Preliminary Evidence That Integrated Financial and Educational Services Can Be Effective Against Hunger and Malnutrition

Barbara MkNelly, Chatree Watetip, Cheryl A. Lassen, and Christopher Dunford

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Freedom from Hunger’s Mission

Founded in 1946, Freedom from Hunger promotes “Self-Help for a Hungry World.” Freedom from Hunger brings innovative and sustainable self-help solutions to the fight against chronic hunger and poverty. Together with local partners, we equip families with resources they need to build futures of health, hope and dignity.

Credits

Design
Michael Curry/
Donna Justice

Freedom from Hunger
1644 DaVinci Court
Davis, CA 95617
(530) 758-6200
FAX (530) 758-6241
programs@freefromhunger.org
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Executive Summary

This paper reports the preliminary results of research by Freedom from Hunger and other researchers on the impacts or benefits resulting from Credit with Education programs. The bulk of the data reported here comes from a study of the Credit with Education program in Thailand, but comparable data from programs in Honduras and Mali are also presented as available.

Despite the newness of the Credit with Education programs studied, there appears to be valid evidence that the hypothesized “benefit process” (Figure 1, p. 2) was already operating to reduce hunger and malnutrition. Simply asking program participants if the nutrition and health of their children has improved does not demonstrate there has been real improvement due to the program or otherwise. However, it is obvious that participants are hopeful because they can discern positive changes in disposable cash income, knowledge, and diet. A positive momentum has begun in the lives of participants.

Relative to the comparison group, the women in the program are undertaking more diversified economic strategies and contributing more to their households’ economic well-being. There is evidence of a change in attitudes and examples of women organizing and taking unprecedented leadership roles. Despite a recent drought in the Thailand program area and the fact that participants are of a similar, if not lower, socioeconomic status than nonparticipant households, the evidence indicates that participant families, including their children, are eating more and better food. Participant households had greater per person weekly food expenditures (approximately $2.00) than nonparticipant households ($1.50). These positive impacts on factors critical to improved nutritional status bode well for longer-term improvement in children’s nutritional status.

It is also clear that nutrition and health education can be effective in the context of a credit and savings program that brings women together regularly in groups that share a sense of mutual responsibility. The program participants demonstrate superior knowledge and practice (e.g., use of ORS to manage diarrhea) of a number of key health/nutrition behaviors promoted by the program that are important to maternal and child health.

The majority of participants in Mali, exposed to concerted education on the appropriate timing for introducing complementary foods, knew the ideal age. On the other hand, the majority of participants in Honduras, where the education on this issue had not yet started, did not know the best timing any better than nonparticipants, as one would expect. The data do not indicate whether or not knowledge actually led to proper practice, but the imparting of knowledge was effectively taking place in Mali in the course of weekly Credit Association meetings. Similarly, participants were learning in Thailand the health and nutrition messages actively promoted by the program.
staff in the *monthly* Credit Association meetings but not the messages not actively promoted by staff (e.g., exclusive breastfeeding with vs. without supplementation with water).

Referring again to the “benefit process” diagram, the hypothesized “intermediate benefits” seem to have been realized to some extent by the program participants, probably because of their participation. Whether these benefits are of a magnitude sufficient to raise nutritional status, especially in the face of factors beyond the scope of the program or the control of its participants, remains to be seen. The nutritional outcome cannot be documented without anthropometric measurements of the appropriate individuals in a participant/control study over an adequate time period.

**INTRODUCTION**

Hunger and malnutrition are among the most fundamental blocks to the development of human capacity and, therefore, the socioeconomic development of human societies. They are tenacious and widespread conditions; according to one much cited source (Bellagio Declaration):

- One billion people live in households too poor to obtain the food they need for work.
- Half of those are too poor even to obtain the food they need to maintain minimal activity.
- One child in six is born underweight and one in three is underweight by age 5.
- Hundreds of millions of people suffer anemia, goiter, and impaired sight from diets with too little iron, iodine or vitamin A.¹

Despite recent and sometimes dramatic gains in agricultural technology and food production, the number of individuals suffering from hunger and malnutrition continues to grow each year. A major challenge to the international development community is to build programs that are both effective and sustainable and have the potential to reach these very large numbers of vulnerable people.

International lending and donor institutions, led by a large and diverse collection of NGOs (the best known being the Grameen Bank of Bangladesh), are responding to the

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**Figure 1: Freedom from Hunger Credit with Education Benefit Process**

1 The Bellagio Declaration was produced and adopted by a group of development planners, practitioners, opinion leaders, and scientists from 14 countries meeting at the Rockefeller Foundation Center in Bellagio, Italy, in November 1989.
challenge by supporting large-scale development of credit and savings programs for the very poor. McKnelly and Dunford (1996) address the question, “Are credit and savings programs appropriate responses to the problems of hunger and malnutrition?” Rather than assert that the poor will no longer be hungry or malnourished if they can grow more food or earn more money to buy food, they examine the academic and practitioner literature to determine what are known, or strongly asserted, to be necessary conditions for credit and savings programs to be effective against hunger and/or malnutrition.

Recognizing that no literature review can be fully comprehensive, provide definitive answers, or be free of interpretive bias, McKnelly and Dunford (1996) conclude that credit and savings programs can effectively promote food security and improve nutritional status of children in vulnerable households when credit and savings services are delivered in combination with nutrition- and health-promoting education to solidarity groups of very poor women, especially mothers. Citing the experience of Freedom from Hunger, they also maintain that this necessary combination of financial and educational services can be most cost-effectively delivered in an integrated program design, called Credit with Education. This integrated design is hypothesized to produce the benefit process diagrammed in Figure 1.

BACKGROUND OF THE CREDIT WITH EDUCATION PROGRAM

In 1989, the Credit with Education strategy was initiated by Freedom from Hunger in Mali and Thailand. Credit with Education has since been replicated in Bolivia, Burkina Faso, Ghana, and Honduras. This paper focuses on the Thailand program, which began in mid-1989 in Chumpuang District of Nakhonratchasima (Korat) Province. By February 1993, when the study was carried out, the program had grown to 26 Credit Associations (joint liability or solidarity groups of about 40 women each) with 1,022 members, 586 of whom were borrowers. The momentum for program expansion had steadily risen as the success of the first Credit Associations became known throughout the area. In the last two quarters of 1992, the number of members more than doubled. By December 1992, the amount of cumulative loans was $109,274.

Credit with Education builds self-help capacity by providing women with cash credit and savings opportunities and with nonformal health/nutrition education. It has the potential for widespread expansion and sustainability, because it is a cost-minimizing strategy that charges interest and fees reflecting the real cost of the program, both for operations and for access to loan capital.

The credit mechanism is based on the village bank methodology pioneered by the Grameen Bank and further developed by the Foundation for International Community Assistance (FINCA). Groups of approximately 30 women jointly take a single loan from the program. This amount is divided and disbursed to solidarity groups of five and then to individual borrowers. The maximum amount an individual can borrow in her first loan cycle is approximately $60, although subsequent loans can be increased by the amount the borrower has deposited in savings. All program participants are required to save a minimum amount at each meeting. This minimum savings amount is set by the individual Credit Associations. No single loan can exceed a $300 limit.

Credit with Education field staff conduct three types of learning sessions at the Credit

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2 Credit with Education is a service mark of Freedom from Hunger.
Associations’ regular meetings—Credit Association management, hunger prevention, and enterprise development. The field agents in Thailand had been focusing on the first two education areas. Hunger prevention education promotes specific ideal behaviors in five topic areas—breastfeeding promotion, infant and child feeding, birth timing and spacing, diarrhoea treatment and prevention, and immunizations. Staff prepare learning sessions that employ a variety of participatory nonformal techniques such as role plays, case studies, and open-ended questions.

The credit component of the Thailand program has certain features that distinguish it from the other Credit with Education programs supported by Freedom from Hunger. The loan cycle is six, rather than four, months in length. Credit associations meet and make savings deposits on a monthly, not weekly, basis. Repayment of the loan principal is made in a “balloon” installment at the last meeting of the loan cycle, although the interest repayments are made in five equal monthly installments. These adaptations were made to accommodate the agricultural and animal husbandry activities for which most women desired loan capital.

