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**CREDIT WITH EDUCATION FOR WOMEN IN MALI:  
SELF-SELECTION AND IMPACTS ON WOMEN'S INCOME, WITH  
IMPLICATIONS FOR ADULT FEMALE AND PRESCHOOLER NUTRITION**

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## EXECUTIVE SUMMARY

The objective of this report is to provide an assessment of the self-selection into a Credit with Education for Women Program (CWE) in Mali and its impact on women's income, with implications for the women's nutritional status and that of her preschoolers. The CWE in Mali was implemented by CANEF (Centre d'Appui Nutritionnel et Economique aux Femmes, Bamako, Mali) in collaboration with Freedom from Hunger (FFH), Davis, California, U.S.A.

Mali is one of the poorest countries in Sub-Saharan Africa. In addition to its preferential loans from the World Bank and the International Monetary Fund (IMF), and extensive programs of support from an array of donor governments, Mali is also a regular recipient of food aid and relief supplies. Explanations for Mali's relatively poor economic performance are due, at least in part, to its harsh environment and poor natural resources. As the second largest country in West Africa, it is estimated that only 2 percent of the land is arable, with 25 percent in use as pasture grazing for livestock. Most of the most fertile land is located in the south and west of the country, with increasing desertification occurring in the north and eastern areas of the country. Climatic trends over recent years have made farming conditions even more difficult with the regular occurrence of drought.

In the Sikasso Region, where the study area of Dogo Arrondissement is located, markets are generally small and dispersed, and mainly serve the local population. The markets of Dogo are, however, situated in the part of the country known as "Mali's breadbasket," and have the comparative advantage of visits from Bamako traders, who purchase staple crops in exchange for imported and domestically manufactured commodities.

For both this type of trade and that between locals, barter continues to be an important form of exchange at these markets. It is especially prevalent during the "lean season," when credit is extended for products to be repaid "in kind" after harvest. This form of advance has been the most important form of credit available to villagers, apart from the traditional moneylenders (who tend to be used as a source of funds only as a last resort in times of extreme need) or the "tontines" (savings

groups), although, traditionally, these sources have been used for consumption rather than investment purposes.

Within this rural environment, four hours from Bamako, the Credit-with-Education-for-Women Project was organized in 1988. With a population of approximately 30,000, the Dogo area was selected for the CWE program, in part because of its proximity to urban market centers and the poor health and nutritional conditions that exist. Like most Malians, the majority of residents in Dogo are poor or extremely poor, thus the need for a poverty lending program such as the CWE. Freedom from Hunger (FFH) has developed a major credit program, called "Credit with Education for Women," which combines credit targeted to women's income generation with (1) education on nutrition and (2) management skills. The combined effect is intended to increase the food security of women and children, and household welfare in general.

The approach has so far been implemented in several countries, including Mali. The project in Mali has been in operation for four-to-five years. USAID is a major donor to this program and, as such, is interested in the measurable impact of this and similar programs. The International Food Policy Research Institute (IFPRI), given its mandate, has long been involved in studying household behavior and food security issues. In recent years, IFPRI has been studying the impact of credit and credit programs on income and food security. As such, IFPRI was asked by FFH, under the USAID IMPACT project managed by the International Science and Technology Institute, to assess the CWE in Mali with respect to impacts on income, food security, and nutrition status.

Previous assessments of the CWE Program in Mali have not directly measured the impacts on women's income and nutrition status. The study by Lassen and McNelly (January 1992) is qualitative in nature. The authors conclude: "simply asking program participants if the nutrition and health of the children has improved does not prove the case" (p. 39). They continue: "However, it is obvious that participants perceive change and feel hopeful and that changes in disposable cash income, diet, and practices can be discerned" (p. 39). Do these perceived changes stem from real changes? The second study focusses more on project performance as

related to service delivery, the product delivered, and the administration of the project (Ashe et al. 1992). This study was also very positive about the Mali program.

When asked directly about the education and credit components of the CWE program, the overwhelming majority of direct recipients rated the program as "good" or "very good" (total of 82.6 percent) on education and 86.3 percent on credit. The indirect recipients of CWE were less positive, understandably, but did not rate the program below "neutral." Qualitative response as to the perceived positive and negative impacts of the credit and education components of CWE also revealed deep satisfaction with the program, although some negative aspects were also brought up.

Results from the multivariate analysis indicate that:

- CANEF credit to index women appears to be well-targeted:
  - (1) CANEF loan receipt is positively associated with household land ownership, but only up to 21 hectares of land owned per household;
  - (2) it is positively associated with households where women and children predominate simultaneously; and
  - (3) it is positively associated with households in small compounds that (presumably) afford little risk-sharing. Only result (2) holds for non-CANEF villages, and the result is less pronounced and statistically weaker.
- CANEF credit raises women's income for index women with no preschoolers, but for index women with one or more preschoolers, it seems to lower their income. Women's credit in non-CANEF villages does not seem to affect women's income.
- Controlling for overall household income, index women's income improves women's nutrition in CANEF villages, but only for women from the wealthiest two-thirds of households. In the non-CANEF villages, women's income raises women's BMI, but only for index women from the poorest 50 percent of households.

- Controlling for overall household income, index women's income raises preschooler weight-for-height in CANEF villages, but only in Round 2, and at a diminishing rate as preschoolers get older. In non-CANEF villages, index women's income has a weakly significant positive impact on preschooler weight-for-height, but only in Rounds 1 and 2, and in Round 1 only for preschoolers below 24 months in age.

The qualitative analyses indicate that the CWE program in Mali makes recipient women feel empowered in terms of access to income-generating activities. The quantitative analyses indicate that

1. CANEF credit is fairly well targeted to women in poorer households, but that targeting efficiency could be improved,
2. women with no preschoolers who receive CANEF credit increase their own incomes but women with preschoolers do not raise their income as a result of CANEF credit,
3. women from the poorest CANEF village households may see their nutrition status decline with increased own income (statistically weak result), and
4. preschooler nutrition status (weight-for-height Z-score) is positively associated with CANEF credit in Round 2.

One conclusion to be drawn that CWE may be reaching women in the poorest households, but that the correct mix of complementary inputs is not in place for it to be as effective as possible. A large component of that input mix is probably time availability. Women with preschoolers might not have time to take advantage of the income-generating opportunities afforded by the CANEF loans. In addition, women

from the poorest households might be stretched so tightly in terms of time in work that they may have to sacrifice their own nutrition status in order to generate income.

Future redesigns of CWE should examine the nature and magnitude of extra time burdens (if any) imposed by the CWE and by the income-generation opportunities it affords. In 1995, the results in an earlier version of this report were shared with CWE managers in Dogo, and other Malian stakeholders in the outcome of the research.

The discussions summarized in Appendix 2 touched upon several points that had emerged in the earlier report:

1. The enumerators found it difficult to ask questions on several areas that were described as "delicate," such as incomes and expenditures.
2. Several stakeholders wanted more detail on exactly how higher income to women benefits child nutrition status.
3. The choice of villages for CANEF projects was clearly a complex and time-varying decision based on logistic realities and resource constraints.
4. The importance of documenting and monitoring program performance was highlighted.

IFPRI's own conclusion from an ongoing dialogue with Freedom from Hunger indicate that closer collaboration of the two institutions with each other and with CANEF would have resulted in an improved experimental design, improved variable definition (especially on what it means to have "received CANEF credit"), improved interpretation of empirical results, and a more receptive audience for the final results.

## 1. INTRODUCTION:

### MALI AND THE CREDIT WITH EDUCATION FOR WOMEN PROGRAM

The objective of this report is to provide an assessment of the self-selection into a Credit with Education for Women Program (CWE) in Mali and its impact on women's income, with implications for the women's nutritional status and that of her preschoolers. The CWE in Mali was implemented by CANEF (Centre d'Appui Nutritionnel et Economique aux Femmes, Bamako, Mali) in collaboration with Freedom from Hunger (FFH), Davis, California, U.S.A.

Mali is one of the poorest countries in Sub-Saharan Africa. In addition to its preferential loans from the World Bank and the International Monetary Fund (IMF), and extensive programs of support from an array of donor governments, Mali is also a regular recipient of food aid and relief supplies. Explanations for Mali's relatively poor economic performance are due, at least in part, to its harsh environment and poor natural resources. As the second largest country in West Africa, it is estimated that only 2 percent of the land is arable, with 25 percent in use as pasture grazing for livestock. Most of the most fertile land is located in the south and west of the country, with increasing desertification occurring in the north and eastern areas of the country. Climatic trends over recent years have made farming conditions even more difficult with the regular occurrence of drought.

Although only a very small percentage of the land is irrigated, Mali is nonetheless an agricultural country and relies on the production of millet and sorghum, rice, maize, groundnuts, cotton, sugarcane, and cassava. Livestock also contributes significantly to the economy, as do fishing and fish processing. When combined with farming, these activities account for approximately 80 percent of GNP. Other sectors of the economy include mining—although this is largely undeveloped—and urban-based service industries.

With an estimated 80 percent of Mali's 9.8 million people living in rural areas (at least 10 percent of whom are migrant or nomadic), it is not surprising to note that agriculture forms the basis of the rural economy. Agricultural production is carried out almost exclusively by small-scale farmers and producers who rely on the basic production techniques (including animal traction when available), and have little

access to agricultural inputs such as fertilizers or improved seeds, unless it is for cotton production.

In this Muslim country, gender roles, in terms of economic production, are traditionally defined within extended households. Typically, men are responsible for the production of the staple grains for household consumption, and women, for the provision of the condiments that add flavor to the staple. The condiment products are often obtained by the woman's production of a crop, which is partially consumed by the household (such as a condiment or rice, perhaps) and traded for (other) condiments in local markets.

In the Sikasso Region, where the study area of Dogo Arrondissement is located, markets are generally small and dispersed, and mainly serve the local population. The markets of Dogo are, however, situated in the part of the country known as "Mali's breadbasket," and have the comparative advantage of visits from Bamako traders, who purchase staple crops in exchange for imported and domestically manufactured commodities.

For both this type of trade and that between locals, barter continues to be an important form of exchange at these markets. It is especially prevalent during the "lean season," when credit is extended for products to be repaid "in kind" after harvest. This form of advance has been the most important form of credit available to villagers, apart from the traditional moneylenders (who tend to be used as a source of funds only as a last resort in times of extreme need) or the "tontines" (savings groups), although, traditionally, these sources have been used for consumption rather than investment purposes.

Within this rural environment, four hours from Bamako, the Credit-with-Education-for-Women Project was organized in 1988. With a population of approximately 30,000, the Dogo area was selected for the CWE program, in part because of its proximity to urban market centers and the poor health and nutritional conditions that exist. Like most Malians, the majority of residents in Dogo are poor or extremely poor, thus the need for a poverty lending program such as the CWE.

## 2. THE MALI POLICY SETTING

Mali is a large landlocked country in the middle of West Africa. Its surface extends over 1.24 million square kilometers and is sparsely populated with 9.8 million people (UNDP 1994). The ecology ranges from the subhumid wooded savanes in the south to the Sahara in the north. Southern Mali is situated in the wooded savannah of West Africa—most of the population lives in the south, where annual rainfall can reach up to 1,300 millimeters.

Current annual population growth is estimated at 3.1 percent (UNDP 1994), outpacing agricultural and economical growth. The urban population is small and limited to the capital and some regional centers. Mali is one of the poorest countries in the world, with a GDP per capita of \$480 (UNDP 1994). Agriculture is the principal economic activity. By ecological zone, agriculture is characterized by cotton and cereals in the savanes and by livestock in the semi-arid zones of the north. Although agriculture is poorly developed, it employs 82 percent of the population and produces 44 percent of GNP.

The lack of natural resources and poor economic growth are reflected in other basic indicators: primary school enrollment is 24 percent, and the adult literacy rate is 36 percent (UNDP 1994). These rates are even lower for women. Moreover, relative to other poor countries, Mali is an underachiever in terms of social indicators relative to GNP per capita. For example, Mali's GNP per capita rank is 12 places higher than its social indicator ranking (UNDP 1994). "Soft" infrastructure such as schools, dispensaries, and hospitals is weak in coverage and quality. The private sector is small and foreign aid exceeds the government budget and forms practically the sole source of public investment. The urban sector is small and contains mostly commerce and services. Industrial production is almost nonexistent.

### 2.1 Recent History

The recent history of Mali shows two clear tendencies: political democratization and economic liberalization. The latter resulted in a 50 percent currency devaluation at the beginning of 1994. These tendencies can be traced back to independence in 1960. At that time, the new government emphasized self-reliance, and launched a major investment program, including large irrigated rice areas and

state-owned industries. The government established a one-party political structure, organizing the rural areas along strong hierarchical lines. The military government that came to power in 1968 organized the rural economy under several regional Rural Development Organizations. These organizations were established for major cash crops such as cotton, rice, and peanuts, and provided subsidized inputs through marketing boards. After the drought of 1973 and the consequent sharp output price increases, a cereal marketing board was also established to enforce strict price controls.

The policy of controlled cereal prices soon became prohibitively expensive: Mali again became a member of the Union Monétaire Ouest Africain, which provides West-African francophone countries with a common currency—the Franc CFA pegged to the French franc; a price liberalization program (Programme de Restructuration des Marchés Céréaliers) was initiated in 1980; and, a structural adjustment program was initiated in 1982 in collaboration with France and the World Bank. Economic liberalization soon became official doctrine. Political adjustment followed economic adjustment. The military government was overthrown in 1991, and the first democratically elected president and parliament were installed in 1992.

The most recent economic event was the devaluation of the Franc CFA on January 12, 1994—a devaluation of 50 percent. This, of course, encouraged exports and discouraged imports. After six months, inflation had stabilized at 30 percent above January prices (for urban households in Bamako and Mopti, as estimated by the Department National des Statistiques et de l'Informatique, oral communication).

Preliminary estimates indicate that the nominal income of the average rural household has increased at a slightly faster rate than inflation (Kone, Kebe, and De Groote 1994). For export crop farmers, however, the scenario is not quite so optimistic. Cotton farmers, for example, have had to bear higher costs of living prior to receiving the expected increased cotton revenues in early 1995.

## **2.2 Rural Credit Programs in Mali**

Credit programs in Mali have followed the same global political and economic evolution: from formal centralized systems to a more decentralized, market-driven approach. The first formal lending schemes were centered on the Rural Development Organizations, and were intended to provide production credit for cash crops such as

rice, peanuts, and cotton. This credit was intended to relieve constraints on the annual purchase of agricultural inputs as well as more infrequent expenditures such as animal traction.

A formal rural bank, the Banque Nationale de Développement Agricole (BNDA), was set up by the government to provide loans to the rural sector. However, due to poor repayment rates, the BNDA rarely lends to individual farmers any more, and has little representation in rural areas. A major problem for the BNDA is the farmers lack of traditional collateral. For example, farmers have no formal land titles in Mali. Therefore, the BNDA restricts itself to teaming up with the Rural Development Organizations to provide credit based on future cash crop earnings. In south Mali, for example, the BNDA increasingly manages the credit administration of the Compagnie Malienne pour le Développement du Textile (CMDT)—the cotton board. The BNDA does not, however, extend services to the rural areas, but uses the Village Association to manage collection.

The government also provides loans to rural areas through the Centres d'Animation Cooperative (CAC). The CAC supports local village organizations, the "ton," with training and credit. In particular, the CAC provides credit for cereal banks, women's activities, and small seasonal loans. CAC credit is directed to the "ton," which is then held accountable by the CAC for repayment. The "ton" then distributes the credit to its members. The CAC does not, however, reach many villages.

Responding to the lack of credit availability for rural households, many development agencies and NGOs have initiated credit activities. Although some follow conventional credit schemes, the following agencies recommend the use of peer pressure-based schemes: UNICEF, International Fund for Agricultural Development (IFAD), Save the Children, and Freedom from Hunger (FFH). These organizations help link external sources of credit to community-based rural finance schemes, usually at subsidized interest rates. There is, however, one organization, Kafo Jiginew, that insists on auto-financing of credit through local savings, and the recovery of working costs by charging commercial interest rates.

Is the unmet demand for credit larger for women than for men? Mali encompasses considerable ethnic and cultural diversity, and the status of women varies accordingly (UNICEF 1989). In the rural areas of south Mali, the extended

family is the common unit of production and consumption. Polygamy is common, and several men, their wives, and children can live and work together. Many activities are gender-specific, although major agricultural activities as planting, weeding, and harvesting are not. Apart from extended family-based activities, individuals can also devote some time to private fields or other individual activities, although many cultural restrictions apply (De Groote and Coulibaly 1994). This gender-specificity of occupation translates into a gender-specificity of credit access—this makes Mali an especially appropriate implementing country for credit targeted to women.

### **2.3 Credit with Education Program (CWE) in Mali**

Freedom from Hunger (FFH) has developed a major credit program, called "Credit with Education for Women," which combines credit targeted to women's income generation with (1) education on nutrition and (2) management skills. The combined effect is intended to increase the food security of women and children, and household welfare in general (Lassen and McKnelly 1992).

The approach has so far been implemented in several countries, including Mali. The project in Mali has been in operation for four-to-five years. USAID is a major donor to this program and, as such, is interested in the measurable impact of this and similar programs. The International Food Policy Research Institute (IFPRI), given its mandate, has long been involved in studying household behavior and food security issues. In recent years, IFPRI has been studying the impact of credit and credit programs on income and food security (Zeller 1994). As such, IFPRI was asked by FFH, under the USAID IMPACT project managed by the International Science and Technology Institute, to assess the CWE in Mali with respect to impacts on income, food security, and nutrition status.

The first loans under CWE were disbursed in 1989, and in 1990-91, the first credit associations were organized in Dogo. CWE started as a joint venture between a Malian private voluntary organization called Association Malienne pour L'Insertion Professionnelle des Jeunes (AMIPJ) and the Freedom from Hunger Foundation. The collaboration between FFH and AMIPJ resulted in the Mali Institutional Development Enterprise and Nutrition Project (MIEN). The CWE program is administered by the Centre d'Appui Nutritionnel et Economique aux Femmes (CANEF), an NGO that is

FFH's local partner. The CWE program provides small loans to women in conjunction with education sessions stressing food security and nutrition issues. The education is conducted in a problem solving way, stressing the active participation of women.

Borrowers are organized into guarantee groups. In this group-lending, poverty-bank system, women are provided with small loans to be paid back in regular, weekly installments. These small groups of women (about six members) are well known to each other and are critically important for eliciting the participation of the poorest women. Women have historically been unwilling to try new income-generating ventures, but are more likely to do so in the company of trusted friends. The repayment schedules are settled in group meetings during which loan management is discussed. The group meetings also serve as a forum for the discussion of health and nutrition issues. The borrower groups serve to streamline the management of both credit and education. The first CANEF loans were provided in 1989 and the program reached over 1,000 women by the end of 1992 (Lassen and MKNelly 1992).

In terms of village eligibility for CANEF loans, CANEF requires that a participating village be accessible by road all year round, contain some literate villagers, produce a certain level of cotton, and is not far from a suitable market.

The two previous assessments of the CWE Program in Mali have not directly measured the impacts on women's income and nutrition status. The study by Lassen and MKNelly (January 1992) is qualitative in nature. The authors conclude: "simply asking program participants if the nutrition and health of the children has improved does not prove the case" (p. 39). They continue: "However, it is obvious that participants perceive change and feel hopeful and that changes in disposable cash income, diet, and practices can be discerned" (p. 39). Do these perceived changes stem from real changes? The second study focusses more on project performance as related to service delivery, the product delivered, and the administration of the project (Ashe et al. 1992). This study was also very positive about the Mali program.

### 3. WOMEN'S CREDIT AND FOOD SECURITY: REVIEW

The targeting of credit programs to women is a good example of development practitioners fast outpacing the development research community. Many economists, for example, would have us believe that the impact of credit on income and household food security is independent of household member characteristics: the most that can be hoped for is that someone in the household has access to credit. Development practitioners, however, clearly think that the food security impact of giving credit to women outweighs the food security impact of giving credit to men. This idea was confirmed recently in the context of women's credit in Bangladesh. Taking advantage of a natural randomized experiment, Pitt and Khandker (1994) show that men and women use credit for very different things: women for investments in child health and household food security, and men more for personal expenditures.

Other experience from Bangladesh caution, however, that credit targeted to women can be appropriated by men (Goetz and Sen Gupta 1994). It is not clear if the nominal increase in women's status (the credit is targeted to women) translates into a real increase in status (can a quid pro quo be demanded by women in return for male access to credit?) or worsening conditions for women (women spend time and resources in getting the credit, only to have it taken away against their will). One possible disincentive for male appropriation is to associate the credit with something that falls within the woman's traditional sphere of influence, such as nutrition education or primary health care. Other advantages of associating women's credit with nutrition education is that access to credit can serve as an incentive to receive some information and assistance on problems related to health and nutrition.

