

DELIVERING HEALTH MICROINSURANCE THROUGH SAVINGS AND INTERNAL LENDING COMMUNITIES

An evaluation of CRS' experience in Benin

March 2015

ANGIE TYLER

CATHOLIC RELIEF SERVICES

INTERNATIONAL DEVELOPMENT FELLOW

ANGELIA.TYLER@CRS.ORG

Table of Contents

| | |
|---------------------------------------------------------------------|-----------|
| Executive Summary | 3 |
| 1. Introduction | 8 |
| 1.1 LITERATURE REVIEW..... | 8 |
| 1.2 EVALUATION CONTEXT..... | 9 |
| 1.3 RESEARCH OBJECTIVES | 11 |
| 1.4 METHODOLOGY | 11 |
| 2. Research Findings | 13 |
| 2.1 SURVEY RESULTS | 13 |
| 2.2 DISCUSSION OF SURVEY RESULTS..... | 18 |
| 2.3 FOCUS GROUPS WITH SILC MEMBERS | 19 |
| 2.4 INTERVIEWS WITH KEY STAKEHOLDERS..... | 22 |
| 2.5 ICT SOLUTION..... | 28 |
| 2.6 COMPETITIVE ANALYSIS..... | 30 |
| 2.7 FINANCIAL ANALYSIS AND PROJECTIONS..... | 33 |
| 3. Recommendations | 36 |
| 3.1 IMPROVE MARKETING AND MESSAGING STRATEGIES | 36 |
| 3.2 REVIEW PRODUCT DESIGN | 37 |
| 3.3 STRENGTHEN PARTNERSHIPS | 37 |
| 3.4 REFINE ICT SOLUTION | 39 |
| 4. Lessons Learned | 39 |
| 5. Appendices..... | 41 |
| APPENDIX A: REFERENCES | 41 |
| APPENDIX B: NSIA’S HEALTH MICROINSURANCE TERMS AND CONDITIONS | 43 |
| APPENDIX C: DETAILED TIMELINE | 44 |
| APPENDIX D: ICT4D E-SYSTEM | 45 |
| APPENDIX E: LIST OF SILC GROUPS..... | 46 |
| APPENDIX F: LIST OF KEY STAKEHOLDERS | 47 |
| APPENDIX G: STATA OUTPUT | 48 |
| APPENDIX H: DESCRIPTION OF ICT EXPERTISE NEEDED | 51 |
| APPENDIX I: PACE ANALYSIS..... | 52 |
| APPENDIX J: FINANCIAL ANALYSIS | 57 |

Executive Summary

CRS, NSIA, and Caritas Natitingou's ICT4HMI project

In Benin, the average household spends over 40% of their total budget on out-of-pocket health expenses annually.¹ Health costs disproportionately affect poor households as they face a higher burden of disease, which leads to higher health costs and a risk of increased impoverishment from “health shocks” or “crises presented by a healthcare need that jeopardizes the already fragile economic status of the poor” (Leatherman et al., 2012). To support poor households in managing these costs, CRS, an international NGO founded by the US Conference of Catholic Bishops; NSIA Assurances, a private health insurance company; and Caritas Natitingou, a faith-based development organization; piloted a health microinsurance (HMI) product delivered through savings and lending groups in northern Benin. The HMI product covers health services including consultations, pharmaceutical products and medicines, local hospitalization, simple births, and small surgeries at two private, Catholic health centers in the area of intervention. The product also features a life insurance component (For more detail on the HMI terms and conditions, see Appendix B). From the product’s launch in March 2012 through December 2014, the number of persons covered has nearly doubled from 715 to over 1,300. In November 2013, CRS introduced a virtual Information and Communications Technology (ICT) solution to improve the efficiency of the HMI management system to prepare for an expansion of the project to other regions of Benin.

Benefits of HMI and the ICT solution

This evaluation was conducted in January and February 2015. Its purpose is to evaluate the project’s ability to meet its intended objectives: to increase access to health services among rural households through HMI and to improve the management quality of the HMI product through the use of ICT.

The ICT solution also intended to achieve the following intermediate results:

1. Identify an Android solution for cost effective hardware and software to significantly speed up the health service delivery process for insured SILC members and covered dependents;
2. Insurance agents use the e-system to register the clients and process insurance premiums;
3. SILC members have the option of paying their premiums using a mobile money solution;
4. Health centers use the e-system to serve insured clients;
5. Health centers reduce the waiting time for insured patients to receive health services;
6. NSIA reduces the time for reimbursement of health center invoices; and
7. NSIA adopts the automated management system to deliver health microinsurance services.

To gather the data needed for this evaluation, we used quantitative and qualitative methods, including a household survey, focus groups and in-depth interviews. Project beneficiaries highlighted three main benefits of using the HMI product, including: (1) less stress and worry in case of illness; (2) a higher likelihood of seeking care at the first sign of illness; and (3) lower out-of-pocket health costs at the time of services. The introduction of the ICT solution has contributed to several improvements from the

¹ "Out of Pocket Health Expenditure." *World Databank World Development Indicators*. The World Bank, 2012. Web. 5 Mar. 2015. The World Bank defines out-of-pocket expenditure as any direct outlay by households, including gratuities and in-kind payments, to health practitioners and suppliers of pharmaceuticals, therapeutic appliances, and other goods and services whose primary intent is to contribute to the restoration or enhancement of the health status of individuals or population groups. The annual out-of-pocket expenditure for Benin is reported as 44.3% for 2012.

former, paper-based system, including: (1) increased availability of data in real time; (2) reduced costs of registration (enrollees no longer need to purchase photos in advance); (3) and an improved reimbursement process for health centers.

