HAITI PRODUCTIVE LAND USE SYSTEMS

SOUTH-EAST CONSORTIUM FOR INTERNATIONAL DEVELOPMENT

and

AUBURN UNIVERSITY

February 1994

PROJECT PLUS BASELINE INFORMATION (Revised)
by
John Dale (Zach) Lea

with the computing assistance of
Stève Rivière and Edgar Liburd

SECID/Auburn PLUS Report No. 18

This work was performed under USAID Contract No. 521-0217-C-00-0004-00. The views expressed herein are the views of the Contractor and not necessarily those of the U. S. Agency for International Development.

TABLE OF CONTENTS

TABLES

FIGURES

APPENDICES

EXECUTIVE SUMMARY

The information in this report was developed from a baseline survey of randomly selected farm households in the 16 monitoring zones of the Productive Land Use Systems Project (PLUS) during the period June - October 1993. The purpose of the information is for monitoring, evaluating and guiding project progress toward the accomplishment of its objectives. The main findings are presented in concise form in this executive summary. More complete displays of the information and discussions of methodology and interpretation are given in the body of the report under similar headings. The questionnaire and manual used in the survey are presented in APPENDIX A.

FARMERS' PRESENT USE OF IMPROVED LAND USE PRACTICES

33 percent of farm plots have at least one of the four soil and water conservation structures promoted by the project.
10 percent have at least one hedgerow.
7 percent have at least one rockwall.
19 percent have at least one stubble barrier.
34 percent of reported ravines have at least one checkdam or ravine barrier.

PLUS PROJECT IMPACT ON IMPROVED LAND USE PRACTICES

The Project has an obvious impact on the adoption of improved land use practices. The vast majority of farm plots containing soil and water conservation practices are managed by farmers who participate in Project activities.

RELATION BETWEEN LAND TENURE AND ADOPTION RATES

There is a positive relationship between land tenure security and soil and water conservation structures. Farm plots being worked by farmers having secure land tenure on the plot are more likely to have conservation structures on them than are plots worked by farmers without secure land tenure agreements.

Globally, only 80 percent of the farm plots in our survey are covered by a secure tenure agreement that farmers feel would allow them to make long-term investments such as hedgerows, rockwalls, or checkdams.

One should expect that this will negatively influence the universal realization of soil and water conservation structures and limit the environmental impact of the project as presently implemented.

RELATION BETWEEN LAND TENURE AND SLOPE OF FARM PLOT

There is a negative relationship between secure land tenure and slope of plot. More highly sloped plots are more likely to be worked by farmers who do not feel they have a secure tenure agreement relating to the plot.

One should expect that this will negatively influence the project's ability to have conservation practices used on more highly sloped farm plots.

FARMERS' CROP REVENUE AND AVERAGE AREA FARMED

The report contains tables showing average reported crop revenue by selected crop and by monitoring zone. Average reported total crop revenue per farm (farmers generally reported data for their 4 most important crops only) over all monitoring zones is 2,478 Gourds with a coefficient of variation of 6 percent. The average reported size of farms is 1.20 careaux or 1.55 hectares. These figures will be useful in understanding the impact of project interventions on farm household income. For example, increases in farm income can be compared with these base figures.

IMPORTANCE OF CROP REVENUE IN FAMILY INCOME

The percentage of farmers indicating that crop revenue was their family's most important source of income was quite significant across all monitoring zones. In most zones, however, basic commodities such as cereals and beans were rated as the most important source of income by less than 50 percent of the respondents.

In some zones, the largest percentage of respondents indicated that income from livestock was their number one source of income. In other zones, fruit or crops other than cereals or beans appeared to be the most important source of farm income.

Of the many interpretations that can be advanced relating to this information, the easiest to justify is that the zones may differ with respect to the importance placed on classes of agricultural activities. This implies that project programs should be tailored to the zone of implementation. The information developed here may be helpful in guiding program adaptations.

FARMERS' INVESTMENT OPINIONS

Assuming that farmers' investment desires or intentions are a guide to the importance (as income-generating mechanisms) they place on various agricultural activities, we asked what they would invest in if they could obtain a loan.

The responses were grouped into three classes: crops, livestock, or commercial enterprises. In 7 out of 16 monitoring zones, a larger number of participants mentioned crops as a desired investment than either of the other two classes of investments. Livestock was mentioned by the largest number of respondents in 3 zones, while commerce was mentioned most in 4 zones. Crops are preferred to livestock in 9 out of 16 zones. Livestock is preferred to crops in 5 zones. Crops and livestock were equally preferred in 2 zones.

Again, the implication is that programs may need to be tailored to the zone of application. The information developed here may be helpful in guiding program adaptations.

FARMERS' MARKETING PRACTICES

Although farmers appear to know seasonal prices, most market their agricultural products at "low" prices. Most market their production at the village level. This indicates a potential area of marketing efficiency gain through better vertical coordination with buyers closer to the final user of the product.

POTENTIAL INCREASE IN INCOME DUE TO IMPROVED MARKETING PRACTICES

Using prices provided by the farmers, we estimated that farmers could increase their crop revenue by 50 percent or more through marketing practices that allowed them to receive

"high" rather than "low" prices for their products. Third-party warehouses, which lend farmers money on stored products, could help capture some of the potential related to storable products such as grains.

VALUE OF FARM LABOR

We calculated an average value (money plus food and drink) for a day's work with a tillage pick for each zone and for all zones combined. The average for all zones combined is 8.70 Gds. The average work-day is 4.8 hours.

VEGETABLE GARDENS

We asked farmers whether they currently had one or more vegetable gardens, their size, the types of vegetables grown, and whether or not some of the vegetables were sold. The data reveal striking differences, across monitoring zones, in the proportion of farmers having a vegetable garden. Secondly, it is evident that gardening usually contributes to farm income. Most farmers who have vegetable gardens sell some of the production.

FARMERS' OWNERSHIP OF LIVESTOCK

The most often reported number of animals (of a single species) per household was 1 for all species, except for chickens where 2 was the modal number reported. The most obvious finding is the absence of sheep from all but the zones in the Northwest. The reported number of animals per farm may appear low to an observer with a pro-livestock bias. Such observers may justify their position through reference to the often stated "fact" that Haitian farmers are reluctant to reveal accurate livestock ownership numbers.

REZIME

Enfòmasyon ki nan rapò sa-a te rasanble pandan yon ankèt ak kèk peyizan ki te chwazi owaza nan sèz (16) zòn kote pwojè PLUS-la ap travay. Bi etid sa-a se pou swiv, evalwe, gide pwogrè pwojè-a ap fè pou rive satisfè objektif li yo. Enfòmasyon ki pi enpòtan ki te jwenn nan etid sa-a prezante nan rezime sa-a. Nan rapò-a gen plis detay sou enfòmasyon ak diskisyon sou metòd yo te sèvi pou fè etid-la ak sans yo bay rezilta yo. N-ap jwenn kesyonè ak dokiman yo itilize pou fè etid-la nan anèks A.

ITILIZASYON PRATIK AMELYORE NAN JADEN PEYIZAN YO

33 pou san jaden yo genyen omwen youn nan kat estrikti konsèvasyon sòl ak dlo lapli pwojè-a fè ekstansyon pou yo.
10 pou san gen omwen yon ranp vivan.
7 pou san gen omwen yon kòdon ròch.
20 pou san gen omwen yon ranp pay.
34 pou san ravinn yo bay enfòmasyon sou yo gen omwen yon mi sèk oubyen yon lòt kalite baryè tankou kleyonaj.

ENPAK PWOJE PLUS SOU ADOPSYON PRATIK AMELYORE (KONSEVASYON SOL AK DLO LAPLI)

Pwojè PLUS gen yon enpak sèten sou adopsyon pratik amelyore yo. Prèske tout jaden ki genyen estrikti konsèvasyon sòl ak dlo lapli se pou moun ki travay ak Pwojè-a.

RELASYON KI EGZISTE ANT DEGRE SEKIRITE SOU TE-A AK ADOPSYON PRATIK AMELYORE

Gen yon relasyon pozitif ant degre sekirite sou tè-a ak estrikti konsèvasyon sòl ak dlo lapli yo. Jaden ki genyen estrikti sou yo, se ta plis jaden ki travay pa moun ki santi yo genyen plis sekirite sou tè-a.

Angwo, se sèlman nan 80 pou san jaden ki te nan ankèt-la moun yo santi yo genyen ase sekirite sou tè yo pou yo dakò fè estrikti tankou ranp vivan, kòdon ròch ou byen mi sèk ki mande pou fè envestisman alontèm.

Kidonk, fòk yo pa atann aske tout moun fè estrikti konsèvasyon sòl ak dlo lapli sou tè yo. Pwoblèm sekirite sou tè-a ka

limite enpak pwojè-a sou anvironman nan zòn kote l-ap travay kounye-a.

RELASYON ANT DEGRE SEKIRITE SOU TE-A AK PANT JADEN YO

Gen yon relasyon negatif ant degre sekirite sou tè-a ak pant jaden yo. Jaden ki gen pi gwo pant yo se jaden ki travay pa moun ki santi yo pa genyen twòp sekirite sou tè-a.

Kidonk, moun ki gen jaden sou gwo pant ta gen tandans mwens adopte pratik konsèvasyon sòl.

KANTITE LAJAN JADEN YO RAPOTE AK KANTITE TE MOUN YO TRAVAY

Rapò sa-a gen tablo ki montre konbyen lajan anmwayenn jaden yo rapòte pou kèk kilti ak pou chak zòn ankèt-la te fèt. Lè yo mete tout zòn yo ansanm, yon jaden rapòte anmwayenn (anjeneral peyizan yo bay enfòmasyon pou 4 kilti ki pi enpòtan yo sèlman) 2,478 goud, kòb ki varye de 6 pou san. Yon jaden mezire anmwayenn 1,20 karo ki vo 1,55 ekta tè. Chif sa yo ap itil pou konprann enpak aktivite pwojè-a sou kantite kòb yon fanmi fè. Pa egzanp, chif sa yo ka pèmèt wè ki kantite lajan anplis ki fèt nan yon jaden.

ENPOTANS KANTITE KOB KI FET NAN JADEN POU YON FANMI PEYIZAN

Pou tout zòn kote ankèt la te fèt, anpil moun di se rekòt nan jaden yo ki pi gwo sous pou yo rantre lajan. Nan prèske tout zòn yo, mwens pase 50 pou san moun deklare se kilti tankou sereal (mayi, pitimi...) ak pwa ki pi enpòtan pou yo.

Nan kèk zòn, anpil moun di se elvaj ki te sous lajan nimero 1 pou yo. Nan kèk lòt zòn, fwi ak lòt kilti ki pa sereal ou byen pwa, te sanble pi enpòtan pou moun fè kòb.

Sa ta vle di enpòtans yon aktivite agrikòl varye swivan zòn nan. Sa ta vle di tou pwogram pwojè-a ta dwe fèt selon enpòtans aktivite yo genyen nan zòn yo. Enfòmasyon sa yo ta ka itil pou pèmèt pwojè-a adapte pwogram li selon reyalite chak zòn.