**OBJECTIVES AND METHODS**

Standardized surveys and in-depth interviews were designed to address the following evaluation questions and programmatic issues:

1. What impact is the Credit with Education program having on women’s economic activities and their contribution to the household economy?

2. What impact is the Credit with Education program having on participants’ health and nutrition knowledge and practice?

3. What impact is the Credit with Education program having on women’s attitudes, organizational capacity, and social status that might empower them to improve the health and nutrition of their families?

4. What impact is the Credit with Education program having on household food security and the diets of households and children?

5. Who is the Credit with Education program reaching? Within participating communities, what socioeconomic group is joining the program?

6. Though the Credit Associations have maintained a 100 percent repayment rate, do individual borrowers have repayment problems? If so, why, and what do they do?

7. What aspects of the Credit with Education program do the participants like best?

**Standardized Surveys**

Information was collected through standardized surveys and open-ended interviews with groups or individuals with the exception of Question #5 (“Who is the Credit with Education program reaching?”). The standardized surveys were conducted by program staff among participants and randomly selected.

<table>
<thead>
<tr>
<th>Table 1: Selection of program and control samples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Villages</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td>Participants</td>
</tr>
<tr>
<td>Nonparticipants</td>
</tr>
</tbody>
</table>

*In these 11 Credit Associations, using numbers of members (saving only) and borrowers as of January 1993
nonparticipants living in communities without the program. Participants were drawn from the 16 Credit Associations that were at least one year old, and each had to have the following characteristics:

- Participants belonged to a Credit Association that was at least one year old and had taken at least one (1) loan in the last year.
- Participants had at least one preschool child who attended the growth monitoring sessions of the local Thai Government (Tambon) Health Center in October 1992 or January 1993.

Control villages were matched by proximity and size to the program communities. Nonparticipants were randomly selected from Tambon Health Center records. These records list all preschool children in a village, their birth dates, their household identification number, and their mothers’ names.

As is evident in Table 1, the program sample was drawn from almost twice as many villages than was the control sample. It was necessary to sample a larger number of program villages because of the limited number of participants having the appropriate characteristics. There are two distinct “types” of participants—members and borrowers. Like borrowers, members make regular savings deposits and participate in Credit Association meetings and learning sessions. However, members are distinct from borrowers in that they are not taking a program loan. Using the membership information as of January 1993, just over 23 percent of the borrowers in these 11 Credit Associations had preschool children who attended the Ministry of Health growth monitoring sessions. A similar number of nonparticipants were sampled in each of the four sub-districts to ensure a similar geographical representation between the two groups.

The survey was conducted during the dry season, which is the peak period for migration from the area. For this reason, it was not possible to interview 24.4 percent of the randomly selected nonparticipants. In addition, 9.2 percent of the participants were away from the village, most commonly engaging in wage labor in Bangkok or Korat City.

**Wealth Ranking**

Question #5—“Who is the Credit with Education program reaching?”—was addressed through in-depth interviews with the village headmen in four of the program communities using an adaptation to a method described in Grandin (1988). A democratically elected local official, the village headman receives a stipend from the government for carrying out a variety of administrative functions. Among these tasks is the responsibility for maintaining a registry of all village inhabitants organized by household. In four program villages, these registries were used to prepare small cards each with the name of a household head. Households in which a Credit with Education participant was a member were marked on the back with a check. The village headmen were then asked to categorize all households in the village into as many socioeconomic groups as they felt were appropriate. The distribution of program participants among these socioeconomic groupings was then analyzed.

**Similarity between the Participant and Nonparticipant Survey Groups**

Optimally, a comparison or control group only differs from the program group in that its members do not participate in the intervention being evaluated. As was explained in the methods section, the nonparticipants were randomly selected mothers of preschool children who attended the Ministry of Health Growth monitoring sessions. Since the coverage of these monitoring sessions is so high—approximately 90 percent—the nonparticipants are
likely to represent a good cross section of mothers. However, those participating in the *Credit with Education* program are not “randomly selected” but represent a subsample of women who opted to join the program and, therefore, have a self-selection bias. For this reason, it was very important to compare the two sample groups on key socioeconomic and demographic characteristics, which potentially might explain the differences the study found in the two groups’ responses. However, statistical tests found little difference in the demographic characteristics and socioeconomic status of the two groups, making the nonparticipants a good comparison group to assess program impact on the participant sample.

No significant difference in the ages, number of children, education level, or marital status was found between the two groups. Nonparticipants do have significantly larger families than participants because they are composed of more adults (3.2) as compared to participant families (2.4). However, this variable is not likely to influence the program impact in any important way.

The socioeconomic status of the two groups was assessed by comparing both groups’ land tenure, food self-sufficiency, and ownership of productive/consumer assets and animals. Few significant differences were found between the two groups, indicating that the socioeconomic status of the nonparticipants was quite similar to the participant sample.

The great majority—over 80 percent of both groups—farmed their own or family land, while approximately 10 percent were landless or rented land. Both groups’ food self-sufficiency—as measured by the number of months the families’ own rice production fulfilled their consumption needs—was also quite similar, averaging approximately 10 months of the year.

A good proxy for permanent income or socioeconomic status is the value of a household’s assets. The program staff helped create a list of goods that represent a progression of wealth within the local context. All respondents were asked whether they owned six different consumer or productive assets and, if so, how many. The following values were assigned to each of the assets based on their average purchase price: local truck 60,000 baht; motorcycle 30,000 baht; small hand-pushed tractor 20,000 baht; television 4,000 baht; refrigerator 4,000 baht; and a rice cooker 600 baht. The mean monetary value of assets was not significantly different: 21,429.4 baht for participants vs. 22,196.6 baht for nonparticipants (US$1=25.2 baht as of February 1993).

In terms of animal ownership, however, the nonparticipant group appears to be marginally better-off. Nonparticipants owned a mean of 2.7 head of large stock (cow or water buffalo) as compared to 1.8 head for participants. This represents a marginally significant difference at p=.09. Since ownership of animal traction is an important determinate of at least a middle-income status, the nonparticipants may be slightly better-off socioeconomically.

Although the participant sample is of equal or perhaps slightly lower socioeconomic status than the controls, they owned a larger number of pigs (1.7 vs .5) and poultry (12.5 vs. 7.5) relative to nonparticipants. This difference is attributable to the considerable number of program loans taken for animal raising, particularly pig raising.

These findings indicate that the nonparticipants represent an excellent control or comparison group for evaluating the impact of the *Credit with Education* program on those participating individuals.

**Socioeconomic Profile of Participants**

For the *Credit with Education* program to successfully achieve its ultimate goal, it is essen-
tial that program services reach poor households most vulnerable to food insecurity and malnutrition. No specific eligibility criteria are set by the program—such as a ceiling on the amount of land owned—to limit participation. The Credit with Education program does have certain self-targeting features, such as an interest rate higher than other readily available commercial credit. Program participation also requires commitments, like joint responsibility for loan repayment and consistent meeting attendance, that those with alternative sources of working capital are probably less willing to accept.

The study attempted to confirm that program benefits were reaching the poorest households—those most at risk for hunger and malnutrition. Village headmen were asked to rank all households in their community from lowest to highest socioeconomic status. They also were asked to explain the considerations they used to group households. Whether the household included a program participant was determined after the ranking process. To ensure better informant information, only relatively small program villages—ranging in size from 57 to 117 households—were selected for this exercise. The Credit Associations in these villages each had between 14 and 33 members.

Two of the headmen grouped the households in their village into five categories from wealthiest to poorest. The other two headmen initially grouped households into three groups with a large percent of the households falling in the medium range. When asked, they were able to provide additional socioeconomic distinctions for this middle range. Table 2 presents these results.

**Wealthiest**—Households that own capital equipment for agricultural production, such as a large tractor, and own relatively large amounts of agricultural land. They might also have other major capital equipment, such as a rice mill or pickup truck. They have no trouble feeding their family, do not need to do wage labor, and do not have debts. They typically rent out tractors or draft animals to poorer households. They have the nicest homes in the community.

**Better-off**—Households that own a good amount of land and may have a small tractor for farming. They have a significant number of animals, especially buffalo and cows. They may have a member who is a salaried worker, such as a government officer or teacher, and have only small debt. They have little trouble feeding their family and do not need to do wage labor.

