



The Role of Financial Services in Building Household Resilience in Burkina Faso

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Executive Summary

The primary theory of change for the microfinance industry has historically been one in which access to and use of formal financial services reduces household poverty. Newer theories of change suggest that the use of financial services for poor households results in resiliency. In effect, financial services help households anticipate, adapt to, and/or recover from the effects of shocks in a manner that protects their livelihoods, reduces chronic vulnerability, and facilitates growth.

To fill some of the gaps in knowledge about how financial services contribute to household resilience, CGAP engaged Freedom from Hunger to conduct a research project with two of its partners in rural Burkina Faso: le Réseau des Caisses Populaires du Burkina Faso (RCPB), a credit union that provides formal financial services, and the Office de Développement des Églises Évangéliques, a nongovernmental organization (NGO) that facilitates savings groups. The research agenda was designed to answer two research questions:

1. What strategies do poor households employ to manage economic, environmental, and health shocks that disrupt their financial lives?
2. What roles do formal, nonformal, and informal financial products play in improving household resiliency and building assets?

Four research methods were used to answer these questions: (1) a formative research exercise conducted with both men and women, (2) 10 “resilience” diary surveys with 46 women over a seven-month period, (3) an economic game conducted with 400 women, and (4) a wrap-up qualitative assessment including focus groups and key informant interviews with partner staff.

The research revealed that the most common shocks households faced, in descending order, were illness/injury, death of family members, livestock loss, and poor harvest. To cope with these shocks, households primarily relied on savings held at home, reduced their food consumption, and sold grain and livestock. Borrowing from financial institutions, family, and friends was less preferred. Households frequently used negative coping mechanisms, such as reducing food consumption and selling grain, which would likely result in long-term negative developmental consequences.

The *preferred* coping mechanisms were different from the ones frequently used: selling small livestock ranked first, followed by borrowing from a savings group, reducing food consumption, using savings, borrowing from family and friends, and selling grain. Purchasing on credit was not a preferred method for coping with any of the shocks.

The two most important factors that determined whether a mechanism was used to cope with shocks were its availability and timeliness. Did the resource or mechanism exist and how quickly could it be accessed? The following features were mentioned but were considered relatively less important: reliability, effectiveness, preventing a family from being worse off (avoiding aggravated food insecurity, the early sale of livestock, or acquiring unmanageable debt), preserving family honor and privacy, and flexibility. Informal financial services played a larger role than formal services in helping households cope with shocks.

Overall, the demand for financial services to anticipate and cope with shocks appears widely unmet. For financial services to help the poor build resilience, they need to be designed to provide vulnerable households with more viable options. The research yielded the following recommendations for designing products and services aimed at improving resiliency:

1. Design financial products with features that matter most for coping with shocks: timeliness of payout and availability of the product.
2. For a very food insecure population, design and offer financial products with the goal of the population consuming more and better food. Food security should be an explicit, not an implicit, goal of any product designed to improve resiliency.
3. Incorporate a gender analysis in market research that allows women to speak freely about the challenges they encounter with all current and potential products.
4. Develop more products and mechanisms that help households increase their savings. Savings, for this population, was the preferred coping mechanism and most used (whether in the form of livestock or cash) to anticipate and respond to shocks.
5. Develop financial products designed to address specific shocks (not all shocks are considered equal). Shock-specific products, such as health savings and loan products could help the poor build resilience to shocks and reduce long-term costs.
6. For highly food-insecure contexts, financial service providers (FSPs) may need to partner with NGOs, such as those offering ultra-poor programs or other support programs (such as health and business and financial education services), to help clients make effective use of financial services.

Financial services can and should play a role in helping women and their households build resilience. But building resilience should be treated as an intentional goal. This may require a shift in focus for some FSPs. Clients need financial and nonfinancial services that help them mitigate risk, lessen the severity of trade-offs, and avoid long-term adverse developmental consequences. Recommendations from this study can be applied to financial service design in a way that increases access and use of financial services for the poor while also making business sense for providers.

Acknowledgements

This study has revealed unique insights into the lives of women in rural areas of Burkina Faso, the shocks they encounter, and how they use financial services to respond to those shocks. The Consultative Group to Assist the Poor (CGAP) selected Freedom from Hunger to conduct this research. Freedom from Hunger staff began this research with some knowledge of financial service use in this location, but were not sure what to expect regarding the perception and management of resilience. The team labored over the best study design that would yield results relevant to participants, and that would make the most of data collected over nearly a year. It has been a rich learning experience.

First, our team would like to thank the Consultative Group to Assist the Poor (CGAP) for partnering with Freedom from Hunger to conduct this research. This research would not have been possible without CGAP support.

We would like to give special thanks to Michael Carter at the University of California, Davis, for partnering with us on this project. We appreciate his many contributions and the support of his colleagues Ghada Elabed and Laura Paul in designing and implementing the economic games used in this study.

In Burkina Faso, we have several people and organizations to thank. The research and microfinance training organization Lessokon Sarl was instrumental in collecting data and navigating political unrest. The data-collection efforts would not have been possible without Freedom from Hunger's valued partnerships with le Réseau des Caisses Populaires du Burkina Faso (RCPB) and the Office de Développement des Églises Évangéliques (ODE), and the women and men who participated in this research.

We dedicate this final report in memory and honor of Aly Ouédraogo, our key staff member in Ouagadougou. Ouédraogo played an instrumental role as the liaison to our partners, the research firm, and our staff in the United States.

We also want to thank our colleagues who reviewed this paper and its content in various forms to ensure it would contribute to the literature and would be an interesting and useful read: Kathleen Stack, Christian Loupeda, Julie Uejio, and Brent Farrar from Freedom from Hunger; Michael Carter, Ghada Elabed, and Laura Paul from the Agricultural and Resource Economics Department of the University of California, Davis; Benjamin Crookston from Brigham Young University; Marie Pascaline Diasso and her colleagues from RCPB; and Pasteur Gustave Diendere and Hélène Bazie and their colleagues from ODE.

Note that reviewers and their organizations do not necessarily endorse all of the content of this report.

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Introduction

Historically, the primary theory of change for the microfinance industry has suggested that access to and use of formal financial services reduce household poverty. Rigorous evaluation results from research conducted around the world have not successfully validated this theory (Roodman 2012). However, a new theory is emerging in which the primary benefit of financial services for poor households is that they help build household resiliency (Dunford 2013); financial services play a role in helping households anticipate, adapt to, and/or recover from the effects of shocks in a manner that protects their livelihoods, reduces chronic vulnerability, and facilitates growth.¹ Thus, financial services contribute to poverty alleviation, and not necessarily poverty reduction. Helping households manage risk and develop appropriate coping strategies is, however, a logical steppingstone to reducing poverty and improving economic growth. A review of results from existing qualitative and quantitative studies suggests that access to and use of financial services do indeed build resilience (Dunford 2013); however, further insight is needed to understand the decision-making processes about how households use financial services to manage shocks to continue improving financial products and services offered.

As an attempt to further understand these decision-making processes, and specifically how they pertain to women, the CGAP Clients at the Center Financial Inclusion Research Fund, funded by the MasterCard Foundation, selected Freedom from Hunger to conduct a research project called Understanding How the Poor in Burkina Faso Anticipate and Recover from Shocks and the Role of Financial Services in Building Household Resilience (henceforth referred to as Understanding Resilience in Burkina Faso). It aims to help fill the gap in knowledge about how different financial services used by women, particularly those services designed to anticipate and respond to common household shocks, contribute to household resiliency.

The research is guided by the following two research questions:

1. What strategies do poor households employ to manage economic, environmental, and health shocks that disrupt their financial lives?
2. What roles do formal, nonformal, and informal financial products play in improving household resiliency and building assets?

It is anticipated that this research will promote financial inclusion for women by contributing to the understanding of the needs, preferences, and behaviors of both women and their households in Burkina Faso, particularly as they relate to anticipating and coping with household shocks. Women were the focus of this research to better understand both their limited access to financial services and their use of informal and formal financial services to help their households cope with shocks. The findings of this research will provide information that could improve financial product and service design for both women and rural households.

This paper summarizes how findings from formative research, 10 “resilience diaries,” qualitative follow-up, and economic games answer the two key research questions noted above. As this research is not related to any specific program or product, its primary purpose is to illustrate how families anticipate and cope with shocks, relating household behaviors and preferences to design features that could improve financial services offered for building resilience. It is organized by first reviewing some of the

1. Adapted definition from USAID. Available at: <http://www.usaid.gov/resilience>. (Accessed June 25, 2013)

recent literature on resilience and providing contextual information on Burkina Faso. Then it describes research partners and research methods used.

The findings section describes resilience diary outcomes, first illustrating the context in which the female participants live, then focusing on shocks, coping mechanisms, and mechanism preferences. Discussion, recommendations, and a conclusion follow, summarizing key findings related to the two research questions and putting forth recommendations for financial services that would build household resilience in the face of continual covariate and idiosyncratic shocks. The audience for the paper includes financial service providers (FSPs), technical assistance providers, and others interested in the intersection of financial inclusion and resilience.

Background

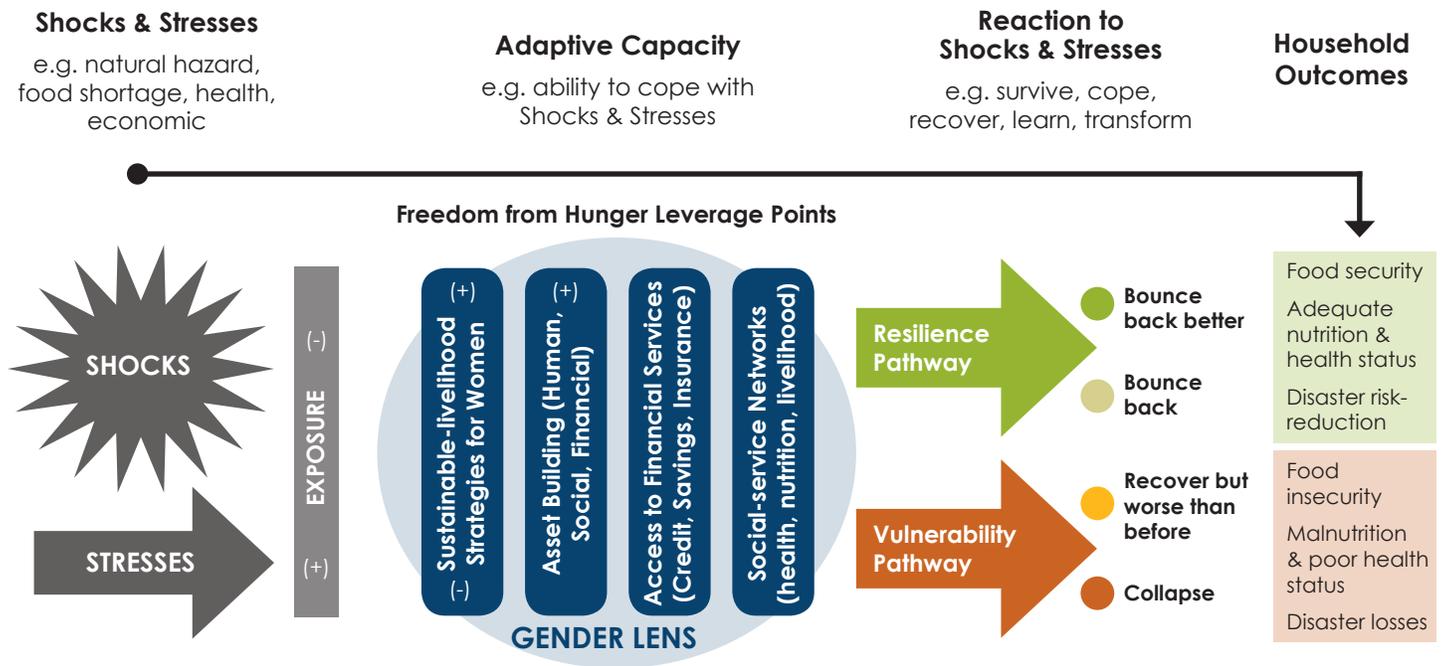
In 2013, Freedom from Hunger sought insight from an emerging leader in the field of resilience to suggest a framework that could be used to inform program and evaluation design. Ultimately, Freedom from Hunger adapted a framework from TANGO International (www.tangointernational.com), which had created a framework built on previous disaster and livelihood frameworks (TANGO 2012). TANGO International has been active in industry conversations on resilience and is an active and publishing member of the Resilience Measurement Technical Working Group.² In 2014, the Working Group published a consensus definition of resilience, a set of ten resilience measurement principles and a model for measurement. Freedom from Hunger has used TANGO's definition of resilience—"the capacity that ensures adverse stressors and shocks do not have long-lasting adverse development consequences" (Constas et al. 2014)—to help shape its work.