The Challenge: Increasing enrollment to reach financial sustainability

Despite these improvements, focus groups and in-depth interviews with project beneficiaries, participating health centers, and project consortium partners have revealed several issues that may threaten the project's long-term viability. This includes the lack of motivation among project partners, particularly the health centers that find HMI adds to their workload without offering any direct benefit. As such, project beneficiaries report long wait times at health centers that accept the insurance product and thus prefer to use HMI to help them access care at public health centers, which are currently not included in the HMI package. In addition, NSIA staff report that HMI is not a priority for their company as long as it continues to be an unattractive investment financially.

Based on this and other feedback elaborated in this report, it is recommended that the following technical and operational changes are made within the proposed timeline to ensure success.

Improve marketing and messaging strategies

- **0–3 months:**
 - Develop, print, laminate and distribute a copy of basic information and frequently asked questions about the HMI product to each participating SILC group and each participating health center.
- **3–6 months:**
 - Establish a feedback mechanism by designating a point person within each SILC group, who fields any questions or concerns about HMI and informs those who missed any learning conversations with Caritas field agents. This point person would be responsible for reporting the group's concerns regularly to Caritas field agents, who would then record any complaints in a notebook and share this information with Caritas project coordinator and project supervisor who follow the status of the issue and ensure that the issue is addressed. Once action has been taken to address the issue Caritas field agents should then communicate this response to the point person in SILC group.
 - Review content and timing of learning conversations modules and any predetermined financial education modules that the project plans to implement with Caritas and CRS staff (bring in technical staff if needed) to discuss efficacy of topics covered, content, length, and frequency of discussions to determine if changes need to be made.
 - If significant changes are made, ensure that Caritas project coordinator, the supervisor, and Caritas field agents are properly trained in updated methodologies.
 - Monitor client understanding of insurance product and financial literacy and make adjustments as appropriate.
- **6–12 months:**
 - Develop new, engaging marketing materials to share with SILC groups (e.g. video², skit, pictorial presentation);
 - Disseminate these materials and messaging through various communication channels (e.g., local radio, publicity events, and annual or bi-annual registration campaigns).

² For an example of low cost videos that can spread virally over cellphone see Purdue University's video demonstration of how to improve crop storage here: <https://www.youtube.com/watch?v=RZN-lqukCPw>.

Review Product Design

- **3–6 months:**
 - Conduct a study to review the product and pricing and consider the feasibility of the following options:
 - Instead of pricing the product at 290 FCFA per month, adjust it to a rounded number like 300 FCFA or 250 FCFA for simplicity (Imagine you are an HMI member and you want to explain it to your neighbor, what would be the simplest way to describe it?);
 - Offer a discounted pricing option for entire families or entire SILC groups;
 - Offer a discounted price for children or a discounted price as the number of dependents increases to incentivize adding dependents;
 - Offer flexible payment options (every month or every 3 months);
 - Provide a renewal incentive for those already enrolled, such as a 10% discount or reward for renewing their HMI plan if they didn't get sick in the previous enrollment period;
 - Assess strengths and weaknesses of the life insurance component and either remove it completely from the HMI package (as suggested by Caritas) in exchange for a lower premium, higher rate of coverage, or expanded package of health services or, if NSIA decides to continue offering the life insurance component then it is recommended to adjust the claims procedures according to the local context (for example, a community leader could serve as the credible witness to sign the death certificate in the place of the health center staff; beneficiaries of the life insurance payout could use voter cards as ID or receive the payment through Caritas staff instead of requiring beneficiaries to present forms of ID that are more difficult to obtain);
 - Provide SILC groups with different savings/financing options and mechanisms to help cover the cost of the premium.

Strengthen Partnerships

- **0–3 months:**
 - Set up meeting with NSIA to create 3-month work plan (repeat each trimester)
 - Draft up contract to work with ANAM and send to ANAM's Director General and Director of Partnerships and contacts at the DNSP. This should include a plan to integrate local public health centers in target areas, including Yarikou, Kotopounga, Birni, and Chabicouma.
 - Set up meeting with Mr. Koto, President of *mutuelles de santé* (contact recommended by the MoH), Afriqu'Mutualité, and NSIA, to brainstorm solutions to motivate health centers.
 - Recommended option to motivate health centers: Permit health centers to charge an administrative fee to HMI members seeking care at a rate to be negotiated with health care providers. Presumably, this could be as low as 100 FCFA per patient and would not pose a significant cost burden to HMI members while providing health care providers some compensation for the extra administrative costs of registering HMI members and costs of phone credit used to contact HMI project staff. It would also bypass NSIA's unwillingness to allocate a percentage of the premium to health centers, as health centers could charge this fee in addition to the 30% copay. If this change is pursued, it should be clearly communicated with SILC members and included on the FAQ and informational policy document.

