilers (3/14/81)

Chicks 199  
 Broilers 402

Total: 601

APPENDIX CTABLE 3GOAT INVENTORIES BY DISTRICT: BELIZE 4-H CLUB MEMBERS SURVEYED - 1980

	<u>BELIZE</u>	<u>CAYO</u>	<u>COROZAL</u>	<u>ORANGE WALK</u>	<u>STANN CREEK</u>	<u>TOTAL</u>
Beginning of Year	12	26	1	13	1	53
Number Born	16	10	-	13	5	44
Total Number Died or Lost	3	5	-	4	-	12
Returned to 4-H Center or Distributed	13	-	-	2	2	17
End of Year Total	11	30	1	23	7	72

APPENDIX CTABLE 4GOAT PRODUCTION INDICATORS BY DISTRICT: BELIZE 4-H CLUB MEMBERS SURVEYED - 1980

	<u>BELIZE</u>	<u>CAYO</u>	<u>COROZAL</u>	<u>ORANGE WALK</u>	<u>STANN CREEK</u>	<u>TOTAL</u>
Herd Growth Rate (%)	- 8	15	-	-12	17	1
Adjusted Herd Growth Rate (%)	100	15	-	- 4	50	25
Crude Birth Rate (%)	133	38	-	50	71	62
Crude Death & Loss Rate (%)	14	17	-	36	18	23
Young Death & Loss Rate (%)	19	50	-	31	-	27
Payback Rate (%)	108	-	-	88	33	24

APPENDIX CTABLE 5SHEEP INVENTORIES BY DISTRICT: BELIZE 4-H CLUB MEMBERS SURVEYED - 1980

	<u>BELIZE</u>	<u>CAYO</u>	<u>COROZAL</u>	<u>ORANGE WALK</u>	<u>STANN CREEK</u>	<u>TOTAL</u>
Beginning of Year	22	13	1	4	8	48
Number Born	21	-	-	-	4	25
Total Number Died or Lost	13	3	-	1	4	21
Returned to 4-H Center or Distributed	20	-	-	-	-	20
End of Year Total	10	10	1	3	8	32

APPENDIX CTABLE 6SHEEP PRODUCTION INDICATORS BY DISTRICT: BELIZE 4-H CLUB MEMBERS SURVEYED - 1980

	<u>BELIZE</u>	<u>CAYO</u>	<u>COROZAL</u>	<u>ORANGE WALK</u>	<u>STANN CREEK</u>	<u>TOTAL</u>
Herd Growth Rate (%)	-55	-23	-	-25	-	-33
Adjusted Herd Growth Rate (%)	36	-23	-	-25	-	8
Crude Birth Rate (%)	95	-	-	-	50	52
Crude Death & Loss Rate (%)	30	23	-	25	33	37
Young Death & Loss Rate (%)	38	-	-	-	50	40
Payback Rate (%)	91	-	-	-	-	42

APPENDIX CTABLE 7RABBIT INVENTORIES BY DISTRICT: BELIZE 4-H CLUB MEMBERS SURVEYED - 1980

	<u>BELIZE</u>	<u>CAYO</u>	<u>COROZAL</u>	<u>ORANGE WALK</u>	<u>STANN CREEK</u>	<u>TOTAL</u>
Beginning of Year	19	8	-	5	2	34
Number Born	26	46	-	8	-	80
Total Number Died or Lost	26	39	-	6	2	73
Returned to 4-H Center or Distributed	-	-	-	-	-	-
End of Year Total	19	15	-	7	-	41

APPENDIX CTABLE 8RABBIT PRODUCTION INDICATORS BY DISTRICT: BELIZE 4-H CLUB MEMBERS SURVEYED1 9 8 0

	<u>BELIZE</u>	<u>CAYO</u>	<u>COROZAL</u>	<u>ORANGE WALK</u>	<u>STANN CREEK</u>	<u>TOTAL</u>
Crude Herd Growth Rate (%)	-	87	NA	40	-100	21
Crude Birth Rate (%)	137	575	-	160	-	235
Total Death & Loss Rate (%)	58	72	-	46	100	64
Young Death & Loss Rate (%)	100	80	-	75	-	86
Payback Rate (%)	-	-	-	-	-	-

APPENDIX CTABLE 9ITEM ANALYSIS: BENEFITS REPORTED BY 4-H CLUB MEMBERS RECEIVING TRAINING AND LIVESTOCK, TRAINING ONLY AND LIVESTOCK ONLY - BELIZE, 1981

<u>BENEFITS</u>	<u>TRAINING &amp; LIVESTOCK</u>			<u>TRAINING ONLY</u>			<u>LIVESTOCK ONLY</u>			<u>ALL RESPONDENTS</u>		
	<u>YES</u>	<u>NO</u>	<u>NO ANSWER</u>	<u>YES</u>	<u>NO</u>	<u>ANSWER</u>	<u>YES</u>	<u>NO</u>	<u>ANSWER</u>	<u>YES</u>	<u>NO</u>	<u>ANSWER</u>
<u>TANGIBLE</u>												
Meat Consumption	2	3	1	6	6	7	-	10	-	8	19	8
Milk Consumption	-	5	1	4	8	7	-	10	-	4	23	8
Egg Consumption	-	2	4	5	7	7	-	10	-	5	19	11
Income	2	3	1	2	6	11	-	10	-	4	19	12
<u>INTANGIBLE</u>												
New knowledge and skills	3	1	2	9	-	10	9	-	1	21	1	13
Leadership development	4	1	1	11	-	8	9	-	1	24	1	10
Motivated to do other activities	5	1	-	9	1	9	9	-	1	23	2	10
Increased community participation	5	-	1	8	2	8	4	3	3	17	6	12

## APPENDIX C

TABLE 10

ITEM ANALYSIS IN PERCENTAGES OF 4-H CLUB MEMBERS RECEIVING LIVESTOCK AND TRAINING, TRAINING ONLY AND LIVESTOCK ONLY - BELIZE, 1981

<u>BENEFITS</u>	<u>TRAINING &amp; LIVESTOCK</u>			<u>TRAINING ONLY</u>			<u>LIVESTOCK ONLY</u>			<u>ALL RESPONDENTS</u>		
	<u>YES</u> %	<u>NO</u> %	<u>NO ANSWER</u> %	<u>YES</u> %	<u>NO</u> %	<u>NO ANSWER</u> %	<u>YES</u> %	<u>NO</u> %	<u>NO ANSWER</u> %	<u>YES</u> %	<u>NO</u> %	<u>NO ANSWER</u> %
<u>TANGIBLE</u>												
Meat Consumption	33	50	17	32	32	36	-	100	-	23	54	23
Milk Consumption	-	83	17	21	42	37	-	100	-	11	66	23
Egg Consumption	-	33	67	26	37	37	-	100	-	14	54	31
Income	33	50	17	11	32	67	-	100	-	11	54	34
<u>INTANGIBLE</u>												
New knowledge and skills	50	17	33	47	-	53	90	10	-	60	3	37
Leadership development	67	17	16	58	-	42	90	-	10	69	3	28
Motivated to do other activities	83	17	-	47	5	48	90	-	10	66	6	28
Increased community participation	83	-	17	42	16	42	40	30	30	49	17	34

HEIFER PROJECT INTERNATIONAL, INC.GOAT PROJECT ANNUAL PRODUCTION AND PARTICIPATION SUMMARYINSTRUCTIONS

This report is for local project leaders or managers to complete.