The Freedom from Hunger Resilience Framework (see Figure 1) focuses on adaptive capacity, or "the ability to learn from experience and adjust responses to changing external conditions, yet continue operating" (von Grebner et al. 2013). In much of the resilience literature, the concept of resilience is discussed as a capacity with which to respond to shocks. There are three types of resilience capacities to consider: absorptive, adaptive, and transformative (von Grebner et al. 2013). Adaptive capacity is where financial services fit best—access to financial services is a leverage point, or where an individual or household can make an incremental change in response to a current shock or in anticipation of a future shock. That leverage point, or change, could help lead a household down a path of resiliency instead of one of vulnerability. Ultimately, a resilient path can lead to better food security, adequate nutrition, and improved health status and disaster risk-reduction for a household. Freedom from Hunger added the "gender lens" to the adaptive capacities to ensure the opportunities and barriers faced specifically by women were included in the design and analysis of resilience research.

This framework served as the basis for the design of the Understanding Resilience in Burkina Faso study. The study captured information on participants and their use of and access to each of the four leverage points, exploring how the leverage points influenced the path households took (or where they were already positioned).

2. The Resilience Measurement Technical Working Group, co-sponsored by the European Union and USAID, is a group of 20 leading experts in resilience measurement from government and non-government organizations, including the FAO, IFAD, Cornell University, TANGO International, Mercy Corps, and others. For more information, see: <http://www.fsincop.net/topics/resilience-measurement/technical-working-group/en/>

Figure 1. Reference Framework: Freedom from Hunger Resilience Framework



TANGO 2012. Adapted from DFID Disaster Resilience Framework (2011), TANGO Livelihoods Framework (2007), DFID Sustainable Livelihoods Framework (1999) and CARE Household Livelihood Security Framework (2002).

Burkina Faso

Burkina Faso is one of the poorest countries in Africa, with 44.6 percent of the population living below the \$1.25/day 2005 PPP international poverty line, and ranking 181 out of 187 countries on a global scale of development, qualifying it as a “low human development” country.³ Drought in Burkina Faso, as with most of the countries in the Sahel, is often depicted and experienced as a crisis, but it is actually more the norm (Hesse et al. 2013). Due to chronic challenges of drought and consequential food crises, food and nutrition security are persistent challenges faced by vulnerable populations.⁴

Rainfall is the key determinant of how households make a living: it determines how land is used, the degree to which households depend on livestock, and the other nonagricultural sources of income. The rainy season, which is also known as hungry season, starts in June and lasts until September or

3. *Human Development Report 2014*. <http://hdr.undp.org/sites/default/files/hdr14-report-en-1.pdf> (Accessed January 20, 2014).

4. *Situation Update: The Sahel Crisis. April 2014*. http://www.fao.org/fileadmin/user_upload/emergencies/docs/SITUATION%20UPDATE%20Sahel%20April%202014.pdf (Accessed Oct. 9, 2015)

October when harvest begins; the dry season is from approximately November through May, with the second hungry season occurring from March to May due to severe drought.

Very little reliable rain falls in the North; consequently, households that rely on agriculture alone are financially vulnerable (Dixon and Holt 2010). In the northeastern zones of Burkina Faso, where the resilience diaries research took place, households allocated most of their land to growing millet, sorghum, and cowpeas. Livestock herding assumed quite a bit of importance, as did gold mining and labor migration for households too poor to own substantial herds. There were also strong cultural and familial ties between households in this part of Burkina Faso and the Ivory Coast, resulting in remittances being important for livelihoods.

Very few households in Burkina Faso have access to formal financial services (Table 1). The World Bank Findex study in 2012 estimated that no more than 13 percent of the total adult population held an account at a formal financial institution, and only 6 percent of the poorest were likely to have an account (Demirguc-Kunt and Klapper 2012). Eight percent were estimated to participate in community-based savings groups (SGs).

Table 1. World Bank Global Findex Figures for Burkina Faso

FINDEX Indicators	Measures in 2011
Percentage of adults with an account at a formal financial institution	13%
Poorest quintile of adults with an account at a formal financial institution	6%
Percentage of women with an account at a formal financial institution	11%
Percentage of adults using mobile money	1%
Percentage of adults with a formal savings account	8%
Percentage of adults participating in community-based SGs	8%
Percentage of adults who took a loan from a formal financial institution	3%

Methods

Research Partners

Two Freedom from Hunger partners—le Réseau des Caisses Populaires du Burkina Faso (RCPB), a credit union that provides formal financial services, and the Office de Développement des Églises Évangéliques (ODE), a nongovernmental organization (NGO) that facilitates SGs—participated in this research project. RCPB has been a Freedom from Hunger partner for over 20 years, implementing Freedom from Hunger’s flagship product Credit with Education, which is based on village-banking financial services integrated with nonfinancial services such as health, business, and financial education. In 2006, RCPB partnered with Freedom from Hunger to further test health products and services, as well as design and

implement a health savings and loan product. ODE recently became a Freedom from Hunger partner and implements Saving for Change,⁵ a methodology for self-managed savings and lending groups integrated with simple training in health, business, and money management. Saving for Change brings basic financial services to areas that are typically beyond the reach of microfinance institutions (MFIs) and, in doing so, creates sustainable, cohesive groups that tackle social issues facing their members and their communities.

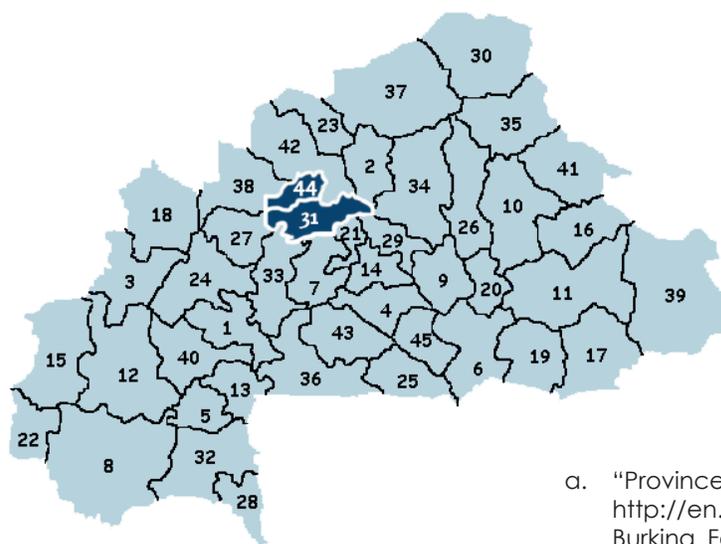
The resilience diaries research focused on RCPB and ODE members who live in either the Samba department of the Passoré province or the Gourcy department of Zondoma province where both organizations have programs. See Figure 2 for a map of these provinces. Based on previous Freedom from Hunger research in Sahelian West Africa, we expect the results of this study to be applicable to rural populations in West Africa, particularly for organizations working with village banks and savings groups.

Research Activities

The project had four main data-collection activities: formative research, resilience diaries, economic games, and a wrap-up qualitative assessment. Details on the activities are as follows:

- **Formative research** was conducted between May and June 2014 to gather community-level data to understand the types of shocks households faced during the prior five to 10 years, how households anticipated and responded to shocks, and the gender dynamics behind their decisions. A total of 15 focus-group discussions (FGDs) with 116 members (28 men and 88 women) across 10 villages served by RCPB and ODE participated. A formative research summary has recently been published (Gray and Gash 2014).

Figure 2. Location of Research Project: Passoré and Gourcy provinces, Burkina Faso^a



a. "Provinces of Burkina Faso." Wikipedia. http://en.wikipedia.org/wiki/Provinces_of_Burkina_Faso. Accessed 15 January 2015.

5. Saving for Change was jointly developed by Freedom from Hunger, Oxfam America, and Strømme Foundation.

- **Economic games** were conducted in collaboration with Michael Carter, Ghada Elabed, and Laura Paul, from the Agricultural and Resource Economics Department of the University of California, Davis. The economic games were designed to test women's responses to health shocks using available financial instruments. For details on the methodology, see Paul and Gash (2015).
- **Resilience diaries**—a series of 10 surveys that examined shocks experienced by women and their households, as well as their coping mechanism responses—were employed with 46 women over a seven-month period.

Each of the 10 diaries focused on a different topic involving participants'

1. Demographics and hopes and dreams (18–20 August)
2. Shock-coping strategies (8–10 September)
3. Use of financial services (29 October–1 September)
4. Food security (20–22 October)
5. Income-generating activities (IGAs) (10–12 November)
6. Social capital (1–3 December)
7. Household decision-making dynamics (18–20 December)
8. Health (12–14 January)
9. Attitudes and perceptions (2–4 February)
10. Program participation and future outlook (23–25 February)

- **Wrap-up qualitative research** consisted of eight FGDs with diary participants and two FGDs with participants and their husbands (81 total participants), as well as three key informant interviews with RCPB and ODE staff. The FGDs focused on coping mechanisms, livestock, food security, and gender issues, each designed to help interpret data from the resilience diaries and the economic games. The key informant interviews asked partner staff for reactions to the findings as well as implications for their work.
- **Partner presentations and dissemination.** Early results were presented to the diary participants and to the partners during the qualitative follow-up activity. A special presentation by Freedom from Hunger staff for RCPB and ODE on the final results was planned for 21 September 2015, but the coup d'état on 16 September led to the cancellation of that presentation. Presentations and early drafts of papers were shared with the two partner organizations over email instead. Comments from all parties have been received and integrated into the discussion throughout this paper.

Research Methods for Resilience Diaries

Resilience Diary Participants

Forty-seven women were originally interviewed with the first diary; however, the remaining interviews included only 46 women as one participant moved outside of the research area and was no longer included. Twenty-five out of the 46 were RCPB members; the remaining 21 were from ODE. As stated earlier, women were the focus of the diaries to better understand both their access to financial services and the way they use them for managing household shocks.

Design of the Resilience Diaries

The resilience diaries consisted of 10 individual surveys. Each of the diaries has sections that were repeated for all of the diaries, including quantitative and qualitative questions related to

- The household members and any changes in household composition
- Recent “positive surprises” and shocks experienced in the prior three weeks and how the household coped with these events
- Household food security and whether food consumption changed during the prior three weeks
- Changes in household assets, particularly changes in livestock
- Changes in household finances—focusing on actual income received and its comparison to expected income, comparison of actual to expected expenses, and use of financial instruments such as savings and loans
- Changes in attitudes, such as women’s level of hope for the future, support from family and friends, overall happiness, and their perceived ability to meet their financial obligations

In addition to the repeated information, each survey had a special focus as described in the Research Activities section and was meant to dive further into the topics being repeated at each interview point.

Data Processing

Freedom from Hunger designed all survey instruments and provided these to Lessokon Sarl, a research firm in Ouagadougou, Burkina Faso. Lessokon Sarl pretested all survey instruments with three or four different participants. While the interviews were written in French, Lessokon used local languages where necessary. Lessokon staff conducted the interviews for the 10 surveys between August 2014 and February 2015.

All diaries were transcribed into predesigned MS Excel databases. Responses to qualitative questions were summarized, and inductive analysis was often used to describe key findings for each question. Some of the quantitative analysis was conducted using STATA.

The Context: Life in Rural Burkina Faso

Demographics

Households varied in size and composition. Of the 46 female participants,⁶ about 53 percent of them were RCPB members (25 out of the 46), and the remaining were ODE members. The average age was 46; the youngest participant was 23, and the oldest was 65. A majority of women (66 percent) were married and living in a polygamous relationship; 26 percent of them were in a monogamous relationship, and 8 percent were widows. Participants were asked about household size using the definition of her husband and her direct family, which focused on her direct dependents who would

6. As mentioned in the Methods section, after Survey 1, one of the 47 original participants dropped out of the study; therefore, the remaining sections of the report will reference results as they relate to the 46 women.

spend most of the next 12 months together—sleeping in the same place and sharing meals—excluding temporary visitors and extended households. The average household size was 14 members, ranging from three to 42 members, with an average of five children.

Most participants reported having a child or family member who no longer lived with the household; many were married or had left to work in the gold mines or elsewhere in Burkina Faso or in the Ivory Coast. Some households reported that the size of their household changed due to one of the following reasons: family members who returned from working in the Ivory Coast or elsewhere in Burkina Faso, births in the family, and families taking in other family members or orphans.

The majority of the women identified their spouse as the head of household (81 percent), with 15 percent as heads of household, which was often because the woman was a widow and held the position as the first wife. Those who said someone else was head of household were widows usually living under the roof of their fathers-in-law or deceased husband's brother.

Very few women could read, and very few had ever attended school.

