Microfinance and Health Protection Initiative

Research Summary Report: PADME

FREEDOM FROM HUNGER RESEARCH REPORT NO. 9D

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Updated: August 16, 2010

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EXECUTIVE SUMMARY

Introduction

Many microfinance institutions (MFIs) have witnessed the significant impact that all-too-common health shocks can have on their clients' ability to make their loan payments, save and flourish in their microenterprise endeavors. These MFIs seek sustainable approaches that help safeguard their clients' health without negatively impacting the financial sustainability of the institution. In 2006, Freedom from Hunger, with support from the Bill & Melinda Gates Foundation, launched the Microfinance and Health Protection (MAHP) Initiative in partnership with the Béninois MFI PADME (Promotion et l'Appui au Développement de Micro-Entreprises) to research, develop, and implement a set of comprehensive health protection services with two main benefits in mind: 1) improve client health outcomes through access to health education and products; and 2) enhance PADME's financial sustainability through improved competitiveness and cost-neutral products.

During the MAHP initiative, PADME launched Freedom from Hunger's flagship product, *Credit with Education* with its peri-urban and rural clients. *Credit with Education* is group-based microfinance and non-formal education delivered by the same credit officer at regular meetings in clients' communities. Because PADME also participated in a community randomized control trial evaluation, four product variations were tested: Women's Credit with Education Groups (W-CwE), Mixed-Gender Credit with Education Groups (M-CwE), Women's Credit Groups (WCG) and Mixed-Gender Credit Groups (MCG). The purpose of testing these four product variations was to determine which product had the most impact on client health, business, and financial outcomes as well as to study which product appeared to benefit PADME, the institution, the most in terms of client growth, repayment, retention, and financial sustainability. By the end of December 2009, 11,290 clients had access to a group-based microfinance and 5,385 of them had access to health education in HIV/AIDS, malaria, childhood illnesses and self-esteem. Men's participation made up about 10 percent of the total population in any of the four product variations.

The purpose of this report is to highlight and summarize the key client-level and institutional-level - results from five main research components implemented during the 4-year PADME initiative: 1) randomized control trial (RCT) evaluation comparing four product variations of *Credit with Education;* 2) a qualitative assessment that supported the RCT; 3) a qualitative client "impact" story study; 4) a client satisfaction, client exit study, and competitors analysis; and 5) an institutional assessment.

Credit with Education:

- W-CwE: Women's Credit with Education Groups
- M-CwE: Mixed-Gender Credit with Education Groups
- WCG: Women's Credit Groups
- MCG: Mixed-Gender Credit Groups

Results

The randomized control trial index results[1] revealed that that the education villages (W-CwE and M-CwE) perform somewhat better than the credit-only villages (WCG and MCG) in malaria

[1] Typical comparison of averages among the four product variations are covered in-depth in the Results section. In the Executive Summary, we chose to present an analysis that combined multiple indicators for each topic, such as malaria,

knowledge indicators such as the cause of malaria, that sleeping under a mosquito net is one way to protect oneself from malaria, and who would sleep under a mosquito net. Mixed-Gender Credit with Education (M-CwE) villages were no more likely to have better malaria knowledge compared to Women's Credit with Education villages (W-CwE); however, M-CwE villages were more likely than the Mixed-Gender Credit villages (MCG) to have better malaria knowledge.

Residents in education villages also have somewhat better malaria behaviors (use of insecticides and repellants, household has a mosquito net obtained in last three years, net is installed, is in good condition and has been treated if necessary and family members slept under net) compared to credit-only villages. As with malaria knowledge, residents in the M-CwE villages were also more likely than MCG villages to have obtained a mosquito net in the past three years and have better overall malaria behaviors, have more nets per household and overall, have a stronger combination of knowledge and behavior score. All results just shared on the comparison between M-CwE and MCG are based on 0.05 p-values, which indicates that only 5 percent of the time would these results show up at random.

Education villages were substantially more likely than credit-only villages to perform better on HIV-knowledge indicators—such as knowing where to purchase a condom, that HIV/AIDS is not contracted from mosquitoes or supernatural means, etc—using a condom during sexual intercourse and talking to husband about HIV/AIDS. As with malaria, M-CwE villages had stronger results than MCG villages.

The table below combines all results in a simplified analysis to show comparisons and the product variant that performed better in terms of knowledge change, behavior change or combined knowledge and behavior change. The results mentioned in this summary combine statistically significant differences of both $p<.10$ and $p<.05$; when there was a significant difference of $p<.10$, this difference will be indicated by a checkmark (√) and when there was a significant difference of $p<.05$, it will be indicated by a checkmark-plus (√+) to show which product demonstrated better results. A result with a significance of $p<.05$ is much better than a result with $p<.10$. In most conventions, only significance levels of $p<.05$ would be mentioned. The comparisons made below are those that are used throughout this paper. Columns under heading "A" compared all-education villages to all credit-only villages. Columns under heading "B" compared Mixed-Gender Credit with Education (M-CwE) villages to Women's Credit with Education (W-CwE) villages. Columns under heading "C" compared Mixed-Gender Credit with Education (M-CwE) villages to Mixed-Gender Credit Groups (MCG). Columns under heading "D" compared Women's Credit with Education (W-CwE) villages to Women's Credit Group villages (WCG).

HIV/AIDS and childhood illnesses, into an index. For the purpose of understanding the index results, a higher standard deviation (the closer the number is to 1) indicates a better or stronger result.

PADME Product Comparison Index Results								
	A		B		C		D	
	All Education (W-CwE and M-CwE)	**All Credit-Only** (WCG and MCG)	**M-CwE** (Mixed-Gender Credit with Education)	**W-CwE** (Women's Credit with Education)	**M-CwE** (Mixed-Gender Credit with Education)	**MCG** (Mixed-Gender Credit Groups)	**W-CwE** (Women's Credit with Education)	**WCG** (Women's Credit Groups)
Malaria								
Malaria knowledge score	√				√+			
Malaria behavior score	√		√		√+			
Malaria combined knowledge and behavior score	√				√+			
HIV/AIDS								
HIV/AIDS knowledge score	√+				√+			
HIV/AIDS behavior score	√+							
HIV/AIDS combined knowledge and behavior score	√+				√+			

There were no significant differences between the four product variants when assessing knowledge and behavior change as a result of the childhood illnesses module. It appears from the malaria and HIV/AIDS results that the M-CwE product variant is driving the results for the education villages when comparing knowledge and behaviors on HIV/AIDS and malaria. However, when assessing women's empowerment indicators individually (such as levels of confidence, decision-making, community participation, etc.), M-CwE clients.

Analysis

The results from this study indicate that villages receiving health education on HIV/AIDS and malaria performed better than credit-only villages for malaria and HIV/AIDS knowledge and behaviors. Out of the four product variants, M-CwE performed better at knowledge and behavior change. W-CwE villages performed better when assessing improvements in women's empowerment. These results demonstrate that men matter when it comes to changing knowledge and behavior; however, women need their own space and women-only peer groups to develop and grow their confidence levels to participate in more family- and community-level decision-making. The lack of detectable knowledge and behavior change for the childhood illnesses module, despite its popularity, indicates Freedom from Hunger should review this module for its effectiveness.

Conclusion

At the time of this writing in mid-2010, PADME was still making decisions about the future of the Credit with Education product. On the one hand, regional and branch staff were very enthusiastic about the social benefits and portfolio quality of Credit with Education, and staff was actively planning not only to continue expanding in the pilot region but also to extend the product in at least one other region over the coming year. On the other hand, PADME leadership continued

justifiably to question the cost-effectiveness of the product and was still deliberating about next steps.

Client satisfaction data indicates that the education makes a difference in loyalty to PADME. If PADME chooses to move forward with its decision to provide Credit with Education "Free"—which is how PADME describes a product in which groups can form as they wish: groups with mixed gender, groups with men only or groups with women only—PADME can move forward with confidence that it will achieve important client- and institutional-level outcomes.

INTRODUCTION

Many microfinance institutions (MFIs) have witnessed the significant impact that all-too-common health shocks can have on their clients' ability to repay, save and flourish in their microenterprise endeavors. These institutions seek sustainable approaches that help safeguard their clients' health while also protecting the institutional bottom line.

Freedom from Hunger, a recognized expert in integrated financial and nonfinancial services ("Value-added Microfinance") for the poor, launched the Microfinance and Health Protection (MAHP) initiative in January 2006 with funding from the Bill & Melinda Gates Foundation. This initiative enabled Freedom from Hunger and its partner MFIs to add new health protection options to existing microfinance services, including health education, health savings, health loans, health micro-insurance, healthcare provider linkages and access to health products. The pilot projects for these new services were implemented in Bénin with PADME, in Bolivia with CRECER, in Burkina Faso with RCPB, in India with Bandhan, and in the Philippines with CARD. In keeping with Freedom from Hunger's longstanding commitment to proving progress and documenting effectiveness, the grant also underwrote evaluation and impact studies and other assessments of MAHP-related innovations.

Types of Health Protection Services
The following types of health protection services were pilot-tested as part of the MAHP initiative.

Health education services
- Interactive education sessions on topics such as prenatal health, malaria, dengue fever, common childhood illnesses and HIV/AIDS
- Interactive education on coping with health-related financial shocks, using health financing services and getting the most out of local healthcare services

Health financing and insurance
- Health loans
- Health savings
- Health micro-insurance
- Community investments in health protection services and products

Linkages to healthcare providers and products
- Mobile healthcare providers offering health education, preventive and diagnostic services in rural areas
- Referrals to private and public providers for primary and secondary care
- Preferred provider program with discounted primary care for rural microfinance clients
- Sale of health products by a network of volunteers in rural areas

Freedom from Hunger emphasizes holistic, cohesive and sustainable approaches to tackling the pressing needs of the chronically hungry poor. With technical support from Freedom from Hunger's MAHP initiative, each MFI developed a unique package of health protection services based on market research and institutional capacity. These packages were reaching more than 300,000 microfinance clients combined by the end of 2009.

With the creation of the MAHP initiative, Freedom from Hunger is initiating a new era in microfinance, one that responds to the desires of microfinance institutions to help their clients stay healthy, flourish in their microenterprises and meet the most pressing health needs of families living in poverty.

This report will focus on the findings and experiences with one of the MAHP partners, the Association for the Promotion and Development of Microenterprises or the Promotion et l'Appui au Développement de Micro-Entreprises (PADME), one of Freedom from Hunger's newest *Credit with Education* partners in West Africa.

PADME

PADME, considered by rating agencies to be one of the strongest MFIs in West Africa today, began in 1993 as a World Bank-funded project of the Béninois government. It was transformed into an independent association in 1997 and is currently working toward becoming a private, regulated MFI. PADME serves microentrepreneurs in Cotonou and Porto Novo, the two largest urban centers of Bénin, and recently expanded to Parakou, a third urban area in the North. In 2008, PADME boasted the largest number of microfinance clients in the country and had a loan portfolio almost equivalent to that of its closest rival, FECECAM, also a Freedom from Hunger *Credit with Education* partner. The bulk of PADME's portfolio is in individual loans, but group loans, a housing loan product and an artisans' loan product are also offered. PADME has seen rapid growth over the past five years, and in the face of increasing competition in the microfinance industry, the MFI is seeking to diversify its product offerings.

Having experienced unsuccessful results with group loans in rural areas (high portfolio-at-risk—PAR—and write-offs), PADME sought out Freedom from Hunger with the goal of developing a new integrated product called *Credit with Education*, which would combine a more systematic **group loan** and meeting methodology (to reinforce discipline and solidarity as well as improve repayment) with value-added **education** (to enable greater outreach to the poor, enhance PADME's image and contribute to the social mission). Based on market research and management conviction, PADME opted to focus its education almost exclusively on health (especially malaria, HIV/AIDS and childhood illness). And, recognizing that information and training on these diseases would not necessarily be enough to engender change, PADME also decided to test out the sale of complementary health products, such as insecticide-treated mosquito nets and condoms.

PADME hoped that Credit with Education would help them extend their microfinance services to more people in poor, rural areas, while also enhancing their clients' ability to flourish, repay and remain a good credit risk. Through these health protection services, PADME sought to better accomplish its mission of providing as many microentrepreneurs as possible with access to credit, while enhancing its own competitive position and protecting its financial sustainability as an MFI. Table 1 highlights key institutional information on PADME and key outreach data for its *Credit with Education* product. The *Credit with Education* data will be explained throughout this paper.

PADME Institutional Data as of December 2009	
MFI-wide	
Year MFI established	1993
Number of active borrowers	48,962 (64% women)
Outstanding loan portfolio (US$)	35,465,271
Portfolio-at-risk (30 days)	4%
Operational self-sufficiency	130%
Health Protection Products	
Year started *Credit with Education*	2007
Number of *Credit with Education* clients	11,290
Credit with Education outstanding loan portfolio ($)	314,255
Number of insecticide-treated mosquito nets sold	1,200

Data provided by PADME

PADME recognizes that financial services alone cannot alleviate poverty. Through these health protection services, which were tested and studied for impact through 2009, PADME seeks to better accomplish its mission of improving the living conditions of clients and their communities, while protecting its own financial sustainability and longevity as a microfinance institution.

Healthcare Concerns in Bénin[2]

Malaria, coughs, diarrhea, typhoid and anemia (caused by untreated malaria) are the most widespread and common health issues, although high blood pressure and HIV/AIDS (particularly in some of the Nigerian border areas served by PADME) are growing concerns. Malaria cases are on the rise, with 41 percent of doctors' visits attributed to the disease, and 75 percent of reported malaria-related deaths occurring among children under age five in 2001. Despite the fact that the most common health issues in Bénin are largely preventable, people's knowledge of prevention and treatment varies, and application of that knowledge, particularly in the case of malaria and HIV/AIDS, is very low. Bénin is participating in the U.S. President's Malaria Initiative, but distribution of free insecticide-treated mosquito nets and other benefits have been slow and uneven across the country.

The average annual income in Bénin is US$530, or about $1.50 a day, and 33 percent of the population lives below the national poverty line of $.27 a day. Most people survive on subsistence agriculture and the informal economy, and while the urban population is growing, 55 percent live in rural areas. In this context of extreme poverty and widespread infectious disease, the typical rural family spends at least one-third of its income on health. Freedom from Hunger found similar findings in market research with PADME clients in 2006. Clients reported spending an average of 30 percent of their annual income to treat malaria alone, and coughs and diarrhea among young children account for additional common expenses. Informal community-based, cooperative health "insurance" programs offer some small-scale coverage with mixed results, but the vast majority of the population lacks access to insurance. The government provides low-cost health care via village health units, community referral centers and regional hospitals, but people must pay out-of-pocket

[2] Section references work done by Marcia Metcalfe: Metcalfe, M. 2006. "Bénin Health Economy Profile." Freedom from Hunger. Davis, CA.

for transportation, medicines, laboratory work, hospital fees and surgical supplies. Private clinics are preferred, especially for malaria treatment, but they are prohibitively expensive for poor families.