The answers to the questions below will tell you how well your goats are doing and will help you in planning for the coming year.

- I. If your project does not have a base herd or central farm but provides goats directly to participants:
  - A. Fill out a Goat Production Report for each participant in your project.
  - B. Add up all the answers and fill in the group totals on this Summary form. Use a separate copy for each breed.
  - C. Return the completed Summaries immediately to the person who gave or sent it to you.
- II. If your goats are all located in a base herd (reproduction center, central farm, school or mission farm, research center, etc.) and offspring have not yet been distributed to others:
  - A. Complete one copy of this form for each breed in your herd.
  - B. Return these forms immediately to the person who gave or sent it to you.
- III. If your project has a base herd and also distributed goats directly to participants (or local groups):
  - A. Fill out a Goat Production Report with each participant in your project.
  - B. Add up all the answers and fill in the blanks on this Summary.
  - C. For your base herd complete a Goat Production Report for each breed.
  - D. Return a completed Summary of the individual participants and a copy of the Goat Production Report for each breed in your base herd immediately to the person who gave or sent it to you.

H.P.I. will analyze your information and share the results with you as soon as possible.

GOAT PRODUCTION REPORT

COUNTRY \_\_\_\_\_ NAME OF PROJECT \_\_\_\_\_

BREED OF GOAT \_\_\_\_\_ DATE \_\_\_\_\_

This summary tells about the goats of: (Check the appropriate box)

 An Individual Producer A Project Base Herd such as reproduction center, central farm, school or mission herd, research center, foundation herd, etc.

Every year it is good to review how well your goats are doing and how well all the goats in your project are doing. By filling out this question sheet you will be able to see your progress over the past year.

By answering the questions below you will also help H.P.I. to do a better job assisting your group and other projects around the world. All of your answers are strictly confidential.

1. In all, how many goats did you have at the beginning of the year (January 1) ?

Total \_\_\_\_\_

If possible, please give the number of young males, mature males, young females and mature does you had on January 1.

Young males \_\_\_\_\_ Young females \_\_\_\_\_

Mature males \_\_\_\_\_ Mature does \_\_\_\_\_

2. How many goats did you have at the end of the year (December 31) ?

Total \_\_\_\_\_

How many of each of the following did you have at the end of the year (December 31) ?

Young males \_\_\_\_\_ Young females \_\_\_\_\_

Mature males \_\_\_\_\_ Mature does \_\_\_\_\_

3. How many live kids were born last year ?

Total \_\_\_\_\_

4. How many of your goats died last year ?

Total \_\_\_\_\_

How many young males and females died ? \_\_\_\_\_How many mature males and does died ? \_\_\_\_\_

5. How many goats did you sell last year ? (\*For base herd, do not include those sold to project participants as part of your project; include only those sold commercially.)

Total \_\_\_\_\_

Young \_\_\_\_\_ Mature \_\_\_\_\_

6. How many goats did you use for food last year ?  
Total \_\_\_\_\_
7. How many goats were removed from your herd by other means last year ?  
Total \_\_\_\_\_
8. How many goats did you receive through H.P.I. when you first started ?  
Total \_\_\_\_\_
9. How many additional goats did you receive through H.P.I. last year ? (\*For base herd, do not include offspring returned to your herd by participants.)  
Total \_\_\_\_\_  
Young male \_\_\_\_\_ Young female \_\_\_\_\_  
Mature male \_\_\_\_\_ Mature female \_\_\_\_\_
10. How many goats were added to your herd from other sources (donation or purchase) last year ?  
Total \_\_\_\_\_  
Young male \_\_\_\_\_ Young female \_\_\_\_\_  
Mature male \_\_\_\_\_ Mature female \_\_\_\_\_
11. PASSING ON THE GIFT
- A. For Individual Producers Only:  
How many goats did you return to the project for repayment or for distribution last year ?  
Total \_\_\_\_\_
- B. \*For Base Herd Only:  
How many offspring were distributed to participants last year ? (Either through direct distribution or sold to participants as a part of the project, etc.)  
Total \_\_\_\_\_
12. Did you have any of the following problems in raising your goats last year ? (Please check the appropriate boxes)
- |  |   |
|--|---|
| <input type="checkbox"/> Feed and Water            | <input type="checkbox"/> Veterinary supplies and medicines            |
| <input type="checkbox"/> Operating cash and credit | <input type="checkbox"/> Marketing                                    |
| <input type="checkbox"/> Diseases                  | <input type="checkbox"/> Need more help in knowing how to raise goats |
| <input type="checkbox"/> Breeding and reproduction |   |

GOAT PROJECT ANNUAL PRODUCTION AND PARTICIPATION SUMMARY

(Please fill out one of these forms for  
each breed of goat in your project)

COUNTRY \_\_\_\_\_ NAME OF PROJECT \_\_\_\_\_

BREED OF GOAT \_\_\_\_\_ DATE \_\_\_\_\_

Name of person submitting this form \_\_\_\_\_

1. In all, how many goats did you have in your project at the beginning of the year (January 1) ?

Total \_\_\_\_\_

Please give the number of young males, mature males, young females and mature does in your herd on January 1, in the spaces below:

Young male \_\_\_\_\_ Young females \_\_\_\_\_

Mature male \_\_\_\_\_ Mature females \_\_\_\_\_

2. In all, how many goats did you have in your project at the end of the year (December 31) ?

Total \_\_\_\_\_

Young male \_\_\_\_\_ Young females \_\_\_\_\_

Mature male \_\_\_\_\_ Mature females \_\_\_\_\_

3. How many live kids were born last year ?

Total \_\_\_\_\_

4. How many of the goats in your project died last year ?

Total \_\_\_\_\_

How many young males and females died ? \_\_\_\_\_

How many mature males and does died ? \_\_\_\_\_

5. How many goats were sold from your project last year ?

Total \_\_\_\_\_

Young \_\_\_\_\_ Mature \_\_\_\_\_

6. How many goats in your project were used for food last year ?

Total \_\_\_\_\_

7. How many goats were removed from the project by other means last year ?

Total \_\_\_\_\_

8. How many goats did you receive through H.P.I. at the start of the project ?

Total \_\_\_\_\_

9. How many additional goats did your project receive through H.P.I. last year (not including those returned by participants) ?  
 Total \_\_\_\_\_  
 Young male \_\_\_\_\_ Young female \_\_\_\_\_  
 Mature male \_\_\_\_\_ Mature female \_\_\_\_\_
10. How many goats were added to your project from other sources (donation or purchase) last year ?  
 Total \_\_\_\_\_  
 Young male \_\_\_\_\_ Young female \_\_\_\_\_  
 Mature male \_\_\_\_\_ Mature female \_\_\_\_\_
11. How many kids were returned to the project by the participants for repayment or distribution last year ?  
 Total \_\_\_\_\_
12. Last year, how many participants (members) had difficulties or problems in each of the following areas ? (Please enter the number of participants for whom each of these was a problem.)
- |  |         |
|--|---------|
| Feed and water                               | # _____ |
| Operating, cash and credit                   | # _____ |
| Diseases                                     | # _____ |
| Breeding and reproduction                    | # _____ |
| Veterinary supplies and medicines            | # _____ |
| Marketing                                    | # _____ |
| Need more help in knowing how to raise goats | # _____ |
13. How many active participants (members) were in the project at the beginning of last year ?  
 Total \_\_\_\_\_
14. How many active participants (members) were in the project at the end of last year ?  
 Total \_\_\_\_\_

HEIFER PROJECT INTERNATIONAL, INC.SWINE PROJECT ANNUAL PRODUCTION AND PARTICIPATION SUMMARYINSTRUCTIONS

This report is for local project leaders or managers to complete.

The answers to the questions below will tell you how well your swine are doing and will help you in planning for the coming year.

- I. If your project does not have a base herd or central farm but provides swine directly to participants:
  - A. Fill out a Swine Production Report for each participant in your project.
  - B. Add up all the answers and fill in the group totals on this Summary form. Use a separate copy for each breed.
  - C. Return the completed Summaries immediately to the person who gave or sent it to you.
  
- II. If your swine are all located in a base herd (reproduction center, central farm, school or mission farm, research center, etc.) and offspring have not yet been distributed to others:
  - A. Complete one copy of this form for each breed in your herd.
  - B. Return these forms immediately to the person who gave or sent it to you.
  
- III. If your project has a base herd and also distributed swine directly to participants (or local groups):
  - A. Fill out a Swine Production Report with each participant in your project.
  - B. Add up all the answers and fill in the blanks on this Summary.
  - C. For your base herd complete a Swine Production Report for each breed.
  - D. Return a completed Summary of the individual participants and a copy of the Swine Production Report for each breed in your base herd immediately to the person who gave or sent it to you.

H.P.I. will analyze your information and share the results with you as soon as possible.

HEIFER PROJECT INTERNATIONAL, INC.SWINE PRODUCTION REPORT

COUNTRY \_\_\_\_\_ NAME OF PROJECT \_\_\_\_\_

BREED OF SWINE \_\_\_\_\_ DATE \_\_\_\_\_

This summary tells about the swine of: (Check the appropriate box)

 An Individual Producer A Project Base Herd such as reproduction center, central farm, school or mission herd, research center, foundation herd, etc.

Every year it is good to review how well your swine are doing and how well all the swine in your project are doing. By filling out this question sheet you will be able to see your progress over the past year.

By answering the questions below you will also help H.P.I. to do a better job assisting your group and other projects around the world. All of your answers are strictly confidential.

1. In all, how many swine did you have at the beginning of the year (January 1) ?

Total \_\_\_\_\_

If possible, please give the number of young males, mature males, young females and mature sows you had on January 1.

Young males \_\_\_\_\_ Young females \_\_\_\_\_

Mature males \_\_\_\_\_ Mature sows \_\_\_\_\_

2. How many swine did you have at the end of the year (December 31) ?

Total \_\_\_\_\_

How many of each of the following did you have at the end of the year (December 31) ?

Young males \_\_\_\_\_ Young females \_\_\_\_\_

Mature males \_\_\_\_\_ Mature sows \_\_\_\_\_

3. How many live pigs were born last year ?

Total \_\_\_\_\_

4. How many of your swine died last year ?

Total \_\_\_\_\_

How many young males and females died ? \_\_\_\_\_How many mature males and sows died ? \_\_\_\_\_

5. How many swine did you sell last year ? (\*For base herd, do not include those sold to project participants as part of your project; include only those sold commercially.)

Total \_\_\_\_\_

Young \_\_\_\_\_ Mature \_\_\_\_\_

6. How many swine did you use for food last year ?  
 Total \_\_\_\_\_
7. How many swine were removed from your herd by other means last year ?  
 Total \_\_\_\_\_
8. How many swine did you receive through H.P.I. when you first started ?  
 Total \_\_\_\_\_
9. How many additional swine did you receive through H.P.I. last year ? (\*For base herd, do not include offspring returned to your herd by participants.)  
 Total \_\_\_\_\_

Young male \_\_\_\_\_ Young female \_\_\_\_\_  
 Mature male \_\_\_\_\_ Mature female \_\_\_\_\_

10. How many swine were added to your herd from other sources (donation or purchase) last year ?  
 Total \_\_\_\_\_
- Young male \_\_\_\_\_ Young female \_\_\_\_\_  
 Mature male \_\_\_\_\_ Mature female \_\_\_\_\_

11. PASSING ON THE GIFT

A. For Individual Producers Only:

How many pigs did you return to the project for repayment or for distribution last year ?  
 Total \_\_\_\_\_

\*For Base Herd Only:

How many offspring were distributed to participants last year ? (Either through direct distribution or sold to participants as a part of the project, etc.)  
 Total \_\_\_\_\_

12. Did you have any of the following problems in raising your swine last year ? (Please check the appropriate boxes)

- |  |   |
|--|---|
| <input type="checkbox"/> Feed and Water            | <input type="checkbox"/> Veterinary supplies and medicines            |
| <input type="checkbox"/> Operating cash and credit | <input type="checkbox"/> Marketing                                    |
| <input type="checkbox"/> Diseases                  | <input type="checkbox"/> Need more help in knowing how to raise swine |
| <input type="checkbox"/> Breeding and reproduction |   |

HEIFER PROJECT INTERNATIONAL, INC.SWINE PROJECT ANNUAL PRODUCTION AND PARTICIPATION SUMMARY

(Please fill out one of these forms for  
each breed of swine in your project)

COUNTRY \_\_\_\_\_ NAME OF PROJECT \_\_\_\_\_

BREED OF SWINE \_\_\_\_\_ DATE \_\_\_\_\_

Name of person submitting this form \_\_\_\_\_

1. In all, how many swine did you have in your project at the beginning of the year (January 1) ?

Total \_\_\_\_\_

Please give the number of young males, mature males, female pigs and gilts and mature sows in your herd on January 1, in the spaces below:

Young male \_\_\_\_\_ Female pigs and gilts \_\_\_\_\_

Mature male \_\_\_\_\_ Mature sows \_\_\_\_\_

2. In all, how many swine did you have in your project at the end of the year (December 31) ?

Total \_\_\_\_\_

How many of each of the following were there in your project on December 31 ?