CANEF provides small loans with nutrition education to women as a way of improving food security; what is the basis for the assumed increase in household food security?

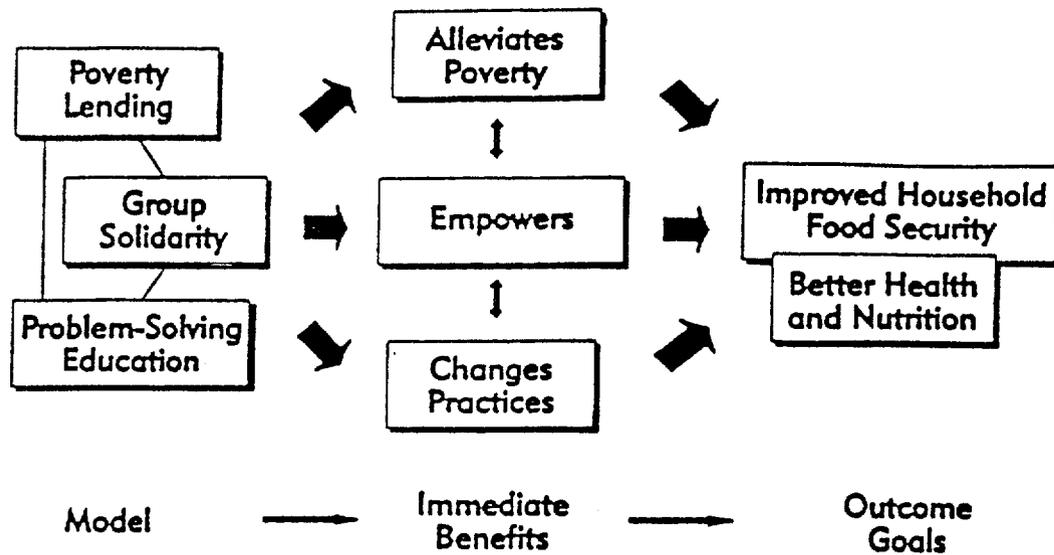
First, it is hoped that improved access to credit will raise women's income-earning and problem-solving ability and hence reduce poverty. Second, it is hoped that this will lead to improvements in household food security and child nutrition through two pathways: (1) improvements in overall household income, and (2) increases in the women's share of household income and, hence, her increased power in household decisionmaking. Third, it is hoped that the combination of credit access

and nutrition education (via changing practices) will have a bigger impact on nutrition than either component alone. Fourth, it is hoped that increased income earning ability translates into more decision-making ability for the women in terms of other choices that affect household and female food security such as decisions related to pregnancy. These pathways are summarized in Figure 1.

The second and fourth points are perhaps the least well understood. On the second point, female income share has been shown to have positive income impacts on child nutrition status from a number of different Sub-Saharan case studies:

- For a Ghanaian sample, Tripp (1982) indicates that women's authority within the household, as proxied by earnings from petty trading and education, is positively correlated with improved child anthropometric status. Tripp cautions, however, that this result may not be related to gender per se, since it may reflect differences in income flows that accrue to men and women.
- In southwestern Kenya, for a given household income level, women-controlled income share had a positive and significant effect on household calorie consumption (improved calorie intakes, however, did not always lead to improvements in children's nutritional status, due to other factors such as health and sanitation constraints) (Kennedy 1991).
- In Rwanda, a similar household expenditure pattern emerged with females deriving most of their income from subsistence income, while males derived most of their income from cash crops. Despite the fact that total female incomes were lower than total male incomes and men had more than ten times as much off-farm earnings as women, there were no female-headed household with severely malnourished children and a less than proportional number were found to be calorie-deficient (von Braun and Wiegand-Jahn 1991). Using the same sample composed of approximately 560 households in Rwanda, von Braun, de Haen, and Blanken (1991) show that female cash income share is positively and significantly associated with household calories derived from food expenditure information.

Figure 1—Freedom from Hunger Credit with Education benefit process



Source: McKnelly et al., undated.

One explanation for the above results is that women are mainly responsible for the provision of food in the household, while men have other expenditure responsibilities. Another explanation, following the lines of Tripp's argument (1982), suggests that male and female income flows are different, with the latter coming in more frequent and smaller amounts, thereby increasing the propensity for it to be spent on household daily subsistence needs. In Kenya, for instance, men's income accrues over longer periods of time (18-24 months) than women's and has been observed to be used for household repairs, investment in cattle, and education (Kennedy and Oniang'o 1990).

- For Niger, and as a response to the second explanation offered above, a study by Hopkins, Levin, and Haddad (1994) attempts to control for the flows of incomes earned by men and women in 135 households in Niger. Using the level of annual income earned by gender, and the seasonal share of annual income earned by gender as two explanatory variables, they arrive at the following conclusions: annual incomes are not pooled

and both the flows of household income and gender-disaggregated incomes are important determinants of total household expenditures. On the other hand, in the case of food expenditures, gender does not matter in a model that does not consider seasonality. However, in a model that does allow for seasonality, gender-disaggregated income flows become important determinants of the level of seasonal food expenditures.

- For the Côte d'Ivoire, Hoddinott and Haddad (1995) show that the share of household cash income earned by women in the household has a positive and significant effect on the budget share for food. It has a negative and significant effect on meals eaten out, children's clothing, adult clothing, alcohol, and cigarettes.
- With the same data set, but with a focus on anthropometric outcomes instead of household expenditure patterns, Haddad and Hoddinott (1994) find that increases in the proportion of cash income accruing to women increases boys' height-for-age relative to girls, and that this effect is statistically significant.

On the fourth point, that improvements in female income earning ability lead to increased decisionmaking ability in other areas, there is some positive evidence. Support for this line of reasoning comes from Ott (1991) (greater bargaining power of women leads to a greater likelihood of using family planning services); Schuler and Hashemi (1994) (greater social and economic empowerment of women leads to more frequent use of family planning services and a smaller desired family size); and Amin et al. (1994) (participation of poor rural women in income-generating projects leads to more frequent use of family planning services and a smaller desired family size).

#### 4. RESEARCH OBJECTIVES

The objective of this research is to assess the targeting aspects of CWE, its impact on women's income and, hence, its impact on nutrition status of the women and their preschoolers via its impacts on women's income.

In pursuing the objective, the main hypothesis to be tested includes:

1. CWE credit is targeted to women who were previously credit-constrained due to lack of collateral,
2. increased access to CWE credit raises women's income, and
3. increased women's income improves adult female and preschooler nutrition status, even controlling for overall household income levels.

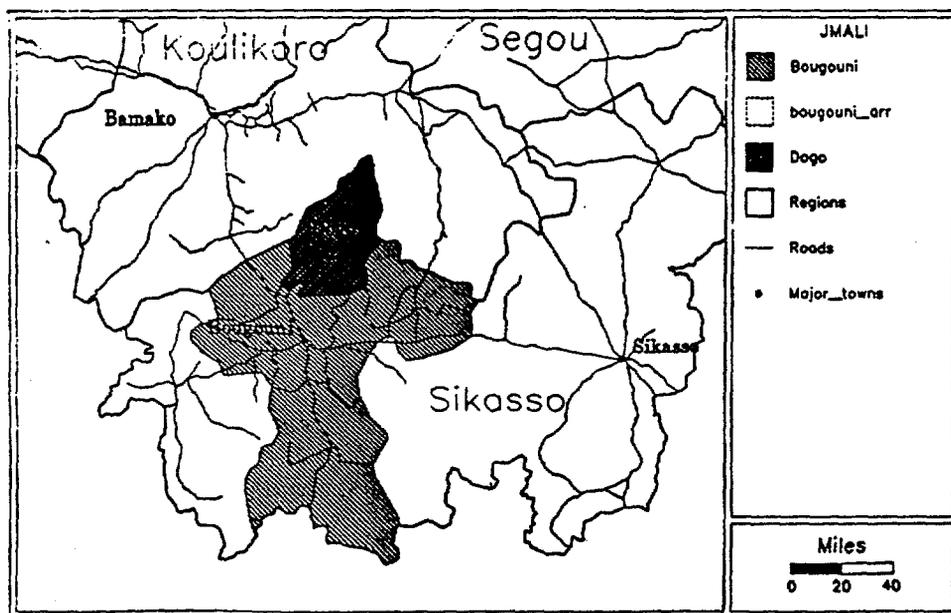
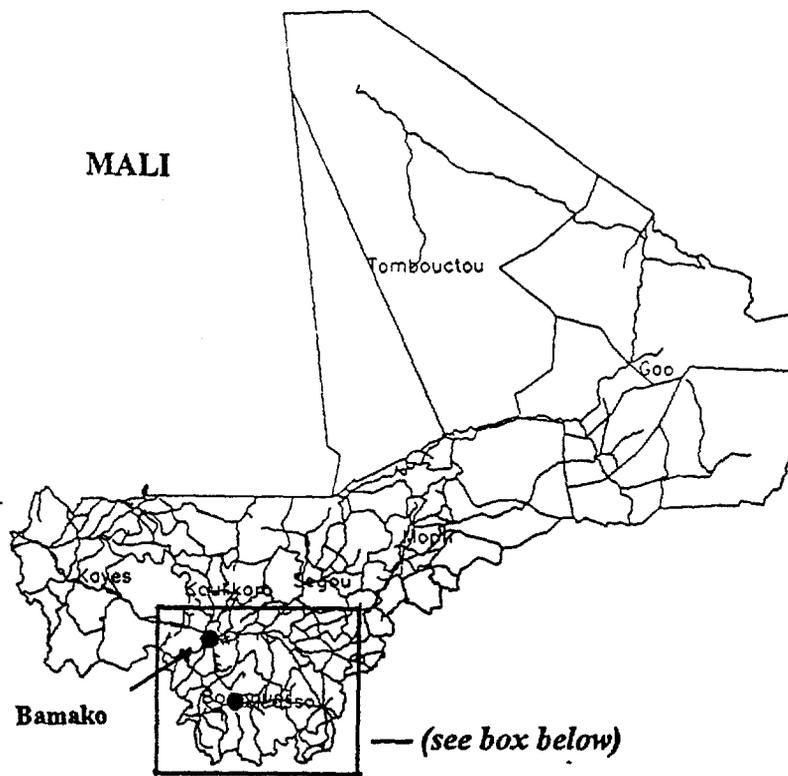
#### 5. RESEARCH DESIGN

After some preparatory visits, IFPRI started the field research in November 1992. The visits were intended to provide answers to research design questions such as where to survey, when and who to survey, and what and how to survey (De Groote et al. 1993).

##### 5.1 Where

A Rapid Rural Appraisal conducted in early 1992 concluded that (1) the CANEF project had only recently branched out into other regions, and (2) the credit with education program is likely to have a gradual impact upon livelihoods. It was decided therefore to exclude the recent CANEF areas, and to limit the investigation to Dogo District to increase the probability of random selection of households within these communities that had completed at least one year of CANEF loan cycles (3 four-month loan cycles). Dogo has a population of 31,500 in 85 villages, covering an area of more than 3,000 square meters (10.5 people per square meter) (CMDT 1992). In the dry season, Dogo is accessible from the town of Bougouni over an unpaved road 55 kilometers in length. It is also linked year-round by an unpaved road to the excellent paved road from Bamako to Bougouni (see map in Figure 2).

Figure 2—Map of the study area



On average, each of the 85 villages contains 21 households or 300 people (CMDT 1992). The majority of people are Bambara. Initial settlers gain customary title to the land. Traditionally, later arrivals respect the rights of the initial settlers and receive land as a loan for cultivation. Those without customary title to the land, for example, are not permitted to alter the land by digging wells or planting trees. In principle, the owning family can reclaim the land at any time. All villages contain several families—owners and non-owners—as a means of assuring physical security (Zuidberg and Djiré 1992).

## 5.2 When

The majority of the households in the study area rely on agriculture for their subsistence. Hence, more than one round of data collection is useful for the analysis. The agricultural economy is based on cotton and cereal production. Given the low population pressure in Bougouni, there is still a fair amount of land for fallow and pasture. At the beginning of the rainy season (April-May), fields are prepared and planted. Cotton is usually first in the rotation, benefitting from chemical fertilizer provided with credit from the CMDT. In the following years, cereals will be planted on the same plot so as to take advantage of the residual effect of the fertilizer. The major cereal crops are sorghum, millet, and maize.

Cereals are mainly produced for home consumption. The major cash crop is cotton, all of which is sold. The value of cotton is half the estimated value of total crop production for the area. Rice is a lowland crop and, in this zone, is almost exclusively a women's activity. In addition to crop production, animal production and gathering/gleaning are important activities. Most households own some livestock, particularly small ruminants and chickens. Since Mali is predominantly a Muslim country, pigs are less popular. Animal husbandry is fairly extensive in nature, with little or no use of purchased inputs.

The collection and transformation of gathered products is the principal source of income for women. The products from two native tree species, shea nut (*Butyrospermum parkii*) and néré (*Parkia bijlobosa*), are traditionally left standing in the fields. A butter is made from the shea nuts that serves as the basic fat component of the diet. The néré grains are fermented and processed into a popular sauce

ingredient. Any production surplus to family requirements belongs to women and can be sold for individual income.

Over a seven-month period, 200 households were visited three times by survey investigators. At each visit, an income, expenditure, and consumption survey was administered in combination with anthropometric measurements of all women and children to assess their nutritional status.

Figure 3 places the three rounds in the context of the agricultural and climatic cycle for the study area. The Bougouni area has had an average yearly rainfall of 1,089 millimeters over the period 1941-1980. Rain falls from April to October, with the principal harvest following shortly thereafter. This rainfall pattern dominates the agricultural year. Round 1, from late February to early April 1993, represents the end of the dry season. Round 2, from April to May, is at the beginning of the rainy season and coincides with the preparation of the fields. Round 3, in August and September, is the lean season, just prior to the new harvest.

### 5.3 Who

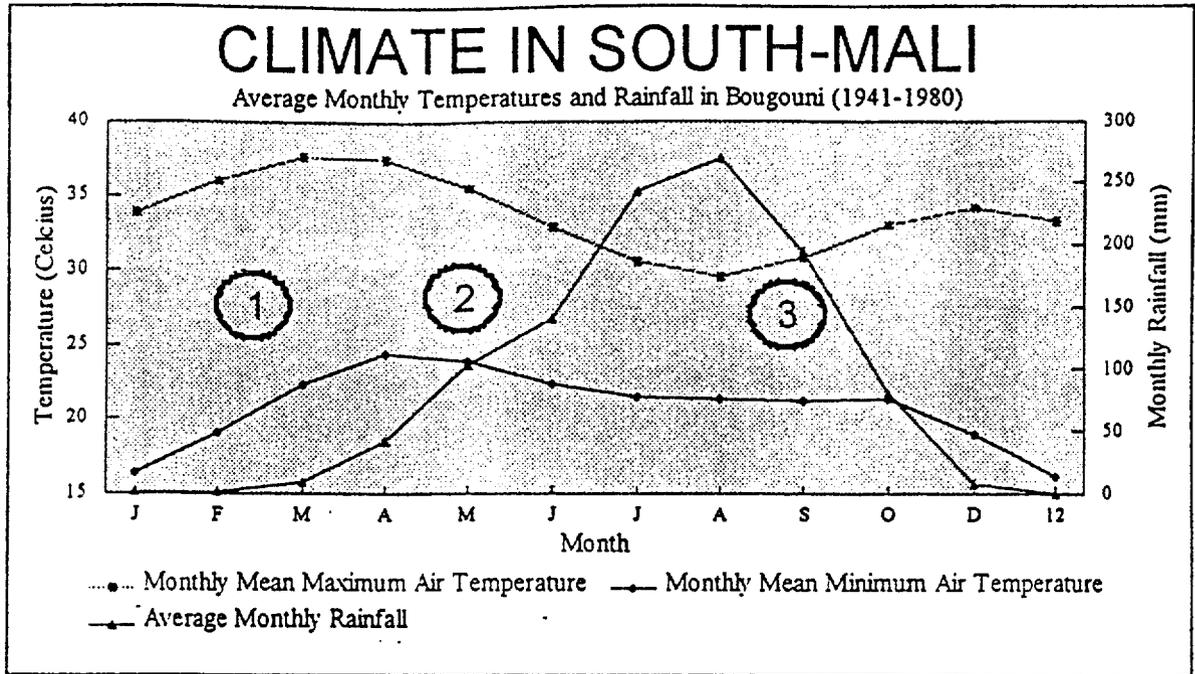
Recall that CANEF requires that CWE-eligible villages be accessible by road all year round, contain some literate villagers, produces a certain level of cotton, and are not far from a suitable market. Not all eligible villages in Dogo could be served by CANEF in 1992-93 due to resource constraints (at the time of the survey, CANEF covered approximately one-quarter of all villages in Dogo). Hence, study-control villages that meet CANEF eligibility requirements, but are not served by CANEF, could be selected from within Dogo.<sup>1</sup>

As a consequence, a two-stage random sample of households was drawn for survey analysis (De Groote 1993). A list of all villages in Dogo that were eligible for CANEF project credit was available from a sampling frame provided by the CMDT (CMDT 1992). That list was divided into villages receiving CANEF credit and villages that were not. From each list, a random sample of villages was drawn. Eleven CANEF villages were randomly selected from 24 CANEF villages. Fifteen non-CANEF villages were also randomly selected. Within each village, a random

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<sup>1</sup>Ideally, the study design should be a randomized allocation of eligible villages into control and noncontrol villages with baseline and follow-up surveys. This approach was infeasible, given CANEF resource constraints.

Figure 3—Seasonality chart



Note: Survey rounds are indicated by the numbers encircled and the timing of these rounds are indicated by the location of the numbers with respect to the horizontal axis.

sample of households was drawn. The 11 CANEF villages yielded 102 households, 42 of which contained CANEF recipients in the previous year (1992).<sup>2</sup> Sixty households with access to CANEF credit did not take it up. This was because (1) they did not ask for it, (2) the credit group was in between cycles, or (3) individuals had unpaid debts (from CANEF or other sources). The 15 non-CANEF villages yielded 98 households. It was decided to select an equal number of households from the universe of households in the selected CANEF villages and the universe of households in the selected non-CANEF villages. This means that households in CANEF villages were oversampled. This was corrected for in the regression analysis. Figures 4 and 5 summarize the characteristics of sampled households and individuals.

The household in Dogo, as defined as a group of related people who eat and work together, is an extended family, consisting of the descendants of one male individual and his wives. The structure is patrilocal, patrilinear, and polygamous. A typical household is composed of a male head, his wives, their children, and sometimes the head's younger brothers and their families. Daughters always leave the household when they marry, but sons and younger brothers of the household head do so less frequently.

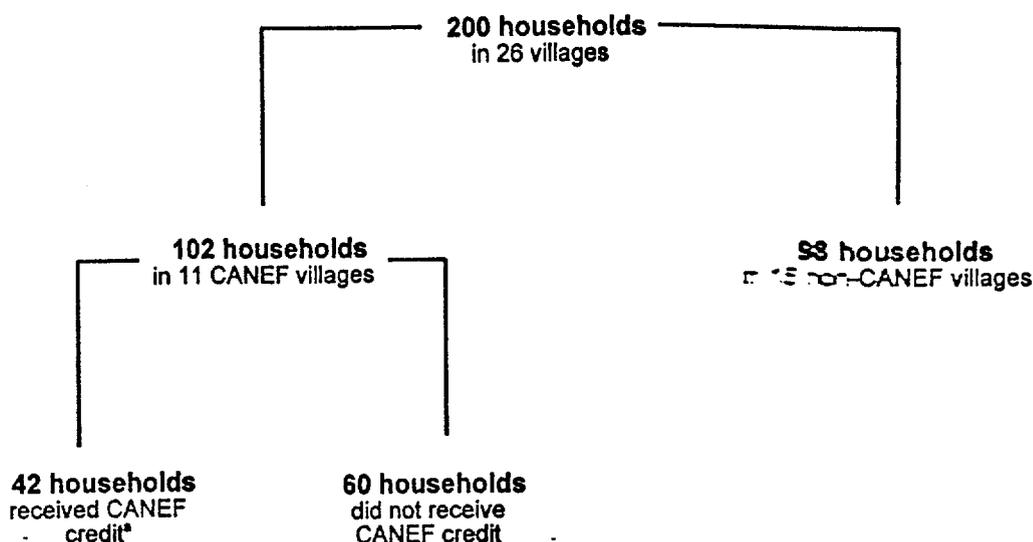
The majority of the household's land is cultivated communally, and most of the livestock belongs to the household as well. Individuals can still cultivate small personal plots and can own animals on their own account. The head of the household is in charge of common grain production and stocks for the year. Generally, the younger women take turns in cooking for the whole household. Once women have daughters-in-law, they leave the cooking to them. The terms "young" and "old" are more social than chronological: "young" women are defined as those who prepare meals, while "old" women are those who have a daughter-in-law and who no longer cook.