According to both national data and PADME clients, malaria is the most widespread and costly disease faced by Béninois people. Malaria and diarrhea strike most frequently during times when people have the least available cash—during the rainy season (when agricultural revenues have not yet been realized) and the holiday season (when social obligations necessitate high expenses), respectively. Without widespread availability of insecticide-treated mosquito nets, oral rehydration salts and life-saving information to prevent these diseases, and without readily available cash to purchase medicine quickly in the diseases' early stages, people tend to self-treat and then wait, which can lead to serious complications, the need for hospitalization and even death.

In Bénin, people realize that certain illnesses occur on a predictable schedule, such as malaria during the rainy season, and they try to save in anticipation of these illnesses. Relying on savings is their first choice when it comes to paying for treatment. Given the overall scarcity of resources, people have been known to try free homemade herbal remedies before seeking outside healthcare services. When savings do not suffice, people use cash (including MFI loan proceeds) from their businesses, or they borrow from family and friends. Occasionally, women use "*tontines*" (rotating community savings and loan funds), although these are reported to be unreliable. In some cases, adequate funds are simply unavailable and the only option is to forgo treatment.

MAHP Products and Services for PADME

PADME's health protection service package includes the following:

- Credit with Education—village bank-based methodology of solidarity loans, combined with interactive education sessions on health topics such as malaria, childhood illnesses and HIV/AIDS.
- Access to affordable, high-quality health products to enable application of the health education, such as insecticide-treated mosquito nets and condoms.

PADME established a longer-term goal of creating a health micro-insurance mechanism for its clients, and conducted a feasibility study on practical and sustainable options. As with the health products, this report will not cover anything regarding the feasibility study as there were no activities implemented during the initiative period.

Information from in-depth market research was used to design an integrated package of health protection services to address clients' most important health, and related financial, challenges. PADME sought to respond to the health and financial needs and demands of its target clientele, as revealed through detailed market research. The MFI had had unsuccessful results with group loans in rural areas, and had never before offered training to clients. So PADME began by offering a new integrated product called *Credit with Education*, which combined a more systematic group loan and meeting methodology (to reinforce solidarity and improve repayment) with health education to encourage clients to adopt recommended practices to prevent common diseases. The first seven education sessions for incoming Credit with Education clients focused on malaria, followed by prevention and treatment of childhood illnesses, and then HIV/AIDS. Towards the latter part of the program period, some clients also received education in self-esteem.

PADME also recognized that information and training on these diseases would not necessarily be enough to engender change. Health products such as insecticide-treated nets and condoms are not available in most rural communities, and would be too expensive for most rural clients when offered at market rate. Therefore, the MFI also established a partnership with Population Services International (PSI) and Freedom from Hunger to offer such health products in PADME's target areas via the Credit with Education field agents, who would sell them at a subsidized price. This report will not substantially cover the product distribution because it was implemented on a relatively small scale and was not replicated during the initiative time period.

It is important to note here, that a randomized control trial (RCT) evaluation conducted with PADME led product design for their *Credit with Education* initiative. Although we would normally wait to describe this under the Results section, the RCT and the implementation of the MAHP products and services at PADME are one in the same. From this point forward, we will call their MAHP initiative "*Credit with Education*" which is meant to describe the product or initiative as a whole. However, there are four variations on this product that were implemented:

Credit with Education:

- W-CwE: Women's Credit with Education Groups
- M-CwE: Mixed-Gender Credit with Education Groups
- WCG: Women's Credit Groups
- MCG: Mixed-Gender Credit Groups

- **Women's Credit with Education Groups.** These all-women groups received group-based microfinance and health education. We will use the acronym, W-CwE to reference this group.
- **Mixed-Gender Credit with Education Groups.** These groups of men and women received group-based microfinance and health education. We will use M-CwE to reference this group.
- **Women's Credit Groups.** These all-women groups received group-based microfinance only and had no access to health education. We will use the acronym, WCG to reference this group.
- **Mixed-Gender Credit Groups.** These groups of men and women received group-based microfinance only and had no access to health education. We will use the acronym MCG to reference this group.

Thus, when viewing Table 2 below, all "MAHP" clients received group-based microfinance. Half of them received education. Half of the groups also allowed men whereas the other half did not. Table 2 represents general institutional indicators for tracking the progress made by PADME using MAHP packages and services. The table shows the number from the first year of implementation in 2007 to the end of the project in December 2009.

Table 2: MAHP Outreach			
	Dec. 2007	**Dec. 2008**	**Dec. 2009**
Members receiving full MAHP package	2,023	9,088	11,290
Number of active borrowers across all of PADME	32,686	44,209	48,962
Number of members receiving education (in pilot region)	1,135	4,471	5,385
Education modules, topics and themes delivered during period	Malaria	Malaria, childhood illness, HIV/AIDS, self-esteem	Malaria, childhood illness, HIV/AIDS, self-esteem

PADME's Research and Evaluation Goals and Activities for MAHP

A key component of the MAHP initiative is research to provide evidence of the impacts that integrated microfinance and health protection services have on MFIs and their clients. The MAHP evaluation activities for PADME include the documentation of both quantitative and qualitative results across all of the MAHP package components. Research design and data collection for client- and institutional-level indicators began in 2007 and continued through March 2010.

For PADME, as with all five MAHP partners, the evaluations draw on data collected from individual client interviews, focus-group discussions (FGDs) and MAHP institutional indicators to examine two primary questions:

1. Does the provision of integrated microfinance and health protection services by an MFI have a positive impact on client health and financial status?
2. Does this provision of services result in stronger institutional performance as measured by growth rate, client loyalty and retention, repayment rates, demand for and effective use of MFI services, and overall competitive position?

The five components of PADME's MAHP evaluation plan were designed to help answer these questions. These components include the following:

1. Randomized control trial (RCT) evaluation in 138 villages (includes original census, baseline, and end line data)
2. Final Qualitative Study in support of RCT
3. Client Impact Stories
4. Client Satisfaction and Client Exit/Competitors Analysis
5. Institutional Assessment

KEY RESULTS

This section provides the methods descriptions and results for each of the five components listed above.

Randomized Control Trial (RCT)

As mentioned above, four *Credit with Education* product variants were tested to evaluate the impact of health education provided within the context of group-based microfinance. An RCT evaluation allows us to be certain that the true impact of a program is not a result of the subtle differences between the people who would have otherwise chosen one program or the other—but rather, a result of the program itself.

Study Objectives and Hypotheses

Without such a rigorous (randomized) evaluation, it is impossible to know to what extent changes in people's lives are attributable to a given program. Such evaluations also allow us to understand how well the program works for different groups of people who are participating in the program. In this case, we wanted to answer two main questions:

- To what extent does adding health education (malaria, HIV/AIDS, childhood illnesses and self esteem) to group-based microfinance improve the health, financial and business status of households and communities?
- To what extent does allowing men to join standard women-only microfinance groups improve or hamper the health, financial, and business status of households and communities (in the context of receiving education and not receiving education)?

Our hypotheses were that:

- Clients participating in Credit with Education groups will have better overall health and business performance than those receiving credit only.
- Offering the product to mixed groups may affect the performance of the group, if women feel uncomfortable discussing health issues in the presence of men and less empowered compared to women-only groups.

Study Design

To answer these hypotheses, 138 villages in which PADME wanted to pilot-test these products were randomly assigned to receive one of the four product variants. One-half of the villages were randomly assigned to receive the education and one-half of the villages were assigned to receive a product that would allow groups to form allowing male participants. Table 3 illustrates the percentages of villages randomized into any of the four product variants:

Table 3: Randomized Control Trial Design

	Health Education Control Group (50%)	**Health Education Treatment Group (50%)**
Gender Control Group (Female-Only)—50%	Women's Credit Groups (WCG)—25%	Women's Credit with Education Groups (W-CwE)—25%
Gender Treatment Group (Mixed-Gender)—50%	Mixed-Gender Credit Groups (MCG)—25%	Mixed-Gender Credit with Education Groups (M-CwE)—25%

To answer the questions above, there were three evaluations planned: a census survey, a baseline survey and a follow-up survey.

> **Census Survey.** Because four product variants were randomly assigned to a village, we had to control for self-selection bias; villagers were not allowed to choose from one of the four products. A villager offered credit and education only might have different reasons for joining compared to a villager offered credit only. Thus, a census survey was administered in

the 138 villages to all heads of households (male and female, ages 15–65) who engaged in an economic activity or business and could be considered potential clients of PADME. The goal of the census survey was to measure *selection*, that is: who chooses to join a program and the possible factors that could influence their decision to join or not to join a group? Fifteen percent of the total population in any given village was interviewed, accounting for approximately 6,000 total interviews. Although we expected to be able to match names from the census survey to the eventual PADME client lists, there was very little overlap. Documented names in the census survey varied substantially from the names that PADME had on record, suggesting that names were not recorded or documented in a similar fashion. As a result, the census survey data was not utilized to help explain selection and serves more as a community-level baseline.

Baseline survey. A full baseline survey was intended for all 138 villages; however, rollout of the product by PADME was not "batched," meaning we were unable to combine multiple villages at a time to conduct a baseline and within time and resources available. Consequently, a baseline was conducted in only 55 of the 138-targeted villages with approximately 25 PADME clients per village.

Follow-up survey. A follow-up survey was conducted with 3,625 community members in the pilot villages. Because the full baseline was abandoned and the census survey was unable to serve as a mechanism to explain selection, the follow-up was conducted using a sampling methodology whereby the credit officers were given a Global Positioning System (GPS) unit to mark the coordinates of the place in which PADME clients held their meetings, which would likely result in a high percentage of PADME clients being sampled compared to community members because it was assumed that members would choose a place to meet that was convenient to their homes. Ultimately, 30 percent of the sample population was categorized as PADME clients.

Thirty women per village in 121 of the 138 villages were interviewed. Unlike the baseline and census for which men and women were interviewed, we chose to interview only women in the follow-up since our research questions are focused on the outcomes on women. Seventeen of the villages were dropped because PADME did not actually succeed in solidifying a product offering in those villages due to geographic isolation of the village; cultural reasons—the village head did not allow PADME to establish the product; and clients had agricultural-based economic activities and the terms of the loans did not make the loan products attractive to them.

This report's analysis and results section will only cover the follow-up data and the follow-up qualitative data. Freedom from Hunger and Innovations for Poverty Action are currently analyzing all data sources and the full reporting was not available at the time of this writing. An official manuscript of findings is intended to follow this report.

Data Analysis

To test our initial hypotheses that all education villages (both all-women and mixed genders) would perform better than credit-only villages, and that the all-women villages would perform better than the mixed-gender villages, individual questions were analyzed and averages were compared among the performance of the four product variants.

Because there are multiple indicators of knowledge, attitude, behavior and impact for the three key education modules (malaria, HIV/AIDS, childhood illnesses), it is challenging to speak with confidence on the effects of the module on client change. In addition to this difficulty, there are two concerns that arise with trying to conduct statistical inference over multiple outcomes. One is Type 1 error(s). The probability that one or more treatment effects are labeled statistically significant due to chance is increasing in the number of outcomes (i.e., in the number of tests preformed). The second concern is evaluating the overall direction and magnitude of the treatment effects when there is a diffuse set of outcomes. We address these concerns using summary index tests.

Following Kling et al.,[3] we construct summary indices at two levels 1) by *domains* of related indicators and 2) an overall measure that aggregates all of our ultimate outcomes of interest. These domains for the full study are malaria, HIV/AIDS, childhood illnesses, empowerment and business enterprise outcomes.[4]

Key Results

This section will describe the key results by topic, using both comparison of averages as well as the index results.

Malaria

The Freedom from Hunger malaria module consists of seven education sessions that cover 1) how malaria is transmitted; 2) how to recognize and treat malaria; 3) how to use malaria medications completely and correctly; 4) how to prevent and treat malaria during pregnancy; 5) how to best prevent malaria through insecticide-treated mosquito nets (ITNs); 6) how to treat a mosquito net with insecticide; and 7) a review of the previous six sessions as well as a community action plan.

Malaria Knowledge

When comparing villages that received malaria education (n=1,766) to credit-only villages (n=1859) (see Appendix A), education villages were no more likely to *know that the mosquito causes malaria*, *that it is the mosquito alone that causes malaria*, or that *ITNs are the best way to protect oneself from malaria*. However, education villages were more likely to know that *pregnant women and children under the age of 5 are the most vulnerable to malaria* (58% compared to 51%, $p<0.05$).

When looking at each individual malaria knowledge indicator, there are no other statistically significant differences when comparing education villages with credit-only villages. There are, however, significant differences when comparing villages with the Mixed-Gender Credit with Education Groups (M-CwE) to the villages with Mixed-Gender Credit Groups (MCG). M-CwE villages are more likely than MCG villages to know that the *mosquito causes malaria* (97% compared to 91%, $p<.01$), and more likely to know that *mosquito nets can protect you from malaria* (91% compared to 85%, $p<0.05$). M-CwE villages are also somewhat more likely than Women's Credit with Education

[3] Kling, J., J. Liebman & L. Katz. 2007. "Experimental Analysis of Neighborhood Effects." *Econometrica* 75(1): 83-120. January.

[4] We construct the indices by first rescaling each outcome Ykij (outcome k, for individual i, in domain j) so that higher values map into better outcomes. Next, we standardize each outcome into a z-score by subtracting its control group mean, and dividing by its standard deviation. Then we combine outcomes in a domain j by taking the average of equally weighted standardized components.

(W-CwE) groups to know that mosquito nets can protect a person from malaria (91% compared to 85%, $p<0.10$).

Because the differences are a bit scattered, such that we cannot conclude that education clients had more knowledge overall and that the trend suggests that the M-CwE is performing better, we conduct the indices to help answer this question as well as to confirm whether there is something more to say about the effectiveness of M-CwE.

When considering an index of the variables (Appendix B), to help concentrate the impacts of the malaria education, we can conclude from these results that the education villages perform somewhat better than the credit-only villages when it comes to malaria knowledge indicators such as the cause of malaria, who should sleep under a mosquito net, and that one should sleep under a mosquito net as a way to protect oneself. This combination produces an estimated treatment effect of .09 standard deviation units ($p=0.056$) for the education villages. The closer the estimated treatment effect is to the number "1," the better. A difference with a p-value of 0.05 or less (i.e. $p<0.01$, $p<0.001$, etc.) is most optimal, although we've included some p-values of 0.10 to indicate interesting or strong trends.

M-CwE were no more likely to have better knowledge compared to W-CwE. However, M-CwE were more likely than MCG groups to have better knowledge (combined treatment effect of .17 versus -0.005 standard deviations, $p<.05$, respectively). When accounting for cultural beliefs and practices in relation to malaria transmission, there appears to be a greater difference as many participants mentioned that a mosquito can be one of several causes of malaria, but participants are still influenced by inaccurate beliefs related to the mode of malaria transmission and mentioned other causes such as too much sun exposure and poor personal hygiene.