Young male \_\_\_\_\_ Female pigs and gilts \_\_\_\_\_

Mature male \_\_\_\_\_ Mature sows \_\_\_\_\_

3. How many live pigs were born last year ?

Total \_\_\_\_\_

4. How many of the swine in your project died last year ?

Total \_\_\_\_\_

How many young males, female pigs and gilts died ? \_\_\_\_\_

How many mature males and sows died ? \_\_\_\_\_

5. How many swine were sold from your project last year ?

Total \_\_\_\_\_

Young \_\_\_\_\_ Mature \_\_\_\_\_

6. How many swine in your project were used for food last year ?

Total \_\_\_\_\_

7. How many swine were removed from the project by other means last year ?

Total \_\_\_\_\_

8. How many swine did you receive through H.P.I. at the start of the project ?

Total \_\_\_\_\_

9. How many additional swine did your project receive through H.P.I. last year (not including those returned by participants) ?  
 Total \_\_\_\_\_  
 Young male \_\_\_\_\_ Young female \_\_\_\_\_  
 Mature male \_\_\_\_\_ Mature female \_\_\_\_\_
10. How many swine were added to your project from other sources (donation or purchase) last year ?  
 Total \_\_\_\_\_  
 Young male \_\_\_\_\_ Young female \_\_\_\_\_  
 Mature male \_\_\_\_\_ Mature female \_\_\_\_\_
11. How many pigs were returned to the project by the participants for repayment or distribution last year ?  
 Total \_\_\_\_\_
12. Last year, how many participants (members) had difficulties or problems in each of the following areas ? (Please enter the number of participants for whom each of these was a problem.)
- |  |   |       |
|--|---|-------|
| Feed and water                               | # | _____ |
| Operating cash and credit                    | # | _____ |
| Diseases                                     | # | _____ |
| Breeding and reproduction                    | # | _____ |
| Veterinary supplies and medicines            | # | _____ |
| Marketing                                    | # | _____ |
| Need more help in knowing how to raise swine | # | _____ |
13. How many active participants (members) were in the project at the beginning of last year ?  
 Total \_\_\_\_\_
14. How many active participants (members) were in the project at the end of last year ?  
 Total \_\_\_\_\_

APPENDIX EAGREEMENT BETWEEN THE GOVERNMENT OF BELIZE AND HEIFER  
PROJECT INTERNATIONAL, INC., TO DEVELOP THE NATIONAL 4-H CENTER

This AGREEMENT is entered into by and between the Government of Belize represented by the Ministry of Social Services, Labour and Local Government, as party of the first part, and Heifer Project International, Inc., (a Company incorporated under the law of the State of Little Rock, Arkansas) as party of the second part.

Whereas the National 4-H Center is intended to provide training to a Corp of 4-H Voluntary Leaders, who it is hoped will assist in the expansion of the general 4-H Movement. The Center is situated on the Agricultural Show Grounds of the Ministry of Agriculture and the training is geared to foster leadership abilities, and to provide basic training in agriculture. It is planned to use the 4-H movement as one of the mediums to inculcate an interest in agriculture among our young people.

And whereas the Center will place emphasis on rabbit production and management, vegetable gardening and the rearing of poultry, pigs, goats, sheep, ducks, turkeys and bees. Trainees will be in residence for three months, after which they will be given loans to begin projects in any one of the areas in which they have been trained at the Center.

A. Now therefore, Heifer Project International, Inc., hereby agrees and undertakes to:

1. Participate with the Ministry of Social Services in an Advisory Committee to supervise the operation of the Center, and periodically evaluate its progress.
2. Establish and operate a Rabbitry.
3. Establish and operate a Poultry project.
4. Establish and operate a Sheep herd.
5. Establish and operate a Goat herd.
6. Establish and operate a project in the rearing of ducks, turkeys and bees.
7. Establish and operate a Vegetable and Crop Division.
8. Construct necessary support buildings and facilities for the abovementioned projects.
9. Provide small hand tools and small power tools for construction and maintenance of all facilities at the Center.

10. Provide a small Tractor for the Center.
11. Fence all pastures and garden areas.
12. Accept responsibility for the procurement, transportation and handling of animals, food and equipment unavailable from within Belize, from the country of origin to the point of entry in Belize.
13. Assist with training programs at the Center and with follow-up work of the graduates of the Center.

B. In consideration wherefore the Government of Belize hereby agrees and undertakes to:

1. Set up an Advisory Committee to supervise the operation of the Center, and periodically evaluate its progress.
2. Accept responsibility for recruiting and training all trainees at the Center.
3. Arrange for the training at the Center of other personnel.
4. Arrange for follow-up and supervision of projects of the graduating trainees from the Center.
5. Gradually take over full responsibility from Heifer Project for managing all the projects of the 4-H Center over the following period:
  - a. February, 1980 - Take over of Bees and garden
  - b. June, 1980 - Take over of poultry
  - c. February, 1981 - Take over of Sheep and goats
  - d. February, 1981 - Take over of Maintenance of buildings
  - e. June, 1981 - Take over of Rabbits and all other expenses

It is understood that at the time of take over of the various projects, all equipments, income and inventory relevant to the particular project will be passed to Government as well.

- C. The Parties further agree that, as of September, 1981, Heifer Project International will assume an Advisory role, assisting with financial and animal inputs only on a limited basis as requested by the Government of Belize.

- D. This AGREEMENT shall be operative on the date of signing by both parties and shall be considered effective for a period of two (2) years, beginning from the date of signature.
- E. The Parties agree that they will do their best to honor the terms of this AGREEMENT, but that if conditions arise which render it necessary or convenient for either party to terminate it, such termination may be legally affected by that party giving ninety days written notice to the other party.
- F. The Parties further agree that since conditions may also arise which might render it necessary to modify this AGREEMENT, such modification may be legally executed by an exchange of letters between the Government of Belize, (Ministry of Social Services, Labour and Local Government) and Heifer Project International, Inc.
- G. This AGREEMENT may be renewed by an exchange of letters between the Government of Belize (Ministry of Social Services, Labour and Local Government) and Heifer Project International, Inc.
- H. In view of the beneficial nature of this project, and the charitable non-profit status of Heifer Project International, Inc., the Government agrees that all materials, equipment and supplies required to be imported by Heifer Project International, Inc., for the execution and administration of this project, as well as the personal effects, equipment and vehicles of the representatives of Heifer Project International in Belize will be admitted by the Government of Belize free of all import duties and taxes, at the time of first entry into the country.

SIGNED AT Belmopan THIS 6th DAY OF September, 1979

Sd/- XXXXXX                      Witness Sd/- XXXXX E. Middleton  
 (Minister of Social Services, Labour and Local Government)

Sd/- XXXX                      Witness Sd/- XXXXXXXX  
 John Dieterly, Jr.                      Mirian Dieterly  
 (Belize Representative for Heifer Project International, Inc.)