- **3–6 months:**
 - If deemed necessary and contingent on funding, hire a partnerships manager at CRS to work with all the different actors and respond to their needs (this could even be a temporary 12-month position to set up consistent communication channels and establish strong linkages between partners).
 - Hold a meeting with St. Joseph’s health center in Chabicouma and a group of representatives HMI enrollees to discuss claims of poor treatment and reception by Chabicouma staff members and propose a solution to make improvements;
 - Hold first periodic meeting (recommended twice annually) with key stakeholders in which each party explains their role in the project.
 - Establish who has authority over which parts of the project and who will be held accountable for the project’s success;
 - Clearly define what constitutes success for the project (e.g. minimum number of enrollees within certain timeframe); Conduct breakout sessions to discuss project’s strengths, weaknesses, threats and opportunities;
 - Conduct breakout sessions to identify project activities and tasks; identify project board or MEAL working group with 3–5 representatives to track key indicators as a team;
 - Create project charter that is distributed to each member, to make sure everyone is on the same page and roles and responsibilities are clearly defined and explain how roles and responsibilities will change over the course of the project as NSIA assumes full responsibility.
 - Organize a field mission for local government officials to visit participating health centers to see how ICT solution for HMI works firsthand.
 - Develop system to keep government authorities updated every 6 months on progress through briefings, check-in phone calls or meetings.
 - Purchase improved materials for Caritas project coordinator to print, cut, and laminate cards.
- **6–12 months:**
 - Review training methods on use of ICT tools for Caritas field agents and consider introducing other training methods such as video or experiential learning opportunities to practice using ICT tools under the supervision of trainers from CRS and NSIA;
 - Hire data collectors, separate from the Caritas field agents who hold learning conversations with a minimum level of education, specifically for collecting data on the tablets.
 - Introduce the Private Service Provider (PSP) model,³ in which agents are recruited, trained and paid by the project for a limited period, then undergo PSP certification to operate independently and be paid by the community. This will allow the project to sustainably manage costs incurred by insurance agents (phone credit, gas costs).

³ For more details: <http://www.crsprogramquality.org/storage/pubs/microfinance/private-service-provider-implementation-manual.pdf>

Refine ICT Solution

- **0–3 months:**
 - Update iFormbuilder forms and integrate feedback from local partners.
 - Resolve technical difficulty at Caritas Natitingou in using the Bartender software to produce HMI cards (link to photos in DropBox, connecting to enrollee database).
 - Develop a procedures manual and distribute to key stakeholders.
 - Purchase a Wi-Fi modem for Caritas Natitingou.
- **3–6 months:**
 - Identify supplier and purchase Android tablets and any accessories (tablet covers, chargers, external batteries).
 - Procure any other ICT supplies specific to Android and QR Barcode scanners.
- **6–12 months:**
 - Integrate the use of QR Barcode scanners in the iFormbuilder forms.
 - Print and distribute a list of health services covered by the HMI plan with corresponding barcodes and a Barcode scanner for each participating health center.
 - Pilot use of Android tablets instead of Apple products for 6 months and conduct an evaluation to determine feasibility of expanding its use.
 - Install a helpdesk on the tablets to facilitate access to technical support as needed, linking Caritas field agents and health center staff to technical experts at CRS, Caritas and NSIA.
 - Strengthen and maintain the partnership with MTN and MOOV to gain their support in introducing mobile money; collaborate with these partners to launch mobile money in a targeted sub-district to determine feasibility of expanding.
- **12 months+:**
 - Conduct a training of trainers (CRS MEAL Coordinator and NSIA Head of IT) on iFormbuilder, WinDev, Java Mobile and Android.
 - Automate the beneficiary codes using QR Barcode scanners.
 - Create a statistical database that links the iFormbuilder cloud database with a system that can output relevant data (e.g. dropout rate, renewal rate, claims rate, etc.).
 - Implement a system to manage patient data specifically for health centers such as Bodarima that prefer to use a computer-based system over the handheld tablets.

1. Introduction

1.1 LITERATURE REVIEW

This literature review surveys empirical studies that provide insight into why enrollment remains low in HMI schemes.

Lack of insurance knowledge

Low education levels and lack of familiarity with financial products are seen as key constraints to increasing enrollment (Harms, 2011). One study discussed reasons for low enrollment among health mutual organizations (HMOs), non-profit community-based organizations that aim to increase their members' access to healthcare, in Benin (Ridde et al., 2010). Researchers found that nonmembers had a low level of knowledge about how HMOs are organized and the types of risks covered, possibly contributing to low penetration rates in rural areas. To overcome this obstacle, many HMOs and health microinsurance schemes have introduced extensive awareness campaigns and financial literacy programs, though these initiatives were found to have little to no impact on uptake (Banerjee & Duflo, 2010; Chandani & Garand, 2013).

In fact, some research suggests that the concern over consumers' lack of insurance knowledge is overstated. In Guinea and Burkina Faso, researchers found that though respondents were unable to recall specific product offerings, they did possess a basic level of understanding of the advantages and limitations of insurance, concluding that a lack of insurance knowledge among consumers was not a major factor in determining enrollment (Criel & Waelkens, 2003; De Allegri et al., 2006). While it may not have an immediate and measurable impact on uptake, understanding and awareness may still be important for renewal and more effective utilization of product services (Chandani & Garand, 2013).

Budget constraints

Inflexible payment methods are more likely to keep the poor from enrolling rather than the cost itself. In Burkina Faso, while respondents agreed that the premium level was fair and were willing to pay, they reported a need for greater flexibility in payment options, such as paying in installments (De Allegri et al., 2006).

Another payment-related issue is the need to sync the time of payment collection to local economic cycles. For example, many rural households reliant on subsistence agriculture may be more likely to have access to cash right after a harvest. Programs that require full payment upfront may also pose a barrier for larger households, which may not have enough cash-in-hand to cover all dependents.