Malaria Behavior

When assessing each indicator individually, education villages were more likely to have reported *using mosquito repellents in the home* compared to credit-only villages (36% compared to 27%, $p<0.05$), but there are no other significant differences between education and credit-only villages in terms of behavior. However, when comparing the individual product variants, respondents in mixed-gender villages (M-CwE and MCG) are more likely than women-only villages (W-CwE and WCG) to *have a mosquito net in the home* (74% versus 68%, $p<.05$), and M-CwE villages are more likely than W-CWE villages to have a mosquito net in the home (75% versus 67%, $p<0.05$).

When assessing the behavior indicators in an index, the education villages have somewhat better malaria behaviors compared to credit-only villages. The malaria behavior scale combines the indicators of use of insecticides/ repellents, whether the household has a mosquito net (and that has been treated if necessary), whether the net is installed and in good condition, and whether family members slept under the net. This scale is then disaggregated by whether the nets were obtained in the last year or in the last three years.

The M-CwE villages are more likely than MCG villages to have *obtained (purchased or through free distribution) a mosquito net in the past three years* and have better overall *malaria behaviors* (.12 compared to -0.030 standard deviation units), have *more nets per household* (.12 compared to -0.030 standard deviation units), have a *stronger combination of knowledge and behavior* score (.13 compared to -0.001 standard deviation units). All results just shared on the comparison between M-CwE and MCG are based on 0.05 p-values, which suggests that only 5 percent of the time these results would show up at random. These findings are not surprising given that PADME sold subsidized mosquito nets to

approximately 25 of the 55 villages during the first dissemination of malaria education. The education villages were the only ones to be offered the subsidized mosquito net for purchase.

When you disaggregate the index results by product (Appendix B), the M-CwE villages perform somewhat better than the W-CwE villages regarding net ownership and malaria behaviors. M-CWE villages were more likely to have purchased nets in the last year as well as within the last three years. There are no significant differences between the women-only villages (W-CwE compared to WCG) in terms of the malaria indices or the direct comparisons of the each individual malaria indicator.

However, there are differences when you compare the M-CwE and MCG villages. The M-CwE villages have better malaria knowledge than MCG villages. When accounting for cultural beliefs and practices with regards to the modes of transmission for malaria, if participants included mosquito in their answer but were not limited to only answering mosquito, this produced a standard deviation of .17 for M-CwE compared to -0.005 for MCG with $p<0.05$.

Overall, it would appear that for malaria education results, education clients are somewhat more likely to have better knowledge and behaviors, but Mixed-Gender Credit with Education clients are substantially driving the results for the education villages as a whole.

Table 4 below combines all malaria index results in a simplified analysis to show comparisons, and which product variant performed better in terms of knowledge change, behavior change, or combined knowledge and behavior change. The results mentioned in this summary combine statistically significant differences of both $p<.10$ and $p<.05$; when there was a significant difference of $p<.10$, this difference will be indicated by a checkmark (√) and when there was a significant difference of $p<.05$, it will be indicated by a checkmark-plus (√+) to show which product demonstrated better results. A result with a significance of $p<.05$ is much better than a result with $p<.10$. In most conventions, only significance levels of $p<.05$ would be mentioned. The comparisons made below are those that are used throughout this paper. Columns under heading "A" compared all-education villages to all credit-only villages. Columns under heading "B" compared Mixed-Gender Credit with Education (M-CwE) villages to Women's Credit with Education (W-CwE) villages. Columns under heading "C" compared Mixed-Gender Credit with Education (M-CwE) villages to Mixed-Gender Credit Groups (MCG). Columns under heading "D" compared Women's Credit with Education (W-CwE) villages to Women's Credit Group villages (WCG).

Table 4: PADME Product Comparison Index Results for Malaria

	A		**B**		**C**		**D**	
	All Education (M-CWE and W-CWE)	**All Credit-Only** (MCG and WCG)	**M-CwE** (Mixed-Gender Credit with Education)	**W-CwE** (Women's Credit with Education)	**M-CwE** (Mixed-Gender Credit with Education)	**MCG** (Mixed-Gender Credit Groups)	**W-*CwE*** (Women's Credit with Education)	**WCG** (Women's Credit Groups)
Malaria								
Malaria knowledge score	√				√+			
Malaria behavior score	√		√		√+			
Malaria combined knowledge and behavior score	√				√+			

HIV/AIDS

The Freedom from Hunger HIV/AIDS module consists of nine education sessions that cover 1) an explanation of HIV/AIDS; 2) transmission of HIV/AIDS; 3) protecting from sexual and blood Spread of HIV; 4) protecting from parent-to-child spread of HIV; 5) testing for HIV; 6) talking about HIV/AIDS; 7) how to use a condom; 8) stopping the stigma of HIV/AIDS; and 9) stopping the spread of HIV/AIDS.

HIV/AIDS Knowledge

Education villages were more likely than credit-only villages to know that they *cannot get HIV/AIDS from a mosquito* (58% versus 51%, $p<0.05$) and somewhat more likely to know they cannot get HIV/AIDS from sharing food with a person infected with HIV/AIDS, or contracting it through supernatural means compared to credit-only villages. They were also more likely to indicate they have *heard messages on HIV/AIDS in the last 12 months* (58% versus 50%, $p<0.01$) compared to credit-only villages. Although still very low, education villages are more likely to report knowing someone with HIV/AIDS and where they can get a condom (33% versus 26%, $p<0.05$).

When you disaggregate the data by product variant, M-CwE villages are slightly more likely to know where they can get an HIV/AIDS test compared to W-CwE villages and somewhat more likely to have heard of HIV/AIDS. M-CwE villages were more likely than MCG villages to know you cannot get HIV/AIDS by supernatural means (62% versus 51%, $p<0.05$) and somewhat more likely to know *where they can purchase a condom. W-CwE villages are more likely to know they can't get HIV/AIDS from a mosquito* compared to WCG villages (60% versus 50%, $p<0.05$) and slightly more likely to know someone who has or is suspected of having HIV/AIDS.

When you consider an index of the knowledge variables (Appendix B), which includes the correct answers to the knowledge indicators, education villages were more likely than credit-only villages to score better at the aggregated level. This combination of HIV/AIDS knowledge variables produces an estimated treatment effect of .11 standard deviation units ($p<0.04$).

HIV/AIDS Attitudes

There was no difference among the villages in whether they would be willing to care for a family member who had HIV/AIDS. Only 34 percent of the entire sample indicated they would be willing, suggesting that the stigma of HIV/AIDS is still a serious issue. Education villages were more likely to indicate *they could purchase a condom* compared to credit only villages (19% versus 13%, $p<0.05$). W-CwE villages were somewhat more likely than MCG villages to indicate they could purchase a condom.

When asked why they felt unable to purchase a condom, villages with women-only groups were more likely to indicate it was because they did not know where to purchase one compared to villages with mixed-gender groups (41% versus 33%, $p<0.05$). W-CwE villages were also somewhat more likely than M-CwE villages to indicate they did not know where to purchase a condom. M-CwE villages were more likely than W-CwE villages to indicate they were embarrassed (52% versus 41%, $p<0.05$).

HIV/AIDS Behavior

There was no difference among the villages in whether they had used a condom during the last time they had sexual intercourse. For the entire sample, only 2 percent reported using a condom. There

were also no differences in the percentages who reported speaking to their husbands about how to avoid getting HIV/AIDS. For the entire sample, 21 percent reported having spoken to their husbands.

When you consider an index of the behavior variables (respondents indicated they used a condom and spoke to their husband about HIV/AIDS), education villages were more likely than credit-only villages to score better at the aggregated level. This combination of HIV/AIDS behavior variables produces an estimated treatment effect of .09 standard deviation units for the education villages compared to .00 ($p<0.05$). Similar results were found when combining the HIV/AIDS knowledge and behavior variables (using all correct "answers" to HIV/AIDS variables). The combination likewise produces an estimated treatment effect of .09 standard deviation units for the education villages compared to .00 of the credit-only villages ($p<0.05$).

Table 5 below combines all HIV/AIDS index results in a simplified analysis to show comparisons, and which product variant performed better in terms of knowledge change, behavior change or combined knowledge and behavior change. As with the malaria results in Table 4, when there was a significant difference of $p<.10$, this difference will be indicated by a checkmark (√) and when there was a significant difference of $p<.05$, it will be indicated with a checkmark-plus (√+) to show which product demonstrated better results.

Table 5: PADME Product Comparison Index Results for HIV/AIDS

	A		B		C		D	
	All Education (M-CWE and W-CWE)	**All Credit-Only** (MCG and WCG)	**M-CwE** (Mixed-Gender Credit with Education)	**W-CwE** (Women's Credit with Education)	**M-CwE** (Mixed-Gender Credit with Education)	**MCG** (Mixed-Gender Credit Groups)	**W-CwE** (Women's Credit with Education)	**WCG** (Women's Credit Groups)
HIV/AIDS								
HIV/AIDS knowledge score	√+				√+			
HIV/AIDS behavior score	√+							
HIV/AIDS combined knowledge and behavior score	√+				√+			

Childhood Illnesses

The Freedom from Hunger childhood illnesses module consists of nine education sessions that cover 1) awareness of most common childhood illnesses; 2) critical danger signs when a child is sick; 3) diarrhea danger signs; 4) cough danger signs; 5) fever danger signs; 6) what should occur during a medical exam; 7) how to chose medical care providers; 8) checklist for quality medical care; and 9) steps for caring for sick children.

Childhood Illnesses Knowledge

There were no significant differences between education and credit-only villages regarding childhood illnesses. Mixed-gender villages, however, were more likely than all women villages to know to *give more liquid to a child with diarrhea* (39% versus 32%, $p>0.05$); however, all women villages were more likely than mixed-gender villages to *know a way to lower a fever* (97% versus 94%, $p<0.05$). M-CwE villages were more likely than MCG villages to *know more correct symptoms for detecting malaria*

(average of 2.6 correct responses versus 2.4 correct responses, $p<0.05$). There were no differences between W-CwE and WCG villages. When you consider an index that combines all correct answers for the knowledge indicators, there were no significant differences among the product variants.

Childhood Illnesses Behaviors

There were no differences in childhood illness behaviors, such as an improvement in the number of children sick, or the cost for treatment. On average, for the entire sample population, 17 percent had a child who was sick in the last 30 days and when they sought treatment, the cost for treatment for the child was approximately 870 FCFA or less than $2.00.

Food Security

A key measure of poverty outreach and well-being for Freedom from Hunger programs is food security. Freedom from Hunger uses an adapted version of the United States Department of Agriculture food-security survey tool with its partners around the world to measure outreach to food-insecure populations and movement out of food insecurity.

There were no differences between education villages and credit-only villages or between mixed-gender and women-only villages in regards to food-security levels. However, M-CwE villages were somewhat more likely than W-CwE villages to have incidences of food security during the past 12 months. M-CwE villages were also more likely than MCG villages to have an incidence of food security during the past twelve months (56% versus 46%, respectively) and to experience chronic food insecurity (42% versus 33%, both statistics at $p<0.05$).

Responsibilities and Social Networks

An additional hypothesis of this study is that groups receiving education were more likely to have stronger social capital and networking compared to credit-only groups. Respondents were asked about their confidence in the strength of their community, their ability to care adequately for their children, and any changes in their ability to play a decision-making role at the community level.

There were no significant differences between education and credit-only villages. There were two significant differences between mixed-gender and women-only villages: women-only villages were more likely to *have spoken out in their community in the last 12 months* compared to mixed-gender villages (33% versus 25%, $p<0.01$) or to have *run for an elected position* (5% versus 2%, $p<0.01$). W-CwE villages were somewhat more likely than M-CwE groups to have spoken out in their community in the last 12 months (36% versus 28%, $p<0.10$) or have run for an elected position (5% versus 3%, $p<0.10$). W-CwE villages were also more likely than M-CwE villages to report *feeling at least somewhat influential in changing their village* (55% versus 42%, $p>0.05$). W-CwE villages compared to WCG villages were somewhat more likely to feel very confident they could protect their children against malaria (74% versus 65%), feed their children (74% versus 66%), and feel that their community is somewhat likely to come together to solve a problem (84% versus 77%, all with $p<0.10$). W-CwE villages compared to WCG villages were also more likely to *feel somewhat influential in changing their community* (55% versus 43%, $p<0.05$).

Decision-making in the Household

Education villages were hypothesized to play a larger role in household decision-making or feel more confident to do so.

There were no significant differences between education and credit-only villages. There were differences between mixed-gender and women-only villages. Women-only villages were somewhat more likely to participate in school decisions and in decisions regarding their child's participation in group memberships. W-CwE villages were also more likely than M-CwE villages to *participate in school decisions* (49% versus 40%), *participate in decisions regarding their child's participation in group memberships* (49% versus 40%) and participate in *buying-and-selling decisions for the household* (52% versus 45%, all with $p<0.05$). They were somewhat more likely to participate in decisions regarding work. MCG villages were somewhat more likely to participate in work decisions compared to M-CWE villages.

Table 6 below simply highlights which product performed better in terms of responsibilities, social networks and decision-making in the household when reviewing individual indicators assessed. When there was a significant difference of $p<.10$, this difference will be indicated with a checkmark (√) and when there was a significant difference of $p<.05$, it will be indicated with a checkmark-plus (√+) to show which product demonstrated better results.

Table 6: PADME Product Comparisons for Individual Indicators on Responsibilities and Social Networks and Household Decision-making

	A		B		C		D		E	
	All Education	All Credit-Only	All Mixed Gender	All Women-Only	CAEM	CAEF	CAEM	CGM	CAEF	CGF
Responsibilities and Social Networks										
Have spoken out in their community in the last 12 months				√+		√				
Have run for an elected position				√+		√				
Feel at least somewhat influential in changing their village						√+			√+	
Feel that their community is somewhat likely to come together to solve a problem									√	
Feel confident they can protect their children against malaria									√	

Table 6: PADME Product Comparisons for Individual Indicators on Responsibilities and Social Networks and Household Decision-making (continued)										
	A		B		C		D		E	
	All Education	All Credit-Only	All Mixed Gender	All Women-Only	CAEM	CAEF	CAEM	CGM	CAEF	CGF
Responsibilities and Social Networks										
Feel confident they can feed their children									√	
Participate in school decisions				√		√+				
Participate in decisions regarding their child's participation in group memberships				√		√+				
Participate in buying-and-selling decisions for the household						√+				
Participate in decisions regarding work						√		√		

Credit and Finance

All respondents were asked about their experiences with MFIs and their financial behaviors. Approximately 30 percent of the four product variants indicated they belonged to PADME. Small percentages belonged to other microfinance institutions such as Fédération des Caisses d'Epargne et de Crédit Agricole Mutuel or FECECAM (3%), Les Associations de Services Financiers or ASF (.5%) and MicroCredit aux Plus Pauvres (or Microcredit for the Poorest Program [MCPP]) (14%). Education villages were slightly more likely to have taken a loan from MCPP (Bénin government's microfinance program for the poor) compared with credit-only villages. Women-only villages were slightly more likely to have a loan with FECECAM, and W-CwE villages were slightly more likely than WCG villages to have a loan with MCPP.