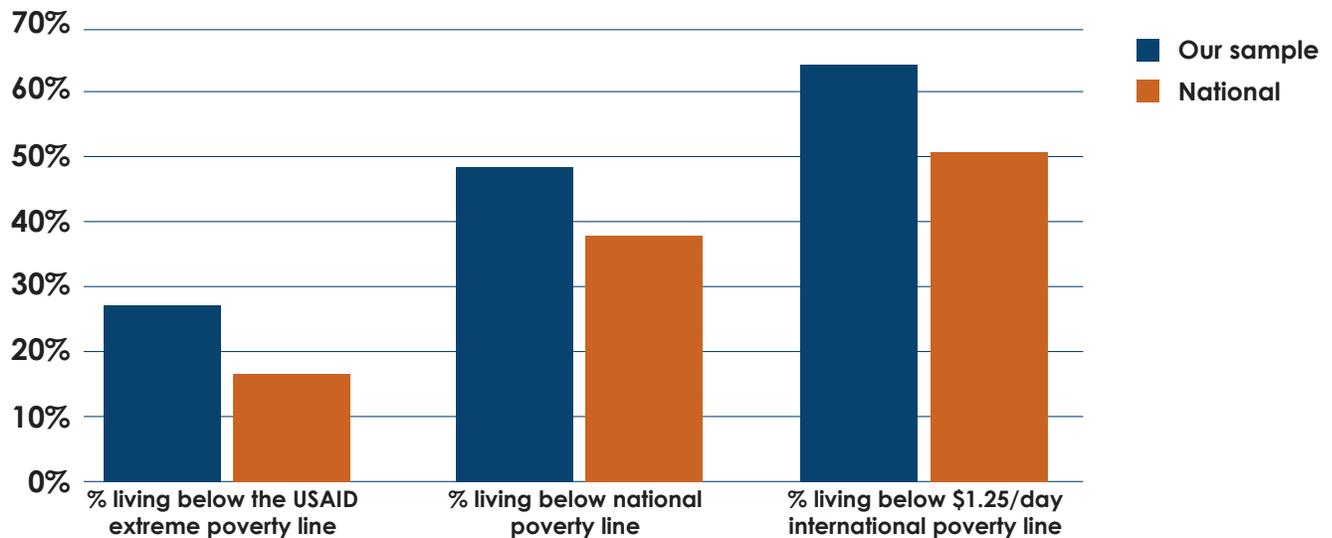
For those who reported attending school at some point, only one person made it to the 10th level, and most reported the highest level attained as being the third level. Of their children, an estimated five children per household were of school age; but on average, only two were attending school. Only 25 percent of the women who had school-aged children had all of their children attending school. Of those who were not in school, the most-mentioned reason for their children not attending was that they lacked the financial means to put them in school. Some mentioned that their husband, or the child's father, did not find it important for them to attend. Some of the young daughters were married and therefore no longer in school.

Almost half identified as Muslim; 32 percent as Christian, and 19 percent as Animist. Most identify as being members of the Mossi ethnic group, with a few identifying with the Gourounsi and Bobo ethnic groups. Table 2 summarizes several statistics on participant demographics.

Table 2. Key Demographics

Indicator	Measure
Percentage who are RCPB members	53%
Percentage who are ODE members	47%
Average age (years)	46
Percentage who are in a polygamous marriage	66%
Average household size	14
Percentage who are illiterate	85%
Percentage who ever attended school	11%
Percentage who are periodically food insecure	91%
Percentage who are chronically food insecure	89%

Figure 3. Poverty Status and Relevant National Benchmarks



Using the Progress out of Poverty Index (PPI),⁷ Figure 3 shows the following:

- 49 percent are estimated to live below the national poverty line, estimated at CFA 226 per person per day—based on year 2003 measures.
- 64 percent live below the \$1.25/day 2005 PPP international poverty line (estimated at CFA 288 in 2003 measures)
- 27 percent live below the USAID Extreme poverty line, which represents the median expenditure of people (not households) below the national poverty line.

All poverty rates are slightly higher among our study population compared to national averages.

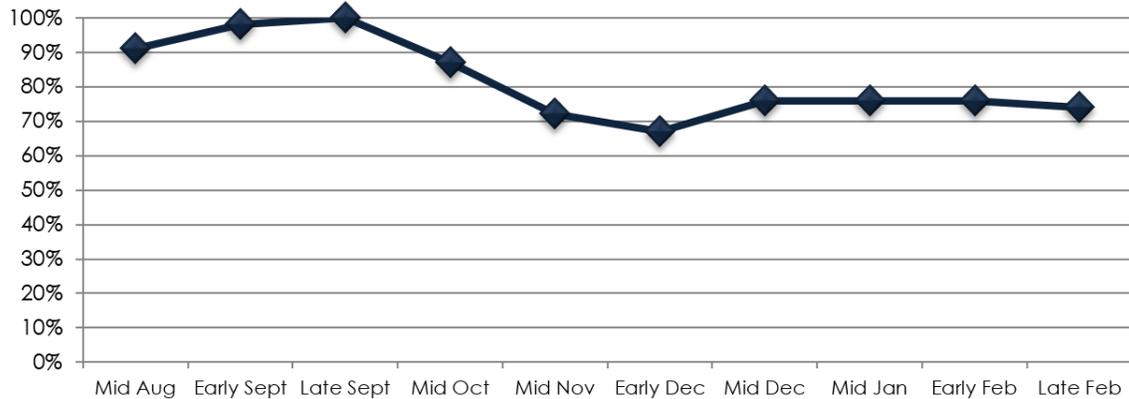
Food Security

The majority of the women and their households suffered from food insecurity throughout the seven months of the diaries.

In the first survey in mid-August, well into the rainy or lean season, 91 percent were classified as food insecure. As the lean season continued, food insecurity peaked in late September and began to decrease after harvest, when households had more food to eat and had money available from crop sales (October–November). Food insecurity was high until early December when it dropped to its lowest point in the diaries (meaning more people were food secure at this time). Food insecurity leveled out at

7. This survey was developed using a national poverty survey conducted in 2003. Therefore, the benchmarks provided here are provided by Mark Schreiner in the documentation for the Burkina Faso PPI survey and may not relate to latest poverty measurements found by the World Bank or others. See the PPI documentation at <http://progressoutofpoverty.org/country/burkina-faso>

Figure 4. Food-Insecurity Rates



about 75 percent for the remainder of the diaries. Figure 4 shows the trends across the dates the diary data were collected. About 50 percent of the participants shared that they face a second hungry season that corresponds with the dry and hot season between March and May. Unfortunately, the diaries did not extend into this period to detect food-security levels. This second hungry season is often due to harvests that were stocked during October and November being depleted, particularly if the harvest was not bountiful. Compounding the situation, during this period households also receive many more visitors than at other times of the year, thus further stressing their food stocks.

Households manage this food insecurity in a variety of ways. They buy food with their personal income, husband's income, savings at home, and money from selling livestock. They also use nonfinancial-coping mechanisms, such as consuming wild leaves from plants, reducing the number of meals per day, limiting portion sizes, giving preference to feeding children and limiting consumption by adults, and eating cheaper foods. Unfortunately, the use of these multiple mechanisms does not yield enough food to render them food secure.

Attitudes

Resilience is explained as an attitude toward life.

Attitudes were explored in a variety of ways: as a view on resilience, as an indicator of one's perception of her life, and to see whether there were connections to shocks. The concept of resilience is encapsulated in a popular quote in the Burkinabe Mooré language: "Week y menga bang guèla," which literally translates to "Abandoned lizard eggs, fight, take your responsibilities to hatch" (Gray and Gash 2014). Here, resilience is metaphorically described as lizard eggs, which are abandoned and left to their own fate. There is no parent to help them hatch, they must do so alone, and survive on their own. A resilient household is made up of people who get up early, go to bed late, and work hard to get ahead. Those who are not resilient are stuck in poverty and are generally "lazy," and women believed the nonresilient home "was a parasite on the environment." Men defined resilience in terms of their means, an accounting of what they have, and thought nonresilient homes resulted from a lack of agreement within the household (on how to manage resources) and particularly stressful lives. Most respondents placed themselves in the resilient category of people in their communities, saying that a resilient household is primarily one that diversifies its income or chooses an IGA wisely; a nonresilient

household is one that does not pick the right IGA, sells its large livestock for food, and takes credit (loans). Gray, Gash, Crookston, and Aleotti (2015) leverages the resilience diary data to explore an interesting link between self-perceived resilience and indicators that households felt defined resilient households. Findings are discussed in Box 1.

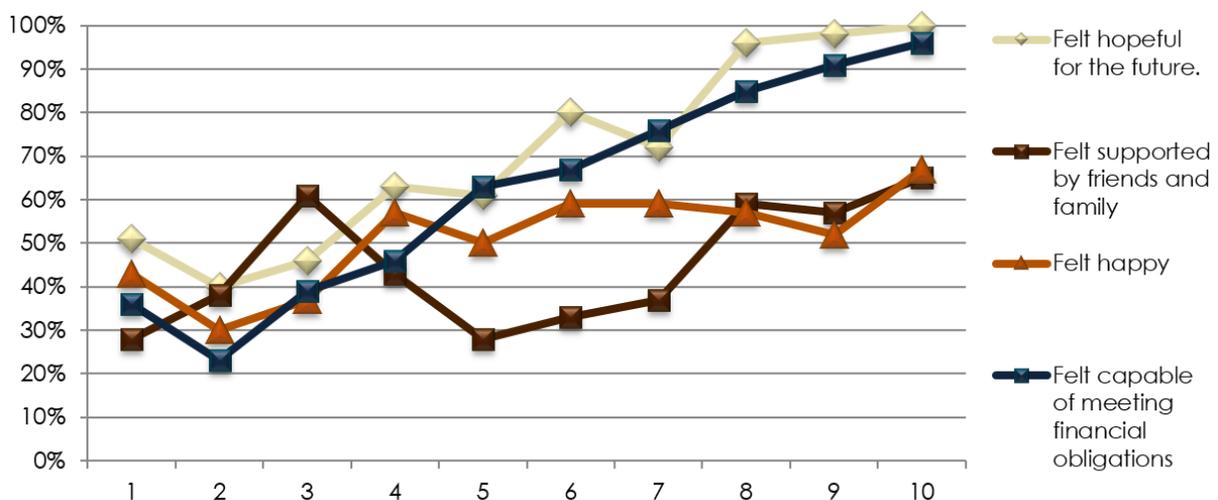
The rainy or hungry season is highly influential on a person’s state of mind.

Households seem to have a fair amount of life satisfaction during the dry season, but the rainy season paints a much different picture. For instance, in Survey 1, respondents were asked to define “the good life,” and whether they felt they could achieve it. Most explained the good life in terms of having enough food, having good health, the ability to take care of their children, and having money to cover expenses for basic needs and school for their children. In Survey 1, during rainy season, only 74 percent felt they could achieve their definition of the good life, while in Survey 10, during dry season, 100 percent felt they could achieve it. Although it is not known if this fluctuation is due to another reason besides the change in seasons, it is nevertheless an interesting change.

Each of the 10 surveys included four attitude indicators asking how respondents felt since the last survey: did they feel hopeful for the future, supported by family and friends, capable of meeting financial obligations, and happy. A few interesting trends appeared:

1. During the rainy season, the attitudes were more negative than during the dry season where attitudes visibly began to improve, as shown in Figure 5.
2. The number of those who feel supported by family and friends increased just before harvest as people relied on each other for food and support at the most difficult time of the hungry season, dropped as food and income became more available, and then rose again during the holiday season when people turned to each other for support and sharing of resources again. This reflects an interesting nuance as to when and how people support each other.
3. Feelings of hopefulness, capability to meet financial obligations, and happiness are significantly associated with food-security outcomes, in a positive direction.

Figure 5. Four Attitude Indicator Outcomes across the Resilience Diaries



A correlation analysis (data not shown) indicated there was a statistically significant connection between food security and each of these three attitudes, meaning that a positive change in food security can help explain a positive change in the other three (and vice versa). These attitudes were more closely linked with food security than with the shock of the respondent being ill. This finding further supports the powerful effect food security has on a person.

Survey 9, conducted during the dry season, included nine psychological questions that made up an attitude index influenced by research completed by Johannes Haushofer (2013). Haushofer and Ernst Fehr chose nine questions from the World Values Study across 46 countries and compared the nine psychological variables to poverty measures. The variables represent different aspects of possible psychological consequences of poverty: intrinsic motivation, trust, level of control over one's life, short sightedness, level of risk taking, loneliness, desire to help one's family, and prosocial attitudes. For this analysis, each answer is weighted; the lowest possible score out of the nine questions is 5 and the highest is 34. A low "happiness/life satisfaction" score is between 5 and 15; a medium score is between 16 and 23; and a high score is between 24 and 34. The respondents scored an average of 22, putting respondents at a medium level of life satisfaction. Two participants fell in the low, 27 in the medium and 17 in the high category. Given the aforementioned trend of attitudes generally being at the poorest level during the rainy season, it would have been interesting to evaluate these indicators during the dry season to see whether the indicators produced different scores.

Gender

Women face several obstacles in maximizing income generation and management of their financial lives.

Regarding their IGAs, women are expected to focus on the growth and sale of secondary crops such as sesame, cowpeas, and groundnuts, while men focus on staple crops such as sorghum and millet. Men are in charge of both purchasing and selling livestock at the market, while women oversee the daily tasks that contribute to the "fattening." Women are not linked to the successful markets that exist to make Burkina Faso a key exporter of cattle, millet, and sorghum. They also lack ownership rights to the land they work; they must borrow small plots of land from their spouses. They have limited access to technology necessary to improve their agricultural production and to financial services that allow them to invest in business opportunities. Almost three-quarters reported that being a woman negatively impacted her ability to successfully generate income, mostly because they must prioritize family needs before they can devote time to their IGAs.

Eighty-five percent of the women say they have as many opportunities to ask for credit as their husbands, and although many said they have a greater ability to save money than their husbands do, they still encounter obstacles to doing both. Difficulties in accessing credit involve lacking guarantees or collateral; lacking access to large amounts of money; lacking understanding of loan terms and interest levels; lacking transportation to an FSP branch office; and needing a husband's consent. Obstacles to saving focused on challenges to adding to informal savings, rather than accessing formal savings, and consisted primarily of competition with other expenses, such as daily household expenses, children's education, clothing, and health costs. There are other vulnerabilities related to finances, for example, a husband can use his wife's money if he knows she has it and not repay, and women are more vulnerable to robbery in a way that men are not.