Given the different spheres of socioeconomic responsibilities exhibited by different individuals, several types of individuals had to be interviewed in each household. In the first round, the head of the household, an additional adult male,

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<sup>2</sup>All the households designated as CANEF credit households in the study contained a woman that had completed at least one loan cycle in the 12 months prior to Round 1. Over 80 percent of CANEF credit households had completed at least two loan cycles.

Figure 4—Tree chart of sampled households, Dogo



\* In the recall period (12 months) prior to Round 1.

and the women who cooked the previous day were interviewed. The woman who cooked the previous day was identified as the "index woman" for the food consumption and nutrition data collected. Of the 42 index women interviewed in Round 1, the credit questionnaire identified 25 as direct CANEF recipients and 13 as indirect recipients. Indirect recipients are index women who do not directly receive CANEF credit. Four index women who directly received CANEF credit did not complete the credit questionnaire sufficiently well to be of use. Figure 5 describes the types of individuals that were interviewed for the survey. *The multivariate results in Section 8 are based solely on direct CANEF recipients.*

Figure 5—Tree chart of persons interviewed

5a. Households surveyed and members interviewed

<p><u>200 Households Surveyed</u></p> <p>200 heads of households<sup>a</sup>                  198 women who cook<sup>a</sup> (index women)                  129 adult men, nonhead<sup>b</sup>                  92 women who do not cook<sup>b</sup></p>		
<p><u>102 Households in CANEF Villages</u></p> <p>102 heads of households<sup>a</sup>                  101 women who cook<sup>a</sup>                  67 adult men, nonhead<sup>b</sup>                  54 women who do not cook<sup>b</sup></p>		<p><u>98 Households in Non-CANEF Villages</u></p> <p>98 heads of households<sup>a</sup>                  97 women who cook<sup>a</sup>                  62 adult men, nonhead<sup>b</sup>                  38 women who do not cook<sup>b</sup></p>
<p><u>42 CANEF Recipient Households</u>  <i>(see box below)</i></p> <p>42 heads of households<sup>a</sup>                  42 women who cook<sup>a</sup>                  29 adult men, nonhead<sup>b</sup>                  23 women who do not cook<sup>b</sup></p>	<p><u>60 Nonrecipient Households</u></p> <p>60 heads of households<sup>a</sup>                  59 women who cook<sup>a</sup>                  38 adult men, nonhead<sup>b</sup>                  31 women who do not cook<sup>b</sup></p>	

<sup>a</sup> Interviewed for Rounds 1, 2, and 3. Whether a woman cooked the day previous to the interview day was the basis for identifying an index woman.

<sup>b</sup> Interviewed for Rounds 2 and 3.

5b. CANEF recipient households

<p><b>Breakdown of 42 Women who Cooked (Index Women),                  Interviewed in Round 1 about Previous 12 Months</b></p> <p>25 - Direct recipients of CANEF credit, previous 12 months                  13 - Indirect recipients, previous 12 months (other women in the household were direct recipients)                  4 - Did not complete credit questionnaire</p>
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#### **5.4 How and What**

Several survey modules were used in the study. First, the head of the family was interviewed as to household composition, and the agricultural income, assets, and credit use of the whole family. This was done in the first round. Second, individuals were asked about their own income (agricultural and nonagricultural), credit use, and expenditures. Individuals included in the first round were the head of the household, the woman who cooked the day before (the index woman), and a second adult man.

Third, a 24-hour recall food consumption survey was administered with the woman who cooked for the household the day before the interview (index woman). She was asked to recall what she had cooked for the household during that day and how many people had participated in the meals. All families were surveyed with this module.

The fourth module, an anthropometric module, was undertaken for all women and children.

Table 1 provides a summary of the data collection modules, to whom they were administered and in which rounds. The survey modules themselves are provided in Appendix 3.

Table 1—Information collected, persons interviewed, and round of data collection

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<b>A. Head of household</b>	
Household composition	Round 1
Household characteristics	Round 1
Agricultural production and livestock	Round 1
Nonagricultural income of head	Round 1
Nonfood expenditures of head	Round 1
Food expenditures of head	Rounds 2, 3
Credit	Rounds 1, 2, 3
<b>B. Index women<sup>a</sup></b>	
Household food consumption <sup>b</sup>	Rounds 1, 2, 3
Food expenditures	Rounds 1, 2, 3
Credit	Rounds 1, 2, 3
Time allocation	Rounds 1, 2, 3
Morbidity	Rounds 1, 2, 3
Economic activities	Rounds 1, 2, 3
Agricultural production	Round 2
CANEF evaluation	Rounds 2, 3
Nutritional knowledge	Round 2
<b>C. Second adult male<sup>c</sup></b>	
Nonfood expenditures	Round 1
Food expenditures	Rounds 2, 3
Credit	Rounds 1, 2, 3
<b>D. All adult women and children</b>	
Anthropometry	Rounds 1, 2, 3

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<sup>a</sup> For the first round, only the woman who cooked the day previous to the interview was interviewed and is identified throughout the report as the "index woman." A second older woman who no longer cooks was interviewed for succeeding rounds.

<sup>b</sup> For the food consumption module only, the woman interviewed in Rounds 2 and 3 may not be the same person interviewed in Round 1.

<sup>c</sup> Form was administered to a second adult male in households where more than 1 adult male household member was present in order to cross-validate answers from the typically older head of household.

## 6. DESCRIPTIVE RESULTS

This section provides descriptive and contextual results on the household demographic structure, income generation, credit source, credit use, household food security, and nutrition status by CWE credit status. Three types of CWE credit status are identified: (1) households that use CWE, (2) households that do not use CWE, but reside in a village that has access to CWE, and (3) households that reside in villages that do not have access to CWE. Table 2 provides a summary of variable definitions used.

Most of the variables used in this and the following sections are constructed from Round 1 information. This is because the Round 1 information allows us to capture the past 12 months in one retrospective sweep. Anthropometry data from Rounds 2 and 3 are used in the analysis because these data tend to be sensitive to seasonal fluctuations in food access and levels of infection. Unfortunately, in Round 1, the 24-hour recall data on household food consumption were collected not on a per ingredient basis, but on a per recipe basis. Without any knowledge as to the weights of specific ingredients in the recipe, it is impossible to accurately convert meals into nutrients.<sup>3</sup> For this report, only food recall data from Round 2 are used.

### 6.1 Household Composition

Reassuringly, we can see from Table 3 that households in the non-CANEF villages are similar in demographic composition to households in CANEF villages. All households are large (average size of 17-24 individuals), contain more adult women than adult men (due to polygamy), and contain a large number of preschoolers. Importantly, households in CANEF villages that avail themselves of CWE credit are not similar to households in CANEF villages that do not avail themselves of CWE credit. This suggests that there is a self-selection of households

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<sup>3</sup>Household calories cannot be computed for Round 1 because (1) in many households, enumerators did not report quantities by ingredients but by a single quantity measure for a combination of ingredients (recipe), and (2) there were many missing quantity codes for the staples consumed (cereals). After eliminating households that have problems (1) and (2), we are left with less than half of the households (98). It was expected that the number of valid cases would be further reduced by other problems in calorie computation. This problem indicates poor training and supervision of the 24-hour recall module enumerators. The data cleaning process leads us to believe that in no other module was the error rate as high as for the 24-hour recall.

Table 2—Summary of variable definitions

Variable	Description
Land owned	Land owned by household, in hectares
Cattle owned	Number of heads of cattle owned by household
Number of houses in compound	Number of houses in the household's compound
Quality of housing	Zero-One dummy variable. Coded as "1" if the household head's house had either (1) walls made of bricks or (2) roofing made of galvanized iron/aluminum sheet.
Presence of latrine	Zero-One dummy variable. Coded as "1" if household has a latrine.
Household size	Number of household members present in the household
Adult male	Male, 15 years or older
Adult female	All mothers, all married women, and single females, 15 years or older
Child	Unmarried household member less than 15 years old
Preschooler	Household member less than 5 years old
Adult equivalent unit (AEU)	Computed using household composition data based on the following formula: adult male = 1.0, adult female = 0.85, schooler (5 to 15 years) = 0.75, and preschooler=0.5
Household calories	Computed based on 24-hour recall of household food intake data. Only Round 2 caloric intake was computed for this paper as a proxy for Round 1 data.
Index woman's own livestock	Includes cattle, sheep, and goats
Index woman's income	Computed as the sum of net nonfarm income and value of woman's agricultural production in the year prior to the first survey round.
Index woman's nutritional knowledge	Zero-One dummy variable. Coded as "1" ( <i>relatively good</i> ) based on number of correct answers to questions on introduction of solids, causes of diarrhea, cure for diarrhea.
Other household income	Computed as the sum of the value of agricultural production and nonagricultural income as reported by the head of the household.
Household income	The sum of index women's income and other income.

**Table 3—Household composition by household credit status**

	Recipient Households in CANEF villages	Nonrecipient Households in CANEF villages	Households in Non-CANEF villages	All Households
Household size	14.83	18.10	17.76	17.24
Number of adult males	3.12	3.92	3.99	3.78
Number of adult females	3.64	4.65	4.59	4.41
Number of preschoolers	2.50	2.90	3.26	2.99
Number of schoolers	5.57	6.63	5.92	6.06
Child/adult ratio	1.35 <sup>a</sup>	1.12 <sup>a</sup>	1.10	1.16
Preschooler/adult ratio	0.40	0.34	0.40	0.38
Adult female/adult male	1.36	1.24	1.29	1.29
Age of head (years)	58.24	57.54	55.61	56.74
N	42	60	98	200

<sup>a</sup> Recipient households significantly different from nonrecipient households at the 5-percent level.

into CWE (CWE households are smaller, and have a higher proportion of adult women and preschoolers) that must be taken into account in the regression analysis in Sections 7 and 8 of this report.

### 6.3 Credit Sources and Uses

From Table 4A, it is clear that CANEF is the principal source of formal credit for women in CANEF villages. The other sources of credit are listed as friends and relatives. As to credit use, Table 4B indicates that the primary use of credit is for income generation, i.e., commerce (relatively large loans) and agricultural investment. Only 14 of the 75 loans are used directly for food purchases, and these loans are small in size. When asked directly about the education and credit components of the CWE program (Table 5), the overwhelming majority of direct recipients rated the program as "good" or "very good" (total of 82.6 percent) on education and 86.3 percent on credit. The indirect recipients of CWE were less positive, understandably, but did not rate the program below "neutral."

Qualitative response as to the perceived positive and negative impacts of the credit and education components of CWE also revealed deep satisfaction with the program, although some negative aspects were also brought up. These responses are summarized in Tables 6a-6d.

Table 6a asks women in CANEF villages about the positive impacts of the nutrition education components of the CANEF credit. The advice on child feeding seems particularly helpful to the women (22.5 percent). The education seems to be useful to the women in the area of child care and prevention of certain diseases (9.9 percent). Perceived negative impacts of education are minimal (Table 6b). Negative aspects listed relate to the literacy requirement, the time spent away from rural work, and the lack of obvious benefit to children.

Table 6c indicates that CWE credit is viewed positively. It is listed as a source of income (profit for women that allows them to meet their "needs"-22.4 percent). It also allows women to save (13.2 percent), and it bestows status upon them (11.8

Table 4a—Credit sources of women in CANEF villages

Source of Credit	Number of Transactions Reported* (Number of women=64)	
	Number	Percent
Formal sources		
CANEF	32	42.7
Other formal source	4	5.3
Informal sources		
Friends and relatives	29	38.7
Savings group	5	6.7
Other informal source	5	6.7
All sources	75	100.0

\* The 64 women comprise the 25 direct recipients and 18 indirect recipients interviewed in Round 1 plus additional women interviewed in later rounds.

<sup>b</sup> Women tend to list, on average, approximately one source of credit (the 64 women in our sample had taken out only 75 loans). This is because women reported several credit transactions from the same source under one "transaction." Thus the actual number of transactions is higher than that indicated in the table. We were unable to determine as to when one "transaction" meant one or several aggregated transactions.

Table 4b—Credit uses of women in CANEF villages

Credit Use	Number of Transactions		Mean Amount Borrowed
	Number	Percent	
Food	14	19.7	1,168
Agricultural investment	8	11.3	1,675
Commerce	25	35.2	12,342
Debt repayment	2	2.8	1,125
Wedding/Special events	2	2.8	625
Health	3	4.2	1,200
Other uses (various, grouped)	17	23.9	1,840
Not specified	4	---	---
All uses	75	100.0	

Table 5—Qualitative evaluation of CWE program in recipient households

Evaluation	Direct Recipients		Indirect Recipients <sup>a</sup>		All	
	N	%	N	%	N	%
<b>A. Education<sup>b</sup></b>						
Neutral	2	8.7	14	38.9	16	27.1
Fair	3	113.0	1	2.8	4	6.8
Good	16	69.6	17	47.2	33	55.9
Very good	2	8.7	4	11.1	6	10.2
Total	23	100.0	36	100.0	59	100.0
<b>B. Credit<sup>c</sup></b>						
Neutral	1	4.5	8	22.9	9	15.8
Fair	2	9.1	5	14.3	7	12.3
Good	16	72.7	19	54.3	35	61.4
Very good	3	13.6	3	8.6	6	10.5
Total	22	100.0	35	100.0	57	100.0

<sup>a</sup> A woman is considered an indirect recipient if someone in the household received a loan while she herself did not receive any. This group includes some of the second women interviewed for each household in later rounds.

<sup>b</sup> Five women did not respond to this question.

<sup>c</sup> Seven women did not respond to this question.

**Table 6a—Qualitative responses from women as to their experiences with CWE:  
Perceived *positive* effects from nutrition education received**

Response	N <sup>a</sup>	%
Women acquire new information/knowledge on child feeding practices and meal preparation	16	22.5
Women acquire new information/knowledge on child nutrition	8	11.3
Women acquire new information/knowledge on prevention of certain diseases and on general child care	7	9.9
Women acquire new information/knowledge ( <i>type of information not specified</i> )	5	7.0
Improvement in child's nutritional status and appearance: following CANEF advice, children are well-fed, are in good health/look good ( <i>4 responses</i> ); children gain appetite/weight ( <i>5 responses</i> ); children become stronger/vigorous ( <i>2 responses</i> ); "...has considerable impact on children" ( <i>1 response</i> )	12	16.9
<b>Others:</b> "improvement in living conditions" "mother is less worried about child" "project allows us to understand the kind of management used for the credit program that the project is offering us"	3	4.2
Does not know	2	2.8
No comment	18	25.4
	<u>71</u>	<u>100.0%</u>

<sup>a</sup> This table is based on multiple responses from 64 women.

Table 6b—Qualitative responses from women as to their experiences with CWE:  
Perceived *negative* effects from nutrition education received

Response	N*	%
No negative aspects	16	21.9
Does not know	2	2.7
Others: "To not follow advice is a possible negative aspect." "This keeps us from engaging in rural work." "The children don't benefit from it." "We are illiterate and are embarrassed by it."	4	5.5
No comment	51	69.9
	<hr/> 73	<hr/> 100.0%

\* This table is based on multiple responses from 64 women.

**Table 6c—Qualitative responses from women as to their experiences with CWE:  
Perceived *positive* effects of credit received**

Response	N <sup>a</sup>	%
Recipients are able to meet small needs <sup>b</sup>	17	22.4
Recipients are able to start a small business	9	11.8
Recipients are able to have savings	10	13.2
Source of income/cash: source of income (4 responses); source of cash (1 response); source of revenue other than from agriculture (2 responses)	7	9.2
Empowerment of women: provides women with a business foundation (1 response); makes women active in the village (1 response); allows women to organize themselves (1 response); source of motivation for the poor (1 response); allows women to solve certain problems without seeking out other people (1 response); women are able to have achievements (2 responses); "women profit from it" (2 responses)	9	11.8
Potential uses of savings and profits: savings provide aid in times of difficulty or for those without any means (2 responses); profits allow women to achieve other goals/ share the returns (3 responses)	5	6.6
Others: improvement in living conditions (2 responses); village savings (2 responses); "benefit received from borrowed money" (1 response); "the act of extending credit to women is, in itself, a good thing" (1 response)	6	7.9
No comment	13	17.10
	<hr/> 76	<hr/> 100.0%

<sup>a</sup> This table is based on multiple responses from 64 women.

<sup>b</sup> That the credit allowed women to engage in business to meet their small needs was explicit in 3 responses and deemed implicit in the rest of the responses.

Table 6d—Qualitative responses from women as to their experiences with CWE:  
Perceived *negative* effects of credit received

Response	N <sup>a</sup>	%
No negative aspects	18	23.7
Short repayment period	7	9.2
Indebtedness: indebtedness that results from mismanagement (3 responses); indebtedness that could result in the dissolution of the group (1 response); or indebtedness that brings about non-indulgence by the project (1 response); indebtedness (1 response)	6	7.9
Negative impressions associated with women in debt: women in debt are not tolerated (1 response); women in debt are misunderstood and perceived to be ill-intentioned regarding repayment (1 response)	2	2.6
Others: "Managing funds is not easy when families are not financially independent." "...the interest affects us greatly." "...(not) enough time for meetings" "Project does not excuse its partners, who are having difficulty paying back." "Discrimination of men is a bad thing." "If we do not pay up on time, we will be obligated to pay by a method of our choice or sell something that we do not wish to sell."	6	7.9
Does not know	1	1.3
No comment	36	47.4
	<hr/> 76	<hr/> 100.0%

<sup>a</sup> This table is based on multiple responses from 64 women.

Table 6e—Qualitative responses from women as to their experiences with CWE:  
Other remarks<sup>a</sup>

- I take advantage of the occasion to say that the agents of the project urge us to find money; the project is also charging 25F to anyone who is unable to pay back in time, per week, these 25 F will serve us more (meaning slightly unclear)
- the project honored us, as we avoided small arguments about money between the villagers and we were respected by the project's agents
- that the project doubles its efforts
- no remarks on the CANEF credit project
- the project's agents should be thanked because they have respected us; we can only pray that the project goes ahead
- I am calling on all the women of the village to take the project seriously and that they understand that this project is here to serve them
- we wish the project to continue in this vein. We do not wish for any disagreements between us and the initiators
- I entirely approve of this project
- I have nothing to say at this time; I'll put it off to the future
- I have no remarks; I know little about the project
- the agents of the project respect us a lot and we want to improve the conditions for credit by multiplying our actions
- no other remarks
- that this pay-back time for the credit program be extended to one year
- I appreciate the project 100 percent
- aside from the discrimination regarding the men, I have no other remarks
- the agents/advisors respect us and vice versa
- the project respects us, we have no problem with the project
- my wish is that the project forge ahead
- the delay allowed for payment is too short
- I don't have any
- the work of this project must be encouraged
- I appreciate the CANEF project a lot.

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<sup>a</sup> "No comment" reply not listed in table.

(it makes them "active" and allows them to "achieve"). The other side of CWE credit is explored in Table 6d: what are the perceived negative impacts of CWE credit? The comments about negative impacts are much less frequent than comments on positive impacts. When negative impacts are noted, they relate to repayment periods that are too short (9.2 percent), indebtedness (7.9 percent), and even discrimination against men (one response).

Table 6e lists "other remarks" that the 64 women might have about the CWE program. Apart from further responses relating to the short repayment time, the main comment relates to the respect the women received from the CWE implementators. The value of this enhanced status is difficult to measure directly, but, as indicated in Section 3, the returns to enhanced status may be large in terms of household decisionmaking on food security and fertility issues. Clearly, the CWE program must be rated a success on the basis of these qualitative responses. The comments in Tables 6a-6e are similar to those generated by Lassen and McKnelly (1992).

#### **6.4 Assets and Income Sources and Levels**

In terms of assets, Table 7 shows that CANEF village households are marginally better-off than households in non-CANEF villages (in terms of land owned per capita and cattle owned per capita).<sup>4</sup> In this regard, CANEF recipient households are statistically significantly worse-off than nonrecipient households in CANEF villages. CANEF recipient households tend to rely more on nonagricultural income sources.

#### **6.5 Household Food Security**

Table 8 indicates household calorie consumption levels (24-hour recall) per adult equivalent unit (aeu). Calorie adequacy (intake relative to a 2,300 calorie per aeu standard) is similar across all household types. None of the differences are statistically significant at the 10-percent level. Previous analysis of this variable indicated very poor correlations with variables such as income, food expenditure, and education. Further work has been done on this variable to improve confidence in it. The trade-off in making the variable more accurate is that the sample size is reduced

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<sup>4</sup>However, these differences are not statistically significantly different at the 5-percent level.