NAN KI AKTIVITE MOUN YO TA RENMEN ENVESTI LAJAN

Nou sipoze lè yon peyizan di li ta renmen envesti nan yon aktivite, se aktivite sa-a ki genyen plis enpòtans pou li. Pou nou te konnen ki aktivite agrikòl peyizan yo bay plis valè, nou mande yo nan ki aktivite yo ta renmen envesti si yo ta jwenn prete lajan.

Te genyen twa kategori repons: lakilti, elvaj, ou byen biznis komès. Pami 16 zòn ankèt la te fèt, nan 7, anpil moun reponn se nan lakilti yo ta renmen envesti; nan 3 zòn, se elvaj ki te antèt kòm aktivite; nan 4 lòt zòn, se komès ki te pi enpòtan pou yo.

You lòt fwa ankò, sa montre pwojè-a dwe adapte pwogram li yo selon reyalite chak zòn. Enfòmasyon sa yo ka itil pou fè travay sa-a.

FASON MOUN YO VANN PWODWI YO

Menm si peyizan yo sanble konnen pri pwodwi yo pou chak sezon nan ane-a, anpil nan yo vann rekòt yo a "ba" pri. Anpil nan yo vann rekòt yo nan lokalite kote y-ap viv la. Sa montre gen mwayen ogmante lajan ki fèt nan lavant pwodwi yo si yo ta mete peyizan yo ankontak ak komèsan ki pi pre achtè yo.

MWAYEN POU OGMANTE LAJAN PEYIZAN YO JWENN NAN LAVANT PWODWI YO

Lè nou konsidere pri peyizan yo jwenn nan lavant pwodwi yo, nou estime yo te ka jwenn 50 pou san anplis emenn plis si ta gen yon chanjman ki ta pèmèt yo jwenn pi wo nonpa pi "ba" pri pou pwodwi yo. Yon mwayen pou ta ka fè moun yo fè plis kòb se ta konsidere pwoblèm ki poze ak moun ki prete machann yo kòb sou pwodwi ki ka sere nan depo yo tankou grenn mayi, diri, pitimi, pwa.

VALE TRAVAY KI FET NAN JADEN YO

Pou chak zòn ak pou tout zòn ansanm, nou kalkile apeprè sa ki depanse (lajan plis manje ak bweson) pou yon jounen travay nan prepare tè ak pikwa. Pou tout zòn yo, se 8 goud 70 ki depanse pou yon jounen. Tan yon jounen travay se 4,8-è.

JADEN LEGIM

Nou mande moun yo si yo abitye genyen yon jaden legim oubyen plis, sou ki kantite tè, ki legim yo fè ladan yo, si yo vann legim yo fè oubyen yo manje yo. Chif yo montre gen gwo diferans ant zòn yo nan kantite moun ki genyen jaden legim. Sèlman, li klè jaden legim yo pote yon lajan anplis pou moun ki fè-l yo. Majorite peyizan yo vann yon pati nan legim yo.

KANTITE BET MOUN YO GENYEN

Dapre enfòmasyon ki jwenn, chak fanmi genyen yon sèl bèt nan chak kalite, eksepte pou poul yo genyen de (2). Pi gwo enfòmasyon ki jwenn sou kesyon elvaj-la sèke pa genyen mouton nan tout zòn yo sòf nan Nodwès. Kantite bèt moun yo genyen ka parèt twò piti pou moun ki konnen sitiyasyon agrikilti nan peyi Dayiti. Sa ka sanble sètin moun gen rezon lè yo panse peyizan ayisyen toujou ap kache vrè kantite bèt yo genyen.

ACKNOWLEDGMENTS

I would like to thank the following individuals for their assistance with the implementation of the Project PLUS baseline survey.

Stève Rivière and Edgar Liburd, SECID Data Management Specialists, developed a data base program to receive and maintain the data, managed the entry of the survey data, provided requested data analyses, and helpful analytical advice. Mr. Lionel Issac, SECID, Assistant Agronomist, translated the questionnaire and questionnaire manual into Creole. Mr. Roosevelt Saint-Dic, SECID Assistant Agricultural Economist, trained and monitored the CARE survey enumerators.

The individuals who actually collected the data deserve special recognition for the efforts they put forth under difficult field conditions. The enumerators or data collectors and their survey headquarter towns were:

For The Cooperative for American Relief Everywhere (CARE):
Ms. Anicette Désinor, Lafond
Mr. Ciment Fernand, Lafond
Mr. Danilas Thirogene, Lafond
Mr. Chesnel Beaubrun, Barbe Pangnole
Mr. Virgile Frais, Barbe Pangnole
Mr. Jean Simon Maxene, Barbe Pangnole
Ms. Christella Jean Baptiste, Bombardopolis
Mr. Lorilus Plessy, Bombardopolis
Mr. Aubriel Petit Jacques, Bombardopolis
Mr. Gérard TIMOTHEE, Passe Catabois
Mr. Henry Claude Chevelon, Passe Catabois
Mr. Steny Abner, Passe Catabois
Mr. Calixte Jean Louis, Passe Catabois

For The Pan American Development Foundation (PADF):
Mr. Jean Sergot Labranche, Mirebalais
Mr. Jean William, Jacmel
Mr. Duvergé Vernus, Jacmel
Mr. Jean Pradel Charles, Les Cayes
Mr. Bossuet Petit-Frère, Grand Rivière du Nord

Mr. Gardy Fleurantin, PADF Monitoring and Evaluation Specialist and

Mr. Athus Pierre, CARE Monitoring and Evaluation Specialist supervised the data collection efforts for their respective organizations. Mr. Fleurantin also provided English/Creole translation advice and organized and assisted with interviews with farmers for the purpose of testing initial versions of the questionnaire.

Mr. Mike Bannister, Deputy Director of PADF/PLUS Project provided English/Creole translation advice as well as overall coordination of the survey within PADF regions. Mr. Greg Brady, CARE/PLUS Project Coordinator, provided overall coordination of the survey within CARE regions.

Dr. Frank Brockman, SECID Tropical Agronomist and Team Leader provided support within SECID and comments on the written report. Dr. Dennis Shannon, SECID/PLUS Campus Coordinator, provided a valuable review of a previous version of the report which resulted in this revised version. Dr. Shannon suggested additional discussion of methodology and clarifications of data presented in tables that have made the report more easily understood and useful. Ms. Marilyn Louis, SECID Administrative Officer, provided logistical support.

INTRODUCTION

This report presents the results of a survey to collect baseline data for use in monitoring and documenting the Project's progress in achieving its objectives.

The major objectives of the PLUS Project are to increase the income of Haitian farmers and to conserve and enhance Haiti's agricultural resources. The approach is to have Haitian farmers use sustainable farming techniques that provide the incentive for their continued use through higher and more stable levels of production and income. Thus, the enhanced income provides the incentive for farmers to make recommended changes in their traditional practices. Because the non-traditional practices promoted by the Project are either environmentally neutral or positive, the resulting impact of the Project is a sustainable increase in farm income and natural resource conservation.

A system to monitor the Project's progress in achieving its objectives has to be based on commencement period, "baseline" data relating to the farmers' land-use practices, incomes, and potentials. Baseline data on potentials provides information help in judging expected levels of project accomplishment. It includes, for example, information on land tenure that will help explain farmers decisions to make longer-term investments in soil conservation structures. If a farmer has only a short-term tenure on the land, he/she might be expected to be reluctant to make an investment that pays for itself over a period of time longer than the land tenure arrangement. Similarly, if farmers consider that their best investment opportunities lie in realms other than those addressed by the Project, they may be hesitant to make the long-term investments promoted by the Project.

ORGANIZATION OF THE REPORT

The baseline survey findings are discussed under separate headings in the report. Generally, a table of results by monitoring zone accompanies each discussion.

METHODOLOGY

The information was collected via a random sample of farm households in 16 zones of concentrated project activity. In this

report, these zones will be referred to as monitoring zones. In the case of the Pan American Development Foundation (PADF), each monitoring zone coincided with easily discernable boundaries of a micro-watershed with an area of approximately 2 km square. In the case of the Cooperative for American Relief Everywhere (CARE), the monitoring zones were not confined to a micro-watershed. The names of the monitoring zones are presented in Table 1. Their geographic locations are indicated on the map in Figure 1.