**Medium**—Households that have a good amount of land and have animals for farming, but no farm machinery. They grow enough rice for their own consumption and some for sale. They have more debt than the two wealthier groups. They have a variety of animals—cows, buffalo, pigs, and poultry.

**Poor**—Households that have land, but only a small amount, and only grow enough rice for the family’s own consumption—not sale. They have few animals—maybe one or two cows or buffalo but no pigs or poultry. They will engage in wage labor for supplementary income. They have debt—typically to BAAC or the local agricultural cooperative.

**Poorest**—Households that are landless, although they might rent a small amount of

### Table 2: Socioeconomic distributions of households and participants

<table>
<thead>
<tr>
<th></th>
<th>Wealthiest</th>
<th>Better-off</th>
<th>Medium</th>
<th>Poor</th>
<th>Poorest</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Households</strong></td>
<td>7.8%</td>
<td>17.6%</td>
<td>33.9%</td>
<td>27.0%</td>
<td>13.7%</td>
<td>307</td>
</tr>
<tr>
<td><strong>Members</strong></td>
<td>4 (4.9%)</td>
<td>17 (20.7%)</td>
<td>28 (34.1%)</td>
<td>25 (30.5%)</td>
<td>8 (9.8%)</td>
<td>82</td>
</tr>
</tbody>
</table>
land during the rice production season. They rely on wage labor to support themselves and typically leave the community for up to several months to do wage labor in Bangkok or another province. They do not own cattle; if they farm, they must hire animal traction or a tractor (since they lack cash, they typically pay in rice). Sometimes they don’t have enough income to feed their family. For any loans they take, they find it very difficult to raise money to repay.

Of the 307 households in the four villages, 74.6 percent fell in the “medium” to “poorest” categories. Of the 82 households with Credit with Education participants, 74.4 percent fell in the “medium” to “poorest” categories. The socioeconomic profile of participants seems to reflect the profile of the whole community. There is a possible bias against participation by the “wealthiest” and the “poorest.”

Given the goal of the program, it is disturbing that so many of the better-off and so few of the poorest were participating. The latter is more disturbing than the former. As long as they remain a minority element, the inclusion of better-off and even wealthy households in the Credit Associations can serve the program’s purposes, for several reasons. Like all members, these wealthier women deposit savings in the internal fund, most likely at higher levels than the poorer members. A growing savings fund benefits the whole Credit Association since more interest can be earned on internal loans and more monies are available for emergency and productive uses. The solidarity that participation in the Credit Associations can develop is also an important reason for having wealthier members. Several informants explained that the women in a Credit Association become closer and help each other more. This interaction is likely to foster greater empathy among the different socioeconomic groups whereby the wealthier households come to better understand the struggles of their poorer neighbors.

However, even the more established Credit Associations should continue to be urged to extend their membership to interested poor women and to actively encourage their participation. This type of encouragement is necessary to help overcome obstacles based on fear or lack of self-confidence rather than simply a lack of demand for working capital.

This exercise and the observations of the village headmen helped to identify several obstacles to program participation faced by the poorest of the economically active poor. The most influential factor mentioned in each of the villages was the importance of wage labor in the survival strategies of the poorest households. The poorest households were landless but would rent land to grow rice. In the dry season, members of these households leave the area primarily to work in the provincial city or Bangkok, where the booming economy offers many wage labor opportunities.

Their seasonal absence was said to discourage the poorest women from joining the program and, according to one headman, made them an undesirable member of a solidarity group. They could not maintain consistent attendance and the required deposits at monthly meetings, and there might be some question about whether they could be trusted to return to the village before the end of the loan cycle. When asked whether very poor women could use a loan to begin their own microenterprise (perhaps selling food to decrease their dependence on wage income), one headman said that it was not likely for several reasons. First, the profits from selling food would not be as secure as earnings from wage labor. He also said that most poor women would not know how to begin a small business and that they would be afraid to take a loan for a new venture. He also doubted whether they would succeed as microentrepreneurs since people might not want to buy food from poor women they considered to be unclean.

All the headmen characterized the poorest women as somewhat more averse to risk
and less confident of their ability to repay a loan than other women. They agreed that these women would want to first watch the experience of others before considering joining themselves. The draw of wage labor opportunities outside the community and the importance of these earnings to the survival of the poorest families are likely to continue to curtail the participation of these families.

The self-targeting features of *Credit with Education*, mentioned above, do not seem to significantly restrain participation by the better-off families. On the other hand, those better-off have not co-opted the program to the exclusion of the poor.

**What Participants Like Best about the Credit with Education Program**

The study also took the opportunity to discover what aspects of the program the participants liked best. Figure 2 shows the distribution of the specific responses (respondents often cited more than one “favorite” aspect; the three women who said “everything” were not included).

Savings was mentioned most often (46%), indicating the genuine value of the program’s savings services. The second most frequently mentioned element was the education component. Respondents said they liked to obtain knowledge from the staff and their friends about health and nutrition and about loan investment opportunities. The program loan was mentioned as the favorite aspect by only 26 percent of the respondents.

A greater number of respondents said they initially joined the program because of the opportunity for loans rather than for savings or education, so this represents an unexpectedly low ranking for the credit component. Some women might have liked the education and savings components more than they had expected, but this third-place ranking for the program loans also may reflect some disillusionment. A number of women who lost money in pig raising or in agriculture during a drought year may have felt discouraged about their investment of loans.

**Credit with Education’s Impact on Women’s Economic Activities**

The majority of the participants interviewed (58%) had never taken a loan from commercial or informal sources before joining the *Credit with Education* program. Of those who had received credit, the most frequently named sources were money-lenders (16%), the Bank for Agriculture and Agricultural Cooperatives (BAAC) (15%), and friends/relatives (10%). Money-lenders typically charged a monthly interest rate of 5 percent but as high as 10 percent. The BAAC has an active agricultural credit program in the program area. The BAAC makes individual (based on collateral) and group (based on group guarantee) loans for 12 months or longer at approximately 12.5 percent per annum. While women are able to join BAAC...
groups, the regulation of one loan per household tends to restrict membership to men. The Credit with Education loans charge 9 percent for the six-month loan period (18% per annum).

Twenty-eight (46.7%) of the nonparticipants reported that either they or their husbands had received a loan in the last 12 months. However, only eight (13.3%) of the women in the nonparticipant group had either taken their own loan or a loan jointly with their husbands as compared to 100 percent of the participants; this indicates that credit to women, even from informal sources, is relatively rare in the program area.

Credit with Education Program Loans

All of the participants had taken at least one loan, and 71 percent had taken two loans from the Credit with Education program during the 12 months preceding the study. The 68 participants had taken a total of 116 program loans. The mean amount of program credit they received during the year was 3,778 baht (approximately $150), with a range of 1,000 to 11,000 baht. The average amount of a six-month program loan was 2,214.66 baht (approximately $88).

Table 3 lists the various ways that these 116 program loans were invested. Animal raising (most commonly pig raising) and agricultural production (primarily rice cultivation) represent the majority of loan activities. Commerce, handicrafts, and the sale of cooked food represent approximately 14 percent of the loan activities. Almost 7 percent of the investment areas mentioned seem to represent consumption rather than productive uses (family expenses and purchase of goods). It is likely that only some part of the total loan amount was used in this way since many women gave multiple answers.

Borrowers may divide their loans among a variety of investments and often alter their loan activities from one six-month cycle to the next. For example, Suwan Pirasri, a member of the Nong Tum Credit Association, described how she had used the six Credit with Education loans she had taken in the last three years. Her first loan of 1,500 baht (approximately $60) was invested in items she needed to produce silk, such as containers to house silk worms and lime to dry them. She bought fertilizer for her mulberry trees with her second loan and said she was able to get visibly more leaves to feed the silk worms. She invested the next four loans in fertilizer but twice for the family’s rice farm, once for her own tapioca plot, and again for the mulberry trees.