Low level of satisfaction with local health care facilities

In Burkina Faso, interviewees were unsatisfied with the quality of health care services in terms of health care providers' (HCP) attitudes, reporting that providers treated patients differently according to their status within the community (De Allegri et al., 2006). In Benin, many respondents claimed that some HCPs were dishonest and would overcharge nonmembers (Ridde et al., 2010). This may indicate that if HMI succeeds in integrating trust as "part of the commodity" of the HMI product, it may attract potential members as a way to increase their bargaining power and their ability to advocate for better quality health services at fair prices (Schneider, 2005; Ridde et al., 2010).

At the same time, this reveals a deep mistrust of HCPs, which may deter enrollment in HMI schemes and even deter health care facilities from participating (Jaffré & Olivier de Sardan, 2007). In a study from Rwanda, responses reflected the tension between patients and HCPs as HMI members described them as “unfriendly, unskilled and incompetent” (Schneider, 2005). At the same time, HCPs felt that HMI members were unappreciative and impatient, expecting speedier access to quality care.

Lack of trust in management

Trust in the management system is a critical component in facilitating effective insurance markets. Through pre-payment, clients must trust that the insurer will reimburse health care providers in return. Given the importance of trust in stimulating demand, past negative experiences such as corruption or fraud in microcredit or microinsurance schemes may deter potential clients from joining (Schneider, 2005), though not always (Criel & Waelkens, 2003).

Some researchers show that embedding “trust-building structures” into HMI schemes may increase enrollment (Schneider, 2005). For example, an HMI member in Guinea explained that she appreciated the complaint filing system offered by other local associations, suggesting that this is also something HMI schemes should consider (Criel & Waelkens, 2003).

Time inconsistency

Another issue is “time inconsistency”—that what you spend money on today may not correspond with how you plan to spend it tomorrow (Banerjee & Duflo, 2010). In the case of HMI, one explanation for low enrollment is not that potential clients cannot afford it or do not find it valuable, but because they plan on enrolling sometime in the future. This is exactly what happened in a study by Innovations for Poverty Action (IPA) in Ghana, where one of the most common responses for non-enrollment was that they wanted to enroll, but had not gotten around to doing so yet (IPA, 2012).

1.2 EVALUATION CONTEXT

Our evaluation took place in the project areas of intervention Chabicouma (pop. 9,041) and Kotopounga (pop. 17,828), located in the Atakora region of northwestern Benin (Laleye et al., 2010). Both sub-districts are located about 30

kilometers from the nearest town, Natitingou. The majority of Atakora residents rely on subsistence agriculture for their livelihoods (manioc, peanut, corn, sorghum, etc.). Many are also engaged in other economic activities such as trading in local markets, raising livestock, food processing and gold mining. To strengthen economic activity, Caritas Diocesaine et Developpement (CDD) of Natitingou and CRS introduced the “SILC” or Savings and Internal Lending Communities

Figure 1 Target communities in Natitingou and Kouandé



methodology in 2006 (See Appendix C for detailed timeline). According to a CRS publication on SILC in Benin, “the SILC model provides access to transparent financial services to people who are often excluded from local microfinance services because they are too poor or too remote from urban or village institutions.” In addition to creating a system for rural populations to engage in savings and lending, SILC groups also offer a social insurance fund in case of emergencies.

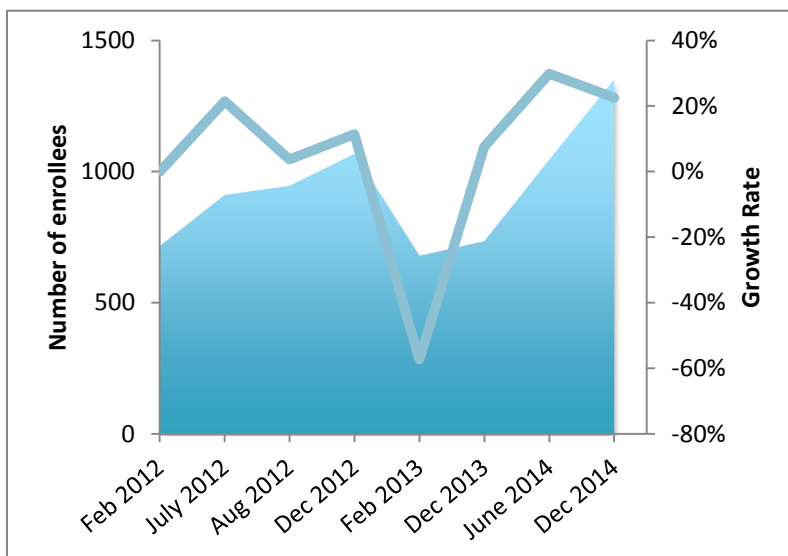
SILC members found that even with these savings and lending mechanisms in place, they still lacked the funds needed to cover health costs. After a number of SILC groups approached CRS and Caritas with this same issue, CRS and Caritas identified NSIA Assurances, a private health insurance company interested in entering the microinsurance sector, to introduce a health microinsurance (HMI) product as an additional service offering to active and mature SILC groups. A feasibility study was then conducted in September 2010 and after some delays and pre-registration of the first group of HMI enrollees, the product was officially launched in March 2012.

The marketing strategy has primarily involved two Caritas Natitingou field agents, the same field agents who helped form the SILC groups in targeted communities in 2006. These Caritas field agents visit SILC groups about once every three months to provide information on several topics including: 1) benefits of enrolling in HMI; 2) saving up to pay the HMI premium; 3) selection of dependents (children); and 4) preventative healthcare.