Household decision-making norms are mixed.

About 45 percent said both men and women have equal influence over decisions related to food and health, with 35 to 40 percent saying men have more influence. Outcomes for education decisions were somewhat similar. Sixty-one percent said women have more influence over financial decisions related to IGAs, with 71 percent wishing they had more influence. Fifty percent said both men and women have influence over decisions related to how financial services are accessed or used, and about 50 percent said they wanted greater freedom to participate in women's groups. Some women wished they had more influence over family planning/birth spacing and greater participation in household decision making overall.

Fifty-two percent of the women said they had sometimes been afraid of their partner in the last 12 months.

Gender-based violence and lack of mobility are a reality. While this measure serves as a proxy for gender-based violence, whether physical, sexual, emotional, or violence experienced in any other form, research conducted in Burkina Faso suggests that 31 percent of women suffered from physical or sexual violence at the hands of their husbands in the prior 12 months (Institut National de la Statistique et de la Démographie et ICF International 2012). Thirty percent of men admitted to having exercised violence on their wives or daughters in the previous 12 months (Kabore, Yaro, and Dan-Kima 2008).

Another study found that women in sub-Saharan Africa living in areas that experienced a recent drought that affected their partners' income were more likely to have been abused during the past year (Cools, Flatø, and Kotsadam 2015). Eighty-nine percent of the respondents in the diaries reported not being able to leave home without permission. Most (72 percent) said they were not currently autonomous or empowered.

When asked how men and women are impacted differently if there is a shock, they talk little about financial services and mostly about how other factors affect them. They say that women take loans or use savings to help pay for shocks, but overall women suffer more than men. The women must stay home with children (while men may emigrate for work), care for the sick, worry about the children, cook and bring water, help other household members in times of need, and care for themselves if they are sick. Women in polygamous marriages suffer more, since they struggle to care for their children by themselves. Men sell livestock, emigrate, decide on the means to implement a plan of action, reconstruct buildings (in case of flood, fire, etc.), and in cases of death, dig the graves and prepare the bodies. "In the event of a serious illness, both are involved: man and woman. Men in search of drugs; women remain with the sick and care for them day and night. In terms of suffering, it is true that men spend money, but women suffer more because they do not sleep." In a detailed study of women in rural Burkina Faso, Trickle Up revealed that while household survival is a point of honor for the husband, he often fails to fulfill his "duty," particularly as related to providing food, health care, and education of his children, and it is then that "women become the real backbone of the household" (Fofana 2013).

Livestock

Each survey asked participants to share the number of livestock the household currently owned, whether there was a change in ownership since the prior survey, and the reason for the change. Throughout the first five surveys, households on average owned 14 chickens, two cows, 11 goats, one donkey, and one other type of livestock. Comparing the number of livestock households owned at Survey 1 to Survey 5, about 72 percent of households had a change in the number of chickens they owned. This did not mean those whose experiences were stable did not gain or lose livestock during the five survey periods; this simply compares the number they started out with and ended with in Survey 5. Thirty percent experienced a gain in the number of chickens owned. When there was a gain, the household gained on average nine chickens. However, 41 percent of the participant households experienced a loss, which includes both chickens sold or died. If they experienced a loss, they lost on average 11 chickens. Similarly, goat ownership fluctuated quite a bit. Sixty-three percent experienced a change in the number of goats, with 41 percent experiencing an average loss of five goats; 22 percent experienced an average net gain of six goats. By contrast, donkey, cattle, and other (mainly horse) ownership changed very little.

Small livestock are commonly used as a form of currency or a “savings account on four legs.”

Participants sold an average of three to nine chickens to cover health, education, and other household expenses, or to pay for food or grain. Compared to losing 15 chickens on average to death, selling livestock for cash to pay expenses could still represent a fairly significant financial loss if the livestock is sold earlier than expected or at a point when market prices are low. The rainy season (July–September) is the worst time to sell animals. Unfortunately, for our study respondents this is when it occurs the most. Although livestock can still be sold at a profit during this period, it is certainly not the best time to sell, and suggests lost earnings. Table 3 summarizes seasonal livestock prices for the areas of the study. The later section on coping mechanisms will discuss this dynamic further.

Box 1 provides an insight into the role raising livestock as an IGA has in terms of building household resilience, particularly when chickens are being used as an interest-bearing savings account.

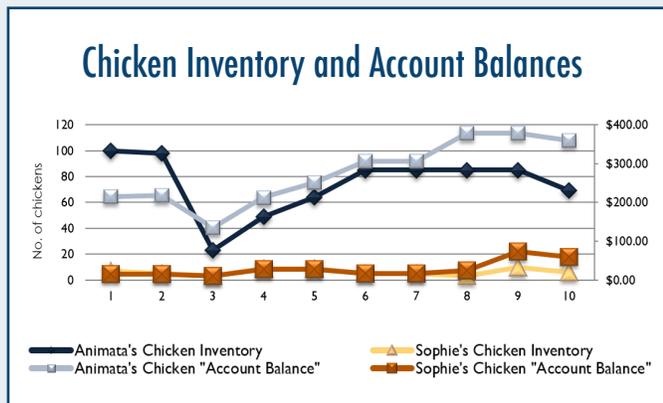
Table 3. Seasonal Livestock Prices (Passoré and Zondoma provinces)

Type of Animal	Price per Season in CFA			
	October to December	January to March	April to June	July to September
Young chickens	1,500	2,000	1,750	1,250
Older and fattened chicken	2,500	3,000	2,500	2,000
Young goats	12,000	15,000	12,500	10,000
Older and fattened goat	35,000	45,000	40,000	27,500
Young sheep	15,000	25,000	20,000	12,500
Older and fattened sheep	50,000	60,000	45,000	30,000
Young cattle	135,000	142,500	132,500	125,000
Older and fattened cattle	275,000	300,000	245,000	200,000

Box 1. Savings Account on Two Legs

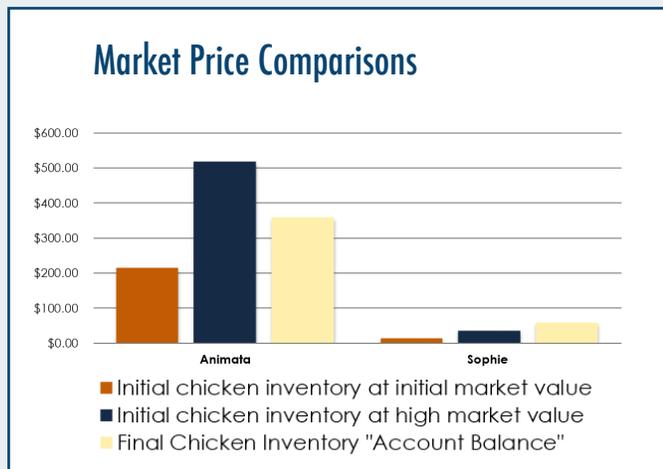
Animata^a mentioned raising livestock as one of her IGAs. She owned seven cows, 100 chickens, 17 goats, four donkeys, and one horse when she is first interviewed. Sophie did not mention livestock as an IGA, but she owned two cattle, seven chickens, six goats, and no donkeys or other livestock.

By assessing the financial benefit of owning only chickens, their chicken inventory (number of chickens in their care) as well as estimated chicken “account balance” or business value (market value of number of chickens in their care based on current market value inclusive of gains experienced through sale of chickens—assuming chickens sold are fattened) are provided to show the economic potential that raising chickens provides a family. The amounts below suggest the amount of purchasing power they would have.



This chart shows that despite the significant drop in chicken inventory for Survey 3, Animata has an average account balance of \$276, while Sophie has an average account balance of \$29 over the 10 survey periods.

If, theoretically, Animata could retain her initial inventory of chickens, whose value is based on low-season prices until high-season prices occur between January and March, it becomes obvious that not being able to hold and sell her initial number of chickens (assuming all were young chickens) until market conditions are most favorable (when fattened chickens can be sold at highest price) is a tangible economic loss. Animata would experience forgone revenue of approximately \$156 due to death of her chickens.



Sophie, on the other hand, had so few chickens to start with that her few losses and gains resulted in a higher account balance at the end compared with what was estimated if she had just held onto her original seven chickens.

This short analysis helps highlight the value of owning livestock for the families in the study, particularly a type of livestock used as a savings account and the potential it holds for purchasing power and responding to shocks. The significant fluctuations of Animata's stock highlights that even for having a large inventory of chickens, there can be large

losses, as well as significant amounts of effort put into managing the inventory. As seen in the section on IGAs, many women do more livestock fattening than before the 2012 food crisis. Chickens are a common animal for women to manage. The cases of Animata and Sophie show that this IGA, at least for chickens, is not necessarily a lucrative business, especially in light of the amount of effort it involves, but it likely provides some financial protection as seen when comparing the stories of Animata and Sophie.

a. Names have been changed to protect participant privacy.

Income-Generating Activities

About 72 percent of the women grow and sell sesame, cowpeas, and groundnuts or peanuts and engage in petty commerce as their main IGAs. Petty commerce includes the sale of a variety of items, such as local spices, condiments, dried fish, vegetables, beignets (donuts) and other sweets, kola nuts, clothes, soap, pottery, and sundries. Women often engage in more than one IGA. The next most common IGAs are fattening cattle, sheep, goats, and poultry (59 percent); producing local beer or dolo (30 percent); growing and selling grains (13 percent); gardening (9 percent); and a few service occupations such as masonry and hairdressing (2 percent).

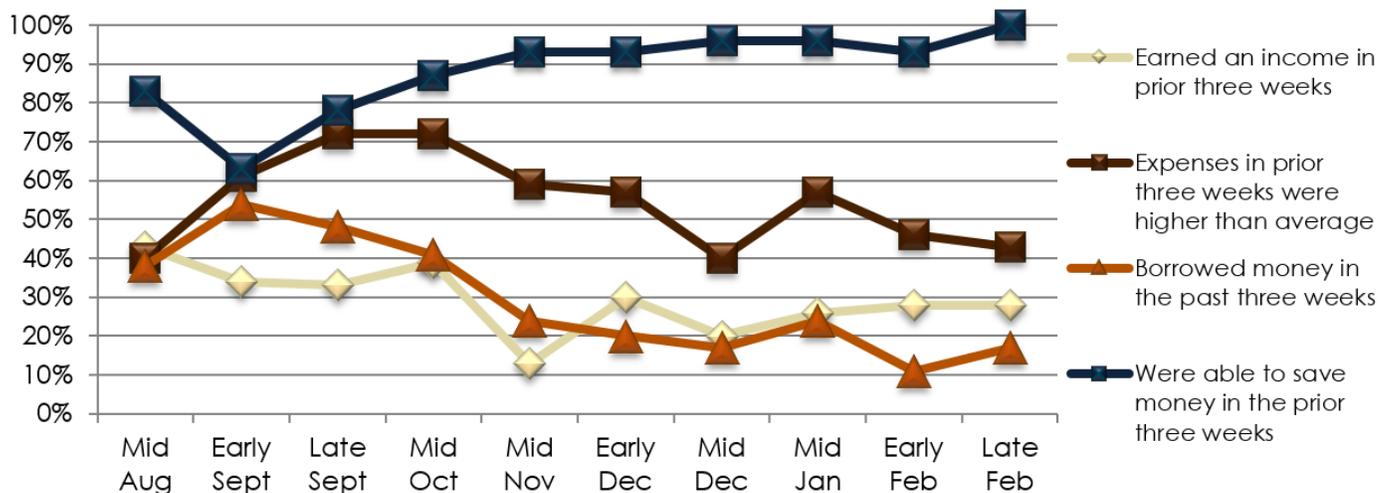
Using IGAs to Manage Shocks

These women typically used income from cash crops, livestock fattening, and petty commerce to cover expenses, but when times were difficult financially, such as during the hungry season or a crisis, many women relied on livestock fattening and selling livestock more than other IGAs. They did so because “livestock has a good market throughout the year” and “these activities provide significant income in a short time.” The majority of women do livestock fattening more now than they did before the food crisis of 2011 and 2012. They purposefully diversified income sources after the crisis as a strategy to anticipate and cope with future shocks. However, some still relied on other methods, such as selling crops or stored food to feed their family. Some said using these methods solved their problems, whereas a few said they were made more food insecure and more vulnerable because the methods reduced their food stocks. Whereas it is clear that some still sell stored food to pay expenses when times are difficult, the preferred method for help at a difficult time is to sell livestock.

Cash Flows

An important part of understanding the need for financial services is based on cash flows during specific times of the year. Data from the 10 surveys exhibited in Figure 6 illustrate the fluctuations in finances during the rainy and dry seasons. Rainy season, or surveys 1–4, show high expense and borrowing levels, low saving levels, and some income. Survey 4 reflects harvest, with a peak in income and a drop at Survey 5. As income decreased or levels out for the other surveys, expenses and borrowing mostly decreased, and saving increased. Rainy season (August through mid-October) is a financially difficult time and suggests a need for additional or specialized financial services to help households better manage the season.