Credit Association Internal Loans

An additional “type” of loan available through the Credit with Education program is the internal loan. These loans are made by the Credit Associations from their own savings, earnings, and interest payment installments. At each

| Animal Husbandry (pigs, buffalo, cow, poultry) | 58 (43.6%) |
| Agricultural Production (produce rice, produce tapioca, grow fruit/eucalyptus trees, grow beans, cultivate garden, purchase fertilizer, hire labor to plant/harvest, hire tractor or animals to plough) | 48 (36.1%) |
| Small Shop/Trading (buy and sell items like soap, dry food, electrical appliances, or unspecified) | 14 (10.5%) |
| Cost of Living/Family Expenses/Family Emergency | 5 (3.6%) |
| Purchase Goods (sewing machine, gas oven, renovate house) | 4 (3.0%) |
| Handicrafts (silk production, sewing bags) | 3 (2.2%) |
| Sell Cooked Food (noodles) | 1 (0.8%) |
meeting participants make savings deposits and pay interest installments on their program loans. This fund continues to grow each meeting. Credit Association members may agree to lend this money either to members or non-members on a short-term basis in what is referred to as an internal loan. Usually, a monthly interest rate greater than the rate for program loans is charged for internal loans. For example, in Thailand, most Credit Associations charge a 2 percent monthly interest rate for internal loans as compared to the 1.5 percent for program loans. This interest is the Credit Association’s to keep. The internal loan mechanism, together with the members’ savings, builds a group fund that can be used for collective or individual purposes, depending on the decision of each individual Credit Association.

In the last 12 months, 26 (38.2%) of the participants had also taken an internal loan with a mean size of 740 baht, (or approximately $30). Internal loans are typically smaller than program loans and may be used for consumption rather than productive purposes, which is the case in Thailand. Table 4 details how the 56 (86%) participants who had taken at least one internal loan had used their loan(s).

**Table 4: How Credit Association internal loans were invested**

<table>
<thead>
<tr>
<th>Expenses (food, cost of living)</th>
<th>21 (34.0%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raising Pigs</td>
<td>12 (19.7%)</td>
</tr>
<tr>
<td>Agricultural Investment</td>
<td>11 (18.0%)</td>
</tr>
<tr>
<td>Medical Costs</td>
<td>9 (14.8%)</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>8 (13.0%)</td>
</tr>
</tbody>
</table>

The Individual Borrower’s Experience Behind the Program’s 100 Percent Repayment Rate

The program staff was maintaining a comprehensive financial monitoring system that tracks the Credit Associations’ repayment of loans, among many other indicators of program process and impact. The loan recovery rate for the Credit with Education program in Thailand is 100 percent. Over the last three years, there have been some incidents—such as widespread flooding—that made on-time repayment difficult for large numbers of borrowers. In general, though, the Credit Associations have maintained phenomenal on-time repayment rates, a fact most probably explained by the social pressure of joint responsibility and program guidelines that prohibit additional loans to a Credit Association that has not completely repaid previous loans.

Repayment rates at the Credit Association level do not provide much insight into the experiences of the individual borrowers. For example, a borrower who makes a 50 percent profit on her loan activity and repays the entire principal with 18 percent interest is indistinguishable from a borrower who lost 50 percent of her loan capital and had to sell-off assets to repay her loan. For this reason, the survey included a question that asked participants, “Was it ever very difficult for you to repay your loan?” Twenty-eight percent of the participants responded “yes,” and approximately 69 percent said “no.” Since the average number of program loans taken by respondents was three, the responses represent the percentage who experienced difficulties at least once in several loan cycles.

Of those who had experienced repayment difficulty, nine said they had no money or they couldn’t get the money in time, indicating that their loan-funded activity probably did not match the length of the loan cycle. An additional two women said they had not yet sold their pigs, also indicating a production period longer than the loan cycle. Additional problems mentioned were as follows: two said that they had a lot of family expenses at that time; another two women referred to losses they experienced with their loan-funded enterprises; and one woman said her increased child care responsibilities meant she had worked less.

These same women were asked what they had done to repay their loans, as ultimately...
these loans were all repaid. Their answers reflect the high degree of commitment to loan repayment. The women with repayment problems took the following steps: eight borrowed from relatives or friends at no interest or did not mention having to pay interest; five borrowed from informal sources that did charge interest (in two cases the respondent had taken a loan from the Chairwoman at 2% a month); three women engaged in wage labor; three women got the money from their husbands; two women sold pigs; one woman sold a cow; one woman sold some of her rice; and one woman sold some small items from her store. In terms of the overall participant sample, approximately 14 percent of the participants had, at least at one time, assumed additional debt or sold personal assets to repay their Credit with Education loan.

Even for those participants who had no experience with repayment difficulties, quite a few said they repaid their loans from sources other than their loan-funded activities. Eight women (or approximately 12%) of the total participant sample said they had engaged in wage labor to repay their loan. An additional 22 percent of participants said they used their husbands’ income or salary to repay. Since many of the Credit with Education loans are taken for general household productive investments that represent a pooling of spousal resources, such as rice production, it is not surprising that husbands’ earnings are used to repay the loan. In these cases, the participant is not the sole manager of the loan-funded enterprise but a co-manager with her husband. Engaging in wage labor may also not reflect a desperate act but rather a desire not to liquidate loan investments like rice or animals. These answers indicate the diverse economic strategies rural women simultaneously undertake and, consequently, one of the ways poverty-lending programs may differ from classical small-enterprise credit programs.

Impact on Women’s Economic Activities, Contributions, and Income
The participants were able to make changes in their economic activities since joining the program. Sixty-one percent of the participants reported that they earned “more” or “much more” income. A similar number (62%) reported that with the loans, they had expanded their existing income-generating activities. Forty-three percent of the participants had undertaken new activities with the loans, and 22 percent were able to find new markets. Thirty-five percent of the participants reported that since joining the program they were able to reduce the amount of work they undertook as agricultural day laborers.

Wage labor is an essential supplementary income source for poor families in the program area. Women may work as day laborers in their own village—planting rice, uprooting tapioca, or cutting sugarcane—or they may travel to distant provinces to work coffee or pineapple plantations. Women may also participate in construction crews for local irrigation schemes and other infrastructure projects in the provincial headquarters, or as far away as Bangkok. The prevalence of wage labor outside the village was identified by village health volunteers as a contributing factor to malnutrition among children and the reason why many surrogate care givers feed infants with bottles. Wage labor was also mentioned as a reason why some of the poorest women were unable to join the Credit with Education program since they were unable to attend the required monthly meetings. A genuine benefit of the program would be to enable women to engage in alternative income-generating activities that would be less arduous and more compatible with child care.

Primary and Secondary Occupations
For both groups, farming is the primary occu-
ipation of the greatest majority of the women. Only 10 percent of the participants and 2 percent of the nonparticipants reported a primary occupation other than farming their own land or working as an agricultural laborer for others. Although farming remains their most common primary occupation, participants have a greater variety of secondary occupations—animal raising and a variety of microenterprises—and seem to have decreased their dependence on wage labor.

Twenty percent of the nonparticipants reported that they had no secondary occupations as compared to only 7 percent of the participants. Fifty percent of the participants raised animals as compared to only 25 percent of the nonparticipants. Participants were also more likely to earn income from the sale of handicrafts, such as silk, sewing, or pottery (15%), than nonparticipants (5%); sell food (12% as compared to 2%); or maintain a store (9% as compared to 3%). Sixty-two percent of the nonparticipants listed wage labor as their secondary occupation as compared to only 47 percent of the participants.

**Contributions to the Household Economy**

Figure 3 illustrates that participants have more diverse and extensive economic involvement than nonparticipants. Participants’ responses indicated both direct and secondary impact of the program. For example, while some participants funded their agricultural investments directly with *Credit with Education* loans, others said the money they used for agricultural investments came from the profit of alternative income sources—raising pigs, running small shops—that had been expanded with a program loan. As women further develop their loan activities and become more productive, it is likely that these secondary impacts will become even more pronounced. It is both the direct and indirect changes brought about by the program that represent the genuine scope of its benefits.

**Time for Child Care**

A concern of program designers and implementors is that the increased economic activity of participants will be at the expense of child care. To evaluate this concern, participants were asked if they had less, the same, more, or much more time for child care since they joined the program. Only 12 percent of the participants reported they had less time for child care, while 43 percent had more or much more, perhaps because they had decreased the amount of wage labor they engaged in outside the village. These findings do not indicate a need for increased concern, although the compatibility of loan-financed activities with quality child care should continue to be monitored and discussed.