Shortly after the product’s launch, CRS hired a PhD student from Tufts University to carry out a preliminary evaluation. This evaluation revealed that while HMI provided some benefits to target populations in increasing their access to health care services, it imposed an administrative burden on participating health centers. This reportedly led to long waiting periods and poor treatment of HMI members at health centers, which likely contributed to a subsequent drop in enrollment between December 2012 and February 2013 (See graph below). CRS addressed this issue by introducing an ICT solution to replace the paper-based system with mini-iPads. Caritas field agents now use these devices to register and renew enrollees and health center staff use them to input patient information and process invoices. This system allows enrollment and patient data to be collected in real time in a “cloud” database, which reduces processing time and increases efficiency (See Appendix D for model of cloud-based system).

This evaluation was carried out to assess the ability of the ICT solution to meet the intended goals and measure its impact on enrollment and consumer satisfaction. Since the introduction of ICT, enrollment has rebounded, from the lowest point in February 2013 of 678 to a high of 1,351 in December 2014.

Figure 2 Total number and growth rate of enrollees, Feb 2012 – Dec 2014



1.3 RESEARCH OBJECTIVES

Quantitative and qualitative data collection tools designed for HMI clients assessed the following factors:

- Determinants of enrollment. Who is enrolling, who has dropped out, who has never enrolled and why? A study by Dixon et al. (2014) divides determinants of enrollment into four categories:
 - **Predisposing factors:** Demographic characteristics which might influence respondents' perception of HMI, such as religion, gender, and household structure.
 - **Enabling factors:** Traits that might make it easier for respondents to acquire HMI such as household wealth and level of education.
 - **Need factors:** Characteristics that drive demand for health insurance such as older age, perceived health status, and health status of dependents.
 - **Restrictive factors:** Factors that might restrict respondents from accessing health insurance benefits, such as distance to the nearest health facility and number of children under five.
- General health behaviors
- General preferences in terms of:
 - Cost of premium
 - Frequency of payments (monthly, quarterly, bi-annually, annually)
 - Savings and lending mechanisms to help pay premium
 - Package of services
- Knowledge and understanding of insurance
- Level of trust in the HMI system
- Level of satisfaction in relation to:
 - Experience at local health centers
 - Product—including eligibility criteria, cost of premium, package of services
 - Processes—including marketing, enrollment and renewal, payment, reimbursement for life insurance payout

Interviews with key stakeholders sought the following information (according to Scope of Work):

- NSIA's level of satisfaction with the HMI project, including the partnership with CRS, profitability, and the number of adherents
- Participating health centers' level of satisfaction with the HMI project, including the package of services and management of invoices
- Strengths and weaknesses of the HMI system
- Overall level of success of the project in reaching intended objectives
- Competition with health mutual organizations or *mutuelles de santé* and alternative HMI products
- Long-term financial sustainability

1.4 METHODOLOGY

Quantitative and qualitative data was collected from January 7 to February 11, 2015. For the quantitative survey, we used a weighted random sampling strategy, weighted according to district, to select 12 SILC groups (one group from Birni, five groups from Chabicouma, and six groups from Kotopounga). Within these 12 SILC groups we surveyed 60 current HMI enrollees, 60 former HMI enrollees who did not renew, and 60 SILC members who never joined HMI. We also surveyed 120 SILC

members outside of these 12 SILC groups, selected from eligible SILC groups not participating in HMI for a total of n=300 surveys. This last group of 120 SILC members who never enrolled in HMI was initially selected to serve as a natural control group under the assumption that these SILC groups had similar characteristics to the 12 selected SILC groups and would have joined HMI at similar rates if they had had the opportunity. However, after the survey was conducted, we found several problems with this assumption. Among the 120 SILC members not participating in HMI, Caritas field agents alerted researchers that many belonged to dysfunctional SILC groups that did not follow the SILC methodology. Therefore, some experienced long delays in the distribution process of accumulated savings and thus, did not have access to adequate funds to pay the premium. Others were part of groups that failed to meet regularly.

Therefore, due to these unforeseen circumstances which make the group of 120 unfit to serve as the control group, where comparisons between groups were made in this report, we analyzed comparisons between the current HMI members, dropouts and those who never joined within the 12 selected SILC groups.

The survey was written in French, translated into local languages and pre-tested. Two supervisors and 10 enumerators with fluency in local languages and French were hired locally and completed a two-day training before conducting the survey. Throughout the data collection process, they also participated in two sessions of data cleaning and data synchronization.

For the qualitative research, we held 12 focus group discussions (FGD) from the same pool of SILC groups selected for the quantitative survey with 7–18 SILC members per FGD, the majority of whom were current HMI members. FGDs were conducted in the local language, translated into French, and recorded (See Appendix E for list of SILC groups).

We also held in-depth interviews with nearly 30 key stakeholders, including Bodarima health center in Kotopounga and St. Joseph’s health center in Chabicouma, NSIA Assurances and NSIA Vie, Caritas Natitingou, CRS, regional and national government officials, Afriqu’Mutualité, Tetoma health mutual and SOLIDEV (See Appendix F for complete list of interviewees).

1.5 Data Collection Tools

- Field survey questionnaire for SILC members
- Benin’s Progress Out of Poverty Index (PPI)
- Focus group discussion guide for SILC members
- Interview guides for key stakeholders
- Product, Access, Cost, Experience (PACE) analysis guide⁴

⁴ Note: The PACE tool was developed by ILO’s Microinsurance Innovation Facility to assess the client value of microinsurance products in relation to alternatives providing protection for similar risks. For more information, see “How to conduct a PACE client value assessment: A technical guide for microinsurance practitioners” (Matul & Kelly, 2012).