Figure 6. Cash Flows across the Diaries



Financial Services

To better understand the roles of financial services in responding to shocks, Survey 3 focused on understanding the value of RCPB and ODE services to participants, as well as information on other financial services they use. As mentioned earlier, 52 percent of the 46 women were RCPB members and 48 percent were ODE members. Three of the RCPB members were also members of SGs via the NGO SEMUS (also a Saving for Change partner of Freedom from Hunger), but for the sake of simplicity, these three are categorized as RCPB members in the data analysis. The participants are saving money for a variety of reasons: to pay school fees, to purchase livestock, to fund their IGAs, to purchase food for the family, to pay health expenses, to pay unforeseen expenses, to cover basic household needs, and to pay agriculture-related expenses. These are common expenses funded through savings, as well as through credit—90 percent have taken loans for these expenses. Managing expenses on small budgets can easily come at a cost to other areas of their lives as indicated below:

- 50 percent said at some point they had gone hungry to make a loan payment
- 46 percent said at some point they had gone hungry to make a savings contribution

RCPB Membership

Members of RCPB village banks seem appreciative of the access to credit, although many would like to change some of the loan terms.

Loans taken as part of the rural group-lending program offered by RCPB in the sample villages were often used to purchase materials to support the women's agricultural work (such as hoes, fertilizer, seeds), although some used it for other IGA expenses, food for the family, school fees, or to speculate on grain. The women liked belonging to RCPB, and talked about how its financial services allowed them to provide schooling for children, treat an ill family member, keep their grain so they could sell when the market improves, keep their money safe, help them manage their portfolio, and help anticipate difficult situations. However, they did not like the perceived high guarantees or collateral to get a loan,⁸ the short repayment periods, or the required frequent payments (which can result in delayed payments). Other aspects they did not like included high interest rates, lack of credit or short repayment periods in the rainy season (the lean season), monthly maintenance fees, and managing their money with the group.

Savings Group Membership with ODE

Women in ODE SGs are fairly satisfied with group participation, although they wish the group provided better protection of their money.

Members of the ODE groups said they were saving their money for a variety of reasons, including purchasing livestock, anticipated health expenses, school fees, food, and their IGAs. One woman was saving her money to open an account with a formal financial institution. Ninety percent of the SG members have borrowed money from the group at some point, mostly for IGAs, but also for food, health care, and education. Solidarity is one of the characteristics they appreciated most about their SGs. Many also liked the idea of being able to get a small loan if needed, without a guarantee or collateral. They also liked that with both the loans and savings, they were able to purchase items

8. Note that it is likely the participants are talking about individual loans or other loans that they possibly could access through RCPB. Credit with Education, like most village-banking methodologies, uses personal guarantees instead of assets as collateral. Women in this study are Credit with Education clients.

needed for their households. Their main concern with their SG was that their money was not very safe sitting in the locked cashbox, and they would prefer to put it with the *caisse* (village bank) or deposit it in a financial institution. They also found that the frequency of meetings and having to pay other members' contributions were at times a constraint.

Ninety-one percent of respondents said they preferred to manage their money individually in a bank or with other financial institutions rather than in a group.

Both RCPB and ODE members appreciate their groups but reported that they prefer to manage their money individually. This is likely due to preferring privacy as well as hoping to avoid dealing with other group members' loan defaults. This point provides a conflicting message since they seem to appreciate the mutual support and collective activities of the groups, like shared gardens and solidarity funds, as well as the help they provide each other during a crisis. Perhaps these women would use more individual financial services if they were offered, but stay as part of a group in some form to enjoy the benefits of mutual support.

Other Financial Services

Regarding the use of other financial services, there was little diversity in their answers. Table 4 summarizes the outcomes. Forty-four percent of the households receive support from the government with most receiving support from SONAGESS—a food security organization that sells grains and seeds at subsidized prices and likely helping with some food stocks. Thirty-three percent claimed they have insurance, all of whom had credit life insurance with RCPB (which pays off their debt to RCPB upon their death). No use of health or agricultural insurance was mentioned, although participants were asked about these types of insurance. There was also very little reference to RCPB health savings accounts, RCPB health loans, and ODE SG mobile wallet services (via Airtel Burkina), even though the respective groups have access to them.

The use of money transfer services to receive remittances was quite common, however, with 85 percent of the households receiving money, even in amounts as small as \$10. Half of the women received the remittance through hand-to-hand services (transporters), reflecting the predominant use of informal services over a formal financial service (this percentage is comparable to national rates) (Ratha et al. 2011). About 15 percent received the remittances through the postal system SONAPOST, 13 percent through Airtel Money, 10 percent through Western Union, and 3 percent through RCPB's intercredit union transfer system (SYTRAF). Only a few participants said this money covered regular expenses; most said the money helps with some daily expenses, but were usually for periodic expenses related to health, food, and education.

Use and awareness of mobile-based financial services are low.

Half of the ODE SG members were known at the time to be linked to Airtel Money mobile wallets through a Freedom from Hunger financial linkages program, although only 21 percent identified this linkage when asked. Those few who said their groups were linked said they liked this linkage because it provided security for group funds, it was easily accessible, and it was easy to use to make transfers. None of the participants had his or her own individual mobile money account. Not surprising, only one

Table 4. Reported Use of Financial Services and Subsidies

Financial Service	Percentage Using Service
RCPB Village Banking Loan	53%
Member of ODE SG	47%
Member of SEMUS SG	46
RCPB Credit Life Insurance	66%
Health or Agricultural Insurance	14
Subsidies (mostly food and agricultural subsidies from SONAGESS)*	85%
Remittance Services	11%
Remittance Services Used**	
Hand-to-Hand Transporters	49%
SONAPOST	15%
Airtel Money	13%
Western Union	10%
RCPB's SYTRAF	3%
Unknown/Didn't answer	10%

* At the time of print, it was not clear in which form they received these subsidies or how they were delivered; e.g., cash, money in an account, money via mobile money, seeds, etc.

** Eighty-five percent of the 46 women, or 39 of them, received remittances; use per carrier was based on what percentage of the 39 women used each service.

woman thought she would use a mobile money account for other financial services, and only two said they would find it useful to receive health, agriculture, and weather information through their mobile phone. Some said receiving information, however, was not useful because they cannot read.

While there is active engagement with the few financial services offered, demand seems greatly unmet.

Questions regarding desired financial products and services yielded interesting results. In Survey 3, only 17 percent felt they had all the financial products and services they needed. RCPB members needed individual credit, health and agricultural insurance, and one woman mentioned that she needed formal money transfer services to avoid using the informal hand-to-hand money transfer service. ODE members needed microcredit (or larger loans), credit insurance, and health or agricultural insurance.

The women used few formal services, such as RCPB credit groups and remittance services. They used more informal services, such as the ODE SGs, hand-to-hand remittance transporters, and a variety of other services described in the coping mechanism section to follow.

Shocks and Coping Mechanisms

Whereas the previous section described the context for the women and their households, this section presents the resilience findings—the description of the shocks and stressors encountered, as well as the strategies employed to manage them. An analysis of coping mechanisms sheds light on the roles that formal and informal financial products play in improving household resiliency and building assets, as well as suggesting features needed for more and better-suited financial products and services. Some results are triangulated among the interview data and the qualitative formative and qualitative follow-up activities, while others come from only one activity. Differences are noted when relevant to the credibility of the outcomes.

Shocks and Stressors

All participant households experienced multiple shocks and stressors throughout the timeline of the study.

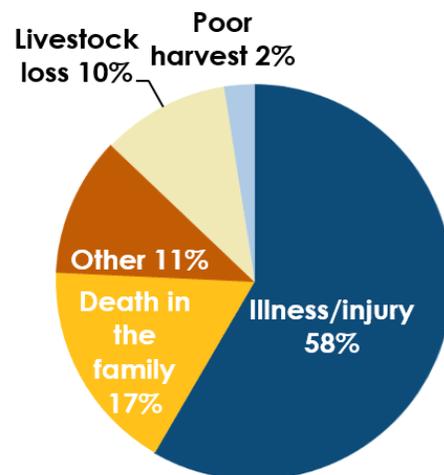
There were 334 shocks reported by the 46 respondents over the seven months in the categories of illness/injury, family death, livestock loss, poor harvest, and “other.” The category “other” usually referred to unexpected expenses, sometimes due to unexpected or expected events. Examples include expenses related to the sale of a plot of land, a roof collapsing, a divorce in the family, burglary of the restaurant of a co-wife’s child, death of someone outside their family, old debt, a credit group, home repair, bicycle repair, agricultural activities, weddings, baptisms, children’s clothing purchases, and holiday celebrations.

The number of shocks indicates an average of 7.3 shocks per respondent, or each household experiencing approximately one shock per month. It is assumed that each of the 334 shocks are different events since the surveys asked about shocks that occurred since the prior survey, but some could be repeated due to the gravity of the shock or unforeseen consequences from the shock. Nevertheless, the most common shocks reported are highlighted in Figure 7.

Illness and injury comprised the majority of shocks, with more than one-half of the respondents experiencing a shock regarding their own health, and almost all of them reporting an illness or injury of a child.

Health shocks included having malaria, snake bites, problems with feet or knees, “being ill” (not specified), motorcycle accidents, surgery, and hospitalization for illnesses. Regarding livestock loss, chickens were the most common animal lost, usually due to disease (most likely to a Newcastle disease epidemic). Goats also often died from parasites and illnesses borne during the rainy season. Poor harvest was not mentioned often, but could be common during drought years.

Figure 7. Most Common Shocks Experienced



In addition to these shocks were a variety of other stressors, sometimes considered a shock and sometimes not. For instance, many participants considered school fees a shock. Although it could be argued that school fees are an expected expense, 48 percent of respondents reported education expenses a shock 33 times. Hunger or food insecurity was not reported as a shock, but as seen in the food-security section earlier in this paper, food-security rates never rose above 33 percent over the seven months, meaning that at all times at least two-thirds of the households struggled with hunger.

During the course of the diaries from August 2014 to February 2015, Burkina Faso experienced a political uprising and the ongoing threat of the Ebola breakout in neighboring countries. Questions added to the subsequent survey after the uprising showed that almost none of the respondents felt directly affected by the change in government at that point, nor were they doing anything to prepare for a possible crisis, since they felt they were still in a “wait-and-see” mode, depending on which regime might follow. Questions about Ebola showed that only four out of the 46 women had ever heard of Ebola. Those four said that they prayed God and/or their government would protect them from it, but it did not seem to directly affect their households.⁹

Trends in the timing of the shocks reiterate an important point made earlier—that the rainy or hungry season is a particularly difficult time of year. Considering surveys 1–5 as rainy season and 6–10 dry season, more shocks occurred during the rainy season (196) than during the dry season (138). Even when dropping the data from Survey 1, which included both current shocks and shocks from the prior year, the number of shocks during rainy season (147) was still slightly higher than during the dry season (138). Excluding Survey 1 data, there were still 15 percent more illnesses and injuries, and almost three times as many reports of livestock lost during the rainy season. Only “death in the family” occurred about as frequently during dry season as rainy season. In addition to these shocks, school fees are due during the rainy season in October, which can create an additional significant stress on household finances.

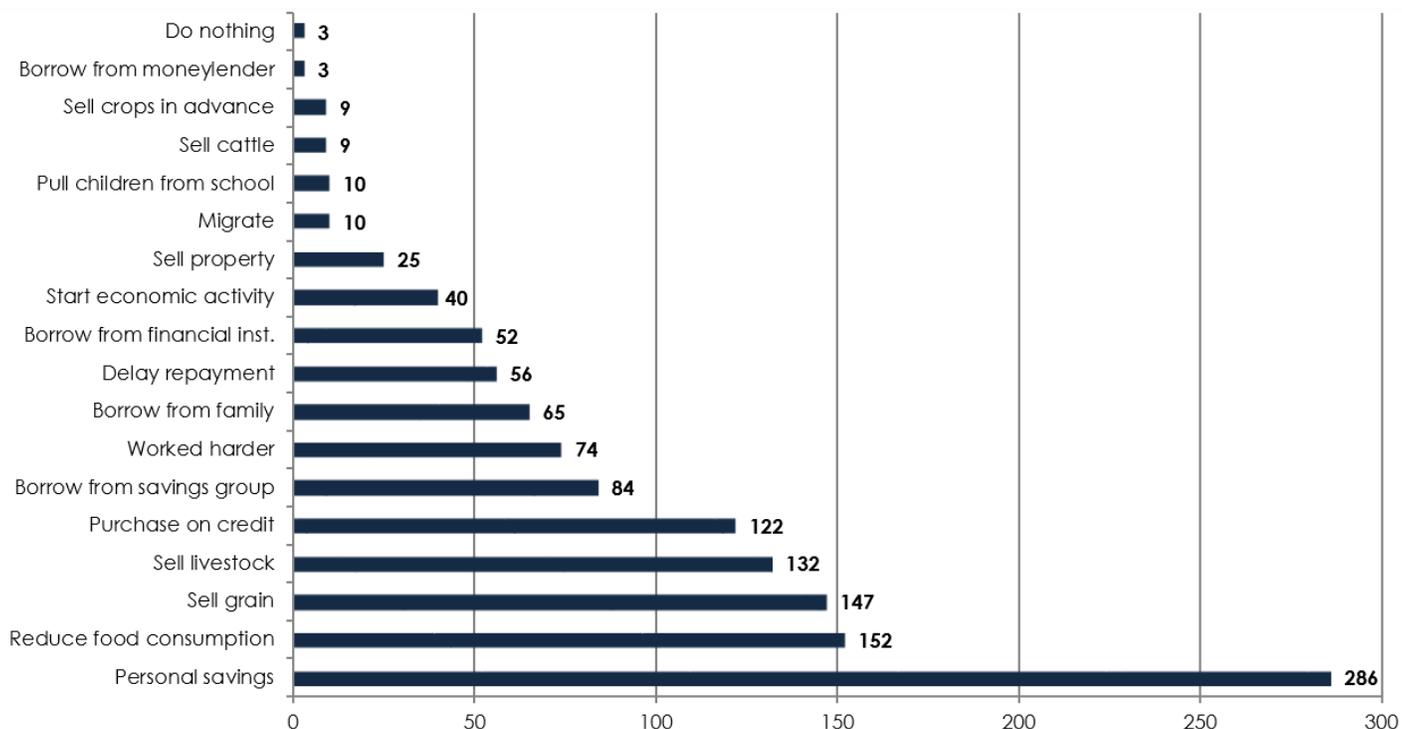
Coping Mechanisms

The most common coping mechanisms used were use of personal savings, followed by reducing food consumption, selling grain, and selling livestock.