APPENDIX F



BELIZE

*Please Quote*

No. F/208/47/81(1)

MINISTRY OF LABOUR  
SOCIAL SERVICES,  
AND  
COMMUNITY DEVELOPMENT

11th March, 1981.

Rev. Cliff Bolenbacher,  
H.P.I. Representative,  
Belmopan.

Dear Rev. Bolenbacher,

This is to confirm our discussion of the 10th March, 1981 in which we agreed to an extension of the time schedule of the formal agreement between Government and Heifer Project International for the take over by Government of the animal projects at the 4-H Centre in Belmopan.

It is now agreed that Government would take over the financial management and care of the sheep and goats and the maintenance of the housing for the animals by June, 1981. Government would also take over the management of the Rabbit Project by June, 1982.

It was further agreed that a Feeder Pig Project would be started in the near future and an assessment of this project would be done in June 1982 to determine whether the project should be continued.

I would like to take this opportunity of extending the thanks and appreciation of the Government and people of Belize for the generous help and support being received from H.P.I.

With all best wishes.

Yours sincerely,

*E. M. Middleton*

E. M. Middleton (Mrs.)  
Permanent Secretary  
M/Social Services

cc: Mr. Ormin Schmidt ✓  
H.P.I.

APPENDIX GCOURSE CURRICULUM - BELIZE NATIONAL 4-H CENTER

## THE 4-H PLEDGE

I pledge my HEAD to clearer thinking,  
my HEART to greater loyalty,  
my HANDS to larger service, and  
my HEALTH to better living,  
for my club, my community, my country, and my world.

## THE 4-H MOTTO

Learning to do by doing to make the best better.

## THE 4-H CREED

I believe in 4-H club work for the opportunity it will give me to become a useful citizen.

I believe in the training of my HEAD for the power it will give me to think, plan, and reason.

I believe in the training of my HEART for the nobleness it will give me to become kind, sympathetic, and true.

I believe in the training of my HANDS for the dignity it will give me to be helpful, useful, and skillful.

I believe in the training of my HEALTH for the strength it will give me to enjoy life, resist disease, and to work efficiently.

I believe in BELIZE as my country and in the commonwealth of Nations to which I belong and in the part I can play for their well being.

In all these things I believe, and I am willing to dedicate my efforts to their fulfillment.

## EMBLEM

The four-leaf clover with the letter "H" on each leaf is the emblem. The colors are green and white - white symbolizes purity; green represents nature's most common color in the great outdoors and is emblematic of youth, life, and growth. The H's stand for Head, Heart, Hands, and Health.

## THE 4-H SONG

I've got the 4-H Spirit up in my Head, up in my Head,  
up in my Head.

I've got the 4-H Spirit up in my Head, up in my Head, to stay.

-- deep in my Heart  
-- here in my Hands  
-- all over me.

BOYS' 3-MONTH TRAINING COURSE - WEEKLY WORK SCHEDULE

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
5:30	Wake-Up Call	Wake-Up Call	Wake-Up Call	Wake-Up Call	Wake-Up Call	Wake-Up Call	Wake-Up Call
6:00- 6:30	**BREAKFAST**	**BREAKFAST**	**BREAKFAST**	**BREAKFAST**	**BREAKFAST**	**BREAKFAST**	**BREAKFAST**
6:30- 7:00	Clean Up Dorm	Clean Up Dorm	Clean Up Dorm	Clean Up Dorm	Clean Up Dorm	Clean Up Dorm	Clean Up Dorm
7:00- 9:00	Chores	Chores	Gardening	Chores	Gardening	Chores	Chores
9:00-11:00	Church	Follow-Up	Goats & Sheep	Follo-up	Goats & Sheep	Follow-up	Wash
11:00-12:00	Church	Free	Bees Class	Free	Bees Class	Slaughter	Wash
12:00- 1:00	**LUNCH**	**LUNCH**	**LUNCH**	**LUNCH**	**LUNCH**	**LUNCH**	**LUNCH**
1:00- 3:00	Chores	Lectures	Poultry Class	Leadership	Poultry Class	Crafts Class	Rest
3:00- 5:00	Chores	Lockup	Rabbits Class	Lockup	Rabbits Class	Lockup	
5:00- 6:00	**** CLEAN UP AND EXERCISE ****						
6:00- 7:00	**TEA**	**TEA**	**TEA**	**TEA**	**TEA**	**TEA**	**TEA**
7:00- 8:00	**** RELAX ****			**** RELAX ****			
8:00- 9:30	ORGANIZED RECREATIONS, FILMS, ETC						
9:30-10:00	**** QUIET PERIOD - LIGHTS OUT - NO TALKING ****						

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OBJECTIVES OF LEADERSHIP TRAINING COURSE

Upon completion of this course the trainee should:

1. Understand why it is important to be involved in leadership training.
2. Be able to recite the 4-H Pledge, Motto, and Creed from memory.
3. Be able to organize and effectively run a 4-H Club.
4. Know various teaching methods to use in teaching 4-H members.
5. Be able to demonstrate good and poor leadership qualities and actions.
6. Be able to develop a list of projects and activities a 4-H Club could do.
7. Be able to enlist the aid of parents, other community leaders, and supporters of 4-H work
8. Understand the importance of good communication.
9. Be able to work effectively in a group decision-making situation.
10. Be able to budget his/her time to make the maximum use of that time.
11. Be able to take a responsible evaluation of this course, and of any other planned activity.

COURSE OUTLINE

- |   |   |
|---|---|
| <p>I. 4-H In Belize</p> <ol style="list-style-type: none"> <li>A. Introduction to 4-H</li> <li>B. The 4-H Pledge, Creed, Motto</li> <li>C. History of 4-H in Belize</li> <li>D. What is 4-H ?</li> </ol> <ol style="list-style-type: none"> <li>1. Goals</li> <li>2. Methods</li> <li>3. Results</li> </ol>               | <p>II. Starting a 4-H Club in Belize</p> <ol style="list-style-type: none"> <li>A. Recruiting Members</li> <li>B. Parliamentary Procedures</li> <li>C. Planning a program</li> <li>D. Planning Education and Interesting Meetings</li> </ol> <ol style="list-style-type: none"> <li>1. Speakers</li> <li>2. Visual Aids</li> <li>3. Recreation</li> <li>4. Demonstration</li> <li>5. Tours</li> <li>6. Other</li> </ol> |
| <p>III. What is a good 4-H Leader ?</p> <ol style="list-style-type: none"> <li>A. Good leader vs poor leader</li> <li>B. Taking a look at yourself as a leader</li> <li>C. The teacher-learner roles in 4-H Clubs</li> <li>D. The 4-H leader</li> <li>E. The role of the parents</li> <li>F. Community support</li> </ol> | <p>IV. Working as a team together</p> <ol style="list-style-type: none"> <li>A. Teamwork: What is it ?</li> <li>B. Committee work</li> <li>C. Community service projects</li> <li>D. 4-H events</li> </ol>  |
| <p>V. Communication techniques</p> <ol style="list-style-type: none"> <li>A. Reflective listening</li> <li>B. Positive and negative reactions</li> <li>C. Active listening</li> <li>D. Facial expressions</li> <li>E. What good communication is all about</li> </ol>   | <p>VI. Time management</p> <ol style="list-style-type: none"> <li>A. Priorities</li> <li>B. Budgeting your time</li> </ol>  |
| <p>VI. Evaluation of course</p>   | <p>VIII. Prepare for graduation</p>   |