Average loan amount used in the last 12 months with PADME was 243,171 FCFA ($457). When comparing the PADME clients to the entire sample, the entire sample's average was slightly higher at 298,381 ($561). There were no differences among the product variants in loan sizes as reported by the respondents.

When asked about client satisfaction with PADME and whether they were likely to take another loan with PADME in the future, M-CwE clients were somewhat more likely than W-CwE clients to indicate they *were very likely to take another loan with PADME* and were more likely than MCG clients

to take another loan (55% versus 37%, $p<0.05$). M-CwE villages compared to W-CwE villages (52% versus 36%, $p<0.05$) and compared to MCG villages (51% versus 32%, $p<0.01$) are *"very likely" to provide a positive referral to another person regarding PADME*. M-CwE are also somewhat more likely than W-CwE to be "somewhat or very likely" to provide a positive referral (92% versus 85%, $p<0.10$). Interestingly, M-CwE clients are more likely than MCG clients to *have had another member of their family join PADME in the last 12 months* (8% versus 4%, $p<0.05$).

Microenterprise

Respondents were asked about revenues from their primary economic activity for the last 7 days. Credit-only villages were somewhat more likely than education villages to have a higher reported level of revenue (17,900 FCFA versus 15,200, $p<0.10$). WCG villages were more likely than W-CwE villages to have reported higher revenues as well (17,400 CFA versus 14,000, $p<0.05$).

Education villages were also more likely than credit-only villages to report a *higher frequency of conflicts with her husband over the money she earns* compared to credit-only villages (24% versus 18%, $p<0.05$). W-CwE was more likely than WCG to report conflict as well (27% versus 19%, $p<0.05$).

Qualitative Follow-up Study

The qualitative study was conducted by Damien Mededji of IREEP. At the time of the qualitative study in March and April 2010, Mr. Mededji was an independent consultant. For each of the three major cities—Pobe, Ketou, and Ifgangy—and for each of the four product variables, two focus group discussions (FGDs) were conducted: one with an urban group and one with a rural group. In total, 24 FGDs were planned, and 23 were conducted (one group refused to participate). This section will not serve as a full reporting on qualitative results, but will aim to help contribute to the quantitative findings from the RCT. Since this study focused primarily on malaria, HIV/AIDS and childhood illnesses, results will be categorized with those headings. In addition to these three categories, a summary of additional findings are reported on the economic difficulties during the evaluation period as well as how information was shared within their communities.

Malaria

As with the RCT results, education clients appear to have benefited greatly from the malaria education, both in terms of knowledge and behavior, with Mixed-Gender Credit with Education clients (M-CwE) appearing to drive many of the positive results. The qualitative interviews revealed that for those who participated in the malaria education, there was definite confidence in protecting one's family from malaria because of the emphasis on sleeping under insecticide-treated mosquito nets. Almost one-half of all education group interviews revealed a high proportion of participants who indicated they and their family members slept under a mosquito net the night before, yet, the male heads of household were the least likely to sleep under the net. "*Many sleep under mosquito nets to avoid malaria, especially during the rainy season when the risk of contracting malaria is really high due to the multitude of mosquitoes that exist."* Another client shared, "*Around me, a lot of people sleep under a mosquito net during all seasons, because we know that a day of illness means the inability to earn (money) for one's family*."

Malaria can be experienced in Bénin year-round and has a significant economic impact on the household (not being able to work, go to the market and a large expense depleting savings). The participants indicated that especially when their children are sick, they are unable to work in the market because they must care for their children. Some education clients admitted that there is

more malaria experienced during the dry seasons because people do not want to sleep under mosquito nets because of the heat and simple negligence. As one client shared, "*There is more malaria during the dry season than the rainy season because during the dry season, the heat keeps people from sleeping under their mosquito nets. However, during the rainy season, it is colder and the mosquito net protects you from the cool air.*"

When a person contracts malaria, all groups mentioned the tradition of serving "tisanes" or herbal treatments prior to seeking other treatment. If the herbal treatments did not help and the use of a fever-reducing drug such as paracetamol did not help, medical care was sought.

Education clients appear to feel more confident about protecting their children from getting malaria. One M-CWE client said she felt "*somewhat more confident because of what PADME has taught us—to have a clean house, sleep under a mosquito net and take the medications to treat malaria*." Another client mentioned that the use of the malaria reminder cards, which provide depictions of steps to prevent, detect and treat malaria, help with memory recall and that they "*share information with those in our communities who are not clients of PADME*." What was most appreciated about the malaria education was learning about the importance of mosquito nets and how malaria was transmitted.

HIV/AIDS

The HIV/AIDS discussions with education clients revealed a much more in-depth discussion regarding HIV/AIDS compared to credit-only groups. Almost all groups mentioned hearing about HIV/AIDS between five and ten years ago, mainly through their local health center. However, three out of five members in an M-CwE group reported having heard of HIV/AIDS for the first time through PADME's education. One participant mentioned that the education helped dispel a myth: "*We know now that mosquitoes do not transmit the HIV/AIDS virus.*" A W-CwE participant shared that *"some people still think that HIV is caused by witchcraft, but in fact the disease comes from unprotected sex and use of instruments (contaminated blades and needles)."*

Although the education groups appeared comfortable with the discussion on HIV/AIDS due to the richness of the conversation, a participant in a Mixed-Gender Credit-Only group (MCG) revealed, *"We avoid talking about HIV/AIDS...no one talks about it here*." The education, consequently, may have been able to remove a barrier to discussion for some of the education groups.

Very few mentioned knowing someone with HIV/AIDS; however, several mentioned that they have heard there is a problem of HIV/AIDS near the Bénin and Nigeria border: *"I do not know whether there are people in my community who have HIV but towards the border with Bénin and Nigeria, I know there are diseases."* Even education groups still felt uncomfortable with the idea of caring for a family member or visiting someone with HIV/AIDS: "*Yes, I would be afraid to attend to an HIV patient*." Some mentioned that parents and children have to take care of each other, but even then, they could still be ostracized by family.

When asked about condom use, most agreed that condom use was much more prevalent in urban areas compared to rural areas, with some in rural areas mentioning that there were no condoms available in their villages—one had to travel to a more urban community. One indicated that to prevent HIV/AIDS, "*in the city, it is the condom, but in the village, it is fidelity [between partners]*." Another felt that condom use is more for a younger population: "*the condom is for the young girl and man. It is still not something for the rural women."*

When asked about confidence in avoiding HIV/AIDS, most mentioned being very afraid of it. "*In reality, everyone is afraid of HIV. So I'm afraid of HIV because it is an incurable disease."* Some felt more confident they could avoid it, because they knew more about what to avoid and what was myth ; however, those in polygamist relationships were much less confident. "*I am not confident because all our husbands are all polygamists and nothing indicates that his next conquest will not have HIV/AIDS*."

Childhood Illnesses

Conversations with respondents regarding childhood illnesses revealed a great concern over their children's health, even though the majority felt their children were in relatively good health. When asked how they decided where to go to get treatment for a sick child, most respondents mentioned that they considered the competence and proximity of the provider and chose one based on overall cost (cost includes transportation and the price of treatment). Conversations revealed that most respondents use traditional medicines and herbal treatments, much like the malaria discussions, prior to seeking medical care. Some even reported a lack of confidence in the local health centers. One mother shared the latest illness that her 4-year-old had experienced, "*He often suffers from headaches that have been unexplainable so far. Treatment at the hospital has never been satisfactory and we decided not to go there anymore. We now consult a healer who knows how to deal with evil. This time, neither I nor his father had the financial means and we had to take a loan from a friend of his father. The loan amounts to 30,000 FCFA. I lost three days of work."*

When education respondents were asked what they most appreciated about the education on childhood illnesses, some indicated they have changed their habits of treating illnesses, mostly diarrhea and fever. One woman felt, "*These sessions have deeply changed my life and especially changed how I look after the health of my children*." Another went so far as to indicate she felt her children's health was actually better: "*Since we started to put into practice what the credit officers have taught us, our children get sick less*."

The Past Year

All participants were asked to indicate whether they felt life was easier or harder during the past year as a way to determine whether there were any externalities that affected their life more than usual. There were two basic responses: 1) the situation is worse, due to price inflations, particularly for food or 2) the situation is better because we have had access to credit from PADME.

For those who chose the first response, some indicated that flooding swept away their harvests and they spent more money on illnesses in the past year. However, a good portion felt that while most things were worse, health was actually good. A W-CwE client shared that "*everything was difficult this past year, except for health, the price inflations, food, lack of money to buy food, difficulty savings, but health was relatively good*." A MCG client agreed, "*Life became harder, because grain and staple foods cost more. It is a terrible slump throughout the community. Fathers and mothers don't have any more money to spend and others have even abandoned their children to flee to Nigeria. To save, you first have to pay everyday expenses. Thank God we have health, but what health can withstand hunger*?"

Benefit and sharing of education

Clients were finally asked whether they shared what they learned with others, such as with their husbands, sisters, sister-in-laws and business partners. Most indicated they had, "*The education has helped us a lot and we've shared what we learned with others."* They also indicated they wanted to continue

with the education and requested new topics such as diabetes, menopause, arthritis, dysentery, and mental illnesses.

Credit-only groups mentioned the desire to finally receive education. "*It is important that PADME offers us education on topics such as malaria, HIV/AIDS and how to care for our sick children because that helps us to avoid the errors that could impede our business activities*."

Impact Stories

This study was undertaken to understand a cross-section of clients' life hopes and aspirations, perceptions of health and well-being, and generational change. In addition, we hoped the study would garner how the program has met the participants' expectations and their overall experience in the MAHP program. Sixty impact stories were collected in urban and rural areas around the three program areas: Pobe, Ifgany, and Ketou. Mr. Mededji, an independent consultant who initially led the RCT data collection with IREEP, collected the data using a standardized Freedom from Hunger Impact Story questionnaire that had been adapted to incorporate more health-specific questions and conducted an initial analysis of all 60 impact stories. Dwight Parker, University of Utah student, wrote up 30 of the 60 stories. For an example of a full impact story, see Appendix C.

Key Results

When asked about the "good life," most clients in the study indicated that "well-being" or the "good-life" can be described as being healthy, having good nutrition, and an absence of problems and worries.

Other elements such as money, employment, children's success and financial independence are also characteristics of a "good life." Most credit-group members feel that they have a good life because of the credit granted by PADME. Those who feel they lack a good life say it is because they lack financial resources. Most felt quite confident that their own children would be blessed with a good life.

When members of Aïchatou Moussiliou's family died, she was forced to seek the help to take care of the expenses. *"In life, everything is based on money,"* she explains. *"If there is money, then I don't worry."* She fervently hopes that her children will be able to lead a good life, and says that "*my wish is that they are able to accomplish everything that I have not, and I will fight for that so that one day they can take care of me.*"—Aïchatou Moussiliou, 35 year old mother of three from Dagbao.

When it comes to food security, most felt their communities faced no problems getting food; however, those facing some food insecurity are mostly women and children at risk for hunger before harvesting seasons. "*Women and children are the most vulnerable*," Folagnimi Ogourole explained, "*but I have not had that problem for a long time because my business is doing well."* Clients indicated a tradition of eating three meals a day, consisting mainly of rice, pasta, beans, cassava, akassa (ground corn paste), vegetables, and palm nuts. Except for changes in methods of food preparation and the arrival of some processed food products, there appears to be no obvious change in eating behaviors compared to past generations.

In regards to health, health is always a big concern. *"I worry about my family's health because health is the most important thing in life,"* says Segla Mewakounou, 41-year-old farmer of Ganhi. Some clients mentioned the financial strain health problems could cause for their families. Modoukpe Akambi, a 36-year-old mother living outside of Igbotcho and a credit-only client, is happy with her family's

health and attributes it to their better financial security. Unfortunately, she does not believe that it will last. "*My children are often sick*," she says. "*I worry too much about them, because I am afraid that we will exhaust the capital we get from PADME*." She takes her children to the hospital whenever they need to be seen, and she feels as though she has a much stronger impact on her children's health than her parents did.

The use of herbal treatments remains important, however many clients mentioned going more often to formal medical facilities such as hospitals and clinics for treatment and they feel more aware of diseases and their symptoms. "*Compared to my mother, I would go to the hospital before trying to use any plants whatsoever*," says Marie Adewale, Credit with Education client in Lagbe, Bénin. Most members who received PADME's health education mentioned the education as a means of being healthy.

Some clients did not feel that there was a huge difference between generations, particularly for women, on their ability to influence household and community decisions in regards to health, finances, or the well-being of family members. However, some mentioned there was quite a bit of difference, such as being in a better financial situation compared to their mothers' generation because they are able to benefit from loans.

> When she joined PADME, Titilayo hoped the program would allow her to have a better life. So far, the most significant improvement has been the better meals she and her children are able to eat, and she says she is able to "*see more clearly"* when she makes business decisions. Her savings have become more regular, she has learned more concerning property management, and especially better health practices such as avoiding malaria, AIDS, and diarrheal disease.—Titilayo Odounaro, 35 years old, *Credit with Education* (women-only) member

As a result of participation in PADME, clients reported they felt they have more financial stability, more knowledge of business management, health, more ability to put their children through school, good health, improved saving, and mutual support among members of the same group. They report referring friends and family members to PADME because of PADME's emphasis on good management and the education that is provided.

"*I will tell other women that if they join this program, their lives will change for the better. They will have money and will be able to share their experiences with others.*"—Anike Kotchelou, 40-year-old mother of four from Ketty, Bénin.

Male members, like their female counterparts, appreciated the health education, when it was part of their credit product. Kolawolé , a father of 15 children and husband of several wives, collaborated with other members of his group to construct the furniture they needed in their meetings, primarily the benches they now use. He reporting learning "*a lot about better healthcare practices as well.*" The most important thing he has contributed, he believes, is "*counseling the other men of his group to be monogamous and has explained the difficulties of polygamy to them in great depth—this in addition to teaching them about their and their families' health*."

Client Satisfaction, Client Exit, Competitors Analysis

The client satisfaction, client exit and competitors analysis were three separate studies; there were also components of client satisfaction and client exit in the randomized control trial study that will be referenced and cross-referenced in this section. Data from the final qualitative study will also be integrated in this section.

Client Satisfaction

Thirty-six FGDs and 10 key informant interviews were conducted mid-year 2009, consisting of 467 client interviews. Approximately 10 percent were men and the remaining were women participants. There was equal representation across the four product categories to help determine whether there were obvious differences in satisfaction among the clients with the four different products. We used a modified version of the SEEP-AIMS Client Satisfaction tool to determine clients' likes, dislikes and their recommendations for improving the program. Mr. Ekoue-Kouvahey, Freedom from Hunger Regional Research Coordinator, along with local research assistants, collected the data that Mr. Ekoue-Kouvahey analyzed and used to generate the final report.