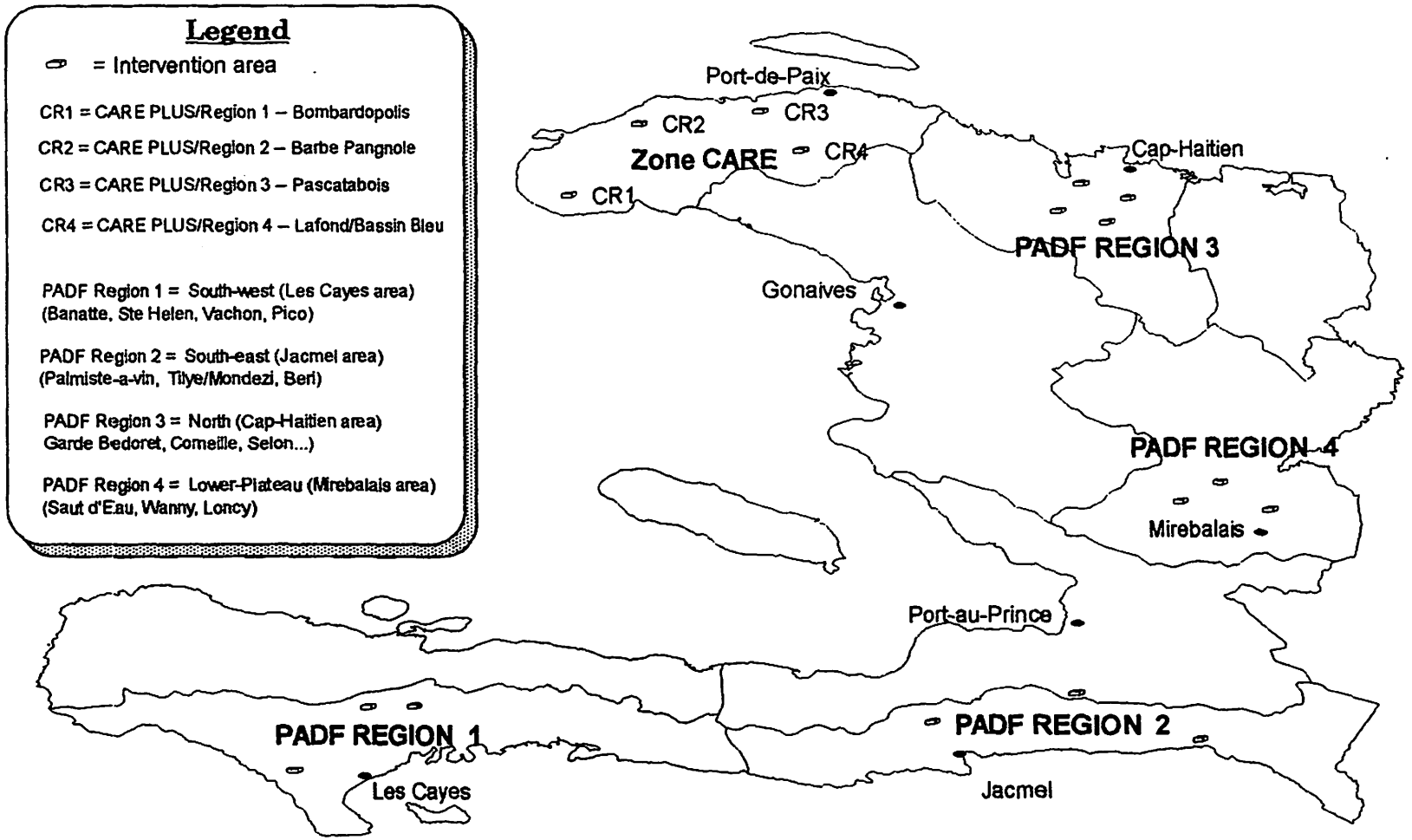
TABLE 1
MONITORING ZONES (SURVEY AREAS) AND
NUMBER OF FARM HOUSEHOLDS

Region Number	Regional Town	Monitoring Zone	Number of Farm Households in:	
			Pop.	Sample
PADF Region I	Les Cayes	Vachon (Gayita)	75	17
PADF Region I	Les Cayes	Picot	142	10
PADF Region I	Les Cayes	Banatte	182	28
PADF Region II	Jacmel	Mondésir	155	30
PADF Region II	Jacmel	Palmiste à Vin	118	29
PADF Region II	Jacmel	Berry	63	30
PADF Region III	Cap Haitien	Corneille (Dondon)	78	28
PADF Region III	Cap Haitien	Bedorette	125	28
PADF Region III	Cap Haitien	Castanille	109	30
PADF Region IV	Mirebalais	Saut d'Eau	211	29
PADF Region IV	Mirebalais	Wanny	165	30
PADF Region IV	Mirebalais	Cerecit	343	30
CARE Region I	Bombardopolis		100	31
CARE Region II	Barbe Pagnole		102	29
CARE Region III	Passe Catabois		110	30
CARE Region IV	Lafond		109	30
		Totals	2188	439

Project extension agents visited each farm household in each zone to record the name and address of each identified family. Additionally, the agent asked the farm family to list those farmers working land adjacent to the farm family. This allowed the agent to identify farmers who worked land in the zone but lived outside the zone. In this way, the agents attempted to build a census of all farm households working land in the monitoring zone. The census

FIGURE 1

PLUS PROJECT INTERVENTION AREAS



numbers for each monitoring zone are given in Table 1. This census became the sampling frame from which a sample of 35 farm households from each zone was drawn at random for participation in the baseline survey. Thus, the farm household was the sampling unit upon which the baseline study was conducted. Surveyors (intreviewers or data collectors) of the survey team visited each randomly chosen household and conducted the survey interview with the head of the household. The surveyors were hired by PADF and CARE and trained by SECID. PADF data collectors were trained in June 1993 and collected data through September 1993. CARE data collectors were trained in September and collected data through October 1993.

At the request of CARE, the survey was enlarged to be a census of all farm families identified in the four CARE monitoring zones. However, for the purpose of calculating the figures included in this report, a random sample was drawn from the population of questionnaires from each CARE monitoring zone. Thus, the information in this report is based on data obtained from 439 farm households: 120 from CARE regions and 319 from PADF regions. A break-down of this number by monitoring zone is given in Table 1. As each farm has more than one farm field or plot, the total number of plots covered by the survey was 1069. The average size (reported by farmers) of the plots is .56 hectares and the average size of the farms is 1.55 hectares. The baseline survey instrument and accompanying manual are attached as APPENDIX A.

FARMERS' PRESENT USE OF IMPROVED LAND USE PRACTICES

The most important question answered through the baseline survey is "How many of the farm plots (jarden in Creole) in Project areas are presently protected by any of the improved land-use practices we are promoting?" From a global perspective, the answer is 33 percent. To be included in this percentage, a farmer responded that the conservation structure existed on the farm plot. Note, that this does not imply that all of the farmer's separate farm fields or plots contained a structure. In the case of checkdams, the figures relate to those farms having a ravine. How this global figure (33 percent) breaks out by monitoring zone and by intervention is probably more useful for project management purposes. These figures are given in TABLE 2. In general, those percentages larger than 10 are significantly different from zero. A complete listing of the standard errors for selected interven-

tions by zones is shown in APPENDIX D.

Another important question is "How is intervention adoption related to farmers' participation in Project activities?" Table 2 also contains the information giving the current answer to this question. There is a strong positive relation between the existence of a soil and water conservation structure on a farm plot and the managing farmer's participation in Project activities. In all but a very few cases, the majority of farm plots containing conservation structures are managed by farmers who participate in Project activities. In the 4 cases where this percentage is less than 50 percent, either the intervention is a traditional practice (stubble barrier) or it was introduced by a previous project (as is the case of hedgerows at Palmiste à Vin).

TABLE 2
PERCENT OF FARM PLOTS HAVING CONSERVATION STRUCTURES
AND
MANAGED BY FARMERS PARTICIPATING IN PROJECT

REGIONAL TOWN & Monitoring Zone	Land-Use Practices									
	Hedgerow		Rockwall		Stubble Barrier		Checkdam (*)		Any Type #	
	A	P	A	P	A	P	A	P	A	P
LES CAYES										
Vachon	24	100	0		2	100	100 (1)	100	27	100
Picot	23	71	10	100	0		100 (2)	100	32	80
Banatte	16	85	5	100	1	100	75 (4)	100	22	89
JACMEL										
Mondésir	21	100	18	88	4	100	75 (16)	100	38	94
Palmiste à Vin	6	33	0		0		0 (11)		6	33
Berry	1	100	2	100	0		0 (26)		3	100
CAP HAITIEN										
Corneille	3	100	0		64	24	14 (14)	100	64	24
Bedorette	0		0		74	15	5 (41)	100	74	15
Castanille	5	100	0		67	38	27 (33)	78	72	43
MIREBALAIS										
Saut d'Eau	6	83	0		25	96	100 (1)	100	32	93
Wanny	19	90	14	87	8	100	100 (2)	100	30	94
Cerecit	11	100	12	100	0		100 (1)	100	19	100
PORT DE PAIX										
Bombardopolis	16	82	23	81	56	79	91 (22)	65	72	78
Barbe Pagnole	2	100	4	50	16	86	24 (17)	75	23	80
Passe Catabois	0		9	100	32	45	30 (23)	100	41	57
Lafond	4	100	2	50	33	82	33 (33)	91	38	81
All Zones Combined	10	90	7	88	19	60	31 (247)	86	33	73

@ Col. A is percent of farm plots having the indicated intervention. Column P is percent of intervention plots (Column A plots) managed by a participating farmer. * Percent of ravines with a checkdam. The figure in parenthesis is the number of reported ravines. # The figures under "Any Type" do not include checkdams.

RELATION BETWEEN LAND TENURE AND INTERVENTION ADOPTION RATES

One would expect the proportions of farm plots with conservation structures to increase over time as the project is implemented--unless some naturally occurring factor interfered. For example, if only a certain proportion of farmers have land tenure agreements that would encourage them to construct hedgerows, rockwalls, or checkdams; then we would not expect the proportion of farmers using such land-use practices to rise above the proportion having appropriate land tenure agreements. We term such tenure agreements "secure tenure" agreements. Globally, only 80 percent of the farm plots in our survey are covered by a secure tenure agreement.

Unfortunately, it appears that there is a tendency for farmers without "secure tenure agreements" not to install our promoted soil and water conservation structures. This is to be expected if we assume the farmers act in an economically rational fashion. Without a secure tenure agreement, one would expect the farmer to be reluctant to make an investment (install a soil and water conservation structure) since the possibility exists that the landlord may demand the return of the use of the land soon after the investment is made and may not compensate the farmer.

Table 3 shows the percent of farm plots, worked by farmers with and without secure tenure relationships, that presently have hedgerows, rockwalls or stubble barriers. A brief examination of the data in Table 3 provokes the hypothesis that there is a relation between land tenure and the existence of a soil and water conservation structure on the plot. A Chi-square analysis of the data confirms that this relation exists.

RELATION BETWEEN LAND TENURE AND SLOPE OF FARM PLOT

Given the relationship between land tenure and the existence of a soil and water conservation structure promoted by the project, one wonders how land tenure and land slope class are related. If we assume that more steeply sloped land erodes faster than less steeply sloped land (a positive relation between land slope class and rates of erosion) and our objective is to reduce erosion, we would like our project to have an impact on farm plots on the higher slopes. If, however, we also find that there is a tendency for farmers working more steeply sloped land not to have long-term tenure on the land, then we should not be very optimistic about

TABLE 3						
PERCENT OF FARM PLOTS WORKED BY FARMERS						
WITH AND WITHOUT SECURE TENURE						
HAVING SELECTED SOIL AND WATER CONSERVATION STRUCTURES						
Monitoring Zone	Land-Use Practices					
	Hedgerow		Rockwall		Stubble Barrier	
	Tenure?*		Tenure?		Tenure?	
	Yes	No	Yes	No	Yes	No
Vachon	31	0	0	0	3	0
Picot	32	0	14	0	0	0
Banatte	29	4	10	0	2	0
Mondésir	21	20	0	0	4	6
Palmiste à Vin	8	0	0	0	0	0
Berry	2	0	3	0	0	0
Corneille	5	0	0	0	75	54
Bedorette	0	0	0	0	80	0
Castanille	4	8	0	0	83	58
Saut d'Eau	7	0	0	0	26	0
Wanny	17		15		7	
Cerecit	11		12		0	
Bombardopolis	16	12	23	25	54	75
Barbe Pagnole	2	0	5	0	4	75
Passe Catabois	0	0	11	0	35	23
Lafond	6	0	4	0	38	23
All Zones Combined	12	5	8	4	20	17

* The figures in the columns headed by "Yes" are the percent of secure tenure farm plots (worked by farmers having a secure tenure relation to the plot) that have the indicated structure installed. The figures under the "No" columns are the percent of farm plots not having a secure tenure relation with the farmer working the plot that have the indicated soil and water conservation structure installed.