**Savings**

An additional economic benefit of program participation is the accumulation of savings in a safe and regulated location. Given the program’s requirement for savings, it is not
surprising that participants (100%) were significantly more likely than nonparticipants (19%) to have savings. Participants had a mean amount of 649 baht (approximately $26) on deposit with their Credit Associations, as compared to a mean of 218 baht (approximately $9) for nonparticipants as a group.

Participants highly valued the program’s savings component. They felt that without this mechanism they were not able to hold onto their money and make it grow. Having a savings deposit made women feel more secure and motivated to plan for the future. The possibility of internal loans combined with the possibility of using their personal savings gave women two new options in times of crisis. Although 19 (28%) of the participants were not yet sure how they were going to use their savings, the following—in descending order—were the plans described by the other participants:

- Save for children or children’s education (32%).
- Save for family emergency/when family facing difficulties or someone sick or to purchase food (20%).
- Raise pigs or poultry (19%).
- Invest in agriculture (3%).
- Invest in business (3%).
- Miscellaneous (6%).

**Comparable Data from Honduras and Mali**

Using very similar methods, Lassen and McNelly (1992) interviewed *Credit with Education* participants and nonparticipants in Honduras and Mali in October 1991 (18 months and 34 months after program start-up, respectively).

In Honduras, several women reported that they had initially engaged in petty sales within their community, but after several loan cycles they had progressed into the more capital-intensive activities, purchasing from markets as far away as El Salvador. Others reported trading on a larger scale or with a greater diversity of items. In Mali, borrowers in later loan cycles also showed a tendency toward larger loans. However, in this program area seasonal changes strongly influence a borrower’s ability to absorb capital productively. Because of poor infrastructure and the imperative of a single, short growing season, trading and food-processing activities contract during the rainy season.

Initially, it was assumed that the loans would be invested in existing economic activities already familiar to the borrower. However, approximately one-third of the respondents in Honduras and Mali reported that their primary loan-funded activity was new to them. At least some part of the loan was invested in a new economic activity by 53 percent of the 15 borrowers interviewed in Honduras and by 54 percent of 15 borrowers interviewed in Mali. Apparently, the credit is allowing both enterprise formation and enterprise expansion. Comparison across countries also reveals different investment strategies. Women in Mali pursue the most diversified investment strategy; only 13 percent of the Mali participants invested their loans in a single economic activity.

Given a choice of “more,” “less,” or “the same,” survey respondents who were participating in *Credit with Education* were asked to compare their current incomes and savings to the period just before they joined the program (more than one year previous). Nonparticipants were asked to compare current incomes and savings to the same period in the previous year. “Income” was defined as net profit after subtracting costs and loan repayments.

In Honduras, 84 percent of 32 participants reported “more income,” compared to 15 percent of 15 nonparticipants; 94 percent of the participants reported “more savings,” compared to 27 percent of the nonparticipants. In Mali, 86 percent of 50 participants reported “more income,” compared to 27 percent of 15 nonparticipants; 90 percent of participants reported “more savings,” compared to 27 percent of nonparticipants.
PROGRAM IMPACT ON WOMEN’S HEALTH/NUTRITION KNOWLEDGE AND PRACTICE

Just as the credit is intended to enhance returns to women’s economic work, the hunger prevention education is meant to enhance women’s caretaking role. To reduce malnutrition, poor households require additional resources, but they also must use these resources in nutritionally beneficial ways and adopt good health/nutrition practices. The hunger prevention education focuses on five topic areas particularly important for maternal and child nutrition and health—breastfeeding promotion, infant and child feeding, diarrhea treatment and prevention, birth spacing and timing, and immunizations. Within these topic areas, specific ideal behaviors are promoted that can greatly influence nutritional status. Program staff are trained and encouraged to utilize nonformal education techniques that are considered more effective in motivating the trial and adoption of new behaviors. It is hoped that the credit and education components of the strategy will reinforce each other to achieve the program’s goal of improved household food security and nutritional status. Credit attracts women who often do not have the time to participate in strictly educational activities. Women will also learn about ways to best use their increased economic resources to benefit the health and welfare of the family.

Certain questions were included in the survey instrument to assess knowledge and practice as it relates to the specific ideal behaviors. Because of limited time and the interdisciplinary nature of the questionnaires, only one or two questions from each of the hunger prevention topic areas were included.

Diarrhea Treatment and Prevention

Figure 4 shows the most commonly mentioned actions respondents took when a child had diarrhea. Far more of the participants said that they gave children oral rehydration salts solution (ORS); one of the foci of the program’s education component has been the promotion of ORS.

Figure 5 shows the most common methods for preventing diarrhea identified by both groups. Participants had a significantly better knowledge of the relatively
simple steps they could take to prevent diarrhea, such as keeping food clean, covering food, not keeping food too long before serving, washing hands, and drinking boiled water. Thirty percent of the nonparticipants responded that they did not know what could be done to prevent diarrhea, as compared to only 3 percent of the participants.

Breastfeeding Promotion

Colostrum is the antibody-rich “first milk” that comes from the breast just after a baby is born. Like a natural inoculant, colostrum protects the newborn from disease and illness. Because of its thickness and yellowish appearance, traditions in many parts of the world encourage women to discard it either before or after the birth. Figure 6 shows good program impact in changing this belief.

A relatively high proportion of women from both the participant (26%) and nonparticipant (25%) groups reported that they had used bottles. In Thailand, using a bottle is particularly common among surrogate care givers when mothers leave the area to engage in wage labor. Program staff explained that, while they have actively been promoting the benefits of breastfeeding, they have not as actively discouraged bottle feeding. They planned to conduct further learning sessions that more directly address the implications of using bottles.

Infant and Child Feeding

In other Credit with Education programs, field agents promote exclusive breastfeeding for the first six months of life. However, in Thailand at that time, the Ministry of Public Health was advising exclusive breastfeeding for only three months (90 days), so program staff reinforced the national recommendation. Figure 7 shows that participants are less likely than nonparticipants to believe that foods should be introduced earlier than is recommended.

The responses of the participants clearly indicate that they have a better appreciation than the nonparticipants that infants from 0 to 3 months do not require any food(s) or liquid(s) other than breastmilk. However, there was widespread belief among respondents, and even program staff, that infants require water in addition to breastmilk. Following the data collection, a staff training
exercise emphasized the benefits of exclusive breastfeeding and the possible dangers of introducing even water when it is not necessary.

It is interesting to note that nonparticipants were two times more likely than participants to identify commercially produced premixes—Cerelac or Cowanamai—as good for infants in their first three months of life.

Field staff had been promoting specific foods as being good for the weaning period, four to twelve months. The survey responses of participants to “What types of foods are good for babies 4–6 months of age?” indicate learning about good weaning foods. Boiled, mashed, or chewed rice is the traditional weaning food for this age group. While many of the participants (35%) still identify plain rice as a good weaning food, this was the most common response of the nonparticipant group (47%). The most common answer given by participants (41%) was mashed rice mixed with banana and egg yolk—a more nutritious weaning mixture than rice alone. Participants (37%) were also more likely than nonparticipants (18%) to identify mashed green vegetables as a good weaning food.

Comparable Data from Honduras and Mali
Using very similar methods, Lassen and McKnelly (1992) interviewed Credit with Education participants and nonparticipants in Honduras and Mali in October 1991 (18 months and 34 months after program start-up, respectively). Figures 8 (Honduras) and 9 (Mali) show the responses to the question, “At what age should foods be introduced to infants?”

Facts for Life (UNICEF/WHO/UNESCO, et al. 1989) advised introduction of weaning foods from four to six months. This is an important area of education, because local practices range from much earlier to much later, although both can have deleterious effects on infants’ nutritional status. Figure 7 (p. 15) shows little difference between the answers given by participants and nonparticipants, probably because this topic had not yet received much attention in the Honduras program. Both groups’ answers indicate the propensity for early introduction to infants of complementary foods and potentially deleterious contaminants.