Key Results

The most important finding across all product groups was that clients appreciated having access to a reliable source of credit. During the program period, the Béninoise government made available a credit product with very low interest to the poor. However, PADME clients indicated that there was no chance to renew this loan. Also, clients felt that PADME "loved the poor" because many of them were geographically undesirable from a bank's perspective, but the PADME field staff reliably came to their village to conduct meetings.

For those clients who also received health education, they felt this was a free service from PADME that helped them greatly. One client mentioned that "*without education, whether it be health or business education, one is blind"* and another reported that "*the education has opened our eyes and helped us see the gravity of illnesses*." The women-only education groups really liked the education and appreciated not having males present in their groups because they felt the men could be disruptive. The research team felt that women in groups that did include men were slightly less animated although those groups did not indicate having men in their group was a problem until women in those groups were interviewed separately. During these separate interviews, women revealed that the men were sometimes disruptive and that the field agent had a harder time managing the men in the group. The credit-only groups appreciated the access to the credit, however, when they discovered some groups were receiving education, they were quite disappointed to have not received any.

Only education groups had access to the subsidized mosquito nets distributed by PADME. They were quite appreciative of the bednets and it appeared that this contributed greatly to their level of satisfaction with PADME. They wanted PADME to provide them more health products, such as medicines.

In addition to the education and credit, clients greatly appreciated the savings component even though it was obligatory, because "*the savings [component] helps assure we have funds for the next credit*," and "*it gives us liquidity after we've repaid our loans*." They were quite satisfied with the fact that the credit service was brought to them by their field agent versus having to travel to a bank or office. As one client reported, "*There is no distance between us and PADME because the field staff comes to us and gets to know us*." Many, on the other hand, were dissatisfied with the loan size, the frequency of the meetings, and that they were responsible for other members' loan payments. As one client reported, "*despite having the credit, we are still obligated to purchase our own merchandise (due to the small loan size) and that becomes more expensive*."

In March and April of 2010, clients who participated in the final qualitative assessment were asked how likely they were to recommend PADME to family and friends. Towards the latter half of the pilot period in 2009, PADME discontinued services to some of the communities that participated in

the launch of *Credit with Education* due to discussions about whether *Credit with Education* was going to be continued and expanded. Although the results from the RCT suggest that Mixed-Gender Credit with Education clients are more likely to recommend PADME compared to Mixed-Gender Credit-Only groups, there was apparent dissatisfaction voiced in the FGDs due to the discontinuation of service in some villages. As has been mentioned in this report, one of the points of highest satisfaction is that PADME is considered a serious organization that offers continual financial services, compared to other organizations in which Béninoise people have lost confidence due to inconsistent and unreliable service. Some clients in the qualitative study were very pleased with PADME, particularly because it provided them important education. However, during 5 of the 24 FGDs, participants voiced dissatisfaction due to the discontinuation of service: "*We are discouraged (that PADME has discontinued service in our area*)…. *It is possible [that I will recommend PADME] but it is difficult because there is a confidence crisis. They are not meeting their deadlines. This has dulled our enthusiasm to recommend PADME to our friends."*

Client Exit

Thirty-six former clients of PADME were interviewed and three FGDs with existing clients were conducted to understand their perception as to why clients leave the program. As with the client satisfaction study, Mr. Ekoue-Kouvahey, along with local research assistants, conducted the interviews. Mr. Ekoue-Kouvahey also analyzed the data and generated the report.

Key Results

Most clients who participated in the surveys dropped out during or after their first loan cycle; they had an average loan size of $44 or 2200 FCFA. They indicated they used their loan for either their business or for purchasing food. The main reason people left was due to being dissatisfied with the program because meetings were too frequent and the size of the credit was too small. The second reason given was the reimbursement problems. The third reason given was for personal reasons: they moved, got pregnant or became ill. Despite their stated reasons for leaving, 60 percent also reported having difficulty with reimbursement and 30 percent reported being expelled due to meeting absences.

All of those interviewed who dropped out indicated that even for the short period that they participated, their participation had helped their family. Seventy percent said as a result of being a PADME client, they had better food and bigger quantities, and 38 percent said it contributed to their children's education. Eighty-six percent of the dropouts reported that they would be somewhat or very likely to refer a family member or friend to PADME.

When asked what they liked the most about PADME: access to reliable credit ranked first; education, second; savings, third; and meetings, fourth. What they liked least about PADME was primarily the small loan size, the frequency of meetings and the group guarantee.

Competitors Analysis

Mr. Ekoue-Kouvahey, as with all other client satisfaction data, collected institutional- and client-level data on the competition using a modified version of MicroSave's competitors analysis tool. Four main competitors (FECECAM, another Freedom from Hunger Credit with Education partner; EDUCOM, a UNICEF-run program; MCPP, the government's microfinance product for the poorest; and PAPME, a competing microfinance institution) were assessed and compared to PADME's Credit with Education products to determine whether the offer of education contributed to PADME's competitive advantage in the Béninois microfinance sector. In addition to these four

competitors, during the client satisfaction FGDs, PADME clients also mentioned additional competitors, only known here by their acronyms: AGF, CREPE, ASF, ACFB, UCEPAD and merry-go-rounds or *tontines*. PADME staff members and clients were interviewed for this study.

Key Results

Compared to the competition, PADME's products were found to be reliable financial instruments and that PADME was a serious organization. When compared to the government's microfinance product, MCPP, clients indicated that although it had a lower interest rate than PADME's, it was not stable, "*what good is a low interest rate if you're unsure you can renew the loan*?" This issue of "security" and "seriousness" appears to be important to PADME clients, as some of the competitors appear to provide less-reliable services. From the clients voiced experiences, it appears they have had organizations or people promising "savings services" or "loan services" that are either not sustainable or fictitious; in some cases, clients have lost their savings to these services.

FECECAM, another Credit with Education provider in Bénin, is an obvious direct competitor to PADME as both organizations provide health education in addition to their microfinance products. FECECAM, because it is a credit union network, is capable of accepting savings and therefore provides savings products. This would appear to be an advantage on FECECAM's part, if the indication of PADME clients' appreciation for their ability to save within their groups demonstrates overall appreciation for savings products in the population; however, from the clients' perspective, they reported that FECECAM "*did not offer voluntary savings*." When clients compared the interest rates between the two organizations, some thought FECECAM had a higher rate, others thought it was the same.

When you combine the client satisfaction data with data on the competitors, organizations that are able to provide reliable services appear to have a competitive advantage over others. When we compare organizations providing similar services of microfinance and education, it is harder to discern whether one organization has a competitive advantage over the other. EDUCOM, which provides health and other types of education to women clients as well as works with families to keep girls and children in school, is highly regarded by the PADME clients; however, due to some inconsistencies in the provision of their microfinance loan product, some voiced dissatisfaction with EDUCOM as a financial service provider. For those clients who had education, as with services provided by other organizations also offering education, this aspect of the product was important to them and they wanted to see it continued and expanded.

Clients reported satisfaction with their field agents, contributing to the perception that PADME was a serious organization. As one client reported, "*There is no other lending organization that has done what PADME has done for us. This organization likes the poor and communicates this love through its field agents."*

Having access to health products also appears to be an important component when comparing PADME to other organizations, as long as the client had access to the mosquito nets. None of the other competitors appeared to provide health products, except for EDUCOM who was mentioned as having provided linkage to health providers because it focuses on women and their children.

When clients compared PADME services to the competitors', PADME scored low on loan sizes (which were perceived as being too low for clients' needs) and the frequency of meetings (which were more frequent than the majority of the other providers' monthly meetings).

In conclusion, from the competitors analysis, it is not apparent that the provision of education sets PADME apart from other providers; however, it is greatly appreciated and the education is appreciated whether it is provided by FECECAM and EDUCOM. What appears, for the moment, to be most important is PADME's ability to provide reliable and secure financial services. The education is a bonus.

Institutional Assessment

The institutional assessment section includes high-level details from the cost-benefit analysis conducted by Myka Reinsch and her team,[5] an assessment of staff satisfaction and a description of the enabling environment both conducted by Mr. Ekoue-Kouvahey.

Cost-Benefit Analysis

In an effort to draw conclusions about potential nonfinancial benefits of the program, we compare PADME's Credit with Education loans to the MFI's regular group loans, and examine average loan sizes across a randomized sample of groups that received Credit with Education financial methodology with and without the education component.

PADME offers Credit with Education—village banking-style solidarity loans along with 30-minute nonformal education sessions delivered by the same field agent at repayment meetings—with a focus on health (malaria, HIV, childhood illnesses). PADME coupled the malaria education with distribution of insecticide-treated mosquito nets for a donor-subsidized price, but since that component was less widespread and consistent, the current paper focuses on the costs and benefits of Credit with Education.

A combination of activity-based and allocation methods were used for the costing presented. We focus primarily on 2008 data because they reflect actual financials. Where direct, tangible costs were incurred, we assigned costs using PADME's audited financial records from 2008. Data presented for 2007 and 2009 are based on a combination of actual data (for example: portfolio size) and extrapolated data (for example: revenues, which were calculated according to actual portfolio size and the portfolio yield reported in 2008). Although activity-based timesheets were collected for some staff, unfortunately we were not able to obtain enough reliable data to confidently assign indirect costs, so we resorted to portfolio- and transaction-based allocations of these. We emphasized the cost of operating and growing the programs, rather than the up-front investment required to develop and launch them. Finally, we were unable to obtain detailed data on PADME's products other than Credit with Education, which restricted our ability to provide a comparison of the costs and benefits of Credit with Education as compared to PADME's existing group loans and other products; this is an unfortunate limitation of this study.

A true cost-benefit analysis goes beyond the crunching of financial data and profit to examine indirect and nonfinancial costs and benefits that can be quantitatively estimated and rolled into the analysis of financial gain or loss. We adopted the vantage point of the MFI itself and looked in particular for MAHP program-related impacts that might not be captured in the financials but that could ultimately enhance PADME's business bottom line.

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[5] Reinsch, M, and F. Ruaz. 2010. *Costs and Benefits of Credit with Health Education: The Case of PADME in Bénin*. Davis, CA: Freedom from Hunger.

Based on the revenues and expenses realized by PADME in offering Credit with Education in three branches located in the Plateau region of Bénin between 2007 and 2009, we conclude the following:

- PADME's Credit with Education program has incurred a net financial cost to the institution in all three years of the pilot and is poised to continue costing the MFI upwards of $70,000 annually in the coming years.
- If the MFI were to increase its effective interest rate on Credit with Education loans from 19 to 27 percent and to achieve certain other efficiencies, such as higher average loan sizes, faster growth in the number of Credit with Education clients (which would entail a rapid increase in the number of field agents) and quicker loan disbursements, PADME's Credit with Education could achieve a break-even point and begin earning net income in 2011, the fourth full year of operation.

Staff Satisfaction

All credit officers (n=17) or "*animatrice*" who provided the four product variants for Credit with Education were interviewed using individual questionnaires. Overall, the field agents were satisfied with their role as both educator and credit officer. Because all *Credit with Education* positions were new, the credit officers simply reflected on their new posts, both for them and for PADME.

However, credit officers faced a few challenges, which is not uncommon when implementing a product that is new to the organization and that uses staff who are new to their positions. In some cases, staff were not based in the local branch office. For example, the credit officers indicated that they did not feel fully understood by their superiors because their superiors did not fully appreciate reasons why it was not always feasible to be in the office early in the morning or later in the evening due to distances they had to travel on foot between groups or to reach the first or final group of the day. In some cases, credit officers had to walk through sacred forests that posed problems of personal security or had to reach villages whose infrastructure was damaged by rain and therefore impeded travel. The commitment of the credit officers to meet with groups who were located far from the local branch is one reason for client satisfaction; however, the credit officers felt somewhat alienated from and unappreciated by the rest of the staff at the branch.

Enabling Environment

During the pilot period, PADME encountered a number of challenges that had an undeniable impact on the implementation of both the Credit with Education product and the research. In 2008, just a few months after the launch of Credit with Education, the Béninois government seized control of the private organization and replaced its leadership. An extensive staff work-strike ensued, leading to about three months of inactivity in the field and some client confusion. With the new leadership in place, the MFI then continued to pursue transformation to a regulated bank—with all the complications and management attention that this entails. At the time of this writing, this process was ongoing. Thus, the environment within PADME was not entirely conducive to the launching, dynamic management and detailed research of a major new product line.

At a more macro-level, there has been a significant increase during three of the four pilot years in "investment societies" that are somewhat illegal and promise their clients a high return on their savings and earnings. Many Béninois flocked to these investment societies and deposited and withdrew their money. These investment societies remain somewhat unregulated to date and are providing organizations such as PADME with much more competition. It is feared that the widespread use of what are considered "ponzi" schemes by many will compromise the stability of

financial institutions in the medium-term given that customers will deposit the money borrowed from banks and MFIs into these illegal companies; however, in the long-term, there is fear that these payment chains will break and negatively impact the more formal financial providers.

In addition to the investment societies, the Bénin government launched its own microcredit product under the program "MicroCredit aux Plus Pauvres," or Microcredit of the Poorest, MCPP. As the RCT results indicate in this paper, 14 percent of our sample population has taken a microcredit loan with MCPP, and a significant number of them in villages offering women-only products (W-CWE and WCG). Although this program directly competes with PADME for clients, they are not seen as a reliable source of credit. Many clients still seek out organizations such as PADME for more sustainable and reliable financial services.

ANALYSIS

This section synthesizes key results from the client-level and institutional-assessment research activities in order to provide a more holistic understanding of the performance and reception of these health protection products and services.

Before the RCT evaluation with PADME, Freedom from Hunger's "proof" that *Credit with Education* resulted in improved health knowledge and behaviors as well as improved financial and economic status for the family was based on two studies conducted in Bolivia and Ghana during the late 1990s[6]. From these two quasi-experimental studies, improved health behaviors related to women's and children's health, improved revenues and women's empowerment were documented. In 2006, Freedom from Hunger published the results from its first randomized control trial evaluation conducted in Ghana to study the impacts of Freedom from Hunger's malaria education module, which found increased insecticide-treated net use and improved malaria knowledge.[7] In 2010, an additional randomized control trial evaluation conducted in West Bengal, India with self-help group (SHG) members and their daughters tested whether Learning Games for Girls influenced health and financial knowledge and behaviors and found improved knowledge and attitudes regarding HIV/AIDS among both SHG members and daughters.[8]

The RCT evaluation reported herein set out to add to Freedom from Hunger's growing knowledge about the benefits of providing *Credit with Education* versus providing microfinance services alone. The *Credit with Education* modules on malaria and HIV/AIDS were tested once again in a new context, and the Integrated Management of Childhood Illnesses (IMCI) or "Childhood Illnesses"

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[6] MkNelly, B. & C. Dunford. 1998. *Impact of Credit with Education on mothers and their young children's nutrition: CRECER Credit with Education program in Bolivia*. Davis CA: Freedom from Hunger.; MkNelly, B. & C. Dunford. 1999. *Impact of Credit with Education on mothers and their young children's nutrition: Lower Pra Rural Bank Credit with Education program in Ghana*. Davis CA: Freedom from Hunger.