Table 7—Assets and income sources by household credit status

	Recipient Households in CANEF Villages	Nonrecipient Households in CANEF Villages	Households in Non- CANEF Villages	All House- holds
Land owned (hectares)				
Mean	12.00	14.42	16.04	14.70
N	42	59	98	199
Land per capita (hectares)				
Mean	.96	1.04	.93	.97
N	42	59	98	199
Cattle (count)				
Mean	8.12*	13.29*	10.48	10.83
N	41	59	98	198
Cattle per capita				
Mean	.59	.73	.66	.67
N	41	59	98	198
Number of houses in compound				
Mean	10.19**	14.97**	13.32	13.16
N	42	60	98	200
Value of household agricultural production in CFA (gross)				
Mean	427,561.88	491,329.50	476,633.47	470,633.77
N	42	59	98	199
Value of household agricultural production in CFA/cap (gross)				
Mean	27,375.89	33,876.10	34,542.17	32,832.21
N	42	59	98	199
Head nonagricultural income in CFA (net)				
Mean	35,829.27	28,124.58	28,605.67	29,964.97
N	41	59	97	197
Head nonagricultural income per capita in CFA (net)				
Mean	3,310.87	2,511.69	2,444.66	2,645.01
N	41	59	97	197
Nonagricultural income-all index woman in CFA (net)				
Mean	2,461.53	2,668.39	1,501.21	2,040.12
N	38	56	95	189
Value agricultural production-index woman in CFA (gross)				
Mean	14,701.79	13,317.33	11,121.17	12,531.95
N	42	60	98	200
Nonagricultural income-CANEF recipient-index woman, in CFA (net)				
Mean	3,115.63	.	.	3,115.63
N	24	0	0	24
Value agricultural production-CANEF recipient index woman, in CFA (gross)				
Mean	12,045.00	.	.	12,045.00
N	25	0	0	25
Household income in CFA				
Mean	476,682.65	546,564.47	497,482.84	508,065.54
N	37	56	94	187
Latrine present				
No	26.2%	35.6%	54.1%	42.7%
Yes	73.8%	64.4%	45.9%	57.3%

\* Recipient households significantly different from nonrecipient households at the .10 level.

\*\* Recipient households significantly different from nonrecipient households at the .05 level.

**Table 8—Household caloric intake in Round 2 per adult equivalent and household caloric adequacy<sup>a</sup> by household credit status**

	Recipient Households in CANEF villages	Nonrecipient Households in CANEF villages	Households in Non- CANEF villages	All Households
<b>Household calories per adult equivalent unit</b>				
Mean	2,041.64	1,902.59	2,314.56	2,127.29
Standard deviation	(1,164.03)	(1,112.83)	(1,236.93)	(1,188.40)
N	28	36	56	120
<b>Household caloric adequacy (percent)</b>				
Mean	88.77	82.72	100.63	92.49
Standard deviation	(50.61)	(48.38)	(53.78)	(51.67)
N	28	36	56	120

<sup>a</sup> Based on a requirement of 2,300 calories per adult equivalent unit.

from 137 in an earlier report (De Groote et al. 1994) to 120. The small sample size for this variable excludes its use in subsequent regression analyses.

### 6.6 Women's Nutritional Status

Tables 9a and 9b describe women's nutrition as measured by the proxy variable body mass index (BMI) across all three survey rounds, disaggregated by household credit status. Table 9a contains all women (index or otherwise) and Table 9b contains only women (index or otherwise) for which we have BMI data in all three rounds. The BMI figures in Table 9a are highest in Round 2, perhaps indicating a lagged effect from Round 1 consumption. Whatever the reason, BMI changes by round are small for women in both age groups reported, and the percent of women below the threshold of 18.5 kilograms per meter squared is approximately 20 percent. A more interesting pattern is exposed in Table 9b. Recall that the women in this table are measured in every survey round. For women in the 15-49 age group, BMI follows the expected lagged pattern of decline from Round 1 to Round 3. The only households where we do not observe this pattern are the CANEF recipient households. This may be due to the greater reliance of these women on nonagricultural income, but it may be due to the CANEF credit. In either case, the energy savings afforded by these sources of income may be helping to maintain BMI. It is crucial to note, however, that none of the comparisons within rounds across types of household are significantly different in Table 9b. Hence, this conclusion is entirely speculative.

### 6.7 Preschooler Nutrition Status

Tables 10a-10d present weight-for-age, height-for-age, and weight-for-height Z-scores<sup>5</sup> for preschool children in three survey rounds. Table 10a presents data for preschoolers under the age of 24 months, and Table 10b presents data for preschoolers under the age of 60 months. Tables 10c and 10d present the

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<sup>5</sup>Z-score is defined as

$$\frac{(\text{actual measurement} - 50 \text{ percentile standard})}{\text{standard deviation of the standard}}$$

based on National Center for Health Statistics (NCHS) standards.

**Table 9a—Women's Body Mass Index by broad age group, by household access to and receipt of CANEF credit, by round, Mali**

	Recipient Households in CANEF Villages				Nonrecipient Households in CANEF Villages				Households in Non- CANEF Villages				All Households			
	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average
<b>15 - 49 years</b>																
<b>Body mass index</b>																
Mean	20.17*	20.45	19.91	19.95	20.79*	20.71	20.23	20.63	20.45	20.58	20.13	20.37	20.51	20.60	20.12	20.38
Standard deviation	(2.0)	(2.3)	(2.2)	(2.2)	(2.7)	(2.5)	(2.1)	(2.4)	(2.3)	(2.5)	(2.1)	(2.2)	(2.4)	(2.4)	(2.1)	(2.3)
N	89	89	75	118	161	143	146	211	291	222	193	346	541	454	414	675
LT 18.5	21.3	18.0	24.0	26.3	17.4	14.0	15.8	14.2	17.9	17.6	19.7	17.1	18.3	16.5	19.1	17.8
GE 18.5	78.7	82.0	76.0	73.7	82.6	86.0	84.2	85.8	82.1	82.4	80.3	82.9	81.7	83.5	80.9	82.2
<b>50 years and older</b>																
<b>Body mass index</b>																
Mean	20.72	20.36	19.72	20.01	20.36	21.24	19.81	20.48	20.08	20.64	18.68	19.72	20.33	20.75	19.34	20.02
Standard deviation	(2.2)	(3.2)	(3.0)	(2.8)	(2.7)	(3.6)	(2.7)	(3.3)	(3.1)	(3.0)	(2.2)	(2.9)	(2.8)	(3.2)	(2.6)	(3.0)
N	11	16	20	22	14	20	19	31	19	30	25	45	44	66	64	98
LT 18.5	9.1	25.0	50.0	36.4	21.4	15.0	31.6	22.6	42.1	26.7	52.0	40.0	27.3	22.7	45.3	33.7
GE 18.5	90.9	75.0	50.0	63.6	78.6	85.0	68.4	77.4	57.9	73.3	48.0	60.0	72.7	77.3	54.7	66.3
<b>All women</b>																
<b>Body mass index</b>																
Mean	20.23	20.44	19.87	19.96	20.76	20.78	20.18	20.61	20.43	20.59	19.96	20.30	20.49	20.62	20.02	20.33
Standard deviation	(2.1)	(2.4)	(2.4)	(2.3)	(2.7)	(2.7)	(2.2)	(2.5)	(2.3)	(2.5)	(2.1)	(2.3)	(2.4)	(2.5)	(2.2)	(2.4)
N	100	105	95	140	175	163	165	242	310	252	218	391	585	520	478	773
LT 18.5	20.0	19.0	29.5	27.9	17.7	14.1	17.6	15.3	19.4	18.7	23.4	19.7	19.0	17.3	22.6	19.8
GE 18.5	80.0	81.0	70.5	72.1	82.3	85.9	82.4	84.7	80.6	81.3	76.6	80.3	81.0	82.7	77.4	80.2

\* Within rounds, recipient households are significantly different from nonrecipient households at the .05 level.

Note: The number of women measured varies by round due to availability of respondent, changes in family composition, changes in residence, and other sources of sample attrition.

**Table 9b—Women's Body Mass Index by broad age group, by household access to and receipt of CANEF credit, by round, Mali (includes only women with data for three rounds)**

	Recipient Households in CANEF Villages				Nonrecipient Households in CANEF Villages				Households in Non-CANEF Villages				All Households			
	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average
<b>15 - 49 years</b>																
<b>Body mass index</b>																
Mean	20.42	20.83	20.51	20.59	20.80	20.66	20.20	20.55	20.66	20.56	20.25	20.49	20.66	20.64	20.28	20.53
Standard deviation	(1.7)	(2.1)	(2.0)	(1.8)	(2.7)	(2.5)	(2.2)	(2.4)	(2.3)	(2.3)	(2.2)	(2.1)	(2.3)	(2.3)	(2.1)	(2.1)
N	42	42	42	42	77	77	77	77	110	110	110	110	229	229	229	229
LT 18.5	14.3	14.3	14.3	11.9	16.9	14.3	18.2	13.0	15.5	16.4	20.9	14.5	15.7	15.3	18.8	13.5
GE 18.5	85.7	85.7	85.7	88.1	83.1	85.7	81.8	87.0	84.5	83.6	79.1	85.5	84.3	84.7	81.2	86.5
<b>50 years and older</b>																
<b>Body mass index</b>																
Mean	20.98	20.25	20.18	20.47	20.71	20.77	19.57	20.35	21.35	21.62	20.57	21.18	20.99	20.84	20.08	20.64
Standard deviation	(2.2)	(3.3)	(2.5)	(2.5)	(3.6)	(2.7)	(2.7)	(3.0)	(2.2)	(2.2)	(2.1)	(2.1)	(2.6)	(2.7)	(2.3)	(2.4)
N	6	6	6	6	6	6	6	6	5	5	5	5	17	17	17	17
LT 18.5	16.7	16.7	33.3	16.7	33.3	16.7	33.3	33.3	20.0	20.0	20.0	20.0	23.5	17.6	29.4	23.5
GE 18.5	83.3	83.3	66.7	83.3	66.7	83.3	66.7	66.7	80.0	80.0	80.0	80.0	76.5	82.4	70.6	76.5
<b>All women</b>																
<b>Body mass index</b>																
Mean	20.49	20.76	20.47	20.57	20.79	20.67	20.15	20.54	20.69	20.61	20.26	20.52	20.69	20.66	20.27	20.54
Standard deviation	(1.8)	(2.2)	(2.1)	(1.9)	(2.7)	(2.5)	(2.2)	(2.4)	(2.3)	(2.3)	(2.2)	(2.1)	(2.3)	(2.4)	(2.2)	(2.2)
N	48	48	48	48	83	83	83	83	115	115	115	115	246	246	246	246
LT 18.5	14.6	14.6	16.7	12.5	18.1	14.5	19.3	14.5	15.7	16.5	20.9	14.8	16.3	15.4	19.5	14.2
GE 18.5	85.4	85.4	83.3	87.5	81.9	85.5	80.7	85.5	84.3	83.5	79.1	85.2	83.7	84.6	80.5	85.8

Note: Within rounds, recipient households are not significantly different from nonrecipient households. Within rounds, no two among the three groups are significantly different from each other.

**Table 10a—Z-scores (based on actual age reported in months) and prevalence of malnutrition among preschoolers below 24 months, by household access to and receipt of CANEF credit, by round, Mali**

	Recipient Households in CANEF Villages				Nonrecipient Households in CANEF Villages				Households in Non- CANEF Villages				All Households			
	Round	Round	Round	Average	Round	Round	Round	Average	Round	Round	Round	Average	Round	Round	Round	Average
	1	2	3		1	2	3		1	2	3		1	2	3	
<b>Weight-for-age</b>																
Mean	-1.63*	-1.57	-1.87	-1.85	-.52*	-.92	-1.53	-.85	-1.05	-1.34	-1.52	-1.23	-.99	-1.28	-1.61	-1.24
Standard deviation	(1.4)	(1.5)	(1.3)	(1.4)	(1.4)	(.95)	(1.0)	(1.1)	(1.3)	(1.3)	(1.1)	(1.3)	(1.3)	(1.3)	(1.1)	(1.3)
N	15	17	14	21	26	21	18	30	53	46	29	64	94	84	61	115
LT -2.0	26.7	47.1	42.9	40.2	7.7	9.5	38.9	32.1	24.5	28.3	37.9	46.6	20.2	27.4	39.3	41.2
GE -2.0	73.3	52.9	57.1	59.8	92.3	90.5	61.1	67.9	75.5	71.7	62.1	53.4	79.8	72.6	60.7	58.8
<b>Height-for-age</b>																
Mean	-1.06	-.89	-1.64	-1.41	-.55	-.63	-1.34	-.67	-.83	-1.00	-1.27	-.98	-.79	-.88	-1.37	-.97
Standard deviation	(1.7)	(1.3)	(1.5)	(1.6)	(1.3)	(1.2)	(.96)	(1.2)	(1.3)	(1.3)	(1.1)	(1.2)	(1.4)	(1.3)	(1.2)	(1.3)
N	15	16	14	21	26	21	18	30	53	46	29	64	94	83	61	115
LT -2.0	33.3	31.3	42.9	36.8	11.5	4.8	16.7	37.2	18.9	19.6	34.5	48.3	19.1	18.1	31.1	42.9
GE -2.0	66.7	68.8	57.1	63.2	88.5	95.2	83.3	62.8	81.1	80.4	65.5	51.7	80.9	81.9	68.9	57.1
<b>Weight-for-height</b>																
Mean	-1.25*	-.99	-1.19	-1.18	-.19*	-.57	-.72	-.47	-.55	-.71	-.90	-.62	-.56	-.74	-.92	-.68
Standard deviation	(1.0)	(.86)	(1.0)	(.84)	(.94)	(.80)	(1.3)	(.83)	(1.3)	(.91)	(.96)	(.98)	(1.2)	(.87)	(1.1)	(.94)
N	15	18	15	21	26	21	18	30	53	45	29	63	94	84	62	114
LT -2.0	20.0	11.1	20.0	13.4	7.7	.0	16.7	3.8	15.1	8.9	13.8	10.0	13.8	7.1	16.1	8.8
GE -2.0	80.0	88.9	80.0	86.6	92.3	100.0	83.3	96.2	84.9	91.1	86.2	90.0	86.2	92.9	83.9	91.2

\* Within round, recipient households significantly different from nonrecipient household at the .05 level.

**Table 10b—Z-scores (based on actual age reported in months) and prevalence of malnutrition among preschoolers below 24 months, by household access to and receipt of CANEF credit, by round, Mali (includes those with complete information for three rounds)**

	Recipient Households in CANEF Villages				Nonrecipient Households in CANEF Villages				Households in Non-CANEF Villages				All Households			
	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average
<b>Weight-for-age</b>																
Mean	-1.23	-1.45	-2.00	-1.56	-.45	-.95	-1.79	-1.06	-1.11	-1.39	-1.80	-1.43	-.93	-1.26	-1.84	-1.34
Standard deviation	(1.0)	(1.1)	(.88)	(.90)	(1.5)	(1.1)	(.89)	(.96)	(.83)	(.80)	(.89)	(.71)	(1.2)	(.97)	(.87)	(.84)
N	8	8	8	8	12	12	12	12	18	18	18	18	38	38	38	38
LT -2.0	12.5	37.5	37.5	37.5	8.3	16.7	50.0	16.7	16.7	16.7	44.4	27.8	13.2	21.1	44.7	26.3
GE -2.0	87.5	62.5	62.5	62.5	91.7	83.3	50.0	83.3	83.3	83.3	55.6	72.2	86.8	78.9	55.3	73.7
<b>Height-for-age</b>																
Mean	-.87	-1.02	-1.71	-1.20	-.62	-.74	-1.41	-.92	-1.00	-1.09	-1.62	-1.24	-.85	-.96	-1.57	-1.13
Standard deviation	(1.1)	(.87)	(.86)	(.84)	(1.4)	(1.3)	(1.0)	(1.2)	(1.2)	(1.0)	(.97)	(.99)	(1.2)	(1.1)	(.95)	(1.0)
N	8	8	8	8	12	12	12	12	18	18	18	18	38	38	38	38
LT -2.0	25.0	25.0	50.0	12.5	16.7	8.3	25.0	16.7	22.2	22.2	44.4	16.7	21.1	18.4	39.5	15.8
GE -2.0	75.0	75.0	50.0	87.5	83.3	91.7	75.0	83.3	77.8	77.8	55.6	83.3	78.9	81.6	60.5	84.2
<b>Weight-for-height</b>																
Mean	-.75	-.92	-1.18	-.95	-.10	-.54	-.99	-.55	-.43	-.73	-.93	-.69	-.39	-.71	-1.00	-.70
Standard deviation	(.91)	(.79)	(.97)	(.66)	(.95)	(.79)	(1.3)	(.74)	(.79)	(.80)	(.99)	(.56)	(.88)	(.79)	(1.1)	(.64)
N	8	8	8	8	12	12	12	12	18	18	18	18	38	38	38	38
LT -2.0	.0	.0	12.5	.0	8.3	.0	25.0	.0	.0	.0	16.7	.0	2.6	2.6	18.4	.0
GE -2.0	100.0	100.0	87.5	100.0	91.7	100.0	75.0	100.0	100.0	100.0	94.4	100.0	97.4	97.4	81.6	100.0

Note: Within rounds, no two among the three groups are significantly different from each other.

**Table 10c—Z-scores (based on actual and estimated age) and prevalence of malnutrition among preschoolers below 60 months, by household access to and receipt of CANEF credit, by round, Mali**

	Recipient Households in CANEF Villages				Nonrecipient Households in CANEF Villages				Households in Non- CANEF Villages				All Households			
	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average
<b>Weight-for-age</b>																
Mean	-1.58	-1.73	-1.88	-1.73	-1.47	-1.47	-1.80	-1.51	-1.77	-1.84	-1.95	-1.80	-1.65	-1.71	-1.89	-1.70
Standard deviation	(1.4)	(1.1)	(1.2)	(1.3)	(1.4)	(1.3)	(1.1)	(1.2)	(1.5)	(1.4)	(1.2)	(1.4)	(1.5)	(1.3)	(1.2)	(1.3)
N	79	83	53	97	131	110	100	156	243	196	148	279	453	389	301	532
LT -2.0	31	31	23	39	46	38	42	50	112	88	71	130	189	157	136	219
GE -2.0	49	52	30	58	85	72	58	106	131	108	77	149	264	232	165	313
<b>Height-for-age</b>																
Mean	-1.47	-1.49	-1.89	-1.65	-1.50	-1.54	-2.01	-1.54	-1.66	-1.82	-2.07	-1.80	-1.58	-1.67	-2.02	-1.70
Standard deviation	(1.6)	(1.3)	(1.4)	(1.5)	(1.7)	(1.6)	(1.6)	(1.6)	(1.8)	(1.6)	(1.4)	(1.7)	(1.7)	(1.6)	(1.5)	(1.6)
N	78	80	53	95	124	107	95	148	230	186	142	267	432	373	290	510
LT -2.0	30	26	24	35	46	41	49	55	106	92	75	129	182	159	148	219
GE -2.0	48	54	29	60	78	66	46	93	124	94	67	138	250	214	142	291
<b>Weight-for-height</b>																
Mean	-.89 <sup>a</sup>	-.85 <sup>b</sup>	-1.01 <sup>c</sup>	-.92	-.48 <sup>a</sup>	-.58 <sup>b</sup>	-.63 <sup>c</sup>	-.56	-.77	-.75	-.84	-.76	-.71	-.72	-.80	-.73
Standard deviation	(1.1)	(.98)	(1.1)	(.95)	(1.1)	(.87)	(.98)	(.86)	(1.1)	(1.0)	(1.0)	(.96)	(1.1)	(.98)	(1.0)	(.94)
N	79	85	54	97	131	110	100	157	245	196	148	280	455	391	302	534
LT -2.0	16.5	16.5	20.4	13.4	9.9	5.5	7.0	3.8	13.5	9.2	13.5	10.0	13.0	9.7	12.6	8.8
GE -2.0	83.5	83.5	79.6	86.6	90.1	94.5	93.0	96.2	86.5	90.8	86.5	90.0	87.0	90.3	87.4	91.2

<sup>a,b,c</sup> Within rounds, recipient households are significantly different from nonrecipient households at the .05 level.