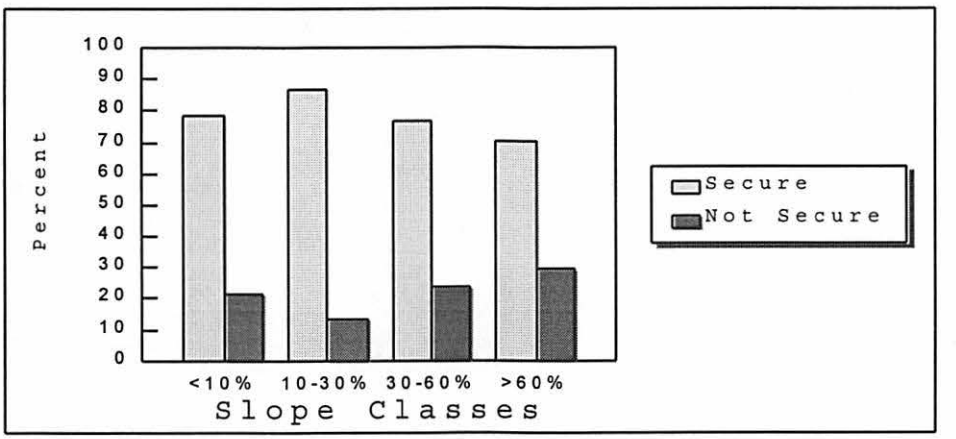
having a major impact on the more highly sloped lands with our current promotional methods because those methods do not normally reach the individual who has a secure tenure relationship with the land.

We tested the hypothesis that there is a relation between land tenure (actually, the data are farmers' responses to our land tenure question) and slope class using a Chi-square test for independence and found that there is a significant relation. This test is further explained in APPENDIX B. A visual presentation of this relationship can be seen in the bar chart of FIGURE 2. Note the slight decrease in percent plots with secure tenure relation-

ships (with the farmer working the plot) as the slope class increases (from left to right in FIGURE 2). One reason this relationship might not be as strong as one might expect is the way the question was asked. We asked farmers if they felt secure enough in their land tenure to invest in a project-sponsored intervention. Some farmers may answer yes to this question even if they have no legal control over the land.

FIGURE 2

LAND TENURE AND SLOPE OF FARM PLOTS (ALL MONITORING ZONES COMBINED)						
Slope	Secure		Not Secure		Total	
Class	Number	Percent	Number	Percent	Number	Percent
<10°	171	78%	47	22%	218	100%
10-30°	339	87%	52	13%	391	100%
30-60°	254	77%	78	23%	332	100%
>60°	52	70%	22	30%	74	100%
Totals	816	80%	199	20%	1015	100%



FARMERS' CROP REVENUE

Our concern with farmers income motivated an attempt to estimate farmers' crop production revenue. In the baseline survey, we did this by asking farmers what were their harvests for their four principal crops for the previous year by farm plot. We multiplied the harvest amounts by market prices reported by the farmers in question. Thus, the revenue figures reported in Table 4 include total production times a market value. That is, it includes a value for those portions of the harvest sold, given to another family as part of a share-cropping arrangement, or consumed by the

farm family. Table 4 also shows the average value of production for four selected crops.

TABLE 4

AVERAGE FARM CROP PRODUCTION INCOME

REGIONAL TOWN Monitoring Zone	Average Income in Gourds per Indicated Crop and All Crops* Combined (12.5 Gourds = 1 US Dollar)					
	Corn	Sorghum	Beans	Plantain	All Crops	C.V. (%)
LES CAYES						
Vachon	431	410	794	0	1503	19
Picot	144	126	715	0	942	15
Banatte	359	151	937	0	1648	30
JACMEL						
Mondésir	58	100	200	1715	1020	22
Palmiste à Vin	71	85	156	100	381	22
Berry	145	90	360	0	1346	12
CAP HAITIEN						
Corneille	161	0	419	175	665	15
Bedorette	107	0	301	147	687	12
Castanille	203	0	4240	541	2100	32
MIREBALAIS						
Saut d'Eau	592	435	1851	1119	2793	8
Wanny	567	495	1755	1704	3663	10
Cerecit	814	875	2520	3158	7270	12
PORT DE PAIX						
Bombardopolis	282	347	427	1344	1697	19
Barbe Pagnole	137		118	930	373	16
Passe Catabois	363	110	360	600	1011	11
Lafond	520	328	777		2054	18
All Zones Combined	373	373	1204	623	2478	6

*"All Crops" generally includes only those the farmer felt were his/her 4 principal crops. Global averages include only zones with positive incomes. C.V. is coefficient of variation. "Beans" include red and black beans, pigeon peas, and cowpeas.

Note that there is no fixed relation between the average values for the four crops selected for presentation in Table 4 and the average of the values of the four principal crops reported under the column heading "All Crops." In some zones, crops other than the four chosen for presentation in Table 4 may enter into the set of four principal crops. At Berry, for example, fruits and tubers are a

major source of farm income. Also, note that these averages do not include incomplete questionnaires. (That is, if we did not have the data to calculate an income figure for a given farm, that farm was not included in the calculation.) It is also important to note that these averages were generally calculated from a relatively large (>15) number of responses per zone.

As these are estimates of average revenue, we have also provided a measure of the variability of the estimate, the coefficient of variation which can be used to set a 95 percent confidence interval around the point estimates of the averages.

IMPORTANCE OF CROP PRODUCTION IN FAMILY INCOME

To obtain some information on the relative importance of crop production on household income, we asked farmers to rank, by order of priority, the four most important income-earning activities of their household. After getting their responses, we combined them into 11 categories. Table 5 shows the proportion of farmers who ranked as "top-priority" income earning activities that fell into these 11 categories. The data indicate that farmers in different regions have different priorities. For example, that they all do not consider cereals (as some observers might expect) to be the most important. Examining the livestock column provides some indication of the localities in which livestock are considered top priority. This does not mean that farmers generally do not consider livestock important. It simply indicates that many do not consider livestock most important. We asked farmers to rank their income sources and the table only provides information on the highest ranked sources. It does not indicate what is in second place. The aggregate data at the bottom of Table 5 lend some support to the position that livestock are an important to the farmers in our survey. Note that the category with the largest percentage (15 percent) of the group is livestock.

TABLE 5											
FARMERS' TOP INCOME EARNING ACTIVITIES											
REGIONAL TOWN Monitoring Zone	Percent of Farmers Indicating the Following Categories of Income Earning Activities as Being the Most Important for Them (See footnote for category descriptions)										
	Cereal	Beans	Tubers et al.	UnSpec. Crops	Fruit	Live-stock	Wage Labor	Com-merce	Prof-esion	Char-coal	Other
LES CAYES											
Vachon				88				6		6	
Picot				70		10			10	10	
Banatte				46		50		4			
JACMEL											
Mondésir	23	23	3		50						
Palmiste à Vin		12	42					33	12		
Berry	17	10	10								64 veg
CAP HAITIEN											
Corneille	37	15	11					7	15	11	4
Bedorette	7	21	39		11	7		4		11	
Castanille	15	15	11		33	18	4				4
MIREBALAIS											
Saut d'Eau	7	3	10	3		3	24	24	21		
Wanny		13		7		20	10	27	20		3
Cerecit		3	3	20		20	3	27	10	10	3
PORT DE PAIX											
Bombardopolis	3	29				29	10		6	16	6
Barbe Pagnole	31		3			24	3	7	17	7	7
Passe Catabois	10					17	20	7	33	13	
Lafond	11	18				32	4	7	18	11	
All Zones Combined	11	11	8	10	6	15	5	10	10	6	6

Category Descriptions. Cereals includes corn, sorghum, and rice. Tubers et al. includes manioc, sweet potato, Irish potato, taro, sugar cane, and peanuts. Fruits includes breadfruit, chocolate, coffee, mango, plantain, avocado, pineapple, etc. Commerce is the buying and selling of any products. Profession includes carpenter, tailor, mason, etc. Charcoal is charcoal production and marketing. "Beans" include red and black beans, pigeon peas, and cowpeas.

FARMERS' INVESTMENT OPINIONS

Farmers opinions relative to what they consider to be the most attractive investment available to them can provide some information about their willingness to make investments promoted by the Project. This information can partially explain the potential or expected adoption rates for land-use practices promoted by the Project. To obtain this type of information, we asked farmers the following question: "If you were to borrow money at a reasonable interest rate to invest in additional activities, in what activity would you like to invest the money?" Table 6 shows the most often mentioned targets of investment and the proportion of farmers

mentioning those investments.

The responses were grouped into three classes: crops, livestock, or commercial enterprises. In 7 out of 16 monitoring zones, a larger number of participants mentioned crops as a desired investment than either of the other two classes of investments. Livestock was mentioned by the largest number of respondents in 3 zones, while commerce was mentioned most in 4 zones. Crops are preferred to livestock in 9 out of 16 zones. Livestock is preferred to crops in 5 zones. Crops and livestock were equally preferred in 2 zones.

The implication is that programs may need to be tailored to the zone of application. The information developed here may be helpful in guiding program adaptations.

TABLE 6

FARMERS' TARGETS OF INVESTMENT

(Percent of Farmers Interested in Investing in the Indicated Income-Earning Activities)

Monitoring Zone	Crops	Livestock	Commerce
Vachon	47	47	60
Picot	30	90	40
Banatte	39	50	39
Mondésir	90	63	50
Palmiste à Vin	18	9	86
Berry	100	41	62
Corneille	89	29	18
Bedorette	89	18	7
Castanille	70	7	26
Saut d'Eau	57	45	48
Wanny	20	67	80
Cerecit	45	83	90
Bombardopolis	57	27	57
Barbe Pagnole	14	52	31
Passe Catabois	86	76	31
Lafond	38	38	45
All Zones Combined	53	45	48

FARMERS' MARKETING PRACTICES

Since a major objective of the project is to increase farmers' income and since farmers' marketing practices can have a substantial impact on their income, we used a portion of the baseline survey questionnaire to obtain some information on this area of farm management. We wanted to know if farmers knew how prices changed throughout the agricultural year and if they took advantage of this marketing knowledge to sell their production at relatively high prices. To obtain this information, we asked them to tell us for each major product they produce, what were the months of high and low prices and what were the high and low prices during the year. We asked what price they received for their products. We also asked where they sell their products: at their farm, at the closest village market, or at the nearest town market. Table 7 shows the responses farmers gave relating to the market at which they sold selected major categories of their production.

TABLE 7

FARMERS' MARKETING PRACTICES

Product Group	Percent of Farmers Selling Product Group At Indicated Location: F=farm only, FV=farm & village only, V=village only, T=town only, VT=village & town only.				
	F	FV	V	T	VT
Beans	4	5	82	5	4
Cereals	9	2	85	3	2
Fruit	3	1	89	6	1
Tubers et al.	17	12	57	12	1

Category Descriptions. Cereals includes corn, sorghum, and rice. Tubers et al. includes manioc, sweet potato, Irish potato, taro, sugar cane, and peanuts. Fruits includes breadfruit, chocolate, coffee, mango, plantain, avocado, pineapple, etc. "Beans" include red and black beans, pigeon peas, and cowpeas.

Table 8 shows the proportion of farmers selling selected major crop categories at "low" prices. What we did was to determine the proportion of farmers who sold their product at a price that was less than the sum of the reported low seasonal price and one-half the difference between the seasonal high and low prices. Mathematically speaking, we counted the farmers whose selling prices were:

$$SP < LP + 0.5(HP-LP)$$

where,

where,

SP=farmer's selling price

LP=lowest seasonal price reported by farmer

HP=highest seasonal price reported by farmer.