On the other hand, program staff in Mali had focused very much on the topic of appropriate weaning practices. Earlier nutritional studies conducted in conjunction with Freedom from Hunger (Dettwyler 1991) had identified the local practice of delaying the introduction of complementary foods to infants as being a leading cause of the high rate of malnutrition in the program area. Figure 8 clearly indicates an educational impact of the program: a much greater percentage of the program participants are aware of the need for timely weaning.

Program Impact on Women’s Empowerment
Empowerment can be defined as an individual’s ability to make and carry out significant decisions that affect his or her own life and the lives of others (John Snow, Inc. 1990; see also Schuler and Hashemi 1994). Obstacles to effective action are diverse. An indi-
individual may lack the necessary resources to take action or she might be isolated and her actions inhibited by social norms. Hardship and frustration can also breed a fatalistic attitude that undermines the necessary self-confidence and motivation required before a person can make a change. Women’s lack of self-confidence and their limited access to resources have been cited as major hindrances to the success of maternal-child health programs. Women’s “silence” prevents them from seeking assistance for themselves and their children and from adopting recommended health/nutrition practices, particularly those resisted by opinion leaders in the household and community (McGuire and Popkin, 1990). Self-confidence can be linked with greater success in breastfeeding, more active feeding of children with illness-induced anorexia, increased use of existing health services, and in general, a more open attitude.

The Credit with Education strategy aims to foster a more empowered attitude in women so that they can take more effective action to improve the food security and nutritional status of themselves and their families. The Credit Association structure and the considerable self-management responsibilities required of each Credit Association is meant to develop women’s individual and collective organizational capacity. The nonformal techniques program staff are encouraged to use in the learning sessions are based on respect and adult-to-adult communication rather than teacher-to-student. The discussions promoted at the learning sessions are meant to expose women to options, new possibilities, and a problem-solving approach. Women’s experience with the credit and their loan-financed activities can also develop their self-confidence by involving them in greater interaction outside the home and by increasing their ability to contribute to the families’ economic welfare. A relationship has been shown between a woman’s involvement in the marketplace and cash earnings and her bargaining power and

![Figure 9: Age foods should be introduced—Mali](image)

![Figure 10: Since joining the Credit with Education program, participants reporting “more” or “much more”...](image)
status within the household (Acharya and Bennett, 1982).

While this study did not focus on measuring empowerment, the surveys and in-depth interviews provided evidence of attitudinal and social changes taking place as a result of the program. Figure 10 (p.17) shows the results of a number of survey questions asking participants whether certain conditions were "less," "the same," "more," or "much more" since joining the program.

Just over 90 percent of the participants said that since joining the program their "hopefulness about the future" is "more" or "much more"; only 3 percent said that it was "less." Most of the program villages had had no previous experience with self-managed women’s groups—particularly ones with economic as well as social goals. The newness of the experience and the flexibility of the program inputs (credit and education) were likely to provide women with a variety of new options, which would explain their more hopeful attitude. When asked an open-ended question about the impact he perceived as a result of the Credit with Education program, the headman in the village of Nonegrad referred to attitudinal, rather than economic, impact. He said that the major difference the program had brought about was that women had more enthusiasm for what they were doing. For example, with the education about good nutrition and the causes of malnutrition, women were more alert and active in trying to prevent malnutrition, he said. He felt it encouraged women to carry out their roles and responsibilities with greater energy and enthusiasm.

Seventy-three percent of the participants said they had "more" or "much more" self-confidence; only one had "less" self-confidence. While a new opportunity may generate optimism, successful experiences are often required before self-confidence is raised. It is likely that an increase in self-confidence is closely related to success with a borrower’s loan activity or positive interactions within the Credit Association.

The leadership positions played by the elected Credit Association officers predictably have a more pronounced influence on a woman’s life than simple membership. Khun Hat, the Chairwoman in the village of Pradoke, said her position in the Credit Association had greatly increased her respect in the village. Although not the Credit Association’s first choice, Khun Hat was elected Chairwoman after it was determined the first Chairwoman lived too far from the center of the village to play an active role in the Credit Association. Before she became Chairwoman, Khun Hat said that she did not have many friends in the village, but now she has many friends. She said that now many people respect her. They come to her when they have problems, and they listen to what she says and the advice she gives them. Khun Hat said that she could see other changes in herself since becoming Chairwoman. When asked for an example, she described a situation where she had the confidence to speak up to someone who, before, would have intimidated her. One of the male program staff was late for a Credit Association meeting. The members deposited their savings with the Credit Association, then waited for two hours, but still he did not arrive. Khun Hat told the members to go home, but she waited for the agent. Khun Hat was convinced that the way that she spoke to him, and what she said when he did arrive, would keep him from ever being late again. She said she would not have had the confidence to do that before she became Chairwoman.

Sixty percent of the participants also stated that since joining the program they cooperated “more” or “much more” with their neighbors. In one of the nonparticipant villages, Watjan, the village headman said that he was very interested in having the Credit with Education program introduced in his community. He said that he had heard from other village headmen in program villages that women cooperate more with each other when they have the program and that they help each other more. The Chairwoman of Pradoke described the type of cooperation the program has brought about. For example, if someone needs
money, the women help each other with a small loan, or they offer their labor to someone who needs help with her field. While there has long been a tradition of cooperation and labor parties in the village, the Chairwoman said that the help the women in the Credit Association gave each other went beyond the tradition.

The survey asked participants and nonparticipants who they could go to for help if they had a family emergency for which they needed money, like a illness. The most common answer given by participants (62%) was their “Credit Association” as compared to “relatives” for nonparticipants (78%).

While not based on the prolonged and in-depth investigations that are arguably required to fully understand social and behavioral transformation, these findings clearly indicate that the Credit with Education program brings about change other than increased incomes or greater knowledge. Potentially, the attitudinal and social impacts could have more far-reaching functional implications than any others brought about by the program.

Comparable Data from Honduras and Mali
Using very similar methods, Lassen and McKnelly (1992) interviewed Credit with Education participants and nonparticipants in Honduras and Mali in October 1991 (18 months and 34 months after program start-up, respectively).

Women of participating villages in Honduras and Mali testified that neighbors were cooperating much more now than before the program started. Groups were discussing problems concerning their economic activities, their repayment, and their families. In Honduras, solidarity groups engaged in weekly group income-earning activities in addition to their own work; 25 percent of the group enterprise profits are deposited in the Credit Association’s collective fund.

One powerful example of social or community-level empowerment was a collective action taken by a number of borrowers in Mali. Several Credit Associations were concerned about women’s lack of time to more fully engage in their loan-funded activities. A major obstacle identified by women was their obligation to travel every few days to bring home food stored at the family farm, typically located several kilometers from the house. A solution suggested was that after the harvest, men could help transport the food with carts and bicycles for storage at the home, a practice in other parts of Mali. Women from several Credit Associations together approached the traditional local courts to request that this problem be reviewed. Though the courts decided against any change in farm storage practices or portage, it was unusual for women to approach the court and for the court to seriously address a concern brought forward by women.

At the individual level, self-confidence and influence within the household are good indicators of women’s empowerment. Figure 11 shows the percentage of respondents who reported that their families listen to them more now when making spending decisions than

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![Figure 11: Family listens to you more when making spending decisions](image-url)
before they joined the program (or for controls, compared to a year ago).

These results support the findings of other more detailed studies which show that when a woman’s economic contributions to the family increase, so does her bargaining power and the weight of her preferences in decision making (Acharya and Bennett, 1982). Borrowers in Honduras explained that their husbands respect them more now that they have income-generating activities. In Mali, the program director reported that one of the most significant impacts of the program is that husbands now generally listen more to their wives.

A majority of the program participants included in the surveys reported that they feel more confident now than before joining the program. In most cases, women claimed to be more confident with their economic activities; several also reported greater confidence in child care as a result of the learning sessions.

In Honduras, a woman who had never taken a loan described how nervous she was when she joined the program and took an initial loan of 50 lempiras ($9.43). When interviewed in her third cycle, she was happily surprising herself by working well with her 100-lempira loan. This was a common reaction.

In another village, virtually all members said that they had felt anxious about being responsible for a loan when they first started, but now none of them were.