**Table 10d—Z-scores (based on actual and estimated age) and prevalence of malnutrition among preschoolers below 60 months, by household access to and receipt of CANEF credit, by round, Mali (includes only preschoolers with data for three rounds)**

	Recipient Households in CANEF Villages				Nonrecipient Households in CANEF Villages				Households in Non- CANEF Villages				All Households			
	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average	Round 1	Round 2	Round 3	Average
	<b>Weight-for-age</b>															
Mean	-1.70	-1.65	-1.89	-1.80	-1.55	-1.70	-1.84	-1.69	-1.81	-1.87	-2.01	-1.91	-1.70	-1.77	-1.93	-1.82
Standard deviation	(1.2)	(.94)	(1.1)	(1.1)	(1.5)	(1.3)	(1.1)	(1.2)	(1.4)	(1.3)	(1.2)	(1.2)	(1.4)	(1.2)	(1.2)	(1.2)
N	37	36	36	37	66	66	66	66	99	99	100	100	202	201	202	203
LT -2.0	16	13	14	16	25	25	30	25	44	43	51	49	85	81	95	90
GE -2.0	21	23	22	21	41	41	36	41	55	56	49	51	117	120	107	113
<b>Height-for-age</b>																
Mean	-1.59	-1.59	-1.88	-1.74	-1.72	-1.79	-2.00	-1.84	-1.74	-1.85	-2.13	-1.96	-1.71	-1.78	-2.04	-1.88
Standard deviation	(1.4)	(1.2)	(1.2)	(1.2)	(1.9)	(1.7)	(1.6)	(1.7)	(1.6)	(1.5)	(1.5)	(1.5)	(1.6)	(1.5)	(1.5)	(1.5)
N	37	36	36	37	62	62	62	62	94	93	96	96	193	191	194	195
LT -2.0	16	13	16	13	32	28	35	32	43	45	51	45	91	86	102	90
GE -2.0	21	23	20	24	30	34	27	30	51	48	45	51	102	105	92	105
<b>Weight-for-height</b>																
Mean	-.77	-.76	-1.04*	-.86	-.42	-.58	-.64*	-.55	-.72	-.75	-.87	-.78	-.63	-.70	-.83	-.72
Standard deviation	(1.1)	(.97)	(1.1)	(.92)	(1.2)	(.90)	(1.0)	(.86)	(1.0)	(1.1)	(1.0)	(.85)	(1.1)	(1.0)	(1.0)	(.87)
N	37	37	37	37	66	66	66	66	100	100	100	100	203	203	203	203
LT -2.0	13.5	10.8	21.6	8.1	7.6	6.1	7.6	3.0	10.0	9.0	15.0	7.0	9.9	8.4	13.8	5.9
GE -2.0	86.5	89.2	78.4	91.9	92.4	93.9	92.4	97.0	90.0	91.0	85.0	93.0	90.1	91.6	86.2	94.1

\* Within round, recipient households are significantly different from nonrecipient households at the .10 level.

corresponding data for the subset of preschoolers for whom we have a measurement in all three rounds. In general, for preschoolers under 24 months in age, anthropometric indicators are worse in the CANEF recipient households than they are in the other types of households. For the less-than-60-month-old preschooler group, this trend is less obvious and, in fact, only holds for weight-for-height, the most reliable indicator in an environment where preschooler age proved difficult to record reliably. For all four tables, preschooler anthropometry is worst in Round 3, just prior to the harvest season. In general, it is difficult to discern any other distinct patterns from the preschooler anthropometry data. Again, the multivariate analysis could present a clearer picture of the impact of CANEF participation on child growth.

## 7. FRAMEWORK FOR THE MULTIVARIATE ANALYSIS

The three types of CWE credit status identified in the previous section direct the analytical framework for the multivariate analysis. Recall that the three types of household are (1) households that use CWE, (2) households not using CWE, but residing in a village that has access to CWE, and (3) households that reside in villages that do not have access to CWE.

The strategy followed allows us to test the hypotheses in Section 4: (1) CWE credit is targeted to women who were previously credit-constrained due to lack of collateral, (2) increased access to CWE credit raises women's income, and (3) increased women's income improves adult female and preschooler nutrition status, even controlling for overall household income levels.

First, we explain the amount of CANEF loans taken out by index women by comparing them to index women in CANEF villages who take out no CANEF credit loans. The value of this variable is zero for index women in CANEF villages that do not take out CANEF credit, and positive for index women that do (the loans range in size from 100 to 87,500 CFA).<sup>6</sup> The truncated nature of this variable means we have to use a Tobit regression procedure to get unbiased estimates of the factors explaining CANEF loan access.

The contribution of CANEF credit to index women's income generation (direct recipients versus nonrecipients) is then assessed. Then, using a proxy measure of the nutrition knowledge of the CWE woman, the impacts of women's income and nutrition knowledge on women's nutrition (body mass index) and preschooler nutrition (anthropometric scores) are estimated.<sup>7</sup> For comparison, this framework is then used for households in villages that do not have access to CANEF credit, but nevertheless take out other forms of informal credit. The analytical framework is summarized in Table 11, the specific variables used in each regression are listed in Table 12, and the detailed regression results are presented in Tables 14-18b in Appendix 1.

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<sup>6</sup>The upper bound of the range (\$338) reflects the fact that loans are reported cumulatively. The lower bound seems too low (\$0.39), but is as listed in the CANEF historical records.

<sup>7</sup>As explained above, reliable household calorie data are available only for a small subset of households, even in Rounds 2 and 3 of the study, and this precludes the estimation of the relationship between household calorie adequacy, women's income, and nutrition knowledge.

Table 11—Summary of analytical framework

Households in CANEF Villages	
1A.	CANEF Loan received by index woman <----- Index woman's, household's characteristics
2A.	Index women's income <---- CANEF loan to index woman
3A.	Other household income <---- CANEF loan to index woman
4A.	Adult index women's BMI <---- Index women's income, household income, index woman's nutrition knowledge
5A.	Weight-for-height of index woman's preschooler <---- Index women's income, household income, index woman's nutrition knowledge
Households in NON-CANEF Villages	
1B.	Non-CANEF loan received by index woman <----- Index woman's, household's characteristics
2B.	Index women's income <---- Non-CANEF loan to index woman
3B.	Other household income <---- Non-CANEF loan to index woman
4B.	Adult index women's BMI <---- Index woman's income, household income, index woman's nutrition knowledge
5B.	Weight-for-height of index woman's preschooler <---- Index woman's income, household income, index woman's nutrition knowledge

**Table 12—Summary of regression models used**

Sample/Regression Method/Independent Variables	Dependent Variable					
	Amount of CANEF Loan Received by Index Woman (1)	Amount of Non-CANEF Loan Received by Index Woman (2)	Index Women's Income (3)	Other Household Income (4)	Index Women's Body Mass Index (5)	Index Woman's Preschooler's Weight-for-Height (6)
<b>A. Sample</b>	Households in CANEF villages	Households in non-CANEF villages	Run separately for households in CANEF villages and households in non-CANEF villages			
<b>B. Regression method</b>	Tobit	Tobit	2SLS <sup>a</sup>	2SLS <sup>a</sup>	2SLS <sup>a</sup>	2SLS <sup>a</sup>
<b>C. Independent variables (x in regression):</b>						
Land owned by household (in hectares)	x	x	x	x		
Land squared by household	x	x				
Cattle owned by household	x	x	x	x		
Number of houses in compound	x	x				
Quality of housing (1 = good)	x	x				
Presence of latrine (1 = yes)	x	x				
Household size	x	x				x
Household size squared				x		x
Child/adult ratio in household				x		
Adult female/adult male ratio in household	x	x		x		x
Household size * Child/adult ratio			x	x	x	
Child/adult ratio * Adult female/adult male ratio	x	x		x		
Age of index woman/mother <sup>b</sup> (in years)	x	x	x		x	x
Age of woman/mother squared <sup>b</sup>						
Number of own preschoolers of index woman	x	x	x		x	
Number of own livestock of index woman			x			
Nutritional knowledge of index woman/mother <sup>b</sup> (1 = relatively good)					x	x
Index woman/mother's <sup>b</sup> height (in centimeters)						x
Husband is head of household (1 = yes)	x	x			x	
Age of preschooler of index woman (in months)						x
Age of preschooler of index woman squared						x
Gender of preschooler of index woman (1 = boy)						x
Father is head of household (1 = yes)						x
Predicted level of credit received by index woman from (1) or (2) <sup>a</sup>			x	x		
Predicted level of credit received by index woman from (1) or (2) <sup>a</sup> *						
Number of own preschoolers			x			
Predicted index woman's/mother's <sup>b</sup> income - from (3)					x	x
Predicted household income - from (3) + (4)					x	x
Predicted index woman's/mother's <sup>b</sup> income * Age of preschooler						x
Predicted index woman's income * Predicted household income					x	

<sup>a</sup> 2SLS = Two-stage least-squares regression.

<sup>b</sup> Pertains to the mother when used in the weight-for-height Z-score regression.

\* The predicted credit from (1) and (2) were used for the regressions on the CANEF sample of households and non-CANEF sample of households, respectively.

## 8. RESULTS OF MULTIVARIATE ANALYSIS

### 8.1 Determinants of CANEF and Non-CANEF Loan Receipt by Index Woman

Results from Appendix 1, Table 14, show that the receipt of CANEF loans by an index woman is associated with household access to land, the demographic composition of the household, the number of houses in the compound, and the presence of a latrine in the household (a proxy for quality of household structure or household wealth). In terms of land owned by the household, the impact on loans taken out by the index woman is positive, although the impact becomes negative at approximately 21 hectares of land owned, or 1.5 hectares per capita (the average size of landholdings for households in CANEF villages is approximately 13 hectares). The CWE seems to be effective at targeting women in households with land owned below 21 hectares. Note that land is not important for securing non-CANEF loans in non-CANEF villages. This implies that CWE indirectly targets loans using land owned as an indicator of eligibility.

The impact of the demographic composition of the index woman's household in securing a CANEF loan is complex. The receipt and size of CANEF loans are positively associated with the ratio of adult women to adult men, but only for households with above average child-to-adult ratios. One possible interpretation of this result is that CWE successfully targets (indirectly) to index women in households that are otherwise time constrained as indicated by high dependency ratios.

The negative association of CANEF loan receipt by the index woman with the number of households in a compound may also reflect the effective targeting of CWE. Compounds with a large number of households tend not to be as credit constrained because of greater opportunities for interhousehold loan and credit transactions.

### 8.2 The Impact of Index Women's Credit on Index Women's Income and Other Household Income

Does CANEF credit raise index women's income? Results from Appendix 1, Table 15, indicate that CANEF credit is associated with higher index women's income, but only for index women with no preschoolers. An insignificant result is found for the impact of women's credit that is taken out in non-CANEF villages on index women's income. The previous section found that women in households with a

high proportion of children to adults and an adult female-to-male ratio of above 0.5 were more likely to receive CANEF loans. But results in this section indicate that for women with preschoolers, the CANEF loans do not seem to help raise their own income. One explanation of this result might be a lack of child care substitutes for the mothers.

Probably because households are large, CANEF loans to one index woman do not show an impact on incomes from other household sources (see Appendix 1, Table 16). Given this apparent dilution of the impact of CANEF credit on other household income, can one expect the impact of increased index women's income to be felt on the nutrition status of the index women and their preschoolers?

### **8.3 Impact of Index Women's Income and Nutrition Knowledge on Index Women's Nutrition**

Appendix 1, Table 17, shows that few of the explanatory variables have a significant impact on adult women's body mass index (BMI). For CANEF villages, women's income has a negative impact on BMI at low household income and a positive impact at higher household incomes (although both of these impacts are only significant at the 20-percent level). The threshold household income is 341,000 CFA: below this level, women's income has a negative impact on women's BMI, holding overall household income constant. The mean household income for the CANEF villages is 542,984, so for approximately the poorest one-third of households in these villages, women's income has a negative impact on their BMI. For the non-CANEF villages, a slightly more significant, but opposite, pattern is found. At lower household incomes, increasing women's income increases women's BMI values. For these households, the threshold household income is 504,000 CFA: below this income level, women's income and BMI are positively associated. The mean household income for the non-CANEF villages is 494,298 CFA, so, for approximately the poorest one-half of households in these villages, women's income has a positive impact on their BMI. Similarly, the impact of household income on BMI in the non-CANEF villages is positive for women with own income levels of below 15,000 CFA. The mean women's income in the non-CANEF villages is 13,275 CFA. For approximately two-thirds of the lowest own-income women, household income is positively associated with BMI.

Women's nutritional knowledge, as we have defined it (Table 2), has positive but insignificant impacts on women's BMI in both CANEF and non-CANEF villages.

#### **8.4 Impact of Index Women's Income and Nutritional Knowledge on their Preschoolers' Nutrition**

From Appendix 1, Table 18a, it is clear that the regression results for the CANEF villages are very poor, with the important exception of Round 2. In Rounds 1 and 3, mother's income does not have a significant impact on preschooler weight-for-height. In Round 2, however, mother's income has a positive and significant impact on preschooler weight-for-height. This impact diminishes with preschooler age, and becomes zero at approximately 62 months. The impact is largest for very young preschoolers and smallest for older preschoolers. The same result occurs with the non-CANEF village preschoolers in Round 1, although the age cutoff at which mother's income has a negative impact is approximately 24 months.

Mothers' measured nutrition knowledge is only significant in the non-CANEF villages and then only in Round 1. Interactions between women's income and nutrition knowledge did not prove significant in any round in either of the two types of villages.

#### **8.5 Conclusions of the Multivariate Analysis**

The multivariate results are summarized in Table 13. Results from the multivariate analysis indicate that:

- CANEF credit to index women appears to be well-targeted: (1) CANEF loan receipt is positively associated with household land ownership, but only up to 21 hectares of land owned per household; (2) it is positively associated with households where women and children predominate simultaneously; and (3) it is positively associated with households in small compounds that (presumably) afford little risk-sharing. Only result (2) holds for non-CANEF villages, and the result is less pronounced and statistically weaker.
- CANEF credit raises women's income for index women with no preschoolers, but for index women with one or more preschoolers, it

**Table 13—Summary of statistically significant multivariate results**

Dependent Variable	Households in CANEF Villages	Households in Non-CANEF Villages
CANEF loan received	Adult female/adult male ratio (-) <sup>a</sup> Child/adult ratio * Adult female/male ratio (+) <sup>a</sup> Land owned (+) <sup>a</sup> Land owned squared (-) <sup>a</sup> Number of houses in compound (-) <sup>a</sup> Presence of latrine (+) <sup>a</sup>	N.A.
Non-CANEF loan received	N.A.	Household size (+) <sup>b</sup> Child/adult ratio (-) <sup>c</sup> Child/adult ratio * adult female/adult male ratio (+) <sup>a</sup> Cattle owned (-) <sup>a</sup>
Women's income	Predicted CANEF credit (+) <sup>b</sup> Predicted CANEF credit * number own preschoolers (-) <sup>a</sup> Adult female/adult male ratio (+) <sup>a</sup> Age of woman (+) <sup>a</sup> Number of own livestock (+) <sup>a</sup> Land owned by household (-) <sup>d</sup>	Number of own livestock (+) <sup>a</sup> Age of woman (+) <sup>a</sup> Number of own preschoolers (+) <sup>b</sup>
Other household income	Household size (+) <sup>a</sup> Household size squared (-) <sup>b</sup> Household size * child/adult ratio (-) <sup>b</sup>	Cattle owned by household (+) <sup>a</sup>
Women's BMI	Predicted women's income (-) <sup>d</sup> Woman married to head (+) <sup>b</sup> Predicted woman's income * predicted household income (+) <sup>d</sup>	Predicted women's income (+) <sup>c</sup> Predicted household income (+) <sup>b</sup> Predicted woman's income * predicted household income (-) <sup>c</sup>
Preschooler weight-for-height, Round 1	Age of preschooler (-) <sup>a</sup> Age of preschooler squared (+) <sup>a</sup>	Predicted mother's income (+) <sup>c</sup> Predicted household income (-) <sup>a</sup> Predicted mother's income * age in months of preschooler (-) <sup>c</sup> Mother's nutritional knowledge (+) <sup>a</sup> Household size (+) <sup>d</sup>
Preschooler weight-for-height, Round 2	Predicted mother's income (+) <sup>a</sup> Predicted mother's income * age in months of preschooler (-) <sup>a</sup> Age in months squared (+) <sup>b</sup> Gender (+) <sup>a</sup> Mother's age (-) <sup>a</sup> Presence of latrine (-) <sup>a</sup>	Predicted mother's income (+) <sup>b</sup> Mother's age (+) <sup>d</sup> Father is head of household (+) <sup>d</sup>
Preschooler weight-for-height, Round 3	Predicted household income (-) <sup>b</sup> Age in months squared (+) <sup>b</sup> Gender (+) <sup>b</sup> Mother's age (-) <sup>b</sup>	Age in months (+) <sup>a</sup> Age in months squared (-) <sup>b</sup> Mother's height (+) <sup>b</sup> Mother's age (+) <sup>a</sup> Father is head of household (-) <sup>b</sup> Household size (-) <sup>b</sup>

<sup>a</sup> Significant at the .05 level. <sup>b</sup>Significant at the .10 level. <sup>c</sup>Significant at the .15 level. <sup>d</sup>Significant at the .20 level.  
Note: Sign in parentheses indicates direction of influence on dependent variable.

seems to lower their income. Women's credit in non-CANEF villages does not seem to affect women's income.

- Controlling for overall household income, index women's income improves women's nutrition in CANEF villages, but only for women from the wealthiest two-thirds of households. In the non-CANEF villages, women's income raises women's BMI, but only for index women from the poorest 50 percent of households.
- Controlling for overall household income, index women's income raises preschooler weight-for-height in CANEF villages, but only in Round 2, and at a diminishing rate as preschoolers get older. In non-CANEF villages, index women's income has a weakly significant positive impact on preschooler weight-for-height, but only in Rounds 1 and 2, and in Round 1 only for preschoolers below 24 months in age.

### 9. IMPLICATIONS FOR CWE

The qualitative analyses indicate that the CWE program in Mali makes recipient women feel empowered in terms of access to income-generating activities. The quantitative analyses indicate that

1. CANEF credit is fairly well targeted to women in poorer households, but that targeting efficiency could be improved,
2. women with no preschoolers who receive CANEF credit increase their own incomes but women with preschoolers do not raise their income as a result of CANEF credit,
3. women from the poorest CANEF village households may see their nutrition status decline with increased own income (statistically weak result), and
4. preschooler nutrition status (weight-for-height Z-score) is positively associated with CANEF credit in Round 2.

One conclusion to be drawn that CWE may be reaching women in the poorest households, but that the correct mix of complementary inputs is not in place for it to be as effective as possible. A large component of that input mix is probably time availability. Women with preschoolers might not have time to take advantage of the income-generating opportunities afforded by the CANEF loans. In addition, women from the poorest households might be stretched so tightly in terms of time in work that they may have to sacrifice their own nutrition status in order to generate income.

Future redesigns of CWE should examine the nature and magnitude of extra time burdens (if any) imposed by the CWE and by the income-generation opportunities it affords. In 1995, the results in an earlier version of this report (De Groote et al.

1994) were shared with CWE managers in Dogo, and other Malian stakeholders in the outcome of the research.<sup>8</sup>

The discussions summarized in Appendix 2 touched upon several points that had emerged in the earlier report (De Groote et al. 1994):

1. The enumerators found it difficult to ask questions on several areas that were described as "delicate," such as incomes and expenditures.
2. Several stakeholders wanted more detail on exactly how higher income to women benefits child nutrition status.
3. The choice of villages for CANEF projects was clearly a complex and time-varying decision based on logistic realities and resource constraints.
4. The importance of documenting and monitoring program performance was highlighted.

IFPRI's own conclusion from an ongoing dialogue with Freedom from Hunger indicate that closer collaboration of the two institutions with each other and with CANEF would have resulted in an improved experimental design, improved variable definition (especially on what it means to have "received CANEF credit"), improved interpretation of empirical results, and a more receptive audience for the final results.

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<sup>8</sup>In addition to sharing the results of research with the policymakers through roundtable discussions, meetings were held with the final beneficiaries of the credit program. The villages where the CWE/CANEF program was implemented were visited in order to compare the research results with the opinions of the beneficiaries and the community leaders. The major results of the study were summarized to the beneficiaries for their feedback. There was an agreement with the results in general. The participants suggested that the credit funds are not enough to have a long-term viable business, although it is currently solving the problem of lack of income. There was also a feeling that not all who receive credit use it effectively and, hence, do not receive the full benefit of the program.