Although farmers appear to know seasonal prices, most market their agricultural products at "low" prices. Most market their production at the village level. This indicates a potential area of marketing efficiency gain through better vertical coordination with buyers closer to the final user of the product.

TABLE 8

PERCENT OF FARMERS SELLING SELECTED PRODUCT TYPES AT "LOW" PRICES

REGIONAL TOWN & Monitoring Zone	Percent of Farmers Selling Indicated Products at "Low" Prices			
	Cereals	Beans	Tubers et al.	Fruits
LES CAYES				
Vachon	88	57	40	
Picot	100	92	78	
Banatte	83	65	60	
JACMEL				
Mondésir	87	86	75	91
Palmiste à Vin	100	86	96	100
Berry	100	100	33	
CAP HAITIEN				
Corneille	83	56		
Bedorette	75	94	50	
Castanille	80	33	54	100
MIREBALAIS				
Saut d'Eau	63	100	40	100
Wanny	87	93	93	100
Cerecit	55	42	40	94
PORT DE PAIX				
Bombardopolis	76	78	74	50
Barbe Pagnole	94	100	84	100
Passe Catabois	100	97	83	100
Lafond	49	68	75	
All Zones Combined	78	81	73	88

Category Descriptions. Cereals includes corn, sorghum, and rice. Tubers et al. includes manioc, sweet potato, Irish potato, taro, sugar cane, and peanuts. Fruits includes breadfruit, chocolate, coffee, mango, plantain, avocado, pineapple, etc. "Beans" include red and black beans, pigeon peas, and cowpeas.

POTENTIAL INCREASE IN FARM INCOME DUE TO IMPROVED MARKETING PRACTICES

To get an idea of the potential increase in crop revenue due to improved marketing practices, we calculated the percent increase in revenue that would occur if farmers were able to sell at the "high" price they reported rather than at the price they reported they sold their products. Obviously, this potential increase is a rough estimation for several reasons. First, it is impossible, in a free market situation, for everyone to sell at the highest price. Secondly, very few farmers sell all of their production at one time. However, the calculated potential provides a notion of the magnitude of potential gains from changes in the marketing system.

TABLE 9

POTENTIAL MARKETING-RELATED INCREASE IN CROP REVENUE

Crop	Number of Observations	Potential Revenue Increase (%)	Coefficient of Variation (%)
Corn	317	87	38
Sorghum	109	75	53
Beans (red/black)	219	56	29
Congo Peas	63	76	29
Rice	39	50	15
Manioc	77	50	36
Sweet Potatoes	42	60	30
Peanuts	45	58	37
Plantain	66	96	32

As shown in Table 9, the average potential increases for all crops for which we had data are above 49 percent, and range between 50 and 96 percent. Table 9 also shows the average (over all zones) potential increase in revenue by crop. The coefficient of variation (C.V.) shows the degree of variability in the calculated potential increases. The C.V. is calculated by dividing the standard deviation of the data by their mean. Thus, for most of these data, the standard deviation is small relative to the mean. That is, the estimated potential increases calculated from farmers' responses do not vary widely, lending confidence to the notion that the potential is real.

One possible change that could capture some of this potential is the establishment of a system of financing the storage of agricultural products. Farmers taking advantage of this system could use

stored products as collateral for loans. The loans could be used for immediate cash needs, while the farmer awaited an expected seasonal rise in the market price of the stored products. At the time of sale, the proceeds from the sale would be used to payoff the loan.

The average seasonal prices and months of occurrence by product and monitoring zone are reported in APPENDIX C.

VALUE OF FARM LABOR

To get an idea of the value of a day's farm labor, we asked farmers to tell us what it would cost, in terms of money and provided

TABLE 10

COST AND LENGTH OF A DAY OF FARM LABOR

REGIONAL TOWN & Monitoring Zone	Hours in a Labor-Day	Money Paid 12.5Gd=1US$	Value of Food & Drink	Total Value	Value per Hour
	(Hours)	(Gourdes)			
LES CAYES					
Vachon	4.6	6	0.8	6.9	1.5
Picot	5.7	6.2	0	6.2	1.09
Banatte	4.8	6.5	0.3	6.9	1.44
JACMEL					
Mondésir	5.9	6.6	4.1	10.7	1.81
Palmiste à Vin	4.8	10.2	10.5	20.5	4.27
Berry	5.4	5.1	5.6	10.7	1.98
CAP HAITIEN					
Corneille	2.6	4.1	1.9	6	2.31
Bedorette	3.9	5.1	3.4	8.5	2.18
Castanille	5.7	5.5	3.7	9.2	1.61
MIREBALAIS					
Saut d'Eau	6	6.1	0	6.1	1.02
Wanny	6	6.2	0	6.2	1.03
Cerecit	6	6.4	0	6.4	1.07
PORT DE PAIX					
Bombardopolis	3.8	5.9	3.7	9.6	2.53
Barbe Pagnole	3.3	7.7	2.2	9.9	3
Passe Catabois	4.6	6.3	3.4	9.7	2.11
Lafond	4.3	6.4	0.6	7	1.63
All Zones Combined	4.8	6.2	2.5	8.7	1.81

meals, to hire a farm worker to till a farm plot using a tillage

pick. We also asked the farmers to define what they mean by "a day's work" by asking for the time such work normally begins and ends. The results of these questions are given in Table 10.

VEGETABLE GARDENS

Because vegetable gardens are projected to increase in importance as an activity promoted to farmers by the Project, we asked farmers whether they currently had one or more vegetable gardens, their size, the types of vegetables grown, and whether or not some of the vegetables were sold.

TABLE 11

VEGETABLE GARDEN INFORMATION

REGIONAL TOWN and Monitoring Zone	No. of Gardens	Percent Farmers Having a Garden	Percent of Farmers With Gardens and:						
			Selling from Garden*	Producing the following vegetables					
				Cabbage	Egg-Plant	Spinach	Okra	Carrot	Tomato
LES CAYES									
Vachon	5	18	67	60	0	0	0	20	20
Picot	0	0	0	0	0	0	0	0	0
Banatte	5	18	60	40	0	0	0	80	20
JACMEL									
Mondésir@	37	97	93	0	5	0	0	0	0
Palmiste à Vin	3	10	0	0	100	0	0	0	0
Berry	31	100	87	0	0	0	45	0	0
CAP HAITIEN									
Corneille	0	0	0	0	0	0	0	0	0
Bedorette	0	0	0	0	0	0	0	0	0
Castanille	2	7	0	0	100	0	0	0	0
MIREBALAIS									
Saut d'Eau	9	31	78	67	67	0	11	0	44
Wanny	5	17	40	40	80	0	20	0	20
Cerecit	2	7	50	0	100	0	100	0	0
PORT DE PAIX									
Bombardopolis	8	23	86	88	38	25	0	75	63
Barbe Pagnole	8	24	86	100	50	25	0	75	50
Passe Catabois	0	0	0	0	0	0	0	0	0
Lafond	22	50	73	9	5	95	9	5	0
All Zones	100	20	73	30	25	25	20	18	16

* Percent of those having a garden who sell some of the garden produce.

@ The most often mentioned crops at Mondésir are: plantain, yam, coconut, mango.

The data reveal striking differences across monitoring zones in the proportion of farmers having a vegetable garden. Secondly, it is evident that gardening usually contributes to farm income, i.e.,

most farmers who have vegetable gardens sell some of the production. Tables 11 and 12 display some of the data we obtained.

It is obvious that the enumerator working in Mondésir and Berry assumed a much broader definition of a "vegetable garden" than we intended. Included in these vegetable gardens are crops such as plantain, corn, and fruit trees. In discussing this situation with the PADF data collection supervisor, we determined that none of the reported vegetable gardens are the type to be promoted by PADF. Berry is a vegetable producing region with established commercial gardens. Mondésir, however, has no vegetable gardens as we know them. Thus, we decided to exclude the Mondésir vegetable gardens when calculating the project-wide results given at the bottoms of TABLES 11 and 12.

TABLE 12

VEGETABLE GARDEN INFORMATION

REGIONAL TOWN and Monitoring Zone	No. of Gardens	Percent of Gardens Within the Size Class: (square meters)			
		< 21	21 - 744	745 - 1290	> 1290
LES CAYES					
Vachon	5	0	40	20	40
Picot	0	0	0	0	0
Banatte	5	60	20	20	0
JACMEL					
Mondésir	37	2	46	30	22
Palmiste à Vin	3	100	0	0	0
Berry	31	0	13	45	42
CAP HAITIEN					
Corneille	0	0	0	0	0
Bedorette	0	0	0	0	0
Castanille	2	100	0	0	0
MIREBALAIS					
Saut d'Eau	9	0	0	100	0
Wanny	5	0	0	80	20
Cerecit	2	0	0	100	0
PORT DE PAIX					
Bombardopolis	8	62	38	0	0
Barbe Pagnole	8	50	50	0	0
Passe Catabois	0	0	0	0	0
Lafond	22	86	14	0	0
All Zones	100	36	17	31	16

FARMERS' OWNERSHIP OF LIVESTOCK

Since many farmers indicated livestock production as an important source of income and since it is widely stated that animals are Haitian farmers' means of storing wealth, we wanted to obtain some information on the numbers of animals owned by our client-farmers. Because it is widely accepted that Haitian farmers will not accurately disclose the numbers of animals they own, we asked farmers how many animals a typical farm family in their neighborhood owns. Table 13 shows the most often reported numbers, i.e., the modal numbers. Table 14 show the average numbers reported by our respondents.

TABLE 13

MODAL REPORTED NUMBERS OF ANIMALS OWNED BY "TYPICAL" FARMER

REGIONAL TOWN and Monitoring Zone	Modal Number of Adult Animals Reported as Being Owned by the "Typical Farmer" in the Indicated Monitoring Zones*				
	Beef	Pig	Goat	Sheep	Chicken
LES CAYES					
Vachon	2 (41%)	1 (12%)	2 (41%)		4 (24%)
Picot	1 (50%)	3 (30%)	2 (30%)		3 (20%)
Banatte	2 (39%)	1 (64%)	2 (32%)		3 (36%)
JACMEL					
Mondésir	1 (53%)	1 (30%)	1 (13%)		2 (17%)
Palmiste à Vin	1 (24%)	1 (7%)	2 (17%)		4 (28%)
Berry	1 (50%)	1 (47%)	1 (23%)		2 (20%)
CAP HAITIEN					
Corneille	1 (50%)	1 (46%)	1 (75%)		1 (29%)
Bedorette	1 (60%)	6 (4%)	1 (46%)		2 (21%)
Castanille	1 (40%)	1 (50%)	1 (33%)		4 (17%)
MIREBALAIS					
Saut d'Eau	1 (41%)	2 (41%)	2 (28%)		3 (21%)
Wanny	2 (27%)	1 (40%)	2 (30%)		4 (20%)
Cerecit	1 (23%)	1 (30%)	2 (20%)		4 (17%)
PORT DE PAIX					
Bombardopolis	1 (10%)	1 (23%)	5 (16%)	2 (16%)	2 (16%)
Barbe Pagnole	1 (17%)	1 (10%)	1 (17%)	1 (14%)	1 (28%)
Passe Catabois	3 (7%)	1 (10%)	1 (23%)	1 (10%)	1 (28%)
Lafond	1 (13%)		1 (17%)	1 (23%)	3 (20%)
All Zones Combined	1 (31%)	1 (27%)	1 (23%)	1 (4%)	2 (15%)

* The figure in parenthesis is percent of all respondents interviewed in a given monitoring zone reporting the number of animals shown first in each cell of the table.