When asked about the benefits of the program, women often spoke about a feeling of greater security, confidence, and skills. The members of a new Credit Association in Honduras were asked what benefits the first loan cycle had brought. Most of the women said that using credit and learning which activities worked and which did not provided valuable experience. In another Credit Association, all 16 members said they felt more secure since joining the program. Their income, savings, access to credit, and proven ability to earn income contributed to this sense of a more stable and secure subsistence. Members of this Credit Association also described how they had learned to keep accounts, calculate profit and loss, manage household budgets, economize, and be more productive with their time.

**Program Impact on Household Diets and Food Expenditures and on Children’s Diets**

Elimination of hunger and malnutrition are the ultimate impact goals of the Credit with Education strategy. Assessment of this impact potential requires a longer time frame than this study. This is particularly the case for changes in children’s nutritional status, since impact at the level of the mother must disseminate to the child. Although the participants had only been in the program for approximately one year, information on the preliminary impacts toward these ultimate goals was collected.

**Household Diet and Food Expenditures**

Respondents in Thailand were asked whether their family ate “better,” “worse,” or “the same” this year as compared to the same time last year. Figure 12 presents...
The recent drought influenced the answers of both groups, but the program seems to have provided greater food security for participants. Only 8 percent of the participants, as compared to 32 percent of the nonparticipants, said that they were eating “worse.” Twelve of the nonparticipants and only three participants directly referred to the drought’s effect on rice harvests, the availability of vegetables and fish.

Twice as many participants as nonparticipants reported that their families were eating “better.” Among the reasons given, increased income from loan-funded activity was mentioned by 13 of the participants and only 2 of the nonparticipants. Income from wage labor—either for the woman or her husband—was mentioned by 11 of the participants and 8 nonparticipants. The participant responses also indicated an impact of the education component of the strategy. Several women said that when they buy food now, they buy only “good” food or buy more meat and eggs.

Respondents of both groups were also asked about food expenditures for the week preceding the interview. Typically the husband gives the wife money—that she may or may not combine with her own income—to purchase food. In 74 percent of the participant families and 81 percent of the nonparticipant families, it was the wife (the respondent) who purchased food for the family. Therefore, attempts to influence the quality of food(s) purchased are best targeted to the women of the household.

Respondents were asked to estimate the total amount spent on food by all family members in the week before the survey. This amount was divided by the number of adults and children in the household. Adults were counted as “1” and individuals under 16 years of age as “.75.” Households that had not grown rice in the last year were excluded from this analysis, because their food expenditures would be significantly greater for reasons unrelated to the program. An additional participant case was also excluded, because expenditures for her microenterprise of selling cooked food seemed to have biased her response.

The weekly per person food expenditures of the participant households was 48.7 baht (approximately $2) as compared to only 37.01 baht (approximately $1.50). This difference is marginally significant (p = .07). Despite the similar socioeconomic status of the two study groups, the participants spend more per person on food. Participant households are purchasing either more food or more expensive (potentially higher quality) food or both.

An assumption of the Credit with Education strategy is that income increases controlled by women are more likely to be spent on food and other nutritionally beneficial items. Efforts to quantify women’s spending on food were complicated by respondents’ difficulty in separating their own from general household income. The mean expenditure by women per family member for those women who could estimate their own spending was 16.60 baht for participants as compared to 10.03 baht for nonparticipants (not significantly different; p=.12). Even if real, this difference would support but not entirely explain the finding that households participating in the program have greater per person food expenditures. In addition to increasing women’s incomes and food expenditures, it is also possible that program participation has an indirect effect by enabling women to better persuade their husbands to spend more on food.

Preschoolers’ Diet

Mothers were also asked to recall how many times in the last three days their preschool children had eaten certain foods (selected for the survey based on their nutritional value). The results shown in Figure 13 exclude information for children younger than 12 months, who are likely to depend much more on breastmilk. One case each from both the participant and nonparticipant group was also excluded, because each child’s appetite
had been suppressed by fever during the reporting period. Preschoolers in participant households had significantly more frequently eaten beef/pork, fish, poultry, and/or milk. There was no significant difference in consumption frequency for eggs or green, leafy vegetables.

Given the importance of protein for child development and growth, these findings indicate a potentially exciting impact of the program. This study’s timeframe did not allow for observational methods to validate these self-reported findings. Still, participants’ children seemed to eat better, which is consistent with participants’ greater exposure to information about foods good for children and participant households’ greater per-person food expenditures.

### Comparable Data from Honduras and Mali

Using very similar methods, Lassen and McKnelly (1992) interviewed *Credit with Education* participants and nonparticipants in Honduras and Mali in October 1991 (18 months and 34 months after program start-up, respectively).

The program respondents who reported having more income were asked how they spent it. Table 5 details the four categories of answers given most often. Food was the expenditure area mentioned with the greatest frequency by program participants in both countries.

Figure 14 indicates that *Credit with Education* families were eating better after joining the program. The results are most dramatic in Mali, during the hungry season when food stores are at their lowest and under-consumption is endemic. It seems that a major objective of the *Credit with Education* program—to help households better withstand

![Figure 13: Number of times in last three days child ate...](image)

![Figure 14: Gains in Diet—Does your family eat better now compared to before you joined the program (or last year at this time)?](image)

### Table 5: For those with increased income, how was that income spent?

<table>
<thead>
<tr>
<th></th>
<th>Food</th>
<th>Health Costs</th>
<th>Clothing</th>
<th>School Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Honduras (N=27)</strong></td>
<td>26</td>
<td>17</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td><strong>Mali (N=43)</strong></td>
<td>33</td>
<td>10</td>
<td>31</td>
<td>0</td>
</tr>
</tbody>
</table>
this difficult time of year—was being achieved.

Figure 15 indicates that program participation can improve both the quantity and the quality of household consumption. The responses of participants in Mali indicate that families were able to eat more of their staple grains: millet and rice. In Honduras, where seasonal food availability is less a problem, responses indicate that the program is allowing participants to eat more animal proteins, such as beef, chicken, and eggs.

Figure 16 indicates that many more participants than nonparticipants felt that the health and nutrition of their preschoolers had improved in the last year.

**Impact Research in Progress**

Freedom from Hunger has initiated a three-year research project in the Bolivia and Ghana *Credit with Education* programs with a research design for assessing nutritional outcomes as well as longer-term changes in economic status, empowerment, and nutrition-relevant practices.

The hypothesis being tested by the field research is: *Credit with Education in a community has positive effect on the nutritional status (weights and heights) of children between 12 and 24 months.*

Because the intervention depends on changing the behaviors of mothers to improve child nutrition, the research also is investigating the following corollary hypotheses: “Program participation will increase women’s . . .

- economic capacity (income, savings, time) to adopt beneficial behaviors and to invest in nutritionally important expenditures, such as food and health care;
- knowledge, trial and adoption of beneficial child spacing, breastfeeding, weaning, and diarrheal management and prevention practices;

Figure 15: (Program only) In what way does your family eat better? They eat more . . .

<table>
<thead>
<tr>
<th>Food Category</th>
<th>Mali (N=33)</th>
<th>Honduras (N=13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staple grains</td>
<td>73%</td>
<td>64%</td>
</tr>
<tr>
<td>Animal proteins</td>
<td>18%</td>
<td>36%</td>
</tr>
<tr>
<td>Dairy</td>
<td>9%</td>
<td>36%</td>
</tr>
<tr>
<td>Legumes</td>
<td>27%</td>
<td>27%</td>
</tr>
<tr>
<td>Vegetables</td>
<td>36%</td>
<td>30%</td>
</tr>
<tr>
<td>More of the same food</td>
<td>27%</td>
<td>27%</td>
</tr>
</tbody>
</table>

Figure 16: Percentage reporting improvements in health and nutrition of preschoolers
women’s status and self-confidence to plan and offer a healthy diet to her family, especially to her young children.”

In order to test the above hypotheses, the research in both study sites is following a three-year experimental protocol. During the first year (1993-94), quantitative and qualitative methods were employed to:

1. characterize children’s nutritional status (weights and heights) and the age-specific patterns of malnutrition;
2. ensure the adequacy of the specific foods and weaning recipes promoted by the program;
3. investigate feeding practices for infants in terms of timing, specific foods, method and frequency of feeding;
4. identify site-specific obstacles to behavior change, in particular those that relate to women’s self-confidence and their economic and social status; and
5. conduct program site censuses.