After participants were asked about shocks occurring since the prior survey, they were asked how they responded. Interviewers took them through a list of 18 different coping strategies, eliciting a “yes” or “no” for each strategy, allowing participants to give more than one response to the shock. Coping-mechanism options came from the formative research and from prior surveys used in West Africa. They included options such as selling livestock (small or large), using personal or household savings, borrowing money from various sources, starting a new economic activity, migrating to earn money, taking children out of school, reducing food consumption, working harder, and doing nothing. Across all of the shocks, including education, respondents reported using all 18 different mechanisms, for a total of 1,279 uses of coping mechanisms. Figure 8 shows how often each coping mechanism was used during the seven months.

9. See Gash and Gray (2015) for more details.

Figure 8. Reported Use of Coping Mechanisms



Savings proved to be both the most commonly used coping mechanism overall and the most commonly used mechanism for each individual type of shock.

Savings refers to both savings kept at home (or in other “informal” places) and formal savings, although only a small number of the respondents reported having formal savings accounts.

Reducing food consumption was the second most common coping mechanism.

The types of foods frequently reduced in consumption were millet and cowpeas, while freely available wild leaves and sorrel are added to bulk up sauces for main dishes. Cutting back can yield small but important sums: reducing millet can equate to a savings of 100 to 500 CFA a day (\$0.17 to \$0.85 a day)¹⁰ and reducing cowpeas can yield 200 to 700 CFA a day (\$0.34 to \$1.19). Selling the valuable asset of stored grain occurs most often post-harvest, but done sparingly as the next hungry season approaches, as a way to protect the family against aggravated food insecurity. As mentioned earlier, selling livestock such as chicken, goats, and sheep is very common, especially to yield larger sums of money.

10. Based on the following exchange rate, as of 21 August 2015: 1USD=588 CFA.

Financial services, both formal and informal, played a significant role in managing shocks.

Purchasing on credit from merchants in the village, borrowing funds from an SG, and borrowing from family and friends are all part of the informal lending that commonly occurs. Borrowing from a financial institution was the only formal financial service that made it into the top 10 mechanisms, although it was not cited often as a direct response to a shock. Much less frequently used mechanisms included starting an economic activity, selling property, migrating, pulling children from school, selling cattle, selling crops in advance, borrowing from a moneylender, and “doing nothing.”

More coping mechanisms were used during the hungry season, when there are the most shocks. Although savings is used most often during the rainy season, it is the one coping mechanism used most consistently throughout the seven months of the study.

Each of the 18 coping mechanisms has the highest rates of use during the rainy season, with use tapering off for most of them for the remaining months. One exception is selling grain, which occurs most often during and just after harvest (after rainy season), as families have grain available for sale. Selling livestock also drops off after the rainy season, but is used somewhat consistently throughout the seven months. This trend is in contrast to market prices, as was shown in Table 3.

Participants used multiple coping mechanisms 70 percent of the time to respond to a shock. The average number of coping mechanisms they used was 3.5, ranging from 0 to 13 (the high-end number could refer to responding to multiple shocks at once with multiple mechanisms). On average, they used the highest number of coping mechanisms for responding to “other” shocks, illness/injury, livestock loss, and death in the family. Poor harvest had the highest number of multiple coping mechanisms (7.1), but was based on a small number of observations (8) and could be an outlier. Although people may be motivated to use a variety of coping mechanisms for different reasons, as discussed later in this paper, using multiple coping mechanisms primarily suggests that individual mechanisms do not yield enough money to cover the entire cost of the shock. An analysis on the characteristics of resilience for this population (Gray, Gash, Crookston, and Aleotti 2014) showed that resilient households were more likely to report using fewer coping mechanisms overall (2.7 compared to 3.6 for nonresilient households) and responding to shocks only with positive coping mechanisms.¹¹ See Box 2 for further details revealed from this analysis.

Out of the top 10 mechanisms, five could be considered positive and five negative.

Those considered positive mechanisms, or at least with less dire consequences, were the following:

1. Using savings
2. Borrowing from an SG
3. Borrowing from family, friends, and financial institution
4. Starting an economic activity
5. Working harder

11. Defined in the analysis as using savings, borrowing from financial institutions, borrowing from savings group, borrowing from friends and family, starting a new economic activity.

Box 2. Characteristics of Self-Perceived Resilient Households

Self-perception of a household's resilience status was established in Survey 5 of the diaries by having households answer the question about whether they felt their household was resilient against income shocks. Then, the self-perceived resilient and nonresilient households were compared using a series of variables that women used to qualitatively describe resilient households.

A statistical analysis showed that self-perceived resilience was associated or correlated with the following characteristics:

- Household poverty status
- Average food security status
- Livestock used as an IGA
- Higher median savings amount over the 10 surveys
- Belonging to a MFI and a savings group
- Saving money for health
- Client not reporting to have been sick during the 10 surveys
- Not being afraid of one's husband
- Feeling supported, hopeful, capable of meeting one's financial obligations, trustful of others
- Not living one's life "day to day"
- Would try anything to improve their lives

As it relates to shocks and shock-coping strategies, self-perceived resilience was associated or correlated to being less likely to

- Borrow money from friends and family
- Reduce food consumption
- Make purchases on credit from vendors
- Work harder as a result of a shock

Self-perceived resilience was associated with being more likely to use fewer coping mechanisms overall and respond to shocks only with positive coping mechanisms (defined by participants as using savings, borrowing from financial institutions, borrowing from an SG, borrowing from friends and family, starting a new economic activity).

Self-perceived resilience was not associated with these select variables: average savings amount, receipt of remittances, having a chronic illness, capable of leaving one's home without spouse's permission, feeling happy or satisfied with life, number of shocks experienced or the type of shock (except for client being ill as previously indicated), and belonging to either an MFI or an SG.

The finding that self-perceived resilience was associated with belonging to both a village bank and an SG but not associated with belonging to only one of those can suggest one of two possible relationships. It may suggest either that those who have the capability to financially contribute to more than one group are more resilient or it may be indicative of one's ability to develop a portfolio of financial services that helps them earmark or safeguard their funds for different financial needs.

These findings provide unique insights into the set of factors, if reinforced by financial institutions and development practitioners, that are likely to strengthen household resilience: facilitating and growing a household's savings and expanding their access to different financial services, such as savings, credit for IGAs (particularly, those associated with a resilient household, such as livestock in the case of this population), and specific savings products for health and other emergencies.

Savings draws on resources a household already has, although using savings for one expense means it cannot be used toward one it was already earmarked for. The concept of debt is a tricky one: borrowing from an SG, from family and friends, or from a financial institution is not perceived as a negative way of coping with a shock by the women, however, purchasing on credit is. While credit is commonly desired, the women were generally risk-averse and concerned about their ability to repay; repayment terms likely play a role on whether debt is considered negative or not. Starting an economic activity and working harder are considered positive, but still draw on resources and divert energy that could have gone elsewhere.

The mechanisms considered negative were as follows:

1. Reducing food consumption
2. Selling grain
3. Selling livestock
4. Purchasing on credit
5. Delaying repayment

Reducing food consumption meant they are buying less food to divert money they would have spent on food toward other expenses. Selling grain indicates they are selling food stocks they would have eaten during the hungry season—if that grain is depleted (and not replaced later), they must turn to eating alternatives such as leaves and low-quality foods. Both of these strategies are likely detrimental to their health and play a role in increasing chronic food-insecurity rates. Eating less means they are less productive, cannot concentrate as much, cannot work diligently in the fields, their children struggle more in school, and they are all more susceptible to illness. Selling livestock at a time when market prices are not ideal can result in a loss of expected profit as well as a loss of income (from eggs or milk, for instance) and was considered a sign of nonresiliency; respondents said selling livestock is something nonresilient households did.

Respondents generally used negative coping mechanisms more often than positive ones. This is a significant issue to consider in terms of building resiliency, since the use of negative mechanisms will ultimately set people back, eroding their ability to be resilient.

Using the respondent definitions, out of the total 1,279 uses of coping mechanisms, 609 were solely negative mechanisms and 561 were solely positive mechanisms. This is complicated as the analysis to develop the characteristics for resilient households revealed (Box 2), those who considered themselves to be resilient were more likely to report using only positive coping mechanisms. In reality, respondent households likely use a mix of positive and negative coping mechanisms to help manage shocks. The overall high use of negative mechanisms suggests, however, that families often have no choice but to use negative ones.

Coping-Mechanism Preferences

The diary data indicated which coping mechanisms were used, but it was not clear why the 46 participants selected particular mechanisms. Why did they use some coping mechanisms more often than others? Did they use certain mechanisms for certain shocks? What issues factored into the decision-making process of how to select a coping mechanism? To try to answer these questions within the study time frame, a “coping mechanisms preferences” FGD was conducted in the qualitative follow-up data collection. The exercise included a facilitator helping three groups of diary participants and their husbands complete a table that looked at the seven most common coping mechanisms and seven most common shocks (seven of each were chosen to simplify the process). Participants

were asked to select the two or three preferred mechanisms for coping with each of seven shocks and to explain reasons for choosing the preferred mechanism or rejecting it. The shocks included small health problem (e.g., malaria), major health problem planned (e.g., planned surgery), major health problem urgent (e.g., meningitis), loss of livestock, death of a family member, loss of IGA or lower than expected revenues (e.g., poor harvest), and hunger (due to crop failure or lack of money). The coping mechanism options included savings, reducing food consumption, selling grain, selling small livestock, purchasing on credit, borrowing from an SG, and borrowing from family or friends. Although not based on as many participants as the diary data, the exercise nevertheless yielded insightful findings and provoked further analysis with the formative and diary data. The analysis led to several salient observations, culminating in conclusions on both behaviors and product and service delivery.

Selling small livestock was the most preferred coping mechanism, with it being preferred for six of the seven shocks (family death is the only instance it was not preferred), followed by borrowing from an SG, reducing food consumption, using savings, borrowing from family and friends, and selling grain.

Table 5 summarizes the results. Purchasing on credit was not preferred for any of the shocks. The ranking for those *not preferred* are basically the inverse of what is preferred. Since selling livestock and borrowing from an SG both rank as frequently preferred mechanisms, they both must be particularly helpful, easy, or otherwise advantageous. Purchasing on credit and selling grain therefore have significant disadvantages. Clearly, these points matter in terms of both use and preference.

There was an obvious difference between the most preferred mechanisms and the most commonly used mechanisms.

For example, the most preferred mechanism was selling small livestock, but the most commonly used was savings. The second most preferred mechanism was borrowing from an SG, but the second most

Table 5. Coping-Mechanism Preferences

Which coping mechanisms do they prefer to use? (Total No.)	For which shocks was it preferred?	Which coping mechanisms do they prefer NOT to use? (Total No.)	For which shocks was it NOT preferred?
Sale of small livestock (6)	Small health, major health–planned, major health–urgent, loss of livestock, loss of income, hunger	Purchase on credit (7)	Small health, major health–planned, major health–urgent, loss of livestock, family death, loss of income, hunger
Borrow from SG (4)	Small health, major health–urgent, loss of livestock, family death, hunger	Sell grain (6)	Small health, major health–urgent, loss of livestock, death, loss of income, hunger
Reduce food consumption (3)	Major health–urgent, Loss of income, hunger	Savings (5)	Major health–planned, major health–urgent, loss of livestock, loss of income, hunger
Savings (2)	Small health, family death	Borrow from family and friends (5)	Small health, major health–urgent, loss of livestock, family death, loss of income
Borrow from family and friends (2)	Major health–planned, hunger	Reduce food consumption (4)	Small health, major health–planned, loss of livestock, family death
Sell grain (1)	Major health–planned	Borrow from SG (3)	Major health–planned, loss of income, hunger
Purchase on credit (0)	None	Sale of small livestock (1)	Family death

Table 6. Coping-Mechanism Preferences vs. Coping Mechanisms Used

Coping-Mechanism Preferences	Coping Mechanisms Used
Sell small livestock	Use savings
Borrow from SG	Reduce food consumption
Reduce food consumption	Sell livestock
Use savings	Sell grain
Borrow from family and friends	Purchase on credit
Sell grain	Borrow from SG
Purchase on credit	Borrow from family/borrow from financial institution/work harder

commonly used was reducing food consumption. Table 6 shows that each of the seven preferences ranked differently than the most common behaviors, with two making particularly big shifts: using savings dropped significantly as a preference and borrowing from an SG increased significantly as a preference.