The relatively low percentage of respondents (less than 50 percent in most cases) providing information on livestock numbers may reflect the alleged reticence of Haitian farmers on this subject. Assuming that this is correct would aid a pro-livestock observer to believe that the reported numbers of livestock are downwardly biased. The most obvious finding is the absence of sheep from all but the zones in the Northwest.

TABLE 14

AVERAGE REPORTED NUMBERS OF ANIMALS OWNED BY "TYPICAL" FARMER

REGIONAL TOWN and Monitoring Zone	Average Number of Adult Animals Reported as Being Owned by the "Typical Farmer" in the Indicated Monitoring Zones				
	Beef	Pig	Goat	Sheep	Chicken
LES CAYES					
Vachon	2.3	2	2.5		4.7
Picot	2.6	2.6	3		
Banatte	1.9	1.5	1.9		3
JACMEL					
Mondésir	1.2	1.9	2.4		4
Palmiste à Vin	1.5	1	1.9		3.5
Berry	1.6	1.3	1.6		5
CAP HAITIEN					
Corneille	1.3	1.1	1.2		2.3
Bedorette	1.3	6	1.5		3.7
Castanille	1.7	1.6	2		3.7
MIREBALAIS					
Saut d'Eau	1.7	1.7	2.3		6
Wanny	2.2	1.6	2.9		7.1
Cerecit	2.1	1.9	2.9		7.6
PORT DE PAIX					
Bombardopolis	2.1	1	7.2	1.7	5.9
Barbe Pagnole	1.7	1	2.4	2.2	3.6
Passe Catabois	2.2	1	2.4	1.3	3.7
Lafond	1.4		1.9	1.9	2.7
All Zones Combined	1.7	1.6	2.6	1.9	4.6

CONCLUDING COMMENTS

These baseline survey results will provide benchmarks from which to compare future PLUS Project accomplishments. The major findings are listed in the EXECUTIVE SUMMARY found at the beginning of the report. More detailed presentation of the results are provided in the body of the report. Additional results can be taken from the data, which are stored on disk, as requested.

Some interpretation of the results has been suggested from the agricultural economics point of view of the author. However, it is expected that PLUS Project decision makers will draw additional insights from the results. We look forward to discussing these additional insights with interested readers. A careful study of the data may also raise questions that possibly can be answered through additional analyses. We look forward to providing this assistance.

Taken as a whole, the results indicate substantial scope for adoption of land-use technologies promoted by the Project. Most farm plots in Project intervention areas are not protected by the soil and water conservation technologies recommended by the project. Additionally, it is obvious from the strong relation between the existence of conservation structures and farmer participation in Project activities that these activities are effective in causing the adoption of these technologies.

Not surprisingly, the results indicate substantial variety across Project monitoring zones in farm activities and in their economic importance to farmers. One conclusion that can be drawn from this observation is that the Project should consider increasing the zonal specificity of its programs.

The substantial increases (50 - 100 percent) in farm income potentially to be derived from improved marketing practices suggests the Project should consider programs to achieve these potentials.

APPENDIX A

BASELINE SURVEY QUESTIONNAIRE AND ACCOMPANYING MANUAL

Kesyonè etid de baz

I. Fason ou itilize jaden tè yo.

No.	Pant té a @a	Konbyen seziem té a ye	Teni: wi ou non @b	Konbyen ou ka anfémen té sa pa ane	Kilti ou pratik ou fé nan jadens					
					Sézons: 1 mwa	2 mwa	3	Estrikti	Fé ak pay	Labouré té
1										
2										
3										
4										
5										

II. Konbyen ravin'n ou genyen é konbyen koreksyon ravin'n ou genyen nan chak ravin'n?

	Ravin'n 1:	Ravin'n 2:	Ravin'n 3:	Ravin'n 4:	Ravin'n 5:
Konbyen koreksyon					
Espes					
Ou vann ou mangé pwodwi	vann mangé	vann mangé	vann mangé	vann mangé	vann mangé

III. Basen vesan?_____ Non Planté_____

Non Anketé_____ Patisipé? Yes ___ No___

IV. Bio-Intensive Gardens (BIGs)

Jaden	Jaden 1	Jaden 2	Jaden 3	Jaden 4
Ki valé té				
Espes				
Ou vann ou mangé	vann mangé	vann mangé	vann mangé	vann mangé

V. Antré Lajan : Pa od priorité, dim 4 fason ki kon pèmèt ou rantré lajan nan kay la?

fason ou fè ti antré lajan jodi'a	fason ou té fè ti antré lajan depi 5 a 10 lané

VI. Si ou ta vlé prété lajan a lintérè pou fè lot aktivité nan ki sa ou ta renmen mété lajan sa'a?

VII. Kobyen zanimo youn moun ka posédé nan zon nan?

	bèf	kochon	kabrit	poule
Total				
Gran				
Piti				

VIII. Distribisyon 4 prinsipal kilti

Jaden/ Sézon	Kilti (youn per rang)	Kantité pwodwi nan jaden sa a	Kantité pou pwopriétè	Kantité ou vann	Ki koté maché a yé *	Pri ou vann pwodwi sa'a	Ki pri ki piro/nan ki mwa pri/mwa	Ki pri ki piba/nan ki mwa pri/mwa

* Choix de maché: 1. maché lakay, 2. maché localité 'a, 3. maché lavil

IX. Pri travay: Si ou vlé pran lot travayé konbyen ouap péyé pou labouré té ak pik?

Ki kantité èd tan youn travayé fé: li antré a _____ li soti a _____.

Konbyen yo péyé youn jounen travay non zon'n nan ak manjé? Lajan _____ manjé _____.

CHWA DE REPONSE

@a Kèk chwa pant:

1. panché net (> 60°)
2. panché (30° - 60°)
3. pa panché anphil (10° - 30°)
4. platon (< 10°)

@b Garantie de teni:

Lè ou konsidéré fason wap travay tè a eské ou santi ou genyen garanti pou fé es estrikti ki ka konsèvé tè a pou pwodwi kilti kap bay plis lajan.

KÈK CHWA PA LOT KESTYONS

Kilti serealyé

1. mayi
2. pitimi
3. pwa rouge/noir
4. pwa congo
5. pwa inconnu
6. riz

Kilti vivryé

7. manyok
8. patat douce
9. yam
10. pom té
11. kilti de kouvèti
12. cane à sucre
13. malanga
14. banan'n
15. mazoubel
16. pistach
17. veritab
18. tabac

Elvaj

20. bèf
21. kabrit
22. mouton
23. kochon
24. poule
25. dind
26. gadinaj/vann bet

Fwityé

27. autres
28. labapin
29. kakao
30. banan'n
31. shadeck
32. zoranj
33. mango
34. zaboca
35. papay
36. anana
37. kokoye
38. kafe
39. depal

Legim

40. karot
41. tomat
42. chou
43. berejen
44. melon
45. zonyon
46. bètrav
47. piman dou
48. piman piké
49. léti
100. zepina

Nombre de Mwa

1. jan
2. fev
3. mar
4. avril
5. mai
6. jui
7. jul
8. août
9. sep
10. oct
11. nov
12. dec

Estrikti

60. ranp vivan
61. ranp pay
62. misek
63. koreksyon ravin'n

Fé ak pay

61. fé ranp pay
70. patiraj
71. antéré
72. boulé
73. raché, retiré

Labouré té

80. ak rou ou pik
81. ak chari
82. pa labouré

Lot antré lajan

90. vann jounen
91. komes
93. profésyon
94. charbon
95. autres/divers
96. fe jaden/vann prodwi jaden

Enstriksyon pou kesyonè de baz.

Nou gen la enstriksyon pou gide Enimeratè lè lap rampli yon kesyonè. La nou rekopie kesyon ki soti nan kesyonè ya e nou meté sou yo nimero ki pou identifie yo oua.

Apre Enstriksyon pou chak kesyon, nap join yo directeman nan kesyon nou recopie yo. Nap join enstriksyon yo nan parantez yo (). Pi fò repons pou kesyon yo kapab fèt avèk yon nimero kab voye ou nan repons posib ki te chwazi nan paj ke nou rele: Chwa repons. Sa ap gen pou li senplifie travay Enimeraté ya, Paske li pap ekri mo kom repons pou kesyon kap soti nan kesyonè ya. Okontrè Enimeratè ya ap sèlman genyen pou join youn nimero cod nan lis ki rele "Chwa repons yo" epi antre nimero kod sa nan espas ki lib la. An ka ke ou pa join repons ou bezwen yan nan lis pou chawzi ya, Enimeratè ya ap gen poul ekri mo a ou mo yo ki pou repons kesyon an.

I. Fason ou itilize jaden tè yo

1. No.

(Sa se sèlman nimero idantite jaden yan, remake ke chak ran ki lan tablo sa se pou youn jaden ke kiltivatè ya nap pale avèk li ya ap travay la. Enimeratè ya gen poul ranpli yon ranje repons pou chak jaden ki pa menm kote nan zòn'n nap kontrole ya. Pa chache enfomasyon sou jaden ki pa nan zon'n modèl sa.)

2. Pant tè ya @

(Sa se pant jaden yan. Chwazi youn nan kat repons yo. @a endike ke eksplikasyon pou kesyon sa ap trouvel' apre syi sa nan paj ki rele: Chwa de repons.)

3. Konbyen sezièm tè a ye?

(Antre nimero ki pou endike sezièm. Si kiltivatè ya se youn lòt mezi ke li chwazi, antre repons kiltivatè a genyen pou li di mezi te ya.)

4. Teni: wi ou non @b.

(@b endike ke eksplikasyon pou kesyon sa trouvel' apre siy @b ya nan paj yo rele "Chwa de repons" la.)

5. Konbyen ou ka anfèmen tè sa pa ane?

(Bi kesyon sa se poun genyen enfòmasyon sou valè jaden ke nap pale ya. Nan anpil ka, kiltivatè a kab pa mèt tè ya, o kel ka, li pa peye fèmaj. Men li va konnen konbyen yo ta kab peyel', si li ta genyen poul ta anfèmen tè sa bay youn fèmye. Se valè sa nou bezwen konnen.

Lè kiltivatè ya pa mèt tè ya eke lap peye yon lajan chak ane poul' sèvi ak tè ya, antre konbyen kòb li peye chak ane ya.