LEADERSHIP COURSE SYLLABUSWEEK ONE

Day 1 Orientation to Center; Greeting by staff; discussion of leadership

WEEK TWO

Day 2 Who are you ? Pledge, Creed, Motto; make posters

WEEK THREE

Day 3 History of Belize 4-H movement; History of Training Center; 4-H Goals

WEEK FOUR

Day 4 Membership; Parliamentary Procedures

WEEK FIVE

Day 5 Program planning

WEEK SIX

Day 6 Effectiveness of a guest speaker; The National 4-H Foundation

WEEK SEVEN

Day 7 Use of visual aids and demonstrations

WEEK EIGHT

Day 8 Recreation, tours; review

WEEK NINE

Day 9 Qualities of a good 4-H Leader; teacher-learner roles

WEEK TEN

Day 10 Team work; community work; 4-H events

WEEK ELEVEN

Day 11 Communication techniques

WEEK TWELVE

Day 12 Time management; course evaluation

WEEK THIRTEEN

Day 13 December 11 - Graduation

POULTRY COURSE OBJECTIVES

At the end of this program participants should:

1. Be able to care for and maintain from 50 to 500 broilers from one day old to slaughter age.
2. Be able to recognize and treat for common diseases and parasites in poultry.
3. Possess the ability to manage a small layers' operation - caring, collecting, storing and marketing eggs.
4. Be able to construct a poultry coop using as many locally available materials as possible.
5. Write, or verbally inform others on the management of a small poultry operation.

REFERENCES:

"Let's All REAP Together"  
 "Successful Duck and Geese Rearing"  
 Poultry 4-H Project Manual  
 Various handouts

TECHNICAL VOCABULARY:

Rooster	Coccidiosis
Hen	Fowl pox
Chick	Marek's disease
Layer	New Castle's
Broiler	Worms
Brooder	Mites
Feeder	Cannibalism
Waterer	Plucking
Gizzard	Broodiness
Crop	Muscovy
Incubation	Drake
Live weight	Flock
Slaughter weight	Khaki Campbell
Feathers	Dual-purpose bird
Molting	Pullet
Culling	Pre-mixed feeds
Comb	Production
Debeaking	Tom
Vent	Turkey hen
Starter ration	

POULTRY SYLLABUSWEEK ONE

- Day 1 (1 hr) Orientation to Center  
2 (2 hr) Greeting by staff; summary of poultry course

WEEK TWO

- Day 3 Why raise poultry; breeds  
4 Where to purchase; field trip to Spanish lookout

WEEK THREE

- Day 5 Management of broiler chicks  
6 The brooder

WEEK FOUR

- Day 7 Debeaking  
8 Broiler nutrition; feeds and feeding

WEEK FIVE

- Day 9 Review  
10 Internal and external diseases and parasites

WEEK SIX

- Day 11 Broiler profit analysis  
12 Slaughtering

WEEK SEVEN

- Day 13 Management of laying hens  
14 The hen house

WEEK EIGHT

- Day 15 Feeds and feeding; expected egg production and egg care  
16 Culling and molting

WEEK NINE

- Day 17 Review; observation of ducks and turkeys  
18 Introduction to ducks and turkeys; breeds

WEEK TEN

- Day 19 Artificial hatching (incubation)  
20 Diseases and other problems in raising ducks and turkeys

WEEK ELEVEN

- Day 21 Feeds and feeding  
22 Observation of poultry; review and catch-up

WEEK TWELVE

- Day 23 Field trip  
24 Review

WEEK THIRTEEN

- Day 25 Prepare for graduation

RABBIT COURSE OBJECTIVES

At the end of this program participants should:

1. Be able to identify rabbit breeds raised in Belize and select a good type for a given situation.
2. Be able to construct a rabbit hutch from locally available materials.
3. Be able to discuss nutritional requirements of does, bucks, and bunnies.
4. Be able to arrange a mating.
5. Be able to identify symptoms of disease and apply proper treatment.
6. Be able to slaughter a rabbit and tan its hide by the method taught.
7. Be able to care for and maintain from 3 to 5 rabbits from birth to slaughter age.

REFERENCES:

"Raising Rabbits in Belize"

"Let's All REAP Together"

Rabbit 4-H Project Manual

Various handouts

"Commercial Rabbit Raising," USDA Hbk #309

"Domestic Rabbits: Diseases and Parasites," USDA Hbk #490

TECHNICAL VOCUBULARY:

Buck	Breeding
Stress	Doe
Meat Breeds	Feeder
Litter	Fur Breeds
Waterer	Hutch
Slaughter	Vitamins/Minerals
Wean	Tanning Hides
Feed Concentrate	Kindle
Nest Box	Tattoo
Pedigree	Dress-out
Comfrey	Nutrition
Sore Hocks	Cassava
Mating	External/Internal Parasites
Wax Plant	Gestation
Disease	Hogbush

## Belize Report

APPENDIX G  
RABBIT SYLLABUS

WEEK ONE

Day 1 Orientation to Center  
2 Orientation to Center and  
Greeting by staff  
3 Summary of rabbit course

WEEK TWO

Day 4 Why raise rabbits; breeds  
5 Inspection of rabbits; selection  
of good animal  
6 External anatomy of rabbits, sexing

WEEK THREE

Day 7 Handling; regularity of care  
8 Record-keeping  
9 Housing

WEEK FOUR

Day 10 Hutch construction  
11 Feeders and waterers  
12 The nest box; other equipment

WEEK FIVE

Day 13 Inspection of rabbits  
14 Nutritional requirements  
15 Feeds and feeding

WEEK SIX

Day 16 Breeding stock  
17 Arranging a mating  
18 Pregnancy and kindling

WEEK SEVEN

Day 19 Preventative disease measures  
20 Internal diseases  
21 External illnesses and  
parasites

WEEK EIGHT

Day 22 Inspection of rabbits  
23 Special problems  
24 Review

WEEK NINE

Day 25 Slaughtering  
26 Tanning  
27 Tanning

WEEK TEN

Day 28 Review and catch-up  
29 Record-keeping  
30 Profit analysis

WEEK ELEVEN

Day 31 Marketing  
32 Eating rabbit  
33 Review

WEEK TWELVE

Day 34 Disease treatments  
35 Inspection of animals  
36 Setting up your own rabbit  
enterprise

WEEK THIRTEEN

Day 37 Review; prepare for graduation  
38 Graduation

APPENDIX G  
OBJECTIVES OF BEE COURSE

At the end of this program participants should:

1. Be able to identify a Queen, a Worker, and a Drone from pictures of each or in the hive.
2. Be able to construct a hive according to standards given at the 4-H Center.
3. Be able to identify a problem in a hive (disease, pest, supercedure, swarming) and discuss remedies.
4. Be able to identify a hive with an actively laying Queen.
5. Be able to demonstrate removal of honey from the hive and its extraction from the comb.
6. Be able to identify plants bees enjoy working for nectar and pollen.
7. Be able to care for and maintain a colony for one year.