[7] De La Cruz, N., B. Crookston, B. Gray, S. Alder & K. Dearden. 2009. "Microfinance against malaria: impact of Freedom from Hunger's malaria education when delivered by rural banks in Ghana." *Trans R Soc Trop Med Hyg*. doi:10.1016/j.trstmh.2009.03.018.

[8] Spielberg, F., B. Crookston. S. Chanani, J. Kim, S. Kline & B. Gray. 2010. "Leveraging microfinance networks to scale up HIV and financial education among adolescents and their mothers in West Bengal: a cluster randomized trial and mixed method evaluation." Freedom from Hunger. Unpublished manuscript.

module was tested for the first time. In addition to testing individual education modules and the benefit of health education, we set out to understand the influence of men in traditional women's-village banking methodology. Our hypotheses were that 1) clients participating in an integrated microfinance and health education product would have better overall health and business performance than those receiving credit only and 2) offering the product to mixed groups may affect the performance of the group, if women feel less comfortable discussing health issues (one might see less performance in mixed groups compared to women-only groups).

The malaria and HIV/AIDS modules demonstrated important knowledge and behavior change.

The RCT evaluation with PADME, similar to the Ghana malaria impact study, demonstrates that the malaria education improves malaria knowledge and behaviors, particularly when looking at multiple indicators at an aggregate or combined level. Participants had improved knowledge and improved use and ownership of mosquito nets (including insecticide-treated mosquito nets) as well as improved use of repellants. They also had improved knowledge and behaviors regarding HIV/AIDS, a sensitive topic to discuss and one that is not normally discussed in public. The benefits from the improved knowledge and behaviors alone can lead to long-term health benefits. The RCT evaluation time period did not allow for measuring actual changes in health or incidences of disease, but the results are promising indicators of future health impacts.

There is room for improvement on education on childhood illnesses.

There were no promising findings for changes in knowledge or behavior regarding childhood illnesses, even though clients reported greatly appreciating this module and desiring more education on this topic. Given the positive findings on the malaria and HIV/AIDS modules, one would expect similar findings on the childhood illnesses module, especially given that it is a popular topic among mothers and community members. The lack of change in knowledge and behavior may be due to the childhood illness module including too many topics to see real change. The malaria and HIV/AIDS modules each have at least seven sessions related to the topic; the childhood illness module has independent sessions on topics not only related to illnesses but on topics related to seeking quality medical care. Perhaps this module deserves some revision, either through concentrating and presenting fewer messages or reviewing each session and improving or simplifying the message. For example, "increased liquids" to treat diarrhea is a key outcome for the diarrhea session. This is a fairly simple knowledge outcome to change, but there were no consistent and strong findings. Using the information from the RCT evaluation as well as information from a similar study conducted in India, Freedom from Hunger will work on improving this module.

Men matter.

The RCT evaluation also indicates that there were more improved knowledge and behavior changes for Credit with Education villages that included men's participation. Although this is counter to our original hypothesis, it is not a surprising finding given that it takes the support of the head-of-household, a category most of the men in the study fell into, in order for changed behavior to occur. In the Béninois culture, there is the perception that "if a man is involved, it will work." Women, whether they be wife, daughter, sister or mother often rely on the financial and nonfinancial support or permission from men in their lives in order to implement change. In some instances, the results

indicate that the education alone was sufficient to see knowledge and behavior change at the village level; in other instances, it took men's involvement and participation in the group to see change.

PADME staff also indicated that this finding was not surprising. There are three suggestions from PADME staff and the Freedom from Hunger research coordinator, Mr. Ekoue-Kouvahey, as to why the Mixed Gender Credit with Education villages excelled:

1. Men who were in the groups actually encouraged discussion in the group and were somewhat demanding that their "sisters" change their behaviors. Men also asked more questions, which may have spurred more in-depth discussion.
2. If men shared anything they learned in the group, either at the community level or at home, people listened. This may explain why even though only 30 percent of our study populations are PADME clients, we were still able to detect village-level differences.
3. Men, knowing they could join the groups, were more comfortable and trusting of the product or service from PADME that they allowed their wife or wives to join or sent her in their place.

The latter point might suggest that a "different" type of woman was allowed to join, simply because the husband "could" join, but chose not to. Of course, there is no qualitative client-level data to support these hypotheses, but they are worthy of further debate and research.

Women-only groups and spaces are needed for improved empowerment.

Despite the interesting findings on the M-CwE village results, indicators on women's empowerment were the contrary. *Credit with Education* implemented in women-only groups (W-CwE) experienced more improved levels of confidence, reporting on more involved decision-making, and community participation. While men's involvement in *Credit with Education* contributed to improved health knowledge and behavior, all-women groups experienced improved "empowerment," when they have been provided the space to talk freely, speak candidly about topics important to them, and learn to be confident in a group of their "peers." Ultimately, the confidence these women experienced in their group will lead to the ability to participate actively and with confidence in their communities.

Interestingly the W-CwE villages experienced more frequent conflicts with their husbands compared to WCG villages, and the education villages combined were somewhat more likely to experience frequent conflicts with their husbands compared to credit-only villages. This suggests, as some research projects have indicated,[9] that conflict arises as women become empowered. Did the introduction of the education and women's empowerment and desire for change within her household lead to marital discord and a barrier to change in knowledge and behavior? Since the M-CwE performed much better than W-CwE and the W-CwE faced more conflict and less improvement, this may be the case. Men's involvement perhaps led to less resistance overall.

[9] "Microfinance and Gender: New Contributions to an Old Issue." 2007. *Dialogue*. No. 37. <http://www.microfinance.lu/_microfinance and gender.pdf> (June 29, 2010)

Food security data is puzzling.

The data on food security also indicated that the Mixed Gender Credit with Education villages (M-CwE) were somewhat more food-insecure than W-CwE villages and more food-insecure than MCG villages. Data collected on men's participation in the four product variants from PADME did not indicate that villages who received the M-CWE product variant had more participation of men than other products. This indicates that it was not a lower food-insecurity level that drove or encouraged some men to participate in greater numbers, which might influence the knowledge and behavior change at the village level. Freedom from Hunger might expect, based on the theory of Credit with Education, that all education villages should be more food-insecure because Credit with Education is meant for a poorer, rural population. However, because of the randomization of villages, the M-CwE were no more rural than the others. To further confound this finding, all education villages were somewhat more likely to take the Microfinance Program for the Poorest (MCPP) loan, and the W-CwE villages were somewhat more likely to state they participated in the MCPP loan compared to MCG villages. Therefore, if high levels of food insecurity were correlated with greater poverty, you might expect the M-CwE to report higher use of this loan as well, but they do not. The food-security finding that Mixed Gender Credit with Education villages were more food insecure than other villages is somewhat puzzling and deserves further research.

Reliability of financial services matters.

The two final topics address findings more at the institutional level than at the client level—although both are driven by client need. The client satisfaction and client exit data suggest PADME clients most appreciate that PADME is a "serious organization" that provides solid, secure, and consistent financial services. PADME clients have been disappointed by other financial providers that promise financial support in terms of loans and savings, such as the government's MCPP product. They could not rely on loan renewal from MCPP, but PADME was with them for the long-term. However, the final qualitative research revealed that when PADME began to question whether it wanted to provide "Credit with Education" (in any of the four variants) and discontinued the service of approximately 12 credit officers and therefore, service to many villages who had received services for at least 1.5 years, PADME clients were discouraged, discontented and disappointed. The one key to client satisfaction—reliable financial services—had been removed. Many were patient and were waiting for PADME to return, with the promise of continued service. Others were disgruntled, and indicated their un-likeliness to refer others to PADME or to rejoin PADME.

The integration of education leads to client loyalty.

Finally, mixed-gender villages were somewhat to very likely to refer others to PADME and M-CwE villages were more likely than W-CwE and MCG villages to refer others to PADME. As referring family and friends to a service provider is a strong indicator of client loyalty, this indicates that men being able to join as well as participate in a group receiving education leads to greater client loyalty. As the MAHP initiative was closing down, PADME had already decided that if it offered any of the four variants going forward, it would offer a Credit with Education "Free" product—meaning groups could form as they wish, with men who join, or do not join. The client loyalty data and the client health impact data helped serve to support this decision.

CONCLUSION

At the time of this writing in mid-2010, PADME was still making decisions about the future of the Credit with Education product. On the one hand, regional and branch staff were very enthusiastic about the social benefits and portfolio quality of Credit with Education, and staff was actively planning not only to continue expanding in the pilot region but also to extend the product in at least one other region over the coming year. On the other hand, PADME leadership continued justifiably to question the cost-effectiveness of the product and was still deliberating about next steps.

If PADME chooses to expand Credit with Education "Free" or for any type of group formation—men and women, women-only, or men-only—it can go to scale with confidence that the educational component can and will lead to important client impacts and institutional benefits, particularly regarding client loyalty and client growth. However, as the financial cost-benefit analysis suggests, important adjustments must be made to make this product financially viable for PADME. Evidence has been shown elsewhere that the marginal costs of education can be just that—marginal.[10] However, for an institution implementing village banking *and* education for the first time, this data provides a less clear picture about financial viability—and yet, PADME was only challenged to provide this service to 5,000 clients during the initiative, and they reached more than 11,000 clients who had not been previously served by PADME. The promise is there to meet both client need (financial and health needs) as well as PADME's need to provide products that serve its double financial and social bottom line.

[10] Reinsch, M. 2010. *The Business Case for Adding Health Protection Products to Microfinance*. Davis, CA: Freedom from Hunger.

APPENDICES

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
Malaria knowledge																					
% who name mosquito bites as a cause of malaria	0.945		0.954		0.936		0.940		0.949		0.970	a	0.941		0.970	c	0.913		0.941		0.957
% who name only mosquito bites as a cause of malaria	0.228		0.232		0.223		0.234		0.222		0.262		0.207		0.262		0.208		0.207		0.237
% who name ITNs as a way to prevent malaria	0.322		0.331		0.313		0.312		0.331		0.311		0.348		0.311		0.313		0.348		0.314
% who name mosquito nets as a way to prevent malaria	0.847		0.860		0.834		0.855		0.840		0.891	a	0.834		0.891	b	0.822		0.834		0.846
% who name mosquito nets and/or ITNs as a way to prevent malaria	0.918		0.930		0.906		0.912		0.922		0.943		0.919		0.943	b	0.884		0.919		0.926
% who name both pregnant women and children under 5 as high risk for malaria	0.536		0.576	b	0.499		0.530		0.541		0.569		0.582		0.569		0.496		0.582		0.501
% who mention membership in a credit group	0.074		0.079		0.069		0.055	b	0.091		0.074		0.083		0.074	a	0.038		0.083		0.098
Mosquito Net Use																					
% households that used any mosquito repellents or insecticides, past 2 weeks	0.317		0.364	b	0.272		0.300		0.332		0.375		0.355		0.375	b	0.234		0.355		0.309
% households that used mosquito repellent spray, all households, past 2 weeks	0.079		0.094	a	0.064		0.078		0.080		0.111		0.080		0.111	b	0.048		0.080		0.080

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
Mosquito Net Use																					
% households that used mosquito coils, all households, past 2 weeks	0.020		0.022		0.019		0.018		0.023		0.020		0.023		0.020		0.016		0.023		0.022
% households that used insecticides, all households, past 2 weeks	0.195		0.195		0.196		0.188		0.202		0.199		0.192		0.199		0.178		0.192		0.212
% that have a mosquito net in the home	0.709		0.706		0.712		0.737	b	0.684		0.752	b	0.667		0.752		0.724		0.667		0.700
Reasons for not having a mosquito net:																					
% Can't afford	0.164		0.156		0.171		0.152		0.172		0.155		0.157		0.155		0.150		0.157		0.189
% Not available	0.188		0.214		0.164		0.161		0.209		0.175		0.239		0.175		0.150		0.239		0.175
% Don't need	0.079		0.081		0.076		0.081		0.077		0.095		0.072		0.095		0.069		0.072		0.082
% Old one damaged	0.541		0.514		0.567		0.566		0.522		0.520		0.509		0.520		0.603		0.509		0.536
Number of mosquito nets owned	1.315		1.320		1.310		1.352		1.279		1.356		1.286		1.356		1.349		1.286		1.273
Number of household members who slept under a net last night	1.693		1.716		1.670		1.775		1.619		1.839		1.613		1.839		1.719		1.613		1.625
Number of nets installed	0.782		0.809		0.757		0.824		0.746		0.851		0.774		0.851		0.799		0.774		0.718
% who have at least one installed net	0.556		0.567		0.545		0.573		0.540		0.584		0.554		0.584		0.564		0.554		0.527
% with net 1 that is treated	0.577		0.568		0.585		0.586		0.568		0.542		0.593		0.542		0.626		0.593		0.545
Number of treated nets	0.580		0.574		0.586		0.617		0.547		0.600		0.553		0.600		0.633		0.553		0.542
Number of installed nets 1 year or newer	0.327		0.322		0.332		0.360	a	0.298		0.333		0.313		0.333		0.384		0.313		0.283
Number of installed nets 3 years or newer	0.679		0.714		0.646		0.709		0.652		0.742		0.690		0.742		0.680		0.690		0.614

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
Mosquito Net Use																					
% with an installed net, 1 year or newer	0.266		0.262		0.271		0.281		0.253		0.258		0.265		0.258		0.303		0.265		0.241
% with an installed net, 3 years or newer	0.497		0.518		0.478		0.511		0.485		0.529		0.508		0.529		0.494		0.508		0.463
Number of nets treated within past 1 year	0.592		0.622		0.564		0.627		0.561		0.703		0.554		0.703		0.558		0.554		0.569
Number of nets treated within past 3 years	0.738		0.777		0.700		0.769		0.710		0.875	a	0.694		0.875	b	0.674		0.694		0.725
Number of nets treated within past 1 year	0.419		0.435		0.404		0.434		0.406		0.485	a	0.394		0.485	a	0.388		0.394		0.419
Has at least one net treated within past 3 years	0.521		0.542		0.500		0.533		0.510		0.601	b	0.493		0.601	b	0.472		0.493		0.526
Number of people sleeping under nets	1.665		1.700		1.632		1.734		1.603		1.804		1.612		1.804		1.672		1.612		1.594
Number of people per net	2.479		2.472		2.485		2.459		2.497		2.431		2.511		2.431		2.487		2.511		2.484
Number of nets in good condition	0.707		0.742		0.673		0.766	b	0.654		0.851	c	0.650		0.851	b	0.690		0.650		0.658
Number of nets in bad condition	0.239		0.270		0.210		0.264		0.217		0.305		0.241		0.305		0.228		0.241		0.193
Number of nets unobserved	0.147		0.142		0.152		0.173		0.125		0.181		0.109		0.181		0.166		0.109		0.140
Number of installed nets in good condition	0.545		0.578		0.514		0.585		0.510		0.641	a	0.526		0.641		0.535		0.526		0.494
Number of installed nets in bad condition	0.173		0.207		0.140		0.188		0.159		0.232		0.187		0.232		0.149		0.187		0.131
Pregnancy and Malaria																					
% pregnant in last 12 months	0.329		0.343		0.315		0.326		0.331		0.328		0.356		0.328		0.324		0.356		0.307
% who gave birth in last 12 months, if pregnant	0.743		0.733		0.753		0.758		0.730		0.771		0.703		0.771		0.747		0.703		0.759