In the third year, mothers with children between 12 and 24 months of age, from program and control communities, will be interviewed and their children will be measured. The specific intermediate variables to be measured are:

1. women’s economic resources (incomes, savings, time allocation, working capital, and assets);
2. their knowledge, trial, and adoption of the promoted family planning and child feeding and care practices; and
3. attitudinal measures of their self-confidence and social status. Program impact on these intermediate variables, interactions between them, and their relationship to children’s nutritional status will be investigated by statistical examination of three sample groups of women with children aged 12-24 months:

- women participating in the program for at least three loan cycles (12 months);
- nonparticipants in program communities; and
- nonparticipants in control communities (without the program).

This ongoing research is comparing the impact on individuals and communities of *Credit with Education* vs. no credit and no education. Even if the research produces valid results which show important positive impact on nutritional status, it will not answer a number of questions in both the micro-credit and public health “communities” about the impact of other combinations of credit and educational services. Research must be designed and carried out to compare the health, nutrition, and other impacts of at least four “treatments” or combinations of services to very poor women:

1. **Credit and savings services** (e.g., village banking) alone.
2. **Health/nutrition education** (e.g., child survival promotion) alone.
3. **Credit and education** presented in separate meetings with the same mothers by parallel programs.
4. **Credit** presented with education in the course of the same village bank meetings by a single, integrated program.

When considering both effectiveness against hunger and malnutrition and the cost of service delivery, which is so critical to the potential for large-scale application of a program, treatment #4 seems intuitively to be the best choice. But the comparative research of cost-effectiveness has yet to be done to validate such an intuitive judgment.
**RÉSUMÉ ANALYTIQUE**

En dépit de la nouveauté des programmes étudiés du *Crédit avec Education*, il semble exister une évidence valide que le "processus de bienfait" hypothétique était déjà opérationnel pour réduire la faim et la malnutrition. Le fait de demander simplement aux participantes du programme si la nutrition et la santé de leurs enfants se sont améliorées ne démontre pas qu’il y a eu une amélioration réelle causée par le programme ou autrement. Cependant, il est évident que les participantes sont pleines d’espoir parce qu’elles peuvent discerner les changements positifs dans leurs revenus disponibles, leurs connaissances et alimentation. Un élan positif a pris place dans la vie des participantes.

Relatif au groupe de comparaison, les femmes du programme entreprennent des stratégies économiques plus diversifiées et contribuent davantage au bien-être économique de leur foyer. Une évidence de changement se trouve dans les attitudes et les exemples de femmes qui s’organisent et qui prennent des rôles sans précédent de commandement. En dépit d’une sécheresse récente dans la zone du programme en Thaïlande et du fait que les participantes sont du même, s’il n’est pas plus bas, statut socio-économique que les non participantes, l’évidence indique que les familles des participantes, y compris leurs enfants, mangent plus et de meilleurs aliments. Ces impacts positifs sur les facteurs critiques du statut nutritionnel amélioré sont de bonne augure pour l’amélioration à long terme du statut nutritionnel des enfants.

Il est clair aussi que l’éducation sanitaire et nutritionnelle peut être efficace dans le contexte d’un programme de crédit et d’épargnes qui réunit régulièrement les femmes en groupes pour partager un sens de responsabilité mutuelle. Les participantes du programme démontrent une connaissance supérieure et une pratique possiblement de même d’un nombre de comportements clés de la santé et de la nutrition (par ex, utilisation du SRO pour gérer la diarrhée) encouragés par le programme et à cause de leur importance pour la santé de la mère et de l’enfant.

La majorité des participantes au Mali qui ont été exposées à l’effort concerté du personnel pour les éduquer sur le meilleur moment pour introduire les aliments complémentaires connaissaient ce moment. D’autre part, la majorité des participantes au Honduras, où l’éducation sur cette question n’a pas encore commencé, ne connaissaient pas mieux que les non participantes le meilleur moment, comme on s’y attendrait. Les données n’indiquent pas si oui ou non la connaissance a vraiment mené à une meilleure pratique, mais la communication des connaissances a eu lieu efficacement au Mali durant les réunions hebdomadaires de l’Association de Crédit. De la même façon, les participantes ont appris en Thaïlande les messages sanitaires et nutritionnels, activement encouragés par le personnel du programme, aux réunions *mensuelles* de l’Association de Crédit, contrairement à ceux qui n’étaient pas activement encouragés par le personnel (par ex, allaitement exclusif).

En ce qui concerne encore le diagramme du "processus de bienfait", les "bienfaits intermédiaires" hypothétiques semblent avoir été réalisés dans une certaine mesure par les participantes du programme, probablement à cause de leur participation. Cependant, même si cela est le cas, ces bienfaits peuvent ne pas être d’une magnitude suffisante pour augmenter le statut nutritionnel, surtout devant les facteurs qui vont au-delà du rayon du programme ou du contrôle de ses participantes. Le résultat nutritionnel ne peut pas être documenté sans des mesures anthropométriques d’individus appropriés pour une étude de contrôle des participantes durant une période de temps appropriée.
RESUMEN EXECUTIVO

A pesar de ser nuevos los programas de Crédito con Educación demuestran que “el proceso de beneficio” postulado ya fue funcionando para disminuir la hambre y la desnutrición. Preguntando a los participantes si la nutrición y la salud de sus hijos han mejorado no demuestra concretamente si han habido cambios atribuidos al programa. Sin embargo, es obvio que los participantes esperan mejorías porque pueden ver cambios positivos a través de los ingresos en efectivo disponibles, el conocimiento y la nutrición. Se ve un movimiento positivo en las vidas de los participantes.

Relacionado al grupo de comparación, las mujeres en el programa están emprendiéndose en unas estrategias económicas diversificadas y están contribuyendo más al bienestar económico de sus familias. Demuestran un cambio en actitudes y ya hay mujeres organizando y tomando papeles de liderazgo. A pesar de una sequía reciente en el área del programa en Tailandia y el hecho que los participantes son de un estado socioeconómico parecido, si no más bajo, a las familias que no participan, la evidencia indica que las familias participantes, incluso sus hijos, están comiendo más y mejor alimentos. Estos impactos positivos en los factores críticos al estado nutritivo mejorado apoyan la mejoría a largo plazo del estado nutritivo de niños.

También es evidente que la educación sobre la nutrición y la salud puede ser efectivo como parte de un programa de crédito y ahorros que junta a mujeres regularmente en grupos que comparten un ambiente de responsabilidad mútua. Los participantes del programa demuestran el conocimiento superior y posiblemente practican más (ej., el uso de las SRO para manejar la diarrea) varios comportamientos fundamentales de salud y nutrición, los cuales son promovidos por el programa como importantes para la salud de la madre y su hijo.

La mayoría de los participantes en Mali, enseñados por el personal sobre el mejor tiempo para la introducción de alimentos complementarios, sabían el mejor tiempo. Por el otro lado, la mayoría de participantes en Honduras, donde todavía no había empezado la educación sobre este tema, no sabían el tiempo mejor más que los que no participaban, como anticipado. Los datos no indican si el conocimiento influyó a las prácticas correctas, pero el impartir del conocimiento efectivamente tomaba lugar en Mali a través de reuniones semanales de Bancos Comunales. Del mismo modo, los participantes en Tailandia estaban aprendiendo los mensajes de salud y nutrición promovidos activamente por el personal del programa en las reuniones mensuales del Banco Comunal, pero no aprendieron los mensajes no promovidos activamente por el personal (ej., la lactancia materna exclusiva).

Con respecto al gráfico del “proceso de beneficio”, los propuestos “beneficios intermediatos” parecen como estuvieran realizados hasta cierto punto por los participantes del programa, probablemente como resultado de su participación. Sin embargo, todavía es probable que estos beneficios no sean bastante amplio para mejorar el estado nutritivo, especialmente contra los factores más allá del enfoque del programa o fuera del control de los participantes. El resultado nutritivo no se puede documentar sin las medidas antropométricas de los individuos apropiados en un estudio de participante/testigo a lo largo de un período de tiempo adecuado.
WORKS CITED