2. Research Findings

2.1 SURVEY RESULTS

Demographics. Table 1 highlights several demographic variables for all 300 survey respondents. Generally, we can observe that a large majority of respondents are women (81%) reflecting the typical makeup of SILC groups in Benin, which are often mostly female. A majority of respondents also have little to no education (88%), an important factor to take into account when designing marketing approaches. The age distribution is relatively equal between the two age groups, 15–34 years and 35 years and older. The average age of respondents is 39 years old.

The majority rate their own health and health of their dependents as “Fair.” A relatively low percentage consider themselves (11%) or their dependents to be in poor health (6%). We can infer then, that SILC groups are in good health on average, which supports the project’s objective to offer HMI to SILC groups as a mechanism to address adverse selection. Most respondents are Catholic (63%). Religion can play an important role in delivering insurance products. Currently, in order for an HMI enrollee to submit a life insurance claim to NSIA in the case of the death of a family member, a health care provider at the closest participating health center must sign a death certificate to serve as a credible witness to the death. However, Caritas field agents have reported that in the case of death, due to religious practices, many tend to bury the dead immediately, which does not allow enough time to follow these procedures. Understanding the target market’s religious practices and adjusting life insurance policies accordingly could therefore improve the claims process.

A slight majority of respondents report being in a polygamous household (53%). For these households, insurance agents should provide further information on how to enroll (e.g. as smaller nuclear family units vs. one large unit). Households among respondents tend to be relatively large, with 57 percent reporting eight or more household members. As such, in order to better serve the family’s health and bring down the level of risk incurred, the insurance provider should consider cost-effective incentives to enroll entire families.

The final two indicators displayed in Table 1, number of children under five and distance from nearest health facility, are considered to be “restrictive factors” which may prevent clients from reaching health centers. 15 percent of respondents with children have three or more children under five and 22 percent of respondents are over 5 km away from the nearest health facility. These groups may

Table 1 Demographics

| | (n = 300) % of respondents |
|--------------------------------------|----------------------------|
| Gender | |
| Male | 19% |
| Female | 81% |
| Education | |
| Secondary or higher | 6% |
| Primary | 6% |
| Less than primary | 88% |
| Age | |
| 15-34 years | 42% |
| 35 years and older | 58% |
| Self-rated health | |
| Excellent | 28% |
| Fair | 60% |
| Poor | 11% |
| Health of dependents | |
| Excellent | 24% |
| Fair | 69% |
| Poor | 6% |
| Religion | |
| Catholic | 63% |
| Other Christian | 9% |
| Muslim | 7% |
| Traditional | 9% |
| Atheist | 10% |
| Household structure | |
| Monogamous | 42% |
| Polygamous | 53% |
| Other | 5% |
| Number of people in household | |
| 1-4 | 15% |
| 5-7 | 27% |
| 8 or more | 57% |
| Children under-five | |
| None | 36% |
| 1 or 2 | 45% |
| 3 or more | 15% |
| Distance to health facility | |
| Less than 1 km | |
| Between 1 km and 5 km | 21% |
| Over 5 km | 52% |
| | 22% |

experience the greatest difficulty accessing health services and as a result may be less likely to enroll in HMI.

Health behaviors

In this section, we asked respondents about what they do in case of illness and how often they seek care from the local health centers. In looking for differences in health behaviors among the three groups (current members, dropouts, and those who never enrolled) we found that those who enrolled at any point (both current members and dropouts) were much more health-conscious. For example, they were more likely to report seeking care regularly from health centers in case of illness as compared to those who never enrolled. In addition, those who enrolled at any point were more likely to report that they did so because they were interested in taking care of their health and because they thought HMI would help them better manage their health expenses, compare to those who never enrolled.

Among those who responded that they do not seek care at the health centers in case of illness regularly, individuals who never enrolled are marginally significantly more likely to report that they did not seek regular care because the quality of care received was poor.

General Preferences. Table 2 shows that the majority of respondents (89%) prefer paying for health expenses through HMI instead of paying for each health expense separately. However, 45 percent report experiencing difficulty paying the monthly premium of 290 FCFA, indicating that a premium any higher than the current amount may be unaffordable for some SILC members. In terms of payment processes, nearly half of respondents (48%) prefer to pay through monthly installments. Only about one third of respondents prefer the current payment methods, bi-annually or annually, to others, suggesting that more flexible payment methods could improve client satisfaction. Interestingly, 85 percent of respondents would like their SILC groups to offer a savings or lending mechanism specifically dedicated to helping them pay for HMI and nearly 80 percent are willing to increase their contribution to the social fund if it would help cover the costs to insure all family members.

When disaggregated into our three sub-groups including: Group 1: current members (n=60), Group 2: dropouts (n=60) and Group 3: those who never enrolled (n=60) within the 12 SILC groups selected for the survey, results showed that a higher percentage of those from Group 3 prefer paying for each health expense separately rather than through HMI (17%) compared to Group 2 (7%) and Group 1 (12%), though across all three groups the vast majority prefer paying for health