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
Pregnancy and Malaria																					
% who gave birth in last 12 months, all obs	0.242		0.246		0.239		0.248		0.238		0.250		0.242		0.250		0.246		0.242		0.233
% pregnant currently	0.101		0.099		0.104		0.107		0.096		0.114	a	0.086		0.114		0.101		0.086		0.106
% who sought antenatal care for last or current pregnancy, all obs	0.276		0.291		0.262		0.278		0.274		0.278		0.302		0.278		0.279		0.302	a	0.246
% who sought antenatal care from a health professional, if sought care	0.814		0.821		0.807		0.819		0.810		0.818		0.824		0.818		0.820		0.824		0.796
% who sought antenatal care from a doctor, all obs	0.062		0.068		0.055		0.055		0.067		0.059		0.075		0.059		0.051		0.075		0.059
Average number of antenatal visits	0.222		0.191		0.253		0.296	d	0.147		0.269	b	0.133		0.269		0.315		0.133		0.167
% who took antimalarials for pregnancy	0.847		0.854		0.840		0.849		0.846		0.846		0.862		0.846		0.852		0.862		0.830
% who took antimalarial Fansidar for pregnancy	0.164		0.177		0.153		0.154		0.174		0.174		0.178		0.174		0.136		0.178		0.169
HIV/AIDS																					
% that have heard of AIDS	0.880		0.898		0.862		0.880		0.879		0.911		0.887		0.911	a	0.853		0.887		0.871
% that know they can't get AIDS from a mosquito bite	0.540		0.578	b	0.505		0.530		0.550		0.552		0.600		0.552		0.510		0.600	b	0.500
% that say using a condom every time can reduce chance of AIDS virus	0.475		0.486		0.464		0.474		0.476		0.502		0.473		0.502		0.448		0.473		0.479

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
HIV/AIDS																					
% that say one cannot contract AIDS virus by sharing food	0.495		0.528	a	0.464		0.471		0.517		0.502		0.550		0.502		0.442		0.550		0.483
% that say abstaining from sex can reduce chance of AIDS virus	0.531		0.532		0.530		0.533		0.530		0.551		0.517		0.551		0.516		0.517		0.543
% that say one cannot contract AIDS virus by supernatural means	0.573		0.605	a	0.543		0.561		0.584		0.615		0.597		0.615	b	0.512		0.597		0.571
% that say there are special meds for AIDS virus available from doctor	0.247		0.266		0.229		0.247		0.248		0.280		0.255		0.280		0.217		0.255		0.241
% that know where they can go to get an AIDS test	0.463		0.461		0.465		0.480		0.449		0.499	a	0.429		0.499		0.462		0.429		0.468
% who have heard HIV/AIDS messages in the last few months	0.538		0.582	c	0.497		0.539		0.538		0.585		0.579		0.585	b	0.497		0.579	a	0.496
% who have heard HIV/AIDS messages in a credit group	0.077		0.089		0.065		0.071		0.082		0.086		0.093		0.086		0.058		0.093		0.071
% who would be willing to care for a family member with AIDS at home	0.347		0.355		0.340		0.354		0.341		0.361		0.349		0.361		0.347		0.349		0.333
% that know someone personally who has or is suspected to have HIV/AIDS	0.068		0.081	b	0.056		0.064		0.072		0.074		0.086		0.074		0.055		0.086	a	0.058
% that have spoken to husband about not getting AIDS	0.212		0.225		0.199		0.213		0.210		0.228		0.222		0.228		0.200		0.222		0.198

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
HIV/AIDS																					
% that used a condom during last sexual intercourse	0.025		0.028		0.022		0.028		0.022		0.031		0.026		0.031		0.024		0.026		0.019
% that know where they can get a condom	0.295		0.327	b	0.264		0.278		0.309		0.316		0.337		0.316	a	0.245		0.337		0.282
% that could get the condom themselves	0.160		0.188	b	0.133		0.157		0.162		0.182		0.192		0.182		0.134		0.192	a	0.133
Reason for inability to get condoms oneself																					
Embarrassed	0.454		0.462		0.447		0.484		0.426		0.523	b	0.410		0.523		0.452		0.410		0.442
Dont know where to purchase	0.371		0.372		0.370		0.329	b	0.408		0.313	a	0.422		0.313		0.342		0.422		0.395
Childhood Illness																					
Number of critical dangers signs for 2mo-5yrs listed	1.546		1.559		1.534		1.545		1.547		1.583		1.538		1.583		1.511		1.538		1.557
More liquid for diarrhea: little more= 1pt, lot more = 2pt	0.592		0.555		0.627		0.653	a	0.537		0.628		0.491		0.628		0.675		0.491		0.582
% that indicate more liquid than normal for a child with diarrhea	0.355		0.332		0.377		0.392	b	0.322		0.373		0.296		0.373		0.409		0.296		0.347
Number of correct signs for needing to take child with diarrhea to a healthcare	1.898		1.903		1.894		1.876		1.919		1.948		1.864		1.948		1.812		1.864		1.973
Number of correct signs for needing to take child with cough to a healthcare pro	2.160		2.188		2.134		2.114		2.203		2.201		2.177		2.201		2.037		2.177		2.228

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
Childhood Illness																					
% that indicate 'fever' for a sign that a child has malaria	0.878		0.889		0.868		0.876		0.880		0.891		0.887		0.891		0.862		0.887		0.873
Number of correct symptoms named for malaria	2.503		2.527		2.480		2.509		2.498		2.643		2.427		2.643	b	2.390		2.427		2.568
% that can name a way to lower fever	0.954		0.955		0.953		0.942	b	0.965		0.935	a	0.972		0.935		0.947		0.972		0.958
Number of correct ways to lower fever	1.139		1.152		1.127		1.126		1.152		1.149		1.154		1.149		1.105		1.154		1.149
% that can name an action a professional should take when assessing a child's he	0.982		0.984		0.980		0.980		0.984		0.986		0.983		0.986		0.975		0.983		0.985
Number of correct ways to lower fever	2.192		2.175		2.207		2.216		2.169		2.247	b	2.114		2.247		2.190		2.114		2.225
% that have given child oral rehydration salts to treat diarrhea	0.569		0.573		0.564		0.576		0.562		0.579		0.568		0.579		0.573		0.568		0.556
% who have never heard of oral rehydration salts, all obs	0.671		0.697		0.646		0.692		0.651		0.729		0.667		0.729		0.656		0.667		0.637
% with a child sick in the past 30 days	0.173		0.190		0.157		0.183		0.164		0.196		0.184		0.196		0.171		0.184		0.144
Number of children (0-10 years) sick, max 3	0.188		0.198		0.179		0.202		0.176		0.209		0.188		0.209		0.196		0.188		0.164
Combined number of days sick among 3 youngest children	1.177		1.231		1.126		1.232		1.129		1.221		1.240		1.221		1.241		1.240		1.018
% with others sick in the past 30 days	0.014		0.016		0.013		0.015		0.014		0.018		0.013		0.018		0.013		0.013		0.014

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
Childhood Illness																					
% with any household member sick in the past 30 days	0.158		0.173		0.143		0.168		0.148		0.186		0.162		0.186		0.153		0.162		0.134
Combined time (hours) spent taking 3 youngest children to healthcare	0.313		0.314		0.312		0.311		0.315		0.299		0.328		0.299		0.323		0.328		0.303
Combined cost of illnesses for 3 youngest children	870.1		1,011.4		735.9		809.2		924.3		989.2		1,030.2		989.2	a	647.7		1,030.2		818.5
Combined cost of illnesses for household	933.4		1,067.7		805.8		873.5		986.6		1,030.3		1,099.1		1,030.3		732.7		1,099.1		874.2
Combined work days lost due to illnesses for 3 youngest children	0.566		0.587		0.546		0.654		0.487		0.623		0.556		0.623		0.682		0.556		0.419
Food Security																					
Food insecurity status 1: 0-9(more insecure)	3.461		3.614		3.316		3.403		3.512		3.903	a	3.370		3.903	c	2.954		3.370		3.654
Food insecurity status 2 (stricter):0-9(more insecure)	2.617		2.721		2.517		2.572		2.656		2.926		2.549		2.926	b	2.255		2.549		2.764
% Food insecure 1 (score 1 >=3)	0.520		0.535		0.505		0.509		0.529		0.559		0.516		0.559	b	0.464		0.516		0.543
% Food insecure 2 (score 2 >=3)	0.380		0.388		0.372		0.372		0.386		0.415		0.364		0.415	b	0.334		0.364		0.408

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
Section H: Responsibilities and Social Network																					
Member of any group, past 12 months	0.669		0.671		0.666		0.640		0.694		0.628		0.707		0.628		0.651		0.707		0.681
Member of a credit group, past 12 months	0.404		0.412		0.396		0.387		0.418		0.385		0.434		0.385		0.388		0.434		0.403
Member of group based around business activity, past 12 months	0.142		0.157		0.128		0.120		0.163		0.123		0.187		0.123		0.117		0.187		0.139
Member of business group, conditional on any group membership	0.227		0.249		0.206		0.194		0.256		0.209		0.279		0.209		0.181		0.279		0.230
% who have spoken out in a community meeting in last 12 months	0.294		0.321		0.269		0.253	c	0.331		0.276	a	0.359		0.276		0.231		0.359		0.304
% who have run for or held an elected community position or office in last 12 mo	0.040		0.044		0.036		0.028	c	0.050		0.032	a	0.054		0.032		0.025		0.054		0.047
% very confident they can protect their children against malaria and other illne	0.237		0.238		0.236		0.241		0.234		0.245		0.232		0.245		0.237		0.232		0.236
% somewhat or very confident they can protect their children against malaria and	0.696		0.707		0.685		0.697		0.696		0.671		0.737		0.671		0.719		0.737	a	0.654
% very confident they can feed their children	0.238		0.238		0.237		0.235		0.240		0.225		0.249		0.225		0.245		0.249		0.230
% somewhat or very confident they can feed their children	0.706		0.723		0.690		0.712		0.701		0.698		0.744		0.698		0.725		0.744	a	0.657

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
Section H: Responsibilities and Social Network																					
% feel their community is at least somewhat likely to come together to solve a problem	0.807		0.819		0.796		0.809		0.806		0.795		0.838		0.795		0.821		0.838	a	0.773
% feel at least somewhat influential in changing their village	0.460		0.493		0.428		0.427		0.489		0.421	b	0.553		0.421		0.431		0.553	b	0.425
Decision-making in the Household																					
% who participate in school decisions	0.443		0.444		0.442		0.415	a	0.468		0.396	b	0.485		0.396		0.432		0.485		0.451
% who participate in decisions about children's membership in groups	0.442		0.449		0.435		0.417	a	0.464		0.398	b	0.493		0.398		0.434		0.493		0.436
% who participate in buying and selling decisions for the household	0.485		0.480		0.490		0.468		0.500		0.433	b	0.519		0.433	a	0.501		0.519		0.481
% who participate in work decisions	0.491		0.490		0.492		0.466		0.513		0.451	a	0.523		0.451		0.480		0.523		0.502
Threats by partner, 0 frequent, 12 never	7.280		7.246		7.313		7.249		7.307		7.218		7.269		7.218		7.277		7.269		7.346
Ability to go out, 0 never, 12 all activities alone	7.490		7.520		7.460		7.465		7.511		7.546		7.498		7.546		7.393		7.498		7.524
Views on women's empowerment, 0 low, 18 for women	7.438		7.458		7.419		7.408		7.464		7.378		7.526		7.378		7.435		7.526		7.403
Frequency of voting: 0 never, 2 always	1.634		1.614		1.654		1.658		1.614		1.645		1.587		1.645		1.669		1.587		1.640

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
Credit and Finance																					
% that took out a loan in the last 12 months	0.459		0.480		0.439		0.434		0.481		0.458		0.499		0.458		0.413		0.499		0.463
average number of loans taken, zero if none	0.921		0.941		0.902		0.841		0.993		0.849		1.019		0.849		0.834		1.019		0.966
% that took loans out with PADME	0.301		0.300		0.302		0.290		0.311		0.311		0.291		0.311		0.270		0.291		0.332
% that took loans out with CLCLAM	0.028		0.032		0.024		0.021	a	0.034		0.021		0.042		0.021		0.020		0.042		0.027
% that took loans out with ASF	0.005		0.006		0.004		0.006		0.004		0.007		0.004		0.007		0.006		0.004		0.003
% that took loans out with CPPM	0.141		0.169	a	0.115		0.121		0.160		0.133		0.199		0.133		0.110		0.199	a	0.120
% who had any individual loan, of borrowers	0.250		0.288	a	0.210		0.233		0.263		0.242		0.325		0.242		0.224		0.325	b	0.197
% who had any individual loan, all obs	0.112		0.136	b	0.090		0.099		0.124		0.109		0.158		0.109		0.090		0.158	b	0.089
% who had any group loan, of borrowers	0.786		0.750	a	0.824		0.807		0.770		0.800	a	0.711		0.800		0.814		0.711	b	0.833
% who had any group loan, all obs	0.353		0.353		0.352		0.343		0.361		0.361		0.346		0.361		0.327		0.346		0.376
Total value of loans, past 12 months, all obs	298,381		290,058		306,288		277,355		317,074		309,260		273,900		309,260		248,715		273,900		360,202
Total value of PADME loans, past 12 months, all obs	243,171		232,490		253,319		220,088		263,692		235,374		230,062		235,374		206,366		230,062		297,287
% of PADME clients that are very satisfied	0.378		0.372		0.384		0.381		0.376		0.402		0.344		0.402		0.358		0.344		0.404
% of PADME clients that are somewhat satisfied	0.585		0.593		0.578		0.556		0.610		0.560		0.624		0.560		0.551		0.624		0.597
% of PADME clients that are somewhat or very satisfied	0.921		0.925		0.918		0.907		0.933		0.925		0.925		0.925		0.889		0.925		0.940