The type of shock does not appear to drive the selection of coping mechanism used; other factors matter more.

Table 7 shows a tally of which coping mechanisms were used per shock. For example, looking at the three types of health shocks, each type is managed a bit differently. Looking across all seven shocks, each one has a different combination of preferences. The clearest trends are of frequency—selling small livestock and borrowing from SGs are preferred for different types of shocks. Comparing this data to coping mechanisms that were used per shock is somewhat more interesting, but patterns are still not clear. Table 8 shows that for the five most common shocks reported in the diary data, savings, reducing food consumption, and selling livestock are all commonly used to manage each shock (with a little variation). Each of those mechanisms obviously has wide appeal, although not the same appeal as the most commonly preferred mechanisms.

Table 7. Coping Mechanism Preferred per Type of Shock

Shock	Coping Mechanisms						
	Savings	Reduce Food	Sell grain	Sell small livestock	Purchase on credit	Borrow from SG	Borrow from family and friends
Small health	X			X		X	
Major health planned			X	X			X
Major health urgent		X		X		X	
Loss of livestock				X		X	
Death in the family	X					X	
Loss of income		X		X			
Hunger		X		X			X

Table 8. Most Common Coping Mechanism Used per Type of Shock

No.	Illness/injury	Family Death	Other	Livestock Loss	Poor Harvest
1	Savings	Savings	Savings	Savings	Savings
2	Reduce food consumption	Sell grain	Reduce food consumption	Reduce food consumption	Reduce food consumption
3	Sell livestock	Sell livestock	Sell livestock	Sell livestock	Sell livestock/ purchase on credit

Table 8 blends the reasons for preferences from the exercise with other relevant information found throughout all three activities of the study. The result is that there are both advantages and disadvantages to using each type of coping mechanism. Some of these answers are straightforward, while others are more nuanced.

Preferences for savings are clear; they are preferred because they are readily available, but not preferred because of insufficient funds to cover the full cost.

Borrowing from an SG is a little more nuanced. It is preferred because the funds are available, can be obtained relatively quickly, and are reliable per the concept of mutual assistance—that others “will help me when I am in need, since I will help them when they are in need.” Borrowing from an SG is not preferred because funds are often too small to cover the cost of a big shock and sometimes are unavailable. When members are simultaneously hit with a shock and are all asking the SG for a loan, for example, there is not enough money to meet everyone’s request. Borrowing from family and friends is preferred because of reliability (due to mutual assistance) and flexibility with repayment terms, yet not preferred because there is not always enough, if any, money available. A second, and more significant reason for not preferring to borrow from friends and family is that asking for help results in a loss of honor and/or privacy—a loss of honor because the male head of household was not able to manage the problem on his own, and privacy because your friends and family now know your circumstances. Maintaining honor for a male head of household, and for a family in general, is highly valued and losing it is considered a high cost. Having to consider both advantages and disadvantages shows that decisions regarding which coping mechanism to use, and when, are not easily decided.

Weighing the advantages and disadvantages of the various coping mechanisms demonstrates that the respondents understand the risks associated with using each coping mechanism.

Each shock poses a situation where a wife, husband, or family must look at resources available and weigh the selection of available resources against the risks of using them. Each coping mechanism has been given a ranking-of-risk level in Table 9 as a way to further understand the decision-making process. Reducing food consumption is an option that is available, considered a natural action to take, and can provide small savings quickly. A key risk is that it will make a family worse off, but people are willing to use it when it is easy to do and there are no alternatives. However, they would use it only to cover a larger cost, and would not use it to cover the cost of a minor health problem since the “shock is not important enough.” Selling grain is more risky; it leads to lower food reserves in the future (if not replaced), making the family worse off, and was seen only as a last resort (likely because replacing stocks is costly and difficult to do, especially during the rainy season). However, they will sell in the case of a major health problem, if there are no options. The riskiest coping mechanisms are selling grain and purchasing on credit because they both will make the families worse off. Although respondents prefer to avoid them, the data on coping-mechanism preference versus behaviors (see Table 5) showed that

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they clearly were used often. The acknowledgment of these risks helps explain the differences between preferences and behaviors. Some coping mechanisms may be risky and were thus not preferred, if one had the luxury to choose; they were used because there was no alternative when the shock occurred.

Table 9. Coping-Mechanism Preferences and Risks

Coping Mechanism	Why Preferred	Why NOT Preferred	Additional Observations	Risk Level
Using savings	<ul style="list-style-type: none"> Available Timely Secure (doesn't fluctuate in price) 	<ul style="list-style-type: none"> Insufficient funds, especially for large shocks 	<ul style="list-style-type: none"> Often have insufficient funds, but good starting place because accessible and low cost, with few trade-offs Savings is considered the "best way" to build resilience 	Low
Reducing food consumption	<ul style="list-style-type: none"> Available—considered natural to do in cases of hunger, loss of IGA/ income Timely (sometimes) 	<ul style="list-style-type: none"> Will make family worse off Does not yield much money (not good for need of large sum) Sometimes not timely enough 	<ul style="list-style-type: none"> Willing to do it in case of hunger and loss of IGA; will use when there is a lack of alternatives 	Medium
Selling grain	<ul style="list-style-type: none"> Can be only option in an emergency 	<ul style="list-style-type: none"> Will not have enough to eat later May not be available if poor harvest affects community 	<ul style="list-style-type: none"> Seen as last resort 	High
Selling small livestock	<ul style="list-style-type: none"> Available Effective—provides a lot of money Timely—can be converted quickly Reliable—provides consistent sum 	<ul style="list-style-type: none"> Don't want to take a loss when have to sell at unexpected time (will if must) 	<ul style="list-style-type: none"> Most preferred mechanism overall Men make transactions in the market whereas women raise the animals Some prefer to sell assets before using income or savings because "other needs may come and you need money then" 	Low
Purchasing on credit	<ul style="list-style-type: none"> Timely 	<ul style="list-style-type: none"> Fear of inability to repay debt Lose honor/privacy 	<ul style="list-style-type: none"> Consistent resistance to credit throughout study; some cite bad credit history Large credit with flexible terms is desired Recognition that credit can harm resilience if not handled well 	High
Borrowing from SG	<ul style="list-style-type: none"> Available Timely Reliable via mutual assistance 	<ul style="list-style-type: none"> Insufficient funds for big shocks Not available when others in the community are affected by bad harvest, covariate shock 	<ul style="list-style-type: none"> SGs are preferred but borrowing from an SG is good for small-shock management only Women like the solidarity they find in SGs that they may not have at home with husbands Mutual assistance is valued but negligible if too many in the community need help at the same time Low or no interest on loans for health 	Low
Borrowing from family and friends	<ul style="list-style-type: none"> Reliable via mutual assistance Flexible repayment terms 	<ul style="list-style-type: none"> Honor/privacy loss (significant) Not always available, or insufficient funds 	<ul style="list-style-type: none"> Will do it willingly in case of hunger and major health issue, but often avoided due to loss of privacy and honor Will not use if issue is not "significant" 	Medium

The insights on coping-mechanism preferences can translate into financial service product and service design features.

Looking at how frequently certain attributes were mentioned to understand their value, Table 10 lists the most important features that determine whether or not to use a coping mechanism. These are listed in descending order, from those mentioned most to least frequently. The features that matter the most for coping with shocks are availability, timeliness, reliability, effectiveness, and flexibility. The reasons for *not* using a coping mechanism include being ineffective, making the family worse off (not enough to eat later, profit loss, unmanageable debt), loss of honor or privacy, unreliable, and not timely enough. These preferences can help explain the success and failure of some existing financial products.

Table 10. Preferences for Features of Coping Mechanisms

Top reasons for using a coping mechanism	Top reasons against using a coping mechanism
1. Available	1. Ineffective (insufficient funds)
2. Timely	2. Will make family worse off (not enough to eat later, profit loss, unmanageable debt)
3. Reliable	3. Honor or privacy is compromised
4. Effective (provides sufficient funds)	4. Not available or reliable
5. Flexible	5. Not timely enough

Two main conclusions result from these observations:

1. Choosing a coping mechanism depends on weighing advantages and disadvantages, but the drivers of the decision-making process are primarily the availability of coping mechanism resources, and risks associated with using each mechanism.
2. The preferences for and against coping mechanisms equate to insights for effective financial product and service design features. Features that mattered most, in descending order, include availability, timeliness, reliability, effectiveness, and flexibility. Other factors that mattered included preventing a family from being worse off (avoiding aggravated food insecurity, early sale of livestock, or acquiring unmanageable debt) and preserving family honor and privacy.

It could be helpful to see how this discussion applies to a real-world scenario. As noted earlier, RCPB designed a health savings account and loan to help clients manage health expenses. The following case study (Box 3) describes how the products were developed and applies the coping-mechanism preference analysis to explain the performance of the products. The case study also includes interesting results on the potential of health savings accounts and health loans stemming from the economic games administered by Michael Carter and Ghada Elabed and Laura Paul of the University of California, Davis.

Box 3. Case Study: RCPB's Health Savings and Loan Product

RCPB offers a voluntary health savings and loan product whereby clients agree to deposit a set, minimum amount of money per month into a special account devoted only to health expenses. During the first six months after opening the noninterest bearing account (or until a minimum of US\$20 is accumulated, whichever comes first), the client may not access these funds. After the six-month capitalization period, clients may withdraw health savings only upon presentation of proof of health expense (such as a receipt or a doctor's order specifying cost of treatment).

Possession of an active account that has exceeded the capitalization period allows clients to apply for a health loan in the case of a verifiable, major health cost for the client or any family member. Health loans are offered at lower interest than RCPB's microenterprise loans and carry more flexible repayment terms. With this package, RCPB clients are better positioned to have the small funds needed to address everyday health expenses before they become more serious, and to access affordable credit to pay for treatment when their health savings are insufficient. By June 2013,^a there were 19,500 health savings accounts (amount in deposits not reported), representing a growth in health savings accounts of 55 percent since the end of a pilot project completed in 2009.

However, the health savings accounts were not successfully reaching RCPB's poorest clients due to poor marketing and challenges with the management information systems that made it difficult to track the number of health savings accounts. RCPB felt that the requirement to submit health receipts was a barrier to using the account since many clients still preferred traditional medicine over formal medical services. In addition, because it was necessary for the group's management committee—made up of three elected group members—to make deposits and withdrawals at the branch for group members, village-banking members were not actively using health savings accounts.

The resilience diaries illuminated possible explanations for these challenges and highlighted the distinction between designing a financial product for health expenses versus health shocks. Several design features were found to be important in helping women from the village banks anticipate and financially respond to shocks:

- **Timeliness**—Products must make it possible for people to respond quickly. Specifically for village banks, the fact that a group of women must organize and travel on behalf of a member made it difficult to withdraw the money in a timely manner.
- **Availability**—The money must be available when it is needed and in sufficient amounts to cover a shock. Health shocks easily occur when the banks are closed, causing clients to resort to other financial resources even if money has been set aside specifically for them.
- **Gender considerations**—Restrictions on mobility likely make it challenging for a group of rural women to travel on behalf of another member in a timely manner. The resilience research revealed that most (84 percent) of the women could not leave their homes without their husbands' permission. If three women must travel on behalf of one to make a withdrawal, then three women could be waiting to request permission to leave as well.
- **Lack of privacy**—People want to keep health and other financial decisions as private as they can. For a member to withdraw her savings, she must inform the group management committee members, who likely must request permission to travel from their husbands as well as justify the trip, which doesn't allow for confidentiality for the member.

The results from the economic games^b demonstrated that a health savings account can provide a protective measure against health shocks and build resilience over the long term. When women were taken through a game in which they were asked to manage resources against a variety of shocks, they were shown to be more resilient if they opened a health savings account. They were better off financially after having put money aside for expected shocks, particularly in the long term. This research, in combination with existing research by Dupas and Robinson (2013) about the impacts of various health savings mechanisms, suggests that getting the design of health-financing mechanisms correct is worth the effort for the positive impact they can have.

Note: For full brief, see Gray and Gash (2015).

- a. As reported by RCPB to Freedom from Hunger for its performance management report (unpublished).
- b. Researchers included Michael Carter, Ghada Elabed, and Laura Paul of the Agricultural and Resource Economics Department of the University of California, Davis. See Paul and Gash (2015).

Discussion

As noted earlier, this paper set out to answer two key questions:

1. What strategies do poor households employ to manage economic, environmental, and health shocks that disrupt their financial lives?
2. What roles do formal, nonformal, and informal financial products play in improving household resiliency and building assets?