Table 2 General Preferences

| | (n = 300) % of respondents |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|
| Do you prefer to pay for each health expense separately instead of paying for health microinsurance? | |
| Yes | 9% |
| No | 89% |
| The current HMI premium is 290 FCFA (per person, per month). Would you have trouble saving up to pay this premium if you decided to enroll in HMI? | |
| Yes | 45% |
| No | 53% |
| What would be the best/most convenient way for you to personally pay this premium? | |
| Monthly installments | 48% |
| Quarterly installments | 10% |
| Once every six months | 13% |
| Once a year | 21% |
| Would you prefer if your SILC group offered a convenient way of saving for the premium? | |
| Yes, if I could borrow the premium payment from the SILC group and pay back later | 70% |
| Yes, if they offered a convenient savings device used to save in advance for the premium | 15% |
| No, I prefer to take care of the payments personally | 2% |
| No, I do not believe the SILC group could be helpful in any way | 6% |
| Would you be willing to increase your contribution to the SILC social fund to facilitate enrollment or renewal of HMI for your family members? | |
| Yes | 79% |
| No | 18% |

expenses using HMI—an interesting finding particularly among those who dropped out (Group 2) and those never enrolled (Group 3). All three groups had relatively similar responses to the following question, “Would you have trouble saving up to pay this premium if you decided to enroll in HMI?” All groups prefer paying the premium via monthly installments, though Group 1 is more mixed across the four different modalities (monthly, quarterly, biannually, or annually). In response to the question on preferences for savings or lending mechanisms to help pay the premium, the most popular response among all groups is as explained above, “Yes, if I could borrow the premium payment from the SILC group and pay back later.” Interestingly, a higher percentage of respondents in Group 3, those who never enrolled, (10%) chose the option: “No, I do not believe the SILC group could be helpful in any way,” compared to Group 2 (2%) and Group 3 (5%). 90 percent of respondents in Group 1 reported being willing to increase their contribution to the SILC social fund compared to lower percentages in Group 2 (73%) and Group 3 (77%).

Level of trust in HMI system. Everyone (100%) reported being confident in the HMI. This is likely due to selection bias and an unwillingness to insult the interviewer. When asked what could be improved to increase the level of trust, the top two responses were to increase contact with insurance provider and release financial information of the insurance provider. Other answers included: “give advice,” “be available to help us,” and “integrate the public hospitals.”

Level of satisfaction with HMI. In terms of the HMI product and processes, people are least satisfied with the range of services covered. Some respondents think that the reason some SILC members may not enroll in HMI is because either they don’t know how to enroll (24%) or they find the premium too expensive (27%). To convince them to join, some suggest reducing the cost of the premium (27%) or expanding the range of services covered (29%).

Knowledge/understanding of HMI. The majority of respondents reported learning about HMI through their SILC group (34%) or Caritas (60%) and 68 percent said that they had received some type of training on HMI. Among current members, the top two reasons for enrolling included preserving one’s health and saving money on health expenses. From Table 3, we can observe that the majority of respondents answered correctly to NSIA’s coverage rate (57%); the amount of the life insurance payout (75%); the need to renew enrollment once it has expired (97%); and the understanding that even if you do not use your insurance throughout the enrollment period, you will not be reimbursed (81%). This shows that many SILC members do possess a basic level of understanding of how HMI works, though most are unaware that there is a limit of 40,000 FCFA per year on health benefits in the insurance plan per enrollment period.

Determinants of Enrollment. To analyze the impact of different variables on enrollment we looked for any significant differences between current members, dropouts, and those

Table 3 Knowledge/understanding of HMI

| | (n = 60 current HMI members) % of respondents |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|
| What percentage of health care services is covered by NSIA? 70% Other Don't know | 57% 2% 40% |
| For life insurance, what is the payout covered by NSIA in the case of the death of an insured family member? 100 000 F Other Don't know | 75% 5% 16% |
| True or false: I must renew my membership when the current one has expired. True False Don't know | 97% 2% 1% |
| True or false: There is a limited number of times I can use my HMI card each year. True False Don't know | 35% 32% 30% |
| True or false: If I don't use any health services, I can get back the money that I spent to enroll in HMI. True False Don't know | 6% 81% 13% |

who never joined within the 12 selected SILC groups (See Appendix G for results).⁵

The demographic characteristics for each of these three groups are summarized in Table 4. The last two columns show the differences between Groups 1 and 2 and Groups 1 and 3. Any difference over 10 percent is displayed in bold. For groups 1 and 2, this includes difference in age (Group 1 is slightly older); self-rated health (Group 1 is in better health, with more respondents reporting “fair” health and fewer respondents reporting “poor” health); religion (more Atheists in Group 2); household structure (more polygamous households in Group 1); children under five (Group 1 has fewer children under 5); distance from nearest health facility (Group 2 lives slightly closer to the nearest health facility, with 86% within 5 km, compared to 75% for Group 1).

For groups 1 and 3, this includes self-rated health (Group 3 is in better health, with more respondents reporting “excellent” health); health of dependents (Group 3’s dependents are in better health, with more respondents reporting “excellent” health of dependents); religion (more Catholics in Group 3); number of people in household (more household members in Group 3); children under five (more children under 5 in Group 3). It is important to note that none of the differences in the last two columns are above 22%.

⁵ Please note: Difference of means and regression analysis was conducted by Professor Emilia Simeonova at Johns Hopkins University.