Lè kiltivatè ya sa demwatye ke li pran tè ya, bay pòsyon depans ke li fè pou rekòt la e ki kantite nan rekòt la ke li pran pou li. Pa ekzanp 100% depans e 50% rekòt.)

6. Kilti ou pratik ou fé nan jaden.

(Kesyon sa mande ki danre ou plante nan jaden e nan ki sezon ou fè plantezon sa. Enimeratè ya va antre nimero kòd danre sa yo.

Sézon:

1 (Nimero sa yo ap korespon'n ak 2 ou 3 sezon ke ane ya pote pou la kilti. Enimeratè ya va ekri nimero mwa yo ki kòmanse e ki fini chak sezon yo nan blok repons ki anba nimero idantite sezon an.)

2

3

Estrikti

Fè ak pay

Laboure tè

(Kesyon "Estrikti" ya mande ki jan, ki espès dispozisyon yo fè nan jaden an. Yon lòt fwa ankò sèlman nimero kòd la va antre. Kesyon " fè ak pay " la mande ki sa kiltivatè ya fè avèk pay kote li retire rekòt yo. Chwa yo se:

61. fè ranp pay
(Kiltivatè ya sèvi ak pay rekòt yo poul fè ranp pay.)

70. patiraj
(Kiltivatè ya pèmèt ke bèt antre manje pay yo nan jaden an.)

71. antere
(Kiltivatè ya vire tè ya poul kab fè pay yo antre nan tè jaden an.)

72. boule
(Kiltivatè ya boule pay yo nan jaden yan.)

73. rache, retire.
(Kiltivatè ya rache pay yo e brote yo al jete.)

(Kesyon "Laboure tè" ya mande ki jan yo prepare tè ya pou yo plantel. Chwa yo pou youn repons se:

80. ak wou ou pik
(Kiltivatè ya prepare tè ya avèk wou ou bien pik.)

81. ak chari
(Kiltivatè ya prepare tè ya avèk yon chari.)

82. pa laboure
(Kiltivatè ya pa fè anyen sou tè ya avan li planteli.)

II. Konbyen ravin ou genyen e konbyen koreksyon ravin ou genyen nan chak ravin ?

Ravin 1: Ravin 2: Ravin 3: Ravin 4: Ravin 5:

(Pou chak Ravin, kesyon sa mande twa lòt kesyon. Enimeratè ya va mete repons ki pou chak ravin yo nan kolòn ki pote nimero idantite ravin nan.

Kesyon "Konbyen koreksyon" an mande konbyen koreksyon genyen nan ravin nap pale ya.

Kesyon "Espès" la mande ki danre ou kiltive nan tè ki dèyè koreksyon ravin nan. Enimeratè ya va antre nimero kòd danre ki kòrèk la. An jeneral, se menm danre, yo plante dèyè tout koreksyon ravin ke youn sèl kiltivatè ap kiltive. Nan tout bagay sa yo, si se pa kazye ya, divize espas pou repons nan sans anba monte epi mete kòd idantite dirèkteman anba youn nimero idantite pou chak kesyon ravin.)

Kesyon "Ou van'n oswa manje pwodwi" mande ki sa kiltivatè ya fè

avèk pwodiksyon li fè ya, nan koreksyon ravin yo. Enimeratè ya va mèt nan youn ti ron'n, repons ki korèk la, : swa van'n, swa manje. Nan anpil ka, se tou lè de mo yo ki pou mete nan youn ti ron'n, paske kiltivatè ya van'n yon pati e manje yon lòt pati nan pwodksyon an.)

III. Non yo: kote Ya.-, plantè.- Enimeratè, .- Eske plantè ya se yon patisipan?

1.- Basen Vèsen? _____

2. Non plantè ya? _____

3. Non anketè ya? _____

4.- Patisipe wi_____ non_____

(Kesyon "Patisipe" ya mande si wi ou non yo konsidere kiltivatè ya kòm yon patisipan nan aktivite pwojè Plus la. Nou ka di ankò si yo konn bay kiltivatè ya kèk enstriksyon ou materyel pou plante nan pwojè ya?)

IV. Jaden biyo-entansif (BIGs)

1. sa se nimero idantité jaden yan.

2. Ki valè tè
(Ki a pe pré longè e lajè jaden an?)

3. Espès
(Bay nimero kòd danre, varyete plant sa yo plantè nan jaden an.)

4. Ou vann ou manjé
(Ki sa kiltivatè ya fè ak pwodiksyon li fè nan BIGS). Enimeratè ya va mèt nan ti wonn, repons ki korèk la, swa van'n swa manje. Nan anpil ka tou, tout de mo yo ap vin'n nan ti won'n, pliske kiltivatè a van'n yon pati e manje yon pati nan pwodiksyon an.)

V. Antré Lajan : Pa òd priorité, di 4 fason ki kon pèmèt ou rantré lajan nan kay la?

(Ki 4 fason pi empòtan ki genyen ki kap fè ou antre lajan nan kay la? Se poun ankouraje kiltivatè ya poul di ki danre, ki kalite elvaj, vann jounen, komès, ou youn kategori jeneralize ke yo rele

pwofesyon. Komès vle di: le ou ap achte ou ap van'n sa ki souvan aktivite fanm. Pwofesyon vle di: tout aktivite ki pa fèt nan plante jaden tan kou chapantye, kouti, kouvri kay etc.)

1. fason ou fè ti antré lajan jodi'a
   (Sa vle di sous ôdinè ki pèmèt fèmyé a fè lajan.)

2. fason ou té fè ti antré lajan depi 5 a 10 lané
   (Sa vle di sak tap pase depi 5 a 10 lane. Pa egzanp, nan tan lontan, kèk kiltivatè te mete konfyans yo plis nan vann kafe, vetivè ou chabon ke jodi ya.)

VI. Si ou ta vlé prété lajan a lintérè pou fè lòt aktivité nan ki sa ou ta renmen mété lajan sa'a?
(Bi kesyon sa se poun join'n enfomasyon sou ki aktivate kiltivatè konsidere kòm pi pwofitab pou li. Enimeratè va ekri oun rezime de repons la ou de respons yo kiltivatè ya va bay la.)

VII. Kobyen zanimo youn moun ka posede nan zon nan?

	bèf	kochon	kabrit	mouton	poul
1. Total					
2. Gran					
3. Piti					

(Paske yo di ke kiltivatè yo pap janm di ki kantite bèt yo genyen, nou mande kiltivatè ya poul di nou konbyen nanm chak espès bèt youn vwè fanmi genyen nan fèm li nan milye ya. Enimeratè va eksplike kiltivatè ke nou konnen ke sa ka oun kesyon difisil poul repon sou prop byen pa li. Sependan, si nou pa genyen enfomasyon ekzat sou kesyon enpòtan sa, nou kab mal konpran ki enpòtans bèt genyen nan oun kote oun fanmi ap viv. Sa ka kòz nou rekomande oun program ki pa bon pou ede kitivatè yo.

Kesyon "Total" la mande tout kantite ki genyen nan chak tip animal oun fanmi genyen ou ta renmen genyen nan zon' model sa.

Kesyon "Gran" e "Piti" ya pèmèt divize total la; kantite gran ak kantite piti ki genyen e yo fèt pou bay total la.)

VIII. Distribisyon 4 prinsipal kilti.

(Kesyon sa se poun genyen enfomasyon sou pi gro sous lajan ke kiltivatè ya ap fè nan agrikilti. Enimeratè a gen poul' retounen nan repons ke kiltivatè ya te bay pou kesyon v la. Enimeratè ya gen poul asirel ke nou fè kiltivatè ya bay enfomasyon sou tout danre ke li mansyone nan repons li bay pou kesyon V.)

1. Jaden/Sézon
(Antre nimero idantite jaden an, ke ou ap jwen nan kesyon nimero 1, Apre nimero idantite jaden yan trase youn liy an diagonal kap travèse bwat repons la, e antre nimero sezon an jan li ye a nan kesyon nimero 1).

2. Kilti (youn pa ranje)
(Antre nimero kòd danre youn pa liy yo. Pa ekzamp si yo te fè kilti mayi e pwa nan premye jaden yan pendan deziem sezon an, repons la ap vin konsa:

Jaden/ Sézon	Kilti (yon pa rang)	Kantité pwodwi nan jaden sa a	Kantité pou pwopr-iétè	Kantité ou vann
1/2	2			
1/2	3			

3. Kantité pwodwi nan jaden sa a
(Antre ki kantite a ki mezi: mamit, kg etc ke nou pwodwi nan jaden asosie ya. Remake nou pwal itilize enfomasyon sa pou kalkile reveni pa e ou a pi pre karo. Konsa kitlitvate ya va gen poul rann oun kont de sa jaden bay, rapote daprè grosèl sa ke nap jwen ansanm avèk jaden an nan kesyon nimero 1.)

4. Kantité pou pwopryetè
(Si kiltivatè ya ap travay an demwatye li gen poul' bay yon posyon nan rekòt la. Kesyon sa mande sa posyon sa ap ye. Si se pa demwatye kiltivaté ap travay, pa antre anyen nan blòk repons sa.)

5. Kantité ou vann
(Nan kantite jaden a bay, ki kantite kiltivatè a vann? Antre kantite e mezi ke kiltavitè a sèvi ya - mamit, kg, etc.)

6. Ki koté maché a yé?
(Ki kote kiltivatè van'n pwodwi yo? Enimeratè va antre nimero kòd youn nan twa chwa sa yo:
1. nan teren ou nan mezon jaden
2. nan vilaj ki pi pre a
3. nan youn vil pi gran et pi lwen ke vilaj ki pi pwe a.)

7. Pri ou vann pwodwi sa'a
(Nou poze 2 dènye kesyon sa yo pou nou wè vre nan si kiltivaté a o kouran, de chanjman pri kap fèt pandan ané ya e si kiltivatè ya tire pwofi de enfomasyon ke li gen poul ran lè pri yo monnte pi wo.

8. Ki pri ki piro/nan ki mwa pri/mwa
(Antré pri ki pi wo e ki mezi pou pri sa. Apre trase youn liy diagonal ki travèse blok repsons la, epi antre nimero mwa pri ya pi wo a. Si se pandan de mwa mete youn tirè nan mitan de nimero kòd yo)

9. Ki pri ki piba/nan ki mwa pri/mwa
(Antré pri ki pi ba e mezi ki pou pri sa. Apre mete oun liy diagonal ki travèse blok repons la epi antre nimero mwa le pri yo pi ba. Si se pandan de mwa, mete youn tirè nan mitan de nimero kòd yo.)

IX. Pri travay: Si ou vlé pran lot travayé konbyen ouap péyé pou labouré té ak pik?

Ki kantité èd tan youn travayé fé: li antré a _____ li soti a _____.
(Pou kesyon sa'a, nou vlé konen ki kantité èd tan ki genyen nan youn jounen travay. Bay ki lè travayè koumansé travay, ak ki lè yo fin'n travay.)
Konbyen yo péyé youn jounen travay non zon'n nan ak manjé? Lajan _____ manjé _____.
(An plis lajan jounen'an, kesyon sa'a mandé pou ta estimé valè manjé ké yo bay travayè pandan jounen travay la.)