REFERENCES:

"Beekeeping in Belize"

"Honey"

Bee 4-H Project Manual

VOCABULARY:

Queen	Extraction
Drone	Robbing the hive
Workers	Swarming
Colony	Supercedure
Hive:	Pesticide poisoning
Super	Queen cells
Brood frame	European Foul Brook
Cover	Dysentery
Bottom board	Wax moth
Wax foundation	Comb
Equipment:	Pollination
Nets/Water jars	Hive inspection
Smoker	Observation
Hive tool	Profit analysis
Metal pan	Pollen
Pupae	Nectar
Eggs	Beeswax
Larvae	
Honey	
Propolis	

WEEK ONE

Day 1 Orientation to Center  
 2 Orientation; Greeting by staff  
 3 Summary of Bee course

WEEK TWO

Day 4 Why raise bees; bee breeds  
 5 The bee community; identification  
 6 Bee equipment

WEEK THREE

Day 7 Housing  
 8 Hive construction  
 9 Hive construction

WEEK FOUR

Day 10 Site selection; plants worked by bees  
 11 Starting a colony; hiving a swarm  
 12 Review

WEEK FIVE

Day 13 Hive inspection  
 14 Observation  
 15 Finding the queen

WEEK SIX

Day 16 Hive inspection  
 17 Bee diseases  
 18 Parasites of bees

WEEK SEVEN

Day 19 Hive inspection and observa-  
 tion of comb  
 20 Control of swarming and  
 supercedure  
 21 Pesticide poisoning

WEEK EIGHT

Day 22 Hive inspection and disease  
 treatment  
 23 Other problems in beekeeping  
 24 Feeding bees

WEEK NINE

Day 25 Moving a hive; dividing a  
 colony  
 26 Hive inspection  
 27 Adding supers

WEEK TEN

Day 28 Robbing the hive  
 29 Extraction of honey  
 30 Bottling and storing honey

WEEK ELEVEN

Day 31 Foundation wax vs comb honey  
 32 Bee products  
 33 Raising bees for sale

WEEK TWELVE

Day 34 Record-keeping  
 35 Marketing bee products  
 36 Cost analysis

WEEK THIRTEEN

Day 37 Miscellaneous and review  
 38 Prepare for graduation

GARDENING COURSE OBJECTIVES

At the end of this program participants should:

1. Be able to prepare, maintain, and harvest a plot of one acre.
2. Be able to construct a seed bed and lay out rows.
3. Be able to describe the vegetables and crops grown in Belize and the planting procedure for each.
4. Be able to identify common crop diseases and pest insects, and relate their controls.
5. Be able to discuss cropping patterns in Belize and how they relate to agriculture in Belize.
6. Be able to discuss the importance of raising vegetables at home.

REFERENCES

"Let's all REAP Together"

"Vegetable Gardening" and "Plant Disease" 4-H Project Manuals

VOCABULARY:

Seed bed or seed box	Soil insect
Germination	Insect damage
Hybrid seed	Chewing and sucking insects
Subsoil vs topsoil	Pesticides
Acid vs alkaline	Chemical, biological mechanical controls
Soil sample	Soilborne disease
Soil texture	Compost pile
Sandy, clayey, silty, loamy	Organic matter
Fertilizer	Manure
Deficiency	Decomposition
Disease symptoms	Residues
Fungus, virus, bacteria	Incorporate
Susceptible vs resistant	Micro-organisms
Variety	Fermentation
Disinfect and sterilize	Irrigation
Stalk, root, leaf whorl	Slope
Tassel, huck, cob	Ditch
Plow, thresh, grind, harvest	Hill-up
Seed storage	Drainage
• Water requirement	

GARDENING SYLLABUSWEEK ONE

- Day 1 (2 hr) Orientation to Center; greeting by staff  
2 (1 hr) Summary of gardening course

WEEK TWO

- Day 3 (2 hr) Why grow vegetables; site selection seed bed preparation  
4 (1 hr) Soils

WEEK THREE

- Day 5 (2 hr) Planing, fertilizing, watering  
6 (1 hr) Soils

WEEK FOUR

- Day 7 (2 hr) Composts  
8 (1 hr) Fertilizers

WEEK FIVE

- Day 9 (2 hr) Insecticides and pesticides  
10 (1 hr) Insecticides and pesticides

WEEK SIX

- Day 11 (2 hr) Vegetables grown in Belize; planting  
12 (1 hr) Vegetables grown in Belize, diseases and pests

WEEK SEVEN

- Day 13 (2 hr) Thinning, transplanting, weeding, staking, pruning  
14 (1 hr) Crop rotation

WEEK EIGHT

- Day 15 (2 hr) Plantation crops and field crops  
16 (1 hr) Milpa farming

WEEK NINE

- Day 17 (2 hr) Field work; garden management  
18 (1 hr) Harvesting, grading, seed storage

WEEK TEN

- Day 19 (2 hr) Field work; garden management  
20 (1 hr) Problems in Belize agriculture

WEEK ELEVEN

- Day 21 (2 hr) Field trip to orchard  
22 (1 hr) Seed set, grafting, budding

WEEK TWELVE

- Day 23 (2 hr) Review and catch-up  
24 (1 hr) Wrap-up and miscellaneous

WEEK THIRTEEN

- Day 25 (2 hr) Review and prepare for graduation

OBJECTIVES OF THE SHEEP AND GOATS ANIMAL HUSBANDRY COURSE

At the end of this program participants should be able:

1. To discuss reasons for raising goats and/or sheep in Belize.
2. To list characteristics of a good dairy goat.
3. To construct suitable shelter using locally available materials and/or select suitable pasture.
4. To design a feeding program for a goat/sheep in a given situation.
5. To properly milk a goat and process the milk.
6. To diagnose and treat common goat/sheep diseases.
7. To care for and maintain 3 to 12 animals from birth to two years of age.