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APPENDIXES

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**APPENDIX 1**

**Multivariate Results**

Problems 100-110

**Table 14—Regression: Determinants of loans received by index women—CANEF loans in CANEF villages and other loans in Non-CANEF villages**

Independent variables	CANEF Villages	Non-CANEF Villages
Age of index woman (in years)	226.69 (.54)	20.53 (.727)
Number of own preschoolers of index women	-3,886.80 (-.682)	125.98 (.408)
Husband is head of household (1 = yes)	-11,795.00 (-1.366)	356.81 (.571)
Household size	380.92 (.845)	70.30 (1.800)
Child/adult ratio in household	-9,768.50 (-.824)	-1,556.5 (-1.563)
Adult female/adult male ratio in household	-29,079.00 (-2.142)	-698.86 (-1.049)
Child/adult ratio * Adult female/adult male ratio in household	20,584.00 (2.560)	1,157.00 (2.080)
Land owned by household (hectares)	2,693.00 (2.185)	1.78 (.069)
Land owned by household squared	-57.91 (-1.958)	.05 (.763)
Cattle owned by household (count)	-357.76 (-.949)	-114.84 (-2.249)
Number of houses in compound	-2,293.90 (-2.536)	-51.33 (-1.021)
Quality of housing (1 = good)	-12,832.00 (-1.349)	576.20 (.788)
Presence of latrine (1 = yes)	24,003.00 (2.779)	-548.03 (-1.062)
Constant	-6,256.60 (-.261)	-663.29 (-.504)
$\sigma$	21,184.00 (6.439)	1,623.30 (6.258)
Dependent variable	CANEF loans	Non-CANEF loans
Log-likelihood	-290.77	-254.41
Number of recipient women (one per household)	86	96

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**Table 15—Regression: Determinants of index women's income, CANEF and non-CANEF villages**

Independent Variables	CANEF Villages	Non-CANEF Villages
Predicted CANEF credit for index woman	.152 (1.694)	
Predicted CANEF credit * number of own preschoolers of index woman	-.196 (-2.121)	
Predicted non-CANEF credit for index woman		-1.736 (-.783)
Predicted non-CANEF credit * number of own preschoolers of index woman		1.698 (1.045)
Age of index woman (in years)	471.668 (2.380)	298.379 (1.376)
Number of own livestock of index woman	3,114.719 (2.630)	3,547.376 (3.396)
Number of own preschoolers of index woman	1,214.344 (0.454)	4,596.736 (1.825)
Land owned by household (hectares)	-170.016 (-1.436)	56.297 (1.025)
Cattle owned by household (count)	118.541 (1.041)	-110.163 (-.742)
Adult female/adult male ratio	3,335.350 (1.358)	-563.421 (-.151)
Constant	-5,333.814 (-.622)	-2,316.630 (-.218)
R-square	0.305	0.225
Adjusted R Square	0.223	0.142
Significance of F	0.001	0.012
Number of index women (one per household)	77	83

**Table 16—Regression: Determinants of other income of the household, in CANEF and non-CANEF villages**

Independent Variables	CANEF Villages	Non-CANEF Villages
Predicted CANEF credit of index woman	-1.427 (-.621)	
Predicted non-CANEF credit of index woman		-31.882 (-1.150)
Household size	62,971.795 (4.297)	6,448.002 (.646)
Household size squared	-247.459 (-1.791)	62.831 (.765)
Child/adult ratio of household	131,721.912 (.842)	61,721.249 (.532)
Household size * Child/adult ratio	-22,890.357 (-1.946)	-2,324.554 (-.305)
Adult female/adult male ratio of household	61,630.994 (.809)	-8,670.989 (-.202)
Land owned by household (hectares)	2,580.429 (.653)	88.924 (.079)
Cattle owned by household (count)	2,383.808 (.594)	7,673.801 (2.336)
Constant	-267,005.004 (-1.376)	253,043.215 (1.825)
R-square	0.466	0.297
Adjusted R Square	0.406	0.23
Significance of F	0	0
Number of households	79	92

**Table 17—Regression: Determinants of adult index women's BMI, CANEF and non-CANEF villages**

Independent Variables	CANEF Villages	Non-CANEF Villages
Predicted index woman's income	-9.75*10 <sup>5</sup> (-1.247)	1.92*10 <sup>4</sup> (1.574)
Predicted household income	-2.17*10 <sup>6</sup> (.546)	5.47*10 <sup>6</sup> (1.773)
Predicted index woman's income * predicted household income	2.86*10 <sup>10</sup> (1.331)	-3.58*10 <sup>10</sup> (-1.609)
Age of index woman (in years)	-.065 (-1.016)	-.048 (-.980)
Number of preschoolers of index woman	-.026 (-.043)	-.382 (-.838)
Index woman married to head of household (1 = yes)	1.513 (1.850)	-.160 (-.205)
Nutritional knowledge of index woman (1 = good)	.826 (.902)	.677 (.995)
Adult female/adult male ratio in index woman's household	.379 (.701)	-.063 (-.112)
Constant	21.846 (6.862)	19.662 (9.099)
R-square	0.195	.110
Adjusted R Square	0.069	-.035
Significance of F	0.165	.642
Number of adult index women	60	58

Table 18a—Regression: Weight-for-height of adult index women's preschoolers—  
CANEF villages

Independent Variables	Round 1	Round 2	Round 3
Predicted mothers' income	3.49*10 <sup>5</sup> (.074)	1.12*10 <sup>4</sup> (2.798)	5.53*10 <sup>5</sup> (.778)
Predicted household income	1.09*10 <sup>6</sup> (.408)	-4.92*10 <sup>7</sup> (-.666)	-1.82*10 <sup>6</sup> (-1.440)
Age (in months)	-.153 (-2.329)	-.021 (.481)	-.065 (-.782)
Age squared	.003 (2.468)	.001 (1.747)	.001 (1.358)
Predicted mother's income * age of preschooler in months	5.74*10 <sup>7</sup> (.338)	-1.79*10 <sup>6</sup> (-1.644)	-6.77*10 <sup>7</sup> (-.258)
Gender (1 = boy)	.291 (.590)	.821 (3.434)	.602 (1.442)
Mother's height (in cm.)	-.019 (.482)	-.032 (-1.360)	.048 (.980)
Mother's nutritional knowledge (1 = good)	-.396 (-.705)	.040 (.145)	-.474 (-.919)
Mother's age (in years)	-.014 (-.246)	-.077 (-2.850)	-.057 (-1.571)
Father is head of household (1 = yes)	-.224 (-.357)	-.091 (-.320)	-.157 (-.330)
Household size	-.058 (-.672)	-.004 (-.312)	.014 (.554)
Child/Adult ratio	.142 (.209)	.066 (.240)	-.025 (-.049)
Presence of latrine (1 = yes)	-.282 (-.578)	-.582 (-2.324)	.137 (.345)
Constant	-1.548 (-.243)	6.063 (1.754)	-5.911 (-.785)
R-square	0.294	0.631	0.401
Adjusted R Square	-0.105	0.43	0.012
Significance of F	0.711	0.007	0.462
Number of preschoolers	37	38	34

Table 18b—Regression: Weight-for-height of adult index women's preschoolers—  
Non-CANEF villages

Independent Variables	Round 1	Round 2	Round 3
Predicted mothers' income	6.04*10 <sup>5</sup> (1.579)	5.53*10 <sup>5</sup> (1.684)	-6.48*10 <sup>5</sup> (-.127)
Predicted household income	-3.59*10 <sup>6</sup> (-2.313)	-1.38*10 <sup>6</sup> (-1.075)	1.06*10 <sup>6</sup> (.455)
Age (in months)	.048 (.638)	.043 (.775)	.207 (1.947)
Age squared	1.34*10 <sup>4</sup> (.124)	6.23*10 <sup>5</sup> (.083)	-.002 (-1.836)
Predicted mother's income * age of preschooler in months	-2.55*10 <sup>6</sup> (-1.560)	-1.51*10 <sup>6</sup> (-1.081)	-4.82*10 <sup>7</sup> (-.234)
Gender (1 = boy)	.380 (.985)	.502 (1.656)	.759 (1.359)
Mother's height (in centimeters)	.032 (1.022)	.013 (.738)	.070 (1.765)
Mother's nutritional knowledge (1 = good)	.752 (1.997)	.147 (.411)	.725 (1.135)
Mother's age (in years)	-.015 (-.300)	.034 (1.399)	.115 (1.947)
Father is head of household (1 = yes)	.188 (.360)	.468 (1.339)	-1.287 (-1.514)
Household size	.045 (1.414)	.023 (1.235)	-.085 (-1.479)
Child/Adult ratio	.246 (.413)	-.746 (-1.925)	-.862 (-1.131)
Presence of latrine (1 = yes)	.207 (.521)	.235 (.748)	-.252 (-.516)
Constant	-6.739 (-1.192)	-4.741 (-1.632)	-17.337 (-2.258)
R-square	0.311	0.448	0.615
Adjusted R square	0.003	0.192	0.159
Significance of F	0.467	0.104	0.313
Number of preschoolers	42	42	25

## APPENDIX 2

### Proceedings of the Mali Roundtable Workshop April 12, 1995 - Bamako, Mali

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#### *Liste des participants*

Suresh Babu, International Food Policy Research Institute (IFPRI)  
Fortes Jean Baptiste, USAID Bamako, PVO-Cofinancing, BP 34, Tel: 223602  
Amadou Camara, économiste, USAID Mali, BP 34 Tel: 223602  
Hugo De Groote, agro-économiste, ESPGRN, BP 186 Sikasso  
Issiaka Dembele, CMDT/PROFED BP 28, Sikasso  
Barbara Durr, Groupe Piroit PME, BP. 1792 BKO, Tel: 232721  
Thea Hilhorst, sociologue, ESPGRN, BP 186 Sikasso  
Demba Kebe, Chef d'Equipe ESPGRN, BP 186 Sikasso  
Mary Keita, BNDA, Tel 226611/226464  
Nina Lilja, agro-économiste, Purdue University, ESPGRN, BP 186 Sikasso  
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Bakary Traore, directeur CANEF, BP 5081, Bamako  
Victoria Weiss, UNICEF, B.P. 96, Bamako, Tel: 224401

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A workshop was organized by the International Food Policy Research Institute (IFPRI) in Bamako on April 12 to discuss the results of the De Groote et al. (1994) study on the impact of the Credit With Education Program. Important policymaking organizations represented included the United States Agency for International Development (USAID), UNICEF, the Centre d'Appui Nutritionnel et Economiques

aux Femmes (CANEF), the pilot group—PME/PMI (small and medium enterprises), the Equipe Système de Production et Gestion des Ressources Naturelles—Sikasso (ESPGRN), and the Banque Nationale de Développement Agricole (BNDA). Funded by IFPRI, this workshop was organized to present the results of a research conducted in 1993 implemented by CANEF with support from Freedom from Hunger (FFH).

The meeting was opened by Hugo De Groote, previously with IFPRI and responsible for conducting the research (now with ESPGRN, the farming systems division of the Institut d'Economie Rurale), and Suresh Babu (with IFPRI). Hugo welcomed the participants and briefly explained the reasons of the workshop, disseminating the research results from IFPRI, and the comments from the users back to IFPRI. All participants introduced themselves.

Hugo De Groote then passed the word to Dr. Suresh Babu, head of training for the IFPRI, who had come specifically from Washington to help organize this seminar. Babu welcomed and thanked all participants for attending. The mandate of IFPRI was summarized as conducting research on food policy, which has included research on informal group credit and other interventions, policies, and initiatives aimed at improving nutritional status. It was in this perspective that FFH and USAID asked IFPRI and ISTI/IMPACT to evaluate the CANEF project.

Babu explained the objectives of the meeting: to extend the draft results of the research to its possible users, the Malian authorities and development projects (outreach), and to take into account their comments and suggestions (inreach). This enables improvement of the methodology of similar research in other countries and helps with the continuation of research in Mali. Finally, this workshop helps to establish relationships with other research institutes and interested organizations in Mali.

Hugo De Groote then gave an overview of the conceptual model used in the research. It was explained how the household model includes seasonal variability, individuals, production as well as consumption, and certain variables needed to test the hypothesis that Credit with Education has a positive effect on nutritional status through improved income of women.

Issiaka Dembele, who supervised the fieldwork in this research, opened the presentation of the results by describing the study area and the methodology used. He reminded the audience of the villages and households chosen and explained some

weaknesses in the data, such as the delicate nature of certain information on income and expenditures, and the low reliability of the time-use data. After his presentation, some questions were asked and answered about the choice and definition of individual members within the household.

The next presentation was by Hugo De Groote, who gave an overview of the results. The first intervention was by Demba Kebe, head of the farming systems research team of Sikasso, which covers southern Mali. He first commented on the methodology of the research, explaining that, for practical reasons, the household usually is taken as having one center of decision, and elaborated on the definition of the household by ESPGRN. He commented on the need to include individuals in the analysis, and on the unsolved methodological problems of this kind of research. Second, Dr. Kebe's intervention included his concern whether the project under study, CANEF, was reproducible and sustainable. He wondered if, on the long term, other credit institutions could take over the services. Third, he explained, briefly, the purpose of the FSR team in South Mali, and how attention to women in development is part of its mandate. He showed how the IFPRI experience worked through Hugo's and Issiaka's work with several ongoing research projects: "Gender and Generation in Access to Productive Resources" and "The Role of Women in Cotton Production," both in which the problem of intrahousehold resource allocation is treated. Finally, he announced the organization of a seminar on rural financial systems in southern Mali, in which the IFPRI results as well as the institution building are of importance.

Bakary Traore, director of CANEF, presented his nongovernmental organization (NGO) in the second intervention. He expressed his satisfaction with the research, which they would not have been able to conduct themselves, and which allows CANEF to improve its program. He asked IFPRI to assist in the building of a monitoring system that would measure essential outcome variables in a continuous manner. Marie Cécile Sidibe, the third intervention, suggested a further analysis to see how exactly the improved income benefits the children and their nutritional status.

Amadou Camara, from USAID-Bamako, expressed his appreciation of the dissemination of the results. He explained that, increasingly, USAID projects have to be result-oriented, and therefore a methodology has to be available to measure these results. He stressed, however, that this does not have to be necessarily quantitative. The CWE project is especially important because it covers the first two out of four

intervention areas of USAID: economic growth, health, environment, and democratic development.

Mary Keita, representative of the rural development bank, BNDA, was asked to present his organization's view. He explained that, since his bank could not possibly reach the rural population on an individual basis, given the high costs, it is looking for partners such as CANEF to play the role of intermediary. Besides CANEF, they collaborate with several similar decentralized financial service organizations. The BNDA offers technical assistance, computer and office facilities, and a preferential rate. The IFPRI study helps them to justify their work.

Barbara Durr, project PME/PMI, commented on several variables that were not taken into account: literacy, distance to markets, cost of transportation, etc. On the analysis, she stressed that access to credit can only increase income if the economic climate is receptive for economic activities fueled by that credit. She mentioned that her organization has also developed monitoring indicators, and that they would like to collaborate with IFPRI on developing further methodologies. The UNICEF participant, responsible for nutrition projects, also expressed interest in this kind of collaboration.

The following discussions tackled the problem of long-term viability and the need for self-supporting systems. Bakary mentioned that Save the Children has just organized a colloquium on the subject in Kolondjeba. It was stressed that it is important to deepen the present results with an analysis of its costs. The ESPGRN seminar, planned next month, could be a vehicle for such a debate.

Another methodological point that was raised by Bakary was the choice of villages. Did CANEF have certain selection criteria for its villages, and could these factors not have been more responsible for measured differences. CANEF thought not, but was not sure. Another need that was expressed is to go back and share the information in the villages, trying to find a better explanation of the statistical relationships found in the study (which IFPRI had already planned).

**APPENDIX 3**

**Questionnaire**

TABLEAU DE RECAPUTILATION ENQUETE CREDIT AVEC EDUCATION  
DOGO -MALI

Nr village	Nom village	Nr Famille	Nom du chef de famille		Nom Enqueteur
			Prenom	Nom	

Tableau	Date de l'enquete	Date de la verification du superviseur	Date du saisi	Remarque
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				





QUESTIONS	CODES	REponses	COMMENTAIRES
1 Est ce que la famille est dirigée par une femme ?	1 = oui 0 = non	---	
2 Quelque soit la raison, pouvez-vous dire que le chef de famille passe plus de temps en dehors de la famille ?	1 = oui 0 = non	---	Donnez les raisons de son absence :
3. Ou est ce que vit présentement le chef de famille .	1 = Dans la région de Dogo 2 = Bamako 3 = Sikasso 4 = Mopti 5 = Autres région du Mali 6 = Autres lieux(indiquer)	_____	
4 Combien d'enfants vivent présentement loin de la famille?	a enfants au collège. lycée b enfants à l'université c enfants travaillant en ville	a _____ b _____ c _____	d. enfants travaillant à l'étranger
5 Quel est le niveau d'étude du chef de famille ? (indiquer le nombre d'année) par exemple :	illétré = 0 premier cycle = 1-5 ans deuxième cyce = 7 - 9 ans lycée, école professionnelle = 10-12 an	_____	
6 Est-ce que le chef de famille peut lire son courrier (lettre) ou le journal ?	1 = oui 2 = avec difficulté 3 = non		
7 De quel groupe ethnique faite vous partie ?	1. Bambara 2. Malinké 3. Sarakolé 4. Peulh 5. Bozo 6. Senoufo 7. Autre(indiquer) = _____	---	
8 Quel est la croyance religieuse du chef de famille ?	1. Musulmane 2. Catholique 3. Protestante 4. Animiste 5. Autre(indiquer) = _____		
9. Quelle est votre première source d'eau potable au début et à la fin de la saison sèche?	a. Puits b. Pompe publique c. Fleuve d. Mangot/trivière e. source f. Autre source d'eau _	au debut: _____ a la fin: _____	
10. Quelle est la distance que les femmes doivent parcourir pour chercher de l'eau à la fin la saison sèche?	en mètres: en minutes:	_____ _____	
11. Quelle quantité des éléments ci-dessous énumérés possédez-vous ?	a. Vélos/bicyclettes b. Radio /magneto c. Voitures d. Camions e. Lampe à pétrole f. Lampe à gaz g. Montre(reveil) h. Brouettes i. houes j. charrues k. rateaux l. fourneaux m. rechaux n. autres(préciser)	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____	

Tableau 3. Agriculture

1 Propriété des terres

	ha	parcelles
1 Quel est la superficie (en nombre de parcelles et en ha) de la concession?		
2 Quel est la superficie totale de terre prêtée par la famille?		
3 Quel est la superficie totale de terre prêtée à la famille?		
4 Quel est la superficie actuelle de terre <sup>utilisée</sup> exploitée par la famille		
- en production		
- en jachère		
- en jardinage		
- autres		

2 Cultures

Culture	Exploitation		Production		vente			
	Nbre parcelles	surface (ha)	Quantité	Unité de mesure	Qté	Unité de mesure	valeur totale	mois
Coton								
Mil								
Sorgho								
Mais								
Riz								
Niébé								
Arrachide								
Autres								

Tableau 03. Agriculture (suite)

3 Intrants

Nature		Unite	Quantite	Valeur
Engrais	Urée			
	Complexe coton			
	Complexe céréales			
	Phosphate de Tilemsi			
pesticides	Herbicides			
	Insecticides			
	Fongicides			
Fumure organique				
Semences	Coton			
	Cereale			
	Autre			
Main d'oeuvre salariale <sup>(homme)</sup> <sub>(jour)</sub>				
Location de matériels agricole				
Autres				

4. Culture Attelée

Matériels	Nombre	Annee d'achat	Prix Unitaire	Prix Totale	Location/ journée de travail	Montant
1 Multiculteur						
2 Charrue						
3 Semoire						
4 Houe asine						
5 Houe manga						
6 Charette						
Animaux de trait	Nombre		Prix unitaire/estimation	Prix totale	Location/ jt	
1. Boeufs						
2 Ane						
3. Cheval						

Tableau 03. ELEVAGE (suite)

5 Combien d'animaux possédez-vous des espèces suivantes?

Espèce	
Bovins	
Ovins	
Caprins	
Porcs	
Anes	
Chevaux	
Poules	
Pintades	

6 Quel changements ont été observé l'année passée? (remplir une ligne par changement)

Espèce	saison	Achat		Autoconsommé		Commercialisé	
		Qté	Valeur totale	Qté	Valeur	Qté	Valeur
bovins et boeuf de trait	saison froide						
	saison chaude						
	hivernage						
ovins	froide						
	chaude						
	hivernage						
caprins	froide						
	chaude						
	hivernage						
porcs	froide						
	chaude						
	hivernage						
volaille	froide						
	chaude						
	hivernage						

**TABLEAU 4. REVENU NON-AGRICOLE DE LA FAMILLE**

N° du village		N° de la famille	
---------------	--	------------------	--

(énumérer toutes les sources de revenu depuis le 1 Janvier 1992)

Source de Revenu Non-Agricole	Valeur (FCFA)	Description
Vente de certains biens ou possessions de la famille a. _____ b. _____ c. _____ (pas d'animaux)	a _____ _____ _____ b _____ _____ _____ c _____ _____	
Salariat agricole		
Revenu d'un emploi permanent		
Revenu d'un emploi temporaire		
Argent reçu des parents, remboursements inclus		
Cadeaux (mariage, dots, etc.)		
Vente de produits d'artisanat		
Vente de repas		
Divers (pensions, loyer, etc.)		
<del>Autre</del>		
Autre		

7

TABLEAU 5. CREDIT DE LA FAMILLE

N° du Village		N° de la famille		N° de la personne	
---------------	--	------------------	--	-------------------	--

1. Y a-t-il quelqu'un de la famille qui a reçu du crédit ou un prêt depuis janvier 1998?	1 Oui 0 Non
2. Si non pourquoi pas?	1 Pas de nécessité 2 Ne peut pas offrir de garantie 3 Procédé trop compliqué 4 Procédé trop cher

5. Autre

Note pour l'enquêteur Complétez le suivant si la réponse est 'Oui' à la question Q.1 Remplissez une colonne par transaction de crédit