APPENDIX B

ELABORATION OF CHI-SQUARE TEST FOR TENURE AND SLOPE CLASS

A Chi-square test is a statistical test that determines if data conform to expectations. Using the test, one can test if sampled data come from a population having a certain distribution. Also, as is the case here, one can test if there is a relation between two sets of data. What the test does is to compare the observations with what one would expect the values of the observations to be if the two sets of data were unrelated. If the observations are sufficiently different from expectations (what one would expect), we reject the hypothesis that the two populations are unrelated.

The test is important for our purposes because it can be used to test data that are not normally distributed. Our data on farmers' responses to the land tenure question and our slope classifications are not normally distributed; so, other tests of relationship are not appropriate.

Table 15 shows the Chi-Square test on the combined data from all monitoring zones. The data under the columns marked "O" are the observed number of responses, while the data under the "E" columns are the expectations (what one would expect based on the data). As an example of the expectation calculation, the number 59.49 (expectation that a plot with >60 percent slope has a secure tenure agreement) is calculated by multiplying the probability that the slope is >60 percent times the probability that the tenure response is "Yes" (74/1015*816/1015*1015 = 59.49).

The Chi-Square statistic compares these expectations with the observed values. The Chi-Square statistic is the sum of $(O-E)^2/E$ for all cells in the table. The second portion of TABLE 15 shows these values, which, when summed total the Chi-square value, 18.39. Since this value is much larger than the critical Chi-square value taken from a Chi-square table, we reject the hypothesis that tenure and slope class are independent.

Examining the $(O-E)^2/E$ values reveals more information about the nature of the relationship between slope class and tenure. For example, in the more steeply sloped classes, we see more negative tenure responses than expected. It is also obvious that we have

fewer negative tenure responses in the 30-10 percent slope class than expected.

TABLE 15

CHI-SQUARE TEST: TENURE AND SLOPE CLASS

Slope Class

		>60		60-30		30-10		<10		
		O	E	O	E	O	E	O	E	
Tenure	Yes	52	59.49	254	266.9	339	314.3	171	175.2	816
	No	22	14.50	78	65.1	52	76.6	47	42.74	199
		74		332		391		218		1015

$(O-E)^2/E$

0.943	0.624	1.934	0.103
3.868	2.559	7.932	0.424

Chi-Square Value 18.39

Degrees of Freedom (2-1)(4-1)=3

For 3 degrees of freedom, one would reject the hypothesis that tenure and slope class are independent (.025 confidence level) if the Chi-Square value exceeded 9.35.

APPENDIX C

AVERAGE SEASONAL PRICES AND MONTHS OF OCCURRENCE BY PRODUCT AND MONITORING ZONE

The units of measurement used in the following tables are:

m=marmite, a gallon can, the weight of corn measured by a marmite is approximately 6 pounds or 2.72 kilograms.

Makout-Chay are baskets used on donkeys. Their sizes vary and the weights of makouts or chays of various products varies.

Average Seasonal price and most often reported month of occurrence. CORN						
Monitoring zones	Nobs	Average selling price (G/m)	Average low price (G/m)		Average High Price (G/m)	
Banatte	20	4.87	4.65	July	7.22	Oct
Bedorette	20	4.08	3.47	July	6.50	March
Berry	32	4.36	4.17	August	9.48	March
Bombardopolis	22	7.61	4.59	July	11.50	May
Barbe Pagnole	16	3.72	3.12	August	5.50	Nov
Castanille	15	5.75	5.20	July	8.53	March
Cerecit	21	6.02	3.48	Sept	9.00	May
Corneille	18	4.33	3.42	July	8.72	April
Lafond	25	5.72	3.16	August	9.16	April
Mondésir	17	5.32	4.79	July	8.68	March
Palmiste à Vin	4	4.50	4.75	Jun/July	8.75	--
Passe Catabois	29	4.41	3.21	July	13.03	March
Picot	9	4.44	4.17	July	7.78	Oct
Saut d'Eau	29	5.39	4.22	Sept	8.59	Jun
Vachon	4	4.75	3.62	June	8.25	Oct/Nov
Wanny	29	5.38	3.76	Sept	9.48	May
All monitoring Zones	310	5.12	3.92	July	9.06	May

Average Seasonal price and most often reported month of occurrence. SORGHUM						
Monitoring zones	Nobs	Average selling price (G/m)	Average low price (G/m)		Average high price (G/m)	
Banatte	5	3.60	2.60	Jan/Feb	7.60	May
Berry	1	3.00	3.00	Jan	7.00	May
Bombardopolis	19	7.16	4.34	Dec	16.37	May
Cerecit	11	6.73	3.32	Jan	8.00	June
Lafond	16	5.06	2.91	Jan	7.87	June
Mondésir	13	5.12	4.12	Jan	7.68	May
Palmiste à Vin	4	4.37	4.50	Nov	9.50	March
Passe Catabois	7	4.29	3.43	Jan	8.43	Sept
Picot	6	4.08	3.58	Jan/Fev	7.50	June
Saut d'Eau	10	5.65	3.00	Jan	7.30	Apr/May
Vachon	4	3.12	2.75	Fev	7.25	Jun/July
Wanny	9	4.94	3.17	Jan	7.33	May
All monitoring Zones	105	5.37	3.50	Jan	9.33	May/June

Average Seasonal price and most often reported month of occurrence. MANIOC						
Monitoring zones	Nobs	Average Selling price (G/Makout-Chay)	Average Low price (G/Makout-Chay)		Average High price (G/Makout-Chay)	
Bombardopolis	3	65.00	55.00	Jan	100.00	--
Barbe Pagnole	2	25.00	25.00	--	50.00	--
Castanille	1	30.00	30.00	--	30.00	--
Lafond	4	40.00	35.25	March	52.50	--
Passe Catabois	11	64.36	48.45	April	91.09	June
All Monitoring Zones	21	54.43	43.76	April	78.19	June

Average Seasonal price and most often reported month of occurrence. BLACK OR RED BEANS						
All monitoring zones	Nobs	Average selling Price (G/m)	Average Low price (G/m)		Average High price (G/m)	
Banatte	14	19.36	16.64	May	26.00	Jan/Feb
Bedorette	17	14.99	14.59	Jun/July	23.88	July/March
Berry	37	12.00	10.96	Oct	24.27	July
Bombardopolis	27	17.48	12.30	Dec	28.44	Aug/Sept
Barbe Pagnole	6	19.67	17.17	Jun/July/ Jan	30.33	Sept/Nov
Castanille	3	18.00	8.00	--	18.00	April
Cerecit	12	24.50	18.17	July	30.00	Sept/Dec/ April
Corneille	13	20.08	15.92	July	28.46	April
Lafond	15	19.07	14.90	July	26.33	April
Mondésir	19	14.05	12.18	Oct/May/ Jun	20.18	March
Palmiste à Vin	7	17.14	16.86	Jun/July	23.86	March
Passe Catabois	3	15.00	13.00	--	28.33	Sept
Picot	7	16.71	14.29	May	25.43	July
Saut d'Eau	12	21.83	18.00	July	30.00	April
Vachon	6	20.33	16.50	May/Jun	25.83	Feb/Aug
Wanny	14	22.50	18.86	July	30.71	April
All monitoring Zones	212	17.47	14.44	July	26.21	April

Average Seasonal price and most often reported month of occurrence. PEANUTS						
Monitoring zones	Nobs	Average Selling price (G/m)	Average Low price (G/m)		Average High price (G/m)	
Bombardopolis	12	7.92	5.04	Dec/Nov	12.08	May
Castanille	11	8.77	6.27	July	11.05	March/Feb
Lafond	2	7.50	4.50	Oct	9.50	April
Palmiste à Vin	13	5.88	5.35	Nov	10.69	March
Passe Catabois	4	7.25	5.75	July	11.25	Feb/March
All Monitoring Zones	42	7.43	5.5	Nov/Dec	11.18	March/May

Average Seasonal price and most often reported month of occurrence. PLANTAINS						
Monitoring zones	Nobs	Average Selling price (G/Régime)	Average Low price (G/Régime)		Average High price (G/Régime)	
Bedorette	1	15.00	15.00	--	15.00	--
Bombardopolis	9	24.78	15.89	Jan	40.56	July/Aug
Barbe Pagnole	2	31.50	27.50	--	40.00	--
Castanille	1	15.00	20.00	--	15.00	--
Cerecit	18	37.50	24.17	Aug	72.50	March
Mondésir	11	14.00	12.32	June	21.27	March
Palmiste à Vin	2	25.00	22.50	--	50.00	--
Passe Catabois	1	25.00	20.00	--	40.00	--
Saut d'Eau	1	40.00	20.00	--	80.00	--
Wanny	18	31.89	22.22	Aug	74.44	March
All Monitoring Zones	64	28.66	20.13	Aug	55.84	March

APPENDIX D

STANDARD ERRORS FOR ESTIMATES OF FARM PLOTS HAVING CERTAIN LAND USE PRACTICES

			Hedgerows			Rockwalls			Stub. Barriers		
	Pop.	Sam.	Per Cent	Std. Dev.	CV	Per Cent	Std. Dev.	CV	Per Cent	Std. Dev.	CV
Vachon	75	17	24	9.4%	0.39	0	0.0%		2	3.1%	1.54
Pico	142	10	23	13.5%	0.59	10	6.6%	0.66	0	0.0%	
Banatte	182	28	16	6.5%	0.41	5	4.8%	0.96	1	2.2%	2.19
Mondezi	155	30	21	6.8%	0.32	18	8.4%	0.47	4	4.3%	1.08
Palmist	118	29	6	3.9%	0.65	0	0.0%		0	0.0%	
Berry	63	30	1	1.3%	1.34	2	3.1%	1.54	0	0.0%	
Corneille	78	28	3	2.6%	0.88	0	0.0%		64	10.6%	0.16
Bedorette	125	28	0	0.0%		0	0.0%		74	9.6%	0.13
Castanille	109	30	5	3.4%	0.69	0	0.0%		67	10.3%	0.15
Sodo	211	29	6	4.2%	0.69	0	0.0%		25	9.5%	0.38
Wanny	165	30	19	6.6%	0.35	14	7.6%	0.54	8	6.0%	0.75
Cerecit	343	30	11	5.6%	0.50	12	7.1%	0.60	0	0.0%	
Bombard	100	31	16	5.6%	0.35	23	9.3%	0.40	56	10.9%	0.19
Barbe P	102	29	2	2.2%	1.12	4	4.3%	1.08	16	8.1%	0.50
Passe Cat	110	30	0	0.0%		9	6.3%	0.70	32	10.3%	0.32
Lafond	109	30	4	3.1%	0.77	2	3.1%	1.54	33	10.3%	0.31
Average					0.65			0.85			0.64