REFERENCES:

Handout on "4-H Dairy Goat Management"  
 Handout on "Goat and Sheep Reproduction"  
 "Dairy Goats - Breeding, Feeding, Management"  
 "The Dairy Goat," 4-H pblcn 1019, MSU  
 "The Sheepman's Production Handbook" (SID)  
 "Dairy Goat Management" (Yellow book)  
 Other handouts

VOCABULARY:

Protein	Milk Stand
Toggenburg	Mastitis
Manger	Udder
Palatability	In Heat
Toxicity	Weaning
High-Energy Feed	Ketosis
Kidding	Disbud
Umbilical Cord	Concentrate
Afterbirth	Doe
Milk Fever	Buck
Teat	Colostrum

•Lactation Period

GOATS AND SHEEP SYLLABUSWEEK ONE

- Day 1 Orientation to Center/Greeting by staff  
2 Summary of goats and sheep course

WEEK TWO

- Day 3 (2 hr) Observation of animals; why raise goats and sheep; breeds  
4 (1 hr) Housing and pasturing

WEEK THREE

- Day 5 (2 hr) Observation of animals; care and management  
6 (1 hr) Ruminant nutrition

WEEK FOUR

- Day 7 (2 hr) Observation of animals; feeds and feeding  
8 (1 hr) Breeding; goat and sheep pasturing

WEEK FIVE

- Day 9 (2 hr) Health of sheep and goats; good husbandry practices  
10 (1 hr) Internal and external parasites; diseases

WEEK SIX

- Day 11 (2 hr) Other maintenance or health problems  
12 (1 hr) Performing necessary operations; docking, castration, dehorn

WEEK SEVEN

- Day 13 (2 hr) Milking and care of milk  
14 (1 hr) Processing milk

WEEK EIGHT

- Day 15 (2 hr) Cheese-making  
16 (1 hr) Review and catch-up

WEEK NINE

- Day 17 Review and catch-up  
18 Additional information

WEEK TEN

- Day 19 Shearing  
20 Sheep products

WEEK ELEVEN

- Day 21 Slaughtering  
22 Marketing; production records

WEEK TWELVE

- Day 23 Live animal and carcass evaluation  
24 Review and catch-up

WEEK THIRTEEN

- Day 25 Review and catch-up  
26 Preparation for graduation

APPENDIX GTHE BELIZE NATIONAL 4-H CENTERDORMITORY RULES FOR TRAINEES

1. All trainees must be neat, clean and property attired at all times.
2. All trainees must show respect to all members of staff and to each other.
3. Trainees should feel free to discuss any concerns or problems they may have during the training with the staff.
4. Trainees must help and cooperate with the Matron and Domestic Staff in keeping the Dormitory clean and tidy, and in assisting with the preparation and serving of meals.
5. No trainee may remove any other trainee's belongings without first getting permission from the owner.
6. No bad language is to be used by any trainee at any time.
7. Use of drugs and alcohol is prohibited.
8. Trainees are not allowed to smoke in any building at the Center.
9. All trainees must respect the property of the Dormitory.
10. Trainees may have visitors between the hours of 5:00 to 7:00 p.m. on weekdays. Parents can visit the Center at any time. However, the recommended time for parents' visits is between 10:00 a.m. to 2:00 p.m. on Saturdays and Sundays. Visitors are allowed only in the common Sitting Room or on the verandah.
11. Trainees are required to let the staff of the Center know their whereabouts at all times. Trainees are accountable to the Matron when they are not in the Farm Center.
12. No trainee will be allowed to go to any disco or clubs. If found in any of these, severe disciplinary action will be taken.
13. All trainees are encouraged to attend church services.
14. Trainees will be allowed to go to the Cinema once a week if accompanied by a responsible adult.
15. Visits to Belmopan are permitted if a staff member approves. No trainee is allowed to leave the Center without staff permission.
16. Trainees are allowed to visit home one weekend per month. Passage money is granted for the trainees' monthly visits to their homes.
17. Trainees are expected to "Learn By Doing." They should look upon the training program as a challenge. They are expected to participate in all activities taking place at the Center.
18. All trainees should be in bed by 10:00 p.m. and should rise at 5:30 a.m. everyday.
19. Failure to obey the rules and regulations of the Dormitory will result in disciplinary action being taken.

APPENDIX HBACKGROUND INFORMATION - BELIZE

Belize is the most northernly of the countries of Central America. It lies on the Caribbean Coast and is bounded on the North by Mexico and on the West and South by Guatemala. Although geographically located in Central America, it is considered part of the Caribbean region.

The country, including the Cayes, has an area of 8,667 square miles. It is 174 miles long and about 68 miles at its widest point.

The climate is sub-tropical with temperatures ranging from 16°C (59°F) to 38°C (100°F) on the coastal plains. The rainfall ranges from 59 inches in the North to 175 inches in the South. The heaviest rainfall is between the months of July and October.

Belize is predominantly agricultural country with vast amounts of unused lands. Major exports are sugar, molasses, clothing, citrus, seafood and lumber. Recently the country has also begun to export bananas, rice and beef.

Belizians are of a multi-racial, multi-ethnic descent. The main racial/ethnic groups are Creoles and Garifuna of African descent, Mestizos (Spanish/Maya), Amerindians (Maya), besides a number of people of East Indian and Spanish descent. English is the official language, but Spanish is commonly used along with Indian Dialects.

The population is approximately 145,000. Population density is low (5.5 persons per square mile). Approximately 55% of this population is concentrated in urban areas with the remaining 45% in the rural parts of the country. About 49% of the population is under fifteen years of age. The large proportion of the population being young, creates a heavy burden on social service and a high dependency ratio.

The birth rate is quite high. In 1975 the net reproductive ratio was 2.06, showing that the population has been able to replace itself on more than double the rate of exact replacement. Although the death rate has decreased, it is significant to note that large number of deaths occur in the age groups under (1) one year of age (233 per thousand), one to four (55 per thousand), and over fifty-five years (330 per thousand) in 1977.

Despite the relatively high birth rate, population growth in the 1970's and 1980's has slowed down considerably due to an increase in migration during the decade. While all ages show substantial losses to migration, the age groups of fifteen (15) to fifty-four (54) is most affected.

Internal migration from the rural to urban areas creates a number of serious problems in the country. Shunning of agricultural occupations leads to the labor force seeking employment in the already over-crowded urban areas. The proliferation of housing, sanitation and health care problems occurs as a result.

Belize, formerly known as British Honduras, is an internal self-governing dependency of Great Britain. Belize has a British Governor, and a Belizian Premier, Cabinet and bi-cameral National Assembly. The country is moving towards independence. The country is divided into six Districts - Corozal, Orange Walk, Belize, Cayo, Stann Creek and Toledo - with Belize District having about 37% of the population. The capital city since 1974 is Belmopan. Prior to that time it was Belize city which is the most densely populated area of the country (approximately 40,000 persons).

The Belizian currency is pegged at 2.1 ratio with the U.S. Dollar. The per capita income in the country in 1976 was figured at approximately \$800.32 ECY.