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL	EDUCATION	CREDIT ONLY	MIXED GENDER	FEMALE ONLY	M-CwE		W-CwE	M-CwE		MCG	W-CwE	WCG
Credit and Finance													
% of sample that are very satisfied PADME clients	0.114	0.112	0.116	0.110	0.117	0.125		0.100	0.125		0.097	0.100	0.134
% of sample that are somewhat satisfied PADME clients	0.176	0.178	0.174	0.161	0.190	0.175		0.181	0.175		0.149	0.181	0.198
Reason for choice of institution:													
Low interest	0.434	0.440	0.428	0.427	0.439	0.402		0.473	0.402		0.453	0.473	0.409
Group solidarity	0.346	0.351	0.340	0.354	0.338	0.363		0.341	0.363		0.346	0.341	0.336
Education or training	0.020	0.025	0.016	0.018	0.022	0.028		0.022	0.028		0.008	0.022	0.022
Provides other financial services	0.002	0.002	0.002	0.004	0.000	0.004		0.000	0.004		0.004	0.000	0.000
No other option	0.091	0.081	0.100	0.091	0.090	0.096		0.068	0.096		0.086	0.068	0.110
Efficiency compared to other banks or sources	0.080	0.064	0.094	0.083	0.077	0.079		0.050	0.079		0.086	0.050	0.101
Easier guarantee	0.016	0.021	0.011	0.014	0.017	0.020		0.022	0.020		0.008	0.022	0.013
Ease of Repayment													
Difficult to repay	0.100	0.096	0.103	0.109	0.092	0.088		0.104	0.088		0.132	0.104	0.082
Within her capacity to repay	0.478	0.460	0.494	0.457	0.494	0.418		0.498	0.418		0.498	0.498	0.491
Easy to repay	0.458	0.480	0.437	0.473	0.446	0.536		0.430	0.536	a	0.407	0.430	0.459
% very likely to take another loan from PADME	0.456	0.468	0.445	0.464	0.450	0.550	a	0.394	0.550	b	0.374	0.394	0.498
% somewhat or very likely to take another loan from PADME	0.922	0.921	0.923	0.927	0.918	0.937		0.907	0.937		0.918	0.907	0.928
% very likely to provide referral to other regarding PADME	0.408	0.430	0.386	0.417	0.400	0.510	b	0.358	0.510	c	0.321	0.358	0.436

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
Credit and Finance																					
% somewhat or very likely to provide referral to other regarding PADME	0.883		0.879		0.886		0.913	b	0.858		0.917	a	0.846		0.917		0.909		0.846		0.868
% that are very satisfied with PADME's services	0.080		0.064		0.094		0.081		0.079		0.068		0.061		0.068		0.095		0.061		0.094
% that are somewhat or very satisfied with PADME's services	0.130		0.111		0.148		0.136		0.126		0.124		0.100		0.124		0.148		0.100		0.148
% that have another member who took a loan, last 12 months	0.102		0.127	b	0.079		0.087		0.116		0.116		0.135		0.116	b	0.060		0.135		0.097
% that have another member who took a PADME loan, last 12 months	0.064		0.078		0.052		0.059		0.070		0.082		0.075		0.082	b	0.038		0.075		0.065
% households that have taken a loan, respondent or other (somewhat imprecise)	0.315		0.319		0.312		0.303		0.327		0.328		0.311		0.328		0.280		0.311		0.342
% that had to sell an asset to repay a loan, borrowers only	0.070		0.067		0.074		0.065		0.075		0.061		0.072		0.061		0.069		0.072		0.077
% that had to take another loan to repay a loan, borrowers only	0.021		0.018		0.024		0.024		0.019		0.019		0.017		0.019		0.028		0.017		0.020
% that had to reduce food consumption to repay a loan, borrowers only	0.065		0.049		0.081		0.069		0.061		0.057		0.041		0.057		0.081		0.041		0.080
% that had to sell an asset to repay a loan, all	0.021		0.021		0.022		0.019		0.023		0.020		0.022		0.020		0.019		0.022		0.024
% that had to take another loan to repay a loan, all	0.006		0.006		0.007		0.007		0.006		0.006		0.005		0.006		0.008		0.005		0.006

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix A: RCT Results—Individual Indicators

	TOTAL		EDUCATION		CREDIT ONLY		MIXED GENDER		FEMALE ONLY		M-CwE		W-CwE		M-CwE		MCG		W-CwE		WCG
Credit and Finance																					
% that had to reduce food consumption to repay a loan, all	0.020		0.015		0.024		0.021		0.019		0.019		0.013		0.019		0.022		0.013		0.025
% ever participating in a tontine	0.683		0.714	b	0.654		0.672		0.693		0.712		0.715		0.712	a	0.636		0.715		0.672
% currently participating in a tontine	0.557		0.585	a	0.531		0.546		0.567		0.579		0.589		0.579		0.516		0.589		0.546
% that have a savings account	0.021		0.022		0.019		0.019		0.022		0.017		0.026		0.017		0.020		0.026		0.018
Current amount of savings (account or tontine), if any	46,350		32,969		61,643		50,532		43,363		29,845		34,605		29,845		66,786		34,605		56,500
Current amount of savings (account or tontine), all	767		597		928		741		791		407		758		407		1,040		758		824
% that had to sell an asset due to financial problem	0.042		0.048		0.037		0.035		0.049		0.050		0.046		0.050		0.021		0.046		0.053
Enterprise																					
% that earned money from an economic/business activity	0.759		0.783		0.737		0.735		0.781		0.761		0.801		0.761		0.711		0.801		0.761
Average revenues in last 7 days from activity 1, if any activity	16,517		15,253	a	17,858		17,597		15,609		16,828		14,041		16,828		18,337		14,041	b	17,416
Average revenues in last 7 days from activity 1, all	10,159		9,906		10,400		10,484		9,869		10,402		9,488		10,402		10,557		9,488		10,252
Frequency of conflicts with husband over money she earns																					
Every week	0.023		0.022		0.023		0.023		0.023		0.026		0.018		0.026		0.020		0.018		0.027
Few times per month	0.209		0.236	b	0.184		0.191		0.225		0.201		0.265		0.201		0.183		0.265	b	0.185

Reference:
a = p<0.10
b = p<0.05
c = p<0.01

Appendix B: RCT Results—Indices

	MEANS							P-VALUES	
Standardized against all control (mixed and female)	**TOTAL**	**WITH EDUC**	**NO EDUC**	**M-CwE: MIXED EDUC**	**W-CwE: FEMALE EDUC**	**MCG: MIXED NO EDUC**	**WCG: FEMALE NO EDUC**	**p-value for M-CwE/W-CwE vs. GFM/WCG**	**p-value for M-CwE vs. W-CwE**
HIV									
HIV knowledge score	0.041	0.082	0.001	0.103	0.065	-0.019	0.020	0.06	0.54
HIV modern knowledge score	0.053	0.108	0.000	0.090	0.123	-0.019	0.018	0.04	0.65
HIV behavior score	0.045	0.093	0.000	0.098	0.089	0.008	-0.008	0.03	0.90
HIV knowledge& behavior score	0.045	0.091	0.000	0.098	0.085	-0.014	0.014	0.03	0.83
Malaria									
Malaria knowledge score, stricter	0.031	0.068	-0.003	0.072	0.064	-0.016	0.009	0.18	0.92
Malaria knowledge score, more lenient	0.041	0.093	-0.008	0.124	0.067	-0.062	0.042	0.06	0.43
Malaria behavior score, 1 yr nets & binary	0.000	0.027	-0.026	0.081	-0.018	-0.016	-0.035	0.22	0.12
Malaria behavior score, 3 yr nets & binary	0.008	0.049	-0.030	0.114	-0.006	-0.033	-0.028	0.10	0.09
Malaria knowledge& behavior score, most basic	0.038	0.079	-0.001	0.107	0.055	-0.021	0.018	0.06	0.39
Child Health									
Health knowledge score, basic	0.003	0.011	-0.004	0.025	-0.001	-0.029	0.021	0.65	0.58
Health knowledge score, more points for more answers	0.001	0.007	-0.004	0.052	-0.033	-0.038	0.029	0.77	0.13
Empowerment									
Empowerment score	-0.001	0.001	-0.003	-0.043	0.037	-0.014	0.007	0.91	0.12

Appendix B: RCT Results—Indices

Standardized against mixed only control	ALL MIXED	M-CwE: MIXED EDUC	MCG: MIXED NO EDUC	p-value for M-CwE vs. MCG
HIV				
HIV knowledge score (mixed only)	0.059	0.124	0.002	0.04
HIV modern knowledge score (mixed only)	0.052	0.110	0.001	0.13
HIV behavior score (mixed only)	0.042	0.088	0.000	0.16
HIV knowledge& behavior score (mixed only)	0.054	0.112	0.001	0.05
Malaria				
Malaria knowledge score, stricter (mixed only)	0.040	0.087	-0.002	0.25
Malaria knowledge score, more lenient (mixed only)	0.076	0.165	-0.005	0.02
Malaria behavior score, 1 yr nets & binary (mixed only)	0.021	0.072	-0.026	0.11
Malaria behavior score, 1 yr nets & continuous (mixed only)	0.021	0.072	-0.025	0.11
Malaria behavior score, 3 yr nets & binary (mixed only)	0.040	0.117	-0.030	0.03
Malaria behavior score, 3 yr nets & continuous (mixed only)	0.039	0.115	-0.029	0.04
Malaria knowledge& behavior score, most basic (mixed only)	0.061	0.131	-0.001	0.03
Child Health				
Health knowledge score, basic (mixed only)	0.021	0.050	-0.005	0.30
Health knowledge score, more points for more answers (mixed only)	0.039	0.088	-0.004	0.12
Empowerment				
Empowerment score (mixed only)	-0.018	-0.034	-0.004	0.52

Standardized against female only control	ALL FEMALE	W-CwE: FEMALE EDUC	WCG: FEMALE NO EDUC	p-value for W-CwE vs. WCG
HIV				
HIV knowledge score (female only)	0.022	0.044	0.000	0.50
HIV modern knowledge score (female only)	0.052	0.105	0.000	0.18
HIV behavior score (female only)	0.049	0.098	0.000	0.12
HIV knowledge& behavior score (female only)	0.036	0.071	0.000	0.25
Malaria				
Malaria knowledge score, stricter (female only)	0.024	0.052	-0.004	0.46
Malaria knowledge score, more lenient (female only)	-0.002	0.009	-0.012	0.80
Malaria behavior score, 1 yr nets & binary (female only)	-0.017	-0.009	-0.025	0.78
Malaria behavior score, 1 yr nets & continuous (female only)	-0.015	-0.004	-0.025	0.73
Malaria behavior score, 3 yr nets & binary (female only)	-0.020	-0.009	-0.031	0.75
Malaria behavior score, 3 yr nets & continuous (female only)	-0.016	-0.003	-0.030	0.69
Malaria knowledge& behavior score, most basic (female only)	0.018	0.036	-0.001	0.54
Child Health				
Health knowledge score, basic (female only)	-0.014	-0.025	-0.003	0.60
Health knowledge score, more points for more answers (female only)	-0.035	-0.065	-0.004	0.23
Empowerment				
Empowerment score (female only)	0.012	0.028	-0.003	0.55

Appendix C: Client Impact Stories

Titilayo Odounaro

Titilayo Odounaro has been a PADME client for over two years. She lives in the city of Illara where she raises her three children with the help of her polygamist husband. She is 35 years old and reports that she buys and resells food products to make money, chiefly rice.

For Titilayo, trust, respect, and financial security rank high on her descriptions of the constituents of a good life. She is happy with where she is and what she has, though extra money certainly wouldn't hurt. The hardest event in her life was the death of one of her sons, and while generally family is able to help out with needs she says that she didn't receive any aid this time. She doesn't know what the future holds in store for her and her family, and says that "everything depends on God. I can only pray for [us]."

Titilayo eats three times a day with her family, but she doesn't know if this is true for her neighbors and other members of her community. Their diet is made up of bouillie, corn mush and "lafou," another name for cassava. Titilayo says that they are well-nourished and says that "I prepare all of the food myself and I am careful when I do so." Her diet is very different from what her mother used to make, and she explains that "we have an understanding of cleanliness and today we are able to make use of a wider variety of food than did our mothers." They now have new products like bottled and canned products, things that "the whites eat." One major difference she noted was that now, her children drink potable water–a major element of their improving diet.

Titilayo worries a lot for the health and well-being of her family. If they were to fall sick they wouldn't be able to work, and she explains that "everything we have to do in our lives depends completely on our good health." She goes to the hospital if anything serious happens, but says that her mother went to witch doctors and used herbal teas to treat disease.

Her mother didn't have her own business, but rather helped her husband in the fields and did farm work. Titilayo works hard to keep her business running smoothly and says that she controls every aspect of it. She sees harmony in her home and in the relationship she has with her husband as being the most conducive factor to progress in her life. She would like to have a larger community influence in securing education for her children. "Women are still not in the best situation," she explains, "but it is better than the conditions our mothers lived in." Even if they are not totally free, women are able to speak out. Improvements her children have seen include more schooling, no longer having to travel long distances to fetch water, and having breakfast regularly.

When she joined PADME, Titilayo hoped the program would allow her to have a better life. So far, the most significant improvement has been the better meals she and her children are able to eat, and she says she is able to "see more clearly" when she makes business decisions. Her savings have become more regular, she has learned more concerning property management, and especially better health practices like avoiding malaria, AIDS, and diarrheal disease.

She recommends the program to others because of her positive experience, and says that she has high hopes for the near future: building a new house, buying a motorcycle, and expanding her business. It can be difficult for others to join, she says, explaining that she knows "a woman whose husband forbid her from joining." Titilayo has still been able to have a good experience and has saved 1,000 CFA thus far.

Segla Mewakounou

Segla Mewakounou is the 41 year-old resident of Ganhi where he works as a farmer. He is married with five children, for whom he would sacrifice everything. He of course hopes his children succeed, "because in life you have to be positive, and I will fight until my last breath."

Segla works to provide his family with food and clothing, though money is often a problem. He explains that money is the solution to every possible problem, and that his lack of money is the dominant factor and obstacle to his living a good life. Other difficulties he has had to face are the deaths of his father and his uncle, which he explains happened because "time is like the chameleon. I had to run in every direction to raise money." He survived the financial shock of it only with the help of his family and friends.

He is lucky in that he hasn't had to go without food, nor has he seen anyone else in his community struggling so much that they go hungry. He eats two meals a day, both of which are usually gari–cassava paste with different sauces. He also eats rice, bread, and ground corn frequently, and says that is suits him very well. He says that it is a good diet for him "because I am without illness." Segla voices some concern over the modernization of the food industry and available products, saying that his mother at better and healthier: "The food used to be better because now we don't know exactly how some of the food we eat is produced, while our parents ate healthily." His family does what they can to take care of themselves and he describes his health, as well as theirs, as perfect other than a few normal aggravations. Segla worries for them and says that "health is the most important thing in life."

He hasn't noticed a lot of significant changes between his mother's generation and his own other than slightly more education. Segla runs his agricultural business "with total liberty" and says that he is very organized and deliberate in his decision making. He feels that social structure has remained unchanged, but he does have a new goal in regards to his family–to teach them better hygiene practices. Some other changes he has seen are the improving of women's conditions, largely because of access to microcredit, and also says that his children are in a better situation and are benefactors of free schooling.

Since joining PADME, Segla has seen considerable change at home and at work. He was able to start his small business and has begun to save money. His commerce has "changed considerably" and he is able to use most of the money he makes to help support his family at home. He has learned much about sanitation as well, but what he values most is his better understanding of business and investment.

Segla recommends the program to others. He still hopes to see more change and to improve his revenue, but he has already seen positive changes. "This program has made me happy," he says, and is motivated to continue working with PADME.