Code de transaction crédit	1	2	3	4	5
1. Nom de la personne recevant du crédit					
2. No d'identification de la personne (1)					
3. Nom de la source du crédit (écrite) 1 CANEF 2 CMDT/BNDA 3 CAC 4 Banque commerciale 5 Autre institution _____ 6 Ami/parent 7 Tontine 8 Employeur 9 Commerçant 10 Autre source privée: _____					
5. Montant demandé					
6. Montant approuvé					
7. Montant reçu	-----		---		-
8. Date de réception (mois)					
9. Quelles sont les modalités de repaiement? 1 Cash 2 terre 3 cultures vivrières 4 cultures de rente 5 Machines 9 Autre, spécifiez					
10. Combien vous avez agréé de repayer? (montant en FCFA; si en nature, donner la valeur)	-----		-----		---
11a. Est-ce que le repaiement est espacé dans le temps (1=oui, 0=non)	---				
11b. Si oui à 11a, en combien de fois le repaiement se fait? 1 Hebdomadaire 2 chaque mois 9 Autre, spécifiez:	---				

12. Combien vous avez déjà repayé jusqu'ici (montant en FCFA; si en nature, donner la valeur)	-----		---		---
13. Date finale de repaiement (entrer mois, "99" en cas de non paiement, date si connu)	--/--- J/M		/	J/M	---
14. Quel type de garantie est-ce que vous avez offert pour obtenir le crédit?  1 Rien 2 Terre 3 Maison 4 Bétail 5 Ustensiles Menage 6 Cultures vivrieres 7 Cultures de rentes 9 Autres. spécifiez: _____	---		---		---
16. Comment est-ce que l'argent était employez? (Employez les codes-ci pour répondre 16a- 16d.  1 Nutrition 2 Logement 3 Terre: achat/location 4 Investment agricole 5 Achat bétail 6 Commerce 7 Repaiement dettes 8 Education 9 Manage/autres activités sociales 10 Voyage 11 Santé 12 Autres. spécifiez					
15a. Premier emploi	Code				
	FCFA				
	% du pret				
16.b Deuxième emploi	Code				
	FCFA				
	% du pret				
16. c troisième emploi	Code				
	FCFA				
	% du pret				
15.d quatrième emploi	Code				
	FCFA				
	% du pret				

Note pour l'enquêteur: si la réponse est "oui" à la dernière question, continuez

Code de la Transaction Crédit	0 1	0 2	0 3
1. Nom de la personne qui a donné le crédit			
2. No ID de (1)	---	---	---
3. A qui a été donné le crédit (écrire d'abord, coder plus tard)?  1 = membre de la famille 2 = autre parent 3 = Ami/voisin 4 = Employé 5 = Autre, spécifiez: _____	---	---	---
3. Quand est-ce que le prêt a été accordé? (mois, date si possible)?	___/___/___	___/___/___	___/___/___
4. Comment est-ce que l'argent était employé? (Employez les codes-ci pour répondre)  1 Nutrition 2 Logement 3 Terre: achat/location 4 Investiment agricole 5 Achat bétail 6 Commerce 7 Repaiement dettes 8 Education 9 Mariage/autres activités sociales 10 Voyage 11 Santé 12 Autres, spécifiez 13 Ne sait pas			
5. Quel était la valeur du crédit? (en CFA)?	-----	-----	-----
6. A combien était fixé le montant à repayer (en CFA)?	-----	-----	-----
7. Quand est-ce que le montant total sera repayé (mois et année date si possible)	___/___/___	___/___/___	___/___/___
8. Combien est-ce que ils ont déjà payé ?	-----	-----	-----
9. Quel type de garantie est-ce que vous avez demandé pour le crédit?  1 Rien 2 Terre 3 Maison 4 Bétail 5 Ustensils Ménage 6 Cultures vivrières 7 Cultures de rente 9 Autres, spécifiez: _____			

Tableau 6. DEPENSES NON-ALIMENTAIRES

No DU VILLAGE	No DE LA FAMILLE
Nom de la Personne Enquetee	No de la Personne

ARTICLES	CODE	QUANTITE	COUT TOTAL	FREQUENC E	MODE DE PAIEMENT
<b>MAISON</b>					
Toiture	2				
Pointes	3				
Planches Poutre	4				
Ciment	5				
Sable	6				
Banco	7				
Briques en banco	8				
Pailles chnisme	9				
Autres	10				
<b>CHAUFFAGE ET LUMIERE</b>					
Bois	12				
Charbon de bois	13				
Lampe a petrole	14				
Batteries	15				
Panneau solaire	16				
Groupe electrogene	17				
Lampe a huile	18				
<b>VETEMENTS ET TEXTILES</b>					
<del>...</del>	20				
Boubou	21				
Chemise	22				
	23				

D. K. H. C.		2.4	
<b>Frequence d'achat</b>		<b>Modes de Paiements</b>	
1 = 1 fois par semaine 2 = 2 fois par semaine 3 = 3 fois par semaine 4 = 4 fois par semaine 5 = 5 fois par semaine 6 = 6 fois par semaine 7 = 7 fois par semaine	8 = Tous les deux jours 9 = Toutes les deux semaines 10 = Une fois par mois 11 = Tous les deux jours 12 = Tous les trois mois 13 = Occasionnellement	1 = Vente de recolte 2 = Revenu non agricole 3 = Argent recu des amis et parents 4 = argent emprunte aupres des voisins	5 = Vente de betail 6 = Vente de biens 7 = Epergne 8 = Autre (indiquer)

No DU VILLAGE :	No DE LA FAMILLE :
-----------------	--------------------

ARTICLES	CODE	QUANTITE	COUT TOTAL	FREQUENCE	MODE DE PAIEMENT
VETEMENTS ET TEXTILE					
<del>Autres</del>	26				
Pagne	27				
Camisole	28				
Boubou	29				
<del>Autres</del>	30				
culotte	31				
Pantalon	33				
Nappe	34				
Boubou	35				
Serviette de bain	36				
Couverture	37				
Rideau. traverse	38				
Drep	39				
Moustiquaire	40				
Chaussures					
Chaussures (hommes)	42				
Hauts talons (femmes)	43				
Autres chaussures (femmes)	44				
Chaussures d'enfants	45				
Chaussures de sport	46				
Sandaes	47				
Autres	48				

Frequence d'achat		Modes de Paiements	
1 = 1 fois par semaine	8 = Tous les deux jours	1 = Vente de récolte	6 = Vente de bétail
2 = 2 fois par semaine	9 = Toutes les deux semaines	2 = Revenu non agricole	7 = Vente de biens
3 = 3 fois par semaine	10 = Une fois par mois	3 = Argent reçu des amis et parents	8 = Epargne
4 = 4 fois par semaine	11 = Tous les deux jours	4 = argent empruntés auprès des voisins	9 = Autre (indiquer)
5 = 5 fois par semaine	12 = Tous les trois mois		
6 = 6 fois par semaine	13 = Occasionnellement		
7 = 7 fois par semaine			

No DU VILLAGE		No DE LA FAMILLE			
ARTICLES	CODE	QUANTITE	COUT TOTAL	FREQUENC E	MODE D' PAIEMEN
AUTRE OBJETS PERSONNELS					
Ceintures	54				
Chapeaux	55				
Montres	56				
Bracelets	57				
Chaines	58				
Perles	59				
Autres	60				
USTENCILS ET AUTRES ARTICLES DE MAISON					
Porcelaine	62				
Couverts	63				
Plateaux	64				
Fourchettes	65				
Couteaux	66				
Casseroles	67				
Pots d'argile	68				
Lampes	69				
Bougies	70				
Paniers/Sacs	71				
Torches	72				
Jouets	73				
Machine à coudre	74				
Meubles	75				
Tapis	76				

Frequence d'achat		Modes de Paiements	
1 = 1 fois par semaine	8 = Tous les deux jours	1 = Ventes de récolte	6 = Vente de bétail
2 = 2 fois par semaine	9 = Toutes les deux semaines	2 = Revenu non agricole	7 = Vente de biens
3 = 3 fois par semaine	10 = Une fois par mois	3 = Argent reçu des amis et parents	8 = Epargne
4 = 4 fois par semaine	11 = Tous les deux jours	4 = argent empruntés auprès des voisins	9 = Autre (indiquer)
5 = 5 fois par semaine	12 = Tous les trois mois		
6 = 6 fois par semaine	13 = Occasionnellement		
7 = 7 fois par semaine			

Tableau 6(suite, P. 4)

## DEPENSES NON-ALIMENTAIRES

No DU VILLAGE :		No DE LA FAMILLE :			
ARTICLES	CODE	QUANTITE	COUT TOTAL	FREQUENCE	MODE DE PAIEMENT
AUTRES ARTICLES DE MAISON					
Matelats	81				
Lits	82				
Canape et fauteuils	83				
Chaises	84				
Oreillers	85				
	86				
Autres	87				
Travaux de menage ୧୧					
Salaire de bonne	89				
Autres depenses	90				
	91				
SOINS PERSONNELS ୧୨					
Savon de toilettes	93				
Razor a accessoires	94				
Pate dentifrice	95				
Brosse a dent	96				
Poudre	97				
Pommade de cheveux	98				
Produits de beauté	99				
Cirage et brosse	100				
	101				
	102				
Autre	103				

Frequence d'achat		Modes de Paiements	
1 = 1 fois par semaine	8 = Tous les deux jours	1 = Ventes de récolte	6 = Vente de bétail
2 = 2 fois par semaine	9 = Toutes les deux semaines	2 = Revenu non agricole	7 = Vente de biens
3 = 3 fois par semaine	10 = Une fois par mois	3 = Argent reçu des amis et parents	8 = Epargne
4 = 4 fois par semaine	11 = Tous les deux jours	4 = argent empruntés auprès des voisins	9 = Autre (indiquer)
5 = 5 fois par semaine	12 = Tous les trois mois		
6 = 6 fois par semaine	13 = Occasionnellement		
7 = 7 fois par semaine			

Tableau 6(suite, P. 5)

## DEPENSES NON-ALIMENTAIRES

No DU VILLAGE		No DE LA FAMILLE			
ARTICLES	CODE	QUANTITE	COUT TOTAL	FREQUENCE	MODE DE PAIEMENT
<b>DEPENSES DE SANTE</b>					
Frais medicaux (clinique private)	108				
Frais medicaux (dispensaires)	109				
Frais medicaux (maternite)	110				
Medicaments	111				
Medecine traditionnelle (herbes, etc)	112				
Frais medicaux (cabinet dentaire)	113				
	114				
Autre depense	115				
<b>TRANSPORTS PUBLICS</b>					
Bus	117				
Bicyclette	118				
Mobylette	119				
Taxi	120				
Bateau, Pirogue	121				
Tram	122				
Autre	123				
<b>ENTRETIEN ET REPARATION</b>					
Essence et huile à machine	125				
Prevision	126				
Pneus	127				
Carte grise et immatriculation	128				
Assurance	129				
Autre	130				

Frequence d'achat		Modes de Paiements	
1 = 1 fois par semaine	8 = Tous les deux jours	1 = Ventes de récolte	6 = Vente de betail
2 = 2 fois par semaine	9 = Toutes les deux semaines	2 = Revenu non agricole	7 = Vente de biens
3 = 3 fois par semaine	10 = Une fois par mois	3 = Argent reçu des amis et parents	8 = Epargne
4 = 4 fois par semaine	11 = Tous les deux jours	4 = argent empruntés auprès des voisins	9 = Autre (indiquer)
5 = 5 fois par semaine	12 = Tous les trois mois		
6 = 6 fois par semaine	13 = Occasionnellement		
7 = 7 fois par semaine			

No. DU VILLAGE :	No. DE LA FAMILLE :
------------------	---------------------

ARTICLES	CODE	QUANTITE	COUT TOTAL	FREQUENCE	MODE de PAIEMENT
<b>CORRESPONDANCE</b>					
Fax	136				
Telephone	137				
Autre	138				
<b>ETRETIEN ET LOISIRS</b> 137					
Surpse parties	140				
Bandes dessinés	141				
Romans	142				
Radio	143				
Guitare	144				
Autre instrument de musique	145				
Journal	146				
Reparation radio montre etc	147				
Sport	148				
Autre	149				
<b>EDUCATION</b> 132					
Frais de scolarite	151				
Livres Scolaires	152				
Autres fourniture scolaires	153				
Uniformes	154				
Autre	155				
	156				
	157				
	158				

Frequence d'achat		Modes de Paiements	
1 = 1 fois par semaine	8 = Tous les deux jours	1 = Venles de récolte	6 = Vente de betail
2 = 2 fois par semaine	9 = Toutes les deux semaines	2 = Revenu non agricole	7 = Vente de biens
3 = 3 fois par semaine	10 = Une fois par mois	3 = Argent reçu des amis et parents	8 = Epargne
4 = 4 fois par semaine	11 = Tous les deux jours	4 = argent empruntes aupres des voisins	9 = Autre (indiquer)
5 = 5 fois par semaine	12 = Tous les trois mois		
6 = 6 fois par semaine	13 = Occasionnellement		
7 = 7 fois par semaine			

Tableau 8 (suite, P. 8)

## DEPENSES NON-ALIMENTAIRES

No DU VILLAGE :		No DE LA FAMILLE			
ARTICLES	CODE	QUANTITE	COUT TOTAL	FREQUENCE	MODE DE PAIEMENT
AUTRES DEPENSES					
LIQUEURS					
Bière	162				
Vin rouge	163				
Bière locale	164				
Vin de ban	165				
Autre boissons alcoolisés	166				
<i>Lo-fo</i>	167				
TABAC ET CIGARETTES					
Tabac local	169				
Tabac importé	170				
Cigarette non filtrée	171				
Cigarette filtre	172				
Chique	173				
Autres	174				
<i>Tous</i>	175				
<i>...</i>	176				
<i>...</i>	177				
<i>...</i>	178				
<i>...</i>	179				
<i>...</i>	180				
<i>...</i>	181				
<i>...</i>	182				

Frequence d'achat		Modes de Paiements	
1 = 1 fois par semaine	8 = Tous les deux jours	1 = Ventes de récolte	6 = Vente de betail
2 = 2 fois par semaine	9 = Toutes les deux semaines	2 = Revenu non agricole	7 = Vente de biens
3 = 3 fois par semaine	10 = Une fois par mois	3 = Argent recu des amis et parents	8 = Epargne
4 = 4 fois par semaine	11 = Tous les deux jours	4 = argent empruntes aupres des voisins	9 = Autre (indiquer)
5 = 5 fois par semaine	12 = Tous les trois mois		
6 = 6 fois par semaine	13 = Occasionnellement		
7 = 7 fois par semaine			

TABLEAU 7. OBSERVATIONS DANS LA CONCESSION

No du village		No de la famille	
<p>1 Quels matériaux de construction ont été utilisés dans la maison du chef de famille ?</p> <p>a Murs : 1. <del>Argile</del> <i>Ciment</i> 2. Brique en banco</p> <p>b Toit : 1. Toile ondulé 2 Paille 3. Chaume 4 Terrace en banco</p> <p>c. Sol : 1. Terre battue 2 Ciment</p>	<p>a _____</p> <p>B _____</p> <p>c. _____</p>		
2 Combien de maisons sont incluse dans la concession de la famille ?	_____		
3 Observer si la famille possède de une latrine (1=oui, 0=non)	_____		

TABLEAU 8. DEPENSES ALIMENTAIRES

No DU VILLAGE	No DE LA FAMILLE	Nom de la Personne Enquêtée	No de la Personne	Date	
				Jour	Mois

ARTICLES	CODE	ACHATS EFFECTUES LA SEMAINE DERNIERE				PRODUCTION DE SUBSISTANCE		
		Quantité	Unité de mesure	Coût total	Fréquence	Quantité	Unité de mesure	Fréquence
CEREALES								
Grain de maïs	2							
Farine de maïs	3							
Epi de maïs	4							
Bouillie de maïs	5							
Gateau de maïs	6							
Mil	7							
Farine de mil	8							
Bouillie de mil	9							
Riz blanc	10							
Riz rouge	11							
Riz non décortiqué	12							
Pain	13							
Biscuit sucré	14							
Biscuit salé	15							
Sorgho	16							
Farine de sorgho	17							
Bouillie de sorgho	18							
Fonio	19							
Sesame	20							
	21							
Autre	22							

UNITES DE MESURE		FREQUENCE D'ACHAT	
1 = petit bol	12 = litre	1 = 1 fois par semaine	10 = une fois par mois
2 = bol de capacité moyenne	13 = panier	2 = 2 fois par semaine	11 = tous les deux mois
3 = poignée	14 = bassine	3 = 3 fois par semaine	12 = tous les trois mois
4 = bouche	15 = boules	4 = 4 fois par semaine	13 = occasionnellement
5 = petite boîte	16 = grammes	5 = 5 fois par semaine	
6 = boîte moyenne	17 = pincée	6 = 6 fois par semaine	
7 = grande boîte	18 = petite tige	7 = 7 fois par semaine ou tous les jours	
8 = cuillère à soupe	19 = tige moyenne	8 = tous les deux jours	
9 = kilogramme	20 = grande tige	9 = toutes les deux semaines ou deux fois par mois	
10 = tas	21 = morceau		
11 = sachet	22 = cubes		
	23 = petite louche		
	24 = grande louche		
	99 = indéterminée		

TABLEAU 8. DEPENSES ALIMENTAIRES (Suite page 2)

No DU VILLAGE .	No DE LA FAMILLE	No de la Personne	Date	
			jour	mois

ARTICLES	CODE	ACHATS EFFECTUES LA SEMAINE DERNIERE				PRODUCTION DE SUBSISTANCE		
		Quantité	Unité de mesure	Coût total	Fréquence	Quantité	Unité de mesure	Fréquence
TUBERCULES								
Pomme de terre	28							
Manioc	29							
Patate douce	30							
Farine de manioc	31							
Manioc séché	32							
Manioc pilé	36							
igname blanc	33							
igname rouge	34							
Tarot	35							
Autre	37							
NOIX								
Noix de palme	39							
Haricot rouge	40							
Haricot blanc	41							
Noix de cola	42							
Pois sucré	43							
Petit pois	44							
Pois chiche	45							
	46							
Arachide	47							
Amande Karité	48							
Amande néré	49							
Autre	50							

UNITES DE MESURE		FREQUENCE D'ACHAT	
1 = petit bol	12= litre	1= 1 fois par semaine	10= une fois par mois
2= bol de capacité moyenne	13= panier	2= 2 fois par semaine	11= tous les deux mois
3= poignée	14= bassine	3= 3 fois par semaine	12= tous les trois mois
4= bouche	15= boules	4= 4 fois par semaine	13= occasionnellement
5 =Petite boîte	16=grammes	5= 5 fois par semaine	
6=boîte moyenne	17= pincee	6= 6 fois par semaine	
7=grande boîte	18=petite ligne	7= 7 fois par semaine ou	toutes
8=cuillère a soupe	19=ligne moyenne		jours
9= kilogramme	20=grande ligne	8= tous les deux jours	
10= tas	21= morceau	9= toutes les deux semaines	
11= sachet	22=cubes	ou deux fois par mois	
	23=petite louche		
	24=grande louche		
	25=indeterminée		

TABLEAU 8. DEPENSES ALIMENTAIRES (Suite page 3, légumes)

No DU VILLAGE	No DE LA FAMILLE	No de la Personne	Date	
			jour	mois

ARTICLES	CODE	ACHATS EFFECTUES LA SEMAINE DERNIERE				PRODUCTION DE SUBSISTANCE		
		Quantité	Unité de mesure	Coût total	Fréquence	Quantité	Unité de mesure	Fréquenc e
LEGUMES								
Tomates	57							
Oignon	58							
Haricot	59							
Haricot vert	60							
Carottes	61							
Poivron	62							
Feuille d'oignon	63							
Aubergine	64							
Feuilles de baobab	65							
Gingembre	66							
Chou-fleur	67							
Chou	68							
Salade	69							
Feuilles de patate	70							
Feuilles de haricot	71							
Feuilles d'arachide	72							
Feuilles de manioc	73							
Epinard	74							
Dah	75							
Gombo	76							
Courge	77							
Autre	78							

UNITES DE MESURE		FREQUENCE D'ACHAT	
1 = petit bol	12= litre	1=1 fois par semaine	10= une fois par mois
2= bol de capacité moyenne	13= panier	2= 2 fois par semaine	11= tous les deux mois
3= poignée	14= bassine	3= 3 fois par semaine	12= tous les trois mois
4= bouche	15= boules	4= 4 fois par semaine	13= occasionnellement
5 =Pelle boite	16=grammes	5= 5 fois par semaine	
6=boite moyenne	17= pincée	6= 6 fois par semaine	
7=grande boite	18=pelle fine	7= 7 fois par semaine ou tous les jours	
8=cuillère à soupe	19=fine moyenne	8= tous les deux jours	
9= kilogramme	20=grande fine	9= toutes les deux semaines ou deux fois par mois	
10= tas	21= morceau		
11= sachet	22=cubes		
	23=pelle louche		
	24=grande louche		
	25= indéterminée		