The most common shocks and stressors this population face are illness and injury, death in the family, myriad miscellaneous events (the “other” category), loss of livestock, and poor harvest.

School fees, although expected, are a challenge for many households to pay, and a fairly consistent struggle with food security serves as an underlying stressor for most of the households. In addition, they also face semi-regular covariate shocks, such as droughts every two to four years (which lead to poor harvest and sometimes food crises), as well as the less common but still relevant famine, political crises, and threats such as Ebola from bordering countries.

There are stressors that are specific to women.

While women play a substantial role in the household economy, they are limited both by gender norms that inhibit their ability to pursue more profitable IGAs, as well as lack of time and resources to focus on building successful enterprises. While women reported making decisions on how to respond to shocks, especially regarding health and food, men seemed to be the final decision makers for all aspects of daily life. As the Trickle Up study revealed, household survival is a point of honor for the husband, and it is when he fails to fulfill his “duty,” particularly as related to providing food, health care, and education for their children, that “women become the real backbone of the household.”¹²

The coping mechanisms most often used were spending personal savings, reducing food consumption, selling grain, and selling small livestock.

These women and their households manage shocks by weighing the availability and risks involved with each option. Households consider which resources are available, are easy to access, can produce funds quickly, are effective enough to produce the sum needed, and have the most manageable negative consequences. The weighing of availability and risks, or availability and burden, is not unique to Burkina Faso; the Microinsurance Center found similar results in the MILK studies conducted across 16 other countries (Zimmerman, Magnoni, and Budzyna 2014).

Although some mechanisms produce enough money to cover the entire cost of a shock, managing a shock usually requires employing several strategies or mechanisms simultaneously to patch together the required funds. They may start out using the less risky mechanisms, but if the mechanisms do not produce enough money, they must turn to the riskier ones. Mullainathan and Shafir (2013) claim that managing scarcity reduces mental capacity, or bandwidth, that could be applied to other areas of one’s life. Applying the concept to the context of these findings, it suggests that as households are hit with a shock each month, they must assess the availability and risks of resources to cover the cost, engage with other players to obtain those resources, and deal with any impending consequences—all of which takes a lot of mental bandwidth. It could be assumed that the more mechanisms they must use, the more mental bandwidth is expended. This is mental bandwidth that could be used toward their IGA, studying for school, or taking care of others. Hence, using multiple strategies is in itself another cost of managing a shock.

12. Based on the exchange rate, as of 21 August 2015: US\$1 = 588 CFA.

The list of coping mechanisms used shows that financial products and services play a significant role in improving household resiliency and building assets.

The role of formal financial services differs from the role of informal (and nonformal) financial services, however. The availability and use of formal financial products is very limited, and the demand is widely unmet. RCPB loans and remittance services are used by many, although half of remittance services are through informal means. Households often use RCPB loans on IGAs and food and school fees, but do not mention using the loans to purchase assets such as livestock. Remittance money seems to be used for reacting to the one-time cost of shocks, as well as daily expenses, but purchasing assets is rarely mentioned. Remittances are also rarely mentioned as a coping mechanism, and this is likely because it was not a precoded option for explaining how one coped with shocks, and the fact that funds received through remittances are considered immediate savings. A few participants said they had formal savings accounts. Almost one-half receive government-supported food and seed subsidies, although it is not known whether formal financial services are used to deliver the subsidy. About one-third have RCPB credit life insurance, which would cover RCPB debt in the case of their death. Technically, all RCPB clients in this study have credit life insurance. This under-reporting demonstrates that clients either do not see this as a service they have access to, or it is not one that creates value until the time of their death; therefore, it is not easily recognized as a service they have. Also, very few RCPB clients mentioned using a health savings account or health loan, and very few ODE members mentioned mobile wallet services—which technically each group has access to even if they have not used them—implying that those products are possibly not creating value for them or that in reality, the access is still limited if mobile agents are not readily available. The formal services used seem to help most in improving cash flow or consumption smoothing in terms of increasing access to cash to cover the costs incurred from shocks.

The use of informal financial services exceeds the use of formal financial services in responding to shocks—and seems to play a greater role in improving resiliency and building assets.

This finding is similar to one found by Mercy Corps in the Philippines after Typhoon Yolanda (Hudner and Kurtz 2015): people relied more on informal savings than formal savings in the aftermath, speaking to the issue of availability as a key driver for choosing coping mechanisms. For both chronic and acute shocks, informal services play a significant role in managing recovery. Purchasing on credit from local merchants and borrowing from SGs are the more commonly used informal services. Little is known about purchasing on credit except that it is used often although strongly not preferred out of fear of inability to later repay debt. The Trickle Up¹³ research also revealed that given the size of many of these villages, purchasing on credit often meant purchasing on credit from extended family members and friends given the limitations of the local market.

The frequent selling of livestock almost makes it a financial service itself, acting both as a form of currency in the marketplace as well as an interest-bearing savings account (when fattened over time and sold for a higher price than bought).

Even though they are not strictly speaking financial services, it is important to understand how the other commonly used coping mechanisms affect a household's resilience. Sometimes households eat the livestock they own, but poor households rarely do so, especially when it is perceived that the value of the animal outweighs the benefit of a full stomach. Although livestock fattening is a popular IGA, especially as a strategy when times are difficult, it is unclear whether it is a highly profitable business for the majority who do it. These households breed livestock mainly for local markets and most seem excluded from the larger international cattle market in West Africa (USAID 2013). Livestock is a risky investment. It can, and often, dies, especially during a disease outbreak or during the rainy season

when parasites are common. For those animals who survive, market prices may not be favorable when a shock hits and the household is forced to sell the animal, or perhaps the animal is not fattened enough to the point where it would bring the higher profit once desired.

Selling grain is considered much less desirable than selling livestock since households may have to sell when market prices are low, but more so because it can cause the family to go hungry later in the season. However, it is done more often than selling livestock.

And even more common is the use of reducing food consumption, which even if considered a “natural” thing to do during hungry season, inevitably leads to poor nutrition, weakened immune systems, and lack of energy to work or attend school. Many households mentioned working more, which may provide some hope that it would lead to more income from a higher crop yield or more goods sold at the market, yet could simultaneously be exacerbating poor health or leading to exhaustion. Although some informal financial services are contributing to their resilience and building assets, some commonly used coping mechanisms, such as grain sales, seem to be taking away from it.

While many of the women consider themselves resilient, it is difficult to consider them resilient in light of the high use of negative coping mechanisms.

In relative terms, many of these women consider themselves resilient. The analysis of self-perceived resilient households compared to nonresilient households found that resilient households saved more, were less poor, and more food secure. However, in absolute terms, it is difficult to consider many of them resilient as they respond to shocks and stressors in such a way that does not result in recovery or resilience to shocks in the long term.

RM-TWG defines resilience as “the capacity that ensures adverse stressors and shocks do not have long-lasting adverse development consequences” (Constas, Frankenberger, and Hoddinott 2014). Even without multi-year data in this study, one can guess that eating less and eating lower-quality foods will have long-term effects on a household's health and productivity.

The negative coping mechanisms should be the last ones used, but they are often the first.

It is also difficult to gauge the amount of profit being made when there is the constant acquisition and sale of livestock—selling assets seems to be a response behavior and not part of recovery. Selling grain is likely contributing significantly to the high rates of food insecurity. Delaying repayment and purchasing on credit are exacerbating and creating debts that can be unmanageable.

As the economic games findings suggest, developing a clear rule of thumb, such that people are taught to invest in an IGA and use remaining money to save for future emergencies, might help people consider how to prioritize their coping mechanisms. But one can guess that using three or four coping mechanisms to manage each shock wears on their mental bandwidth; it is stressful, tiring, and takes time away from other activities. Their “capacities” to respond are low; they are likely not resulting in positive development outcomes, a core issue for the definition of resilience.

“A resilient home is the one that is diversifying its sources of income (farming, trade, pottery, blacksmithing, gardening, etc.); a non-resilient household does not diversify its sources of income, it is devoted only to agriculture; if there is drought, there will be problems.”

–53-year-old RCPB member living in Gourcy commune

Recommendations

Taking what has been learned, how can FSPs respond to these complicated findings? Key design insights for improving financial product and service design for this population are listed below:

1. Features that matter most for coping with shocks are timeliness of pay out and availability of the product.

People react differently to a crisis than they would when they can anticipate costs or make investments meant to generate income. The design features from this study are similar to, and complement, those found in both Seltzer et al. (2014) and Collins, Morduch, Rutherford, and Ruthven (2009).

2. For a highly food-insecure population, financial products and services should result in the population consuming more and better food.

This suggests that market research tools typically used within the sector for product and service design should include hunger/food security as an outcome as well as a product design feature.

3. Incorporate a gender analysis in market research that allows women to speak freely about the challenges they encounter with current and potential products.

Ask about multiple aspects of their lives that can help reveal hidden nuances; consider control over IGAs, resources, and income; time use; attitudes; family honor; relationships with their husbands and other family members; and ability to move freely and feel safe. It should not be taken for granted that products that overcome one barrier (participation in a village bank) will overcome them all (traveling to a branch to make an unscheduled health savings withdrawal).

4. Develop more products and mechanisms that help households increase their savings.

Self-perceived resilient households were more likely to report saving relatively higher amounts consistently. Many rely heavily on savings to respond to shocks. There are several ways to help people save for both general expenses as well as earmarked ones—household commitment savings products, agricultural commitment savings, SGs, and SGs that save for health are a few examples. More specific examples of successful products include the following:

- A commitment savings product offered in Malawi allowed customers to restrict access to their own funds until a future date of their choosing. Savings accounts were offered to farmers in the preharvest season of one year, with deposits made just after harvest, and most withdrawals were made during the subsequent planting season. This resulted in increased agricultural input use for planting (which included seed, fertilizer, pesticides, hired labor, transport, and firewood for curing), increased crop sales from the subsequent harvest, and increased household expenditures in the period after harvest.
- A study looking at behaviors of four types of rotating savings and credit association- (ROSCA) based health savings mechanisms showed that all products led to increases in spending on preventive health products (bednets or water purification devices) and increases in health savings by 66 percent (Dupas and Robinson 2013). Adding an earmarking feature was helpful in emergencies and fending off friends and relatives who frequently requested money.

5. Develop financial products for specific shocks.

Products or services that earmark funds or set aside funds for quick access to cover anticipated expenses such as funeral costs—especially family death, which was very common—would be highly useful. RCPB's commitment health savings account and loan are an excellent example. Another example is adding health savings (as well as health education and linkage services) to savings groups:

- In Benin, Freedom from Hunger added a health savings component to the regular savings as part of the Saving for Change SG program.¹⁴ Ninety-five percent of groups offering health savings voted to add it to their SGs. Over a seven-month implementation period, health savings averaged 19 percent of regular savings per week, and \$38,708 was saved by the 16,663 SG members. Thirty-one percent took a health loan to cover costs during the period, averaging \$8.70 per loan.

6. For highly food insecure contexts, FSPs may need to partner with NGOs to help clients make effective use of financial services.

Given the high levels of food insecurity and poverty within this particular population, additional support may be necessary for households to fully benefit from financial services. "Graduation" programs of consumption support, savings, asset transfer, technical skills training, lifeskills coaching, and even referrals to health care services are proving to have long-term effects on very poor households. FSPs could partner with NGOs to provide a graduation model to coordinate an effective transition into more formal financial services. This acknowledges that FSPs that reach into poorer segments of the population may still need to provide more support than is traditional for actors in the FSP sector.

- A six-country study on the CGAP and Ford Foundation graduation program showed statistically significant cost-effective impacts on 10 key outcomes, including consumption, food security, and psychosocial status, with impacts sustained over three years on eight of the outcomes (Banerjee et al. 2015). The NGO Trickle Up is currently supporting a graduation program in Burkina Faso.¹⁵

While insurance products would greatly benefit this population, they were rarely used. Additionally, this study attempted to detect and understand the benefits of newly implemented mobile-based products and services within this population; however, at the time of this research, uptake and use of such services were so low that product insights are still limited. It is perceived that the mobile-based products could help women overcome some key barriers to using more financial services, particularly if they were able to respond to the need for timely access to funds or if they helped increase timely receipt of remittances.

13. For more information, see Brune, Giné, Goldberg, and Yang (2011).

14. For more information, see Chandler (2014).

15. For more information, see <http://trickleup.org/projects/burkina-faso-goudoubo-and-mentao-refugee-camps/>.

Conclusion

This study shows that women and their households use many strategies deemed necessary to build their resilience in the short term, but ultimately those strategies may prevent them from advancing. These women appear to be running in place, despite their best efforts. As one woman put it, “my life curve remains constant.” While they diversify their income streams, sacrifice to keep their children in school, and seek medical care, they and their children are suffering nutritionally, as their livestock and grain are used as currencies instead of nourishment. They lack enough financial resources to help them move forward, despite their membership in village banks and/or SGs.

Financial services can and should play a role in helping women and their households build resilience. But building resilience should be treated as an intentional goal. This may require a shift in focus for some FSPs. Clients need financial and nonfinancial services that help them mitigate risk, lessen the severity of trade-offs, and avoid long-term adverse developmental consequences. Recommendations from this study can be applied to financial service design in ways that increase access and use of financial services for the poor, while also making business sense for providers.

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