TABLEAU 8. DEPENSES ALIMENTAIRES (Suite page 4, fruits)

No DU VILLAGE :	No. DE LA FAMILLE	No de la Personne	Date	
			jour	mois

ARTICLES	CODE	ACHATS EFFECTUES LA SEMAINE DERNIERE				PRODUCTION DE SUBSISTANCE		
		Quantité	Unité de mesure	Coût total	Fréquence	Quantité	Unité de mesure	Fréquence
FRUITS								
Banane	82							
Mangue	83							
Mangue greffée	84							
Papaye	85							
Pamplemousse	86							
Citron	87							
Avocat	88							
Goyave	89							
Pomme acajou	90							
Pomme canelle	91							
Pastèque	92							
Fruit sauvage	93							
Ananas	94							
POISSONS								
Silure	96							
Capitaine	97							
Carpe	98							
Poisson fumé	99							
Poisson séché	100							
Sardines en boîte	101							
Autre	102							

UNITES DE MESURE		FREQUENCE D'ACHAT	
1 = petit bol	12= litre	1= 1 fois par semaine	10= une fois par mois
2= bol de capacité moyenne	13= panier	2= 2 fois par semaine	11= tous les deux mois
3= poignée	14= bassine	3= 3 fois par semaine	12= tous les trois mois
4= bouche	15= boules	4= 4 fois par semaine	13= occasionnellement
5 = petite boîte	16= grammes	5= 5 fois par semaine	
6=boîte moyenne	17= pince	6= 6 fois par semaine	
7=grande boîte	18=petite tige	7= 7 fois par semaine ou tous les jours	
8=cuillère à soupe	19=tige moyenne	8= tous les deux jours	
9= kilogramme	20=grande tige	9= toutes les deux semaines	
10= tas	21= morceau	9= toutes les deux semaines ou deux fois par mois	
11= sachet	22=cubes		
	23=petite louche		
	24=grande louche		
	25=indéterminée		

TABLEAU 8. DEPENSES ALIMENTAIRES (suite P.5, Mandes)

No DU VILLAGE	No DE LA FAMILLE	No de la Personne	Date	
			jour	mois

ARTICLES	CODE	ACHATS EFFECTUES LA SEMAINE DERNIERE				PRODUCTION DE SUBSISTANCE		
		Quantité	Unité de mesure	Coût total	Fréquence	Quantité	Unité de mesure	Fréquence
<b>VIANDES</b>								
viande de boeuf	105							
Abats de boeuf	106							
Canard	107							
Poulet	108							
Pintade	109							
Viande de mouton	110							
Viande de chèvre	111							
Corn beef	112							
Dindon	113							
	114							
<b>LAIT ET PRODUITS LAITIERS</b>								
Lait de vache	116							
Lait de chèvre	117							
Lait en poudre	118							
Fromage traditionnel	119							
Vache qui rit	120							
Autre fromage importé	121							
Beurre	122							
Lait caillé	123							
Crème	124							
ghee (sirimé)	125							
	126							
Autre	127							

UNITES DE MESURE		FREQUENCE D'ACHAT	
1 = petit bol	12 = litre	1 = 1 fois par semaine	10 = une fois par mois
2 = bol de capacité moyenne	13 = panier	2 = 2 fois par semaine	11 = tous les deux mois
3 = poignée	14 = bassine	3 = 3 fois par semaine	12 = tous les trois mois
4 = bouche	15 = boules	4 = 4 fois par semaine	13 = occasionnellement
5 = petite boîte	16 = grammes	5 = 5 fois par semaine	
6 = boîte moyenne	17 = pincée	6 = 6 fois par semaine	
7 = grande boîte	18 = petite ligne	7 = 7 fois par semaine ou toutes les jours	
8 = cuillère à soupe	19 = ligne moyenne	8 = tous les deux jours	
9 = kilogramme	20 = grande ligne	9 = toutes les deux semaines ou deux fois par mois	
10 = tas	21 = morceau		
11 = sachet	22 = cubes		
	23 = petite louche		
	24 = grande louche		
	99 = indéterminée		

TABLEAU 8. DEPENSES ALIMENTAIRES( suite P.6, huile)

No DU VILLAGE	No DE LA FAMILLE	No de la Personne	Date	
			jour	mois

ARTICLES	CODE	ACHATS EFFECTUES LA SEMAINE DERNIERE				PRODUCTION DE SUBSISTANCE		
		Quantité	Unité de mesure	Coût total	Fréquence	Quantité	Unité de mesure	Fréquence
<b>HUILES ANIMALES ET VEGETAUX</b>								
Margarine	131							
Beurre	132							
Huile d'arachide	133							
Huile de soja	134							
Beurre de karité	135							
Autre huile vegetal	136							
<b>OEUFS</b>								
Poule pintade	138							
Autre volaille	139							
	140							
<b>BREVAGE ALCOOLIQUE</b>								
The	142							
Cafe	143							
Sucriere	144							
Gingembre	145							
Traditionelle	146							
Jus de dah	147							
Jus de tamarin	148							
Boisson tonifiante et tonifiante	149							
	150							
	151							

UNITES DE MESURE		FREQUENCE D'ACHAT	
1= petit bol	12= litre	1= 1 fois par semaine	10= une fois par mois
2= bol de capacité moyenne	13= panier	2= 2 fois par semaine	11= tous les deux mois
3= poignée	14= bassine	3= 3 fois par semaine	12= tous les trois mois
4= bouche	15= boules	4= 4 fois par semaine	13= occasionnellement
5= Petite boîte	16= grammes	5= 5 fois par semaine	
6= boîte moyenne	17= pincée	6= 6 fois par semaine	
7= grande boîte	18= petite tinc	7= 7 fois par semaine ou toutes les semaines	
8= cuillère à soupe	19= tinc moyenne	8= tous les deux jours	
9= kilogramme	20= grande tinc	9= toutes les deux semaines ou deux fois par mois	
10= tas	21= morceau		
11= sachet	22= cubes		
	23= petite louche		
	24= grande louche		
	25= indéterminée		

TABLEAU 8. DEPENSES ALIMENTAIRES(suite P.7. divers)

No DU VILLAGE	No DE LA FAMILLE	No de la Personne	Date	
			jour	mois

ARTICLES	CODE	ACHATS EFFECTUES LA SEMAINE DERNIERE				PRODUCTION DE SUBSISTANCE		
		Quantité	Unité de mesure	Coût total	Fréquence	Quantité	Unité de mesure	Fréquence
SUCRE MIEL								
Sucre blanc	155							
Sucre brun	156							
Miel	157							
Confiture	158							
CONDIMENTS								
Tomate de conserve	160							
Sel	161							
Pouvre	162							
Piments	163							
Datou	164							
Cubes magi	165							
Soumbala	166							
Autre	167							
REPAS CONSOMES EN DEHORS DU MENAGE								
To	169							
Riz au gras	170							
Riz soupe	171							
Riz sauce arachide	172							
Couscous	173							
Sucrierie	174							
The	175							
Autre	176							
PRODUITS NON ALIMENTAIR ES								
Savon local	178							
Savon industriel	179							
Detergents	180							
Eau de javel	181							
Allumettes	182							
Autres	183							

UNITES DE MESURE		FREQUENCE D'ACHAT	
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TABEAU 10. CREDIT INDIVIDUEL

(... du premier tour)

No DU VILLAGE	No DE LA FAMILLE	No de la Personne	Date	
			jour	mois

Note pour l'enquêteur Remplissez une colonne par transaction de crédit, reçu ou accord

Code de transaction crédit		1	2	3	4
1 Est-ce que vous avez reçu ou accordé du crédit depuis <del>1990-1999</del> <i>1990-1999</i> ?	1 = reçu 2 = accordé				
2 Nom de la source du crédit, (ou le destinataire)	1 CANEF 2 CMDT/BNDA 3 CAC 4 Banque commerciale 5 Autre institution 6 Ami/parent 7 Tontine 8 Employeur 9 Commerçant 10 Autre source privée				
3 Montant reçu /accordé					
4 Date de réception (mois)					
5 Quelles sont les modalités de repayment? spécifiez	1. Cash 2. terre 3. cultures vivrières 4. cultures de rente 5. Machines 9 Autre.				
6 Combien est le montant du repayment?					
7 Est-ce que le repayment est espacé dans le temps	1=oui. 0=non				
8 Si oui à 11a. en combien de fois le repayment se fait?	1. Hebdomadaire 2. chaque mois 3. Autre. spécifiez				
9 Si oui à question 11a. combien vous repayez chaque fois?					
10 Date finale de repayment (M/A)					
11 Quel type de garantie est-ce que vous avez offert/demandé pour obtenir le crédit?	1 Rien 2. Terre 3. Maison 4. Bétail 5. Ustensiles Menage 6. Cultures vivrières 7. Cultures de rentes 9. Autres. spécifiez:				
12. Comment est-ce que l'argent était employé? (Employez les codes-ci pour répondre 13-15.	1. Nutrition 2. Logement 3. Terre: achat/location 4. Investment agricole 5. Achat bétail 6. Commerce 7. Repaiement dettes 8. Education 9. Mariage/autres activités sociales 10. Voyage 11. Santé 12. Autres. spécifiez				
13. Premier emploi	Code FCFA % du prêt				
14. Deuxième emploi	Code FCFA % du prêt				
15. troisième emploi	Code FCFA % du prêt				

**TABLEAU # ACTIVITES ECONOMIQUES DES FEMMES**

Noter toutes les activites a partir du <sup>premier jour /</sup> ~~1er~~ ~~Janvier~~ 1993

Activite	Produit	Quantité	Unité Mesure	Prix total d'achat	Prix total de Vente
Commerce produits agrcols		_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____
Petit Commerce		_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____
Production beurre de karite		_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____
Repas		_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____
Bois		_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____
Prestations de Services		_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____
Autres		_____	_____	_____	_____
		_____	_____	_____	_____
		_____	_____	_____	_____

**TABLEAU 11. ACTIVITES ECONOMIQUES DES FEMMES**

Noter toutes les activites a partir du 1 Janvier 1993/ ~~ou a partir du premier jour~~

N° du Village	N° de la Famille	Nom de la Personne Enquêtée	N° de la Personne	Date de l'Enquête		Nom Enqueteur
				Jour	Mois	

Activite	Produit	Quantité	Unité Mesure	Prix total d'achat	Prix total de Vente
Commerca produits agricoles					
Petit Commerce					
Production beurre de karle					
Repas					
Bois					
Prestations de Services					
Autres					

Date de correction: .../.../...

Date de saisie: .../.../...

Saisie par: ...

10/6





TABLEAU 15. CREDIT INDIVIDUEL (deuxième homme enquêté dans la famille)

N° DU VILLAGE	N° DE LA FAMILLE	No de la Personne	Date	
			jour	mois

Note pour l'enquêteur Remplissez une colonne par transaction de crédit, reçu ou accordé

Code de transaction crédit		1	2	3	4
1. Est-ce que vous avez reçu ou accordé du crédit depuis 1 janvier 1992?	1 = reçu 2 = accordé				
2. Nom de la source du crédit <i>destruction</i>	1 CANEF 2 CMDT/BNDA 3 CAC 4 Banque commerciale 5 Autre institution _____ 6 Ami/parent 7 Tontine 8 Employeur 9 Commerçant 10 Autre source privée :				
3 Montant reçu /accordé					
4 Date de reception (mois)					
5 Quelles sont les modalités de repayment? spécifiez.	1 Cash 2 terre 3 cultures vivrieres 4 cultures de rente 5 Machines 9. Autre				
6 Combien est le montant du repayment?					
7 Est-ce que le repayment est espacé dans le temps	1=oui, 0=non				
8 Si oui à 11a. en combien de fois le repayment se fait?	1 Hebdomadaire 2. chaque mois 3. Autre. spécifiez:				
9 Si oui a question 11a. combien vous repayez chaque fois?					
10 Date finale de repayment (M/A)					
11. Quel type de garantie est-ce que vous avez offert/demandé pour obtenir le crédit?	1. Rien 2. Terre 3. Maison 4. Bétail 5. Ustensiles Menage 6. Cultures vivrieres 7. Cultures de rentes 9. Autres. spécifiez.	—		—	
12. Comment est-ce que l'argent était employé? (Employez les codes-ci pour répondre 13-15)	1. Nutrition 2. Logement 3. Terre: achat/location 4. Investment agricole 5. Achat bétail 6. Commerce 7. Repayment dettes 8. Education 9. Mariage/autres activités sociales 10. Voyage 11.. Santé 12. Autres, spécifiez				
13. Premier emploi	Code FCFA % du pret				
14. Deuxième emploi	Code FCFA % du pret				
15. troisième emploi	Code FCFA % du pret				







TABLEAU 10. CREDIT INDIVIDUEL - FEMME

No. DU VILLAGE :	No. DE LA FAMILLE :	No. de la Personne	Date	
			jour	mois

Nota pour l'enquêteur: Remplissez une colonne par transaction de crédit, reçu ou accord

Code de transaction crédit		1	2	3	4
1. Est-ce que vous avez reçu ou accordé du crédit depuis le 1 <sup>er</sup> janvier / l'année passée?	1 = reçu 2 = accordé				
2. Nom de la source du crédit	1 CANEF 2 CMDT/BNDA 3 CAC 4 Banque commerciale 5 Autre institution _____ 6 Ami/parent 7 Tontine 8 Employeur 9 Commerçant 10. Autre source privée				
3. Montant reçu /accordé					
4. Date de reception (mois)					
5. Quelles sont les modalités de repaiement? spécifiez:	1. Cash 2. terre 3. cultures vivrières 4. cultures de rente 5. Machines 9. Autre,				
6. Combien est le montant du repaiement?					
7. Est-ce que le repaiement est espacé dans le temps	1=oui, 0=non				
8. Si oui à 11a, en combien de fois le repaiement se fait?	1. Hebdomadaire 2. chaque mois 3. Autre, spécifiez:				
9. Si oui à question 11a, combien vous repayez chaque fois?					
10. Date finale de repaiement (M/A)					
11. Quel type de garantie est-ce que vous avez offer/demandé pour obtenir le crédit?	1. Rien 2. Terre 3. Maison 4. Bétail 5. Ustensiles Menage 6. Cultures vivrières 7. Cultures de rentes 9. Autres, spécifiez:	—		—	
12. Comment est-ce que l'argent était employez? (Employez les codes-ci pour répondre 13-15.)	1. Nutrition 2. Logement 3. Terre: achat/location 4. Investment agricole 5. Achat bétail 6. Commerce 7. Repaiement dettes 8. Education 9. Mariage/autres activités sociales 10. Voyage 11. Santé 12. Autres, spécifiez				
13. Premier emploi	Code FCFA % du pret				
14. Deuxième emploi	Code FCFA % du pret				
15. troisième emploi	Code FCFA % du pret				

**TABLEAU 11. ACTIVITES ECONOMIQUES DES FEMMES**

Noter toutes les activités a partir du 1 Janvier 1993/ ~~ou a partir du premier jour~~

N° du Village	N° de la Famille	Nom de la Personne Enquêtée	N° de la Personne	Date de l'Enquête		Nom Enqueteur
				Jour	Mois	

Activite	Produit	Quantité	Unité Mesure	Prix total d'achat	Prix total de Vente
Commerce produits agricoles					
Petit Commerce					
Production beurre de karte					
Repas					
Bois					
Prestations de Services					
Autres					

Date de correction: .../.../...

Date de saisie /

Saisie par .....



TABLEAU 12. Allocation du temps (suite)

1. Combien de temps avez-vous passé hier en dehors de la famille ?	a. Travail b. Autre	a. heures b. heures
2. Qui a pris soin des enfants pendant que vous étiez au travail ou ailleurs ?	1. Grand-mère 2. Autre femmes de la maison 3. Enfants plus âgés 4. Autre femmes qui ne vivent pas dans le foyer 5. Les enfants généralement se surveillent entre eux 6. Père 7. A l'école 8. Autre : _____	
3. a. A quelle heure êtes-vous aller aux lit hier ? b. Quand est-ce que vous vous êtes levés ?		a. heures b. heures
4. Pouvez-vous dire que la journée d'hier est typique en matière de vos activités journalière ?	1. Oui 2. NON	
5. Avez-vous pris hier des chargements sur la tete ?	1. Oui 2. Non	
6. Si oui, pendant combien de temps avez-vous transporté cette charge ?		
6. Si vous aviez plus de temps, comment l'utiliserez-vous ?	1. Se detendre/loisirs 2. Dormir davantage 3. Passer plus de temps au champ 4. Artisanat 5. Service communautaire 6. Travailler autour de la maison 7. Passer plus de temps avec les enfants 8. passer plus de temps avec les amis 9. autre	
7. Si vous ganiez une loterie, comment dépenseriez-vous cet argent	1. Nouriture 2. Vetement 3. Frais de scolarité 4. Améliorer la maison familiale 5. Aider les membre de la petite et grande famille 6. Acheter du bétail 7. Rembourser les dettes 8. Epargner 9. Acheter des biens de consommation durables 10. Autre	
8. Quelle est votre première source d'alimentation ?	1. Achat 2. Autosuffisance 3. Troc 4. cadeau	
9. Si les vivres sont achetés quelle est votre source de revenu ?	1. Revenu du mari 2. Revenu personnel 3. Revenu des enfants 4. Autre	







**TABLEAU 17. AGRICULTURE - FEMMES**

N° du Village	N° de la Famille	Nom de la Personne Enquêtée	N° de la Personne	Date de l'Enquête		Nom Enqueteur
				Jour	Mois	

1. Combien d'ha (ou de parcelles) disposez-vous pour ces différentes spéculations? *(année passée)*

Spéculations	hectares	Parcelles	Qte produite (kg)	Qte vendue (kg)	valeur vente
Riz de bas-fond					
Arachide					
Haricot					
Jardinage					
Vergers					
Autres (spécifiez): _____					

2. Comment est-ce que vous avez obtenu les parcelles?

Mode d'obtention des parcelles	Réponse (1 = oui, 0 = non)
Héritage	
Propriété du mari	
Achat	
Autres (spécifiez): _____	

3. Combien d'animaux possédez-vous?

Animaux	Nombre	Nombre Autoconsommé	Nombre vendu	valeur vente
Bovins				
Ovins				
Caprins				
Anes				
Poules				
Pintades				
Canards				
Autres (spécifiez): _____				

**TABLEAU 18 : CONNAISSANCES, ATTITUDES ET PRATIQUES (KAP).**

N° du Village	N° de la Famille	Nom de la Personne Enquêtée	N° de la Personne	Date de l'Enquête		Nom Enqueteur
				Jour	Mois	

1. A quel âge vos enfants commencent à prendre :

- 1 - L'eau: à \_\_\_\_\_ mois
- 2 - La bouteille: à \_\_\_\_\_ mois
- 3 - Le té et autre: à \_\_\_\_\_ mois

2. Connaissez-vous les causes de la diarrhée chez l'enfant.

- 1.
- 2.
- 3.

3. Comment peut-on traiter la diarrhée?

- 1.
- 2.
- 3.

4. Combien de vos enfants ont été vaccinés ( enfants de 1 à 15 ans, habitants avec la famille):

Type de vaccination	Fréquence	Nombre d'Enfants
Immunization:	- vaccinés 4 fois	
	- vaccinés 1 à 3 fois	
	- non-vaccinés	
Lors des Epidemies (année passée)	- vaccinés au moins 1 fois	
	- non-vaccinés	

5. Connaissez-vous les causes de Hémeralopie (Troubles visuelles nocturnes)? \_\_\_\_\_ ( oui = 1, non=0)  
Si oui, que sont-elles?

- 1.
- 2.
- 3.

6. Comment traiter l'hémeralopie.

- 1.
- 2.
- 3.

Date de correction: .../.../...

Date de saisie: .../.../...

Saisie par .....

TABLEAU 19. EVALUATION CANEF.

N° du Village	N° de la Famille	Nom de la Personne Enquêtée	N° de la Personne	Date de l'Enquête		Nom Enqueteur
				Jour	Mois	

1. Comment évaluez-vous le projet CANEF volet éducation ?

Négatif	-1	
Neutre	0	
Assez bien	1	
Bien	2	
Très bien	3	

2. Elements positifs du volet éducation:

·  
·  
·

3. Elements négatifs du volet éducation:

·  
·  
·

4. Comment évaluez-vous le projet CANEF, volet crédit?

Négatif	-1	
Neutre	0	
Assez bien	1	
Bien	2	
Très bien	3	

5. Elements positifs du volet crédit:

·  
·  
·

6. Elements négatifs du volet crédit:

·  
·  
·

7. Autres remarques sur le projet CANEF:

Date de correction: . / . / ...

Date de saisie /

Saisie par

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