Table 4 Demographic characteristics of the 12 selected SILC groups

| Key features | Group 1: Current HMI members | Group 2: Dropped out of HMI | Group 3: Never joined HMI | Difference between Group 1 and Group 2 | Difference between Group 1 and Group 3 |
|--------------------------------------|------------------------------------|-----------------------------------|---------------------------------|-------------------------------------------------|-------------------------------------------------|
| No. of respondents | 60 | 60 | 60 | 0% | 0% |
| Gender | | | | | |
| Male | 18% | 15% | 25% | 3% | -7% |
| Female | 82% | 85% | 75% | -3% | 7% |
| Education | | | | | |
| Secondary or higher | 5% | 7% | 12% | -2% | -7% |
| Primary | 8% | 7% | 3% | 2% | 5% |
| Less than primary | 87% | 87% | 85% | 0% | 2% |
| Age | | | | | |
| 15–34 years | 30% | 42% | 40% | -12% | -10% |
| 35 years and older | 70% | 58% | 60% | 12% | 10% |
| Self-rated health | | | | | |
| Excellent | 22% | 18% | 35% | 3% | -13% |
| Fair | 63% | 65% | 57% | -2% | 7% |
| Poor | 15% | 17% | 5% | -2% | 10% |
| Health of dependents | | | | | |
| Excellent | 17% | 23% | 30% | -7% | -13% |
| Fair | 80% | 58% | 65% | 22% | 15% |
| Poor | 2% | 18% | 3% | -17% | -2% |
| Religion | | | | | |
| Catholic | 62% | 55% | 73% | 7% | -12% |
| Other Christian | 10% | 13% | 2% | -3% | 8% |
| Muslim | 7% | 0% | 8% | 7% | -2% |
| Traditional | 15% | 8% | 7% | 7% | 8% |
| Atheist | 5% | 18% | 10% | -13% | -5% |
| Household structure | | | | | |
| Monogamous | 52% | 67% | 53% | -15% | -2% |
| Polygamous | 43% | 32% | 45% | 12% | -2% |
| Other | 5% | 2% | 2% | 3% | 3% |
| Number of people in household | | | | | |
| 1–4 | 20% | 15% | 13% | 5% | 7% |
| 5–7 | 32% | 28% | 28% | 3% | 3% |
| 8 or more | 47% | 55% | 58% | -8% | -12% |
| Children under-five | | | | | |
| None | 48% | 32% | 38% | 17% | 10% |
| 1 or 2 | 40% | 53% | 30% | -13% | 10% |
| 3 or more | 8% | 13% | 23% | -5% | -15% |
| Distance to health facility | | | | | |
| Less than 1 km | 23% | 13% | 32% | 10% | -8% |
| Between 1 km—5 km | 52% | 73% | 43% | -22% | 8% |
| Over 5 km | 22% | 12% | 18% | 10% | 3% |

First, we found that the **probability of enrolling** in HMI is affected by:

1. Having a car or motorbike (owners of car or motorbike, more likely to enroll)
2. Being worse in health (those in poorer health, more likely to enroll)
3. Having dependents with worse health (those with dependents in poorer health, more likely to enroll)
4. Having experienced the death of a child under age 5 (those who experienced death of a child, more likely to enroll)
5. Distance to health center (longer distance from nearest health center, more likely to enroll)

The **probability of renewing enrollment** is affected by:

1. Having more children (those with more children, less likely to renew)
2. Being monogamous (those who are monogamous, less likely to renew)
3. Having a car (owners of car or motorbike, less likely to renew)
4. Having experienced the death of a child under age 5 (those who experienced death of a child, more likely to renew)
5. Reporting that the hours of operation of the closest health center are inconvenient (those reporting inconvenient hours, less likely to renew)

We next turn to multivariate analysis of the decision to enroll/stay enrolled in HMI. Important **demographic determinants of enrolling in HMI**, controlling for all other included demographic variables are:

1. Having children—which increases the probability of ever enrolling in HMI by 62.8 percentage points on average.
2. Being one year older—which increases the probability of ever enrolling in HMI by 0.6 percentage points on average.
3. Having a car or a motorcycle—which increases the probability of ever enrolling in HMI by 15.9 percentage points on average.

Important **demographic determinants of renewing enrollment in HMI** are:

1. Having experienced the death of a child under age 5 (those who have experienced death of child, more likely to renew)
2. The distance to the nearest health center (longer distance from nearest health center, more likely to renew)
3. The number of children (those with more children, less likely to renew)
4. Being an atheist (atheists, less likely to renew)

2.2 DISCUSSION OF SURVEY RESULTS

Our findings show that first, “predisposing factors” like religion and gender did not have a significant impact on enrollment though those reporting atheism as their religion were more likely to dropout. Results also show that respondents were more likely to enroll if they had a car or motorbike, which can be interpreted as an indicator of wealth or an “enabling factor.” If HMI enrollees are relatively wealthier than those who never enrolled, then we can infer that the HMI product is not reaching the poorest of the poor within the SILC groups. It is also important to note that all survey participants were members of SILC groups, and therefore, it is possible that the poorest of the poor are outside of the SILC groups. If

this is the case, the HMI product may not be reaching the poorest of the poor within targeted communities.⁶

The variables, being worse in health, having dependents with worse health and having experienced the death of a child under age five, are all considered to be “need factors” which shows that those with the greatest need are more likely to enroll in HMI. This could contribute to adverse selection in which case, CRS and its partners should aim to enroll all SILC group members rather than those SILC members with the greatest health needs by emphasizing the importance of accessing preventative healthcare and by offering incentives such as covering annual check-ups.

Those respondents with more children may be less likely to renew because they have trouble choosing between which children to enroll, an issue that many SILC members raised during focus group discussions. Or perhaps they did enroll one or more dependents that did not get sick during the period of enrollment and therefore, did not see the benefit of renewing. This indicates the importance of encouraging SILC members to enroll all dependents by offering discounts for each additional dependent and discounts for renewing enrollment.

Another interesting finding is that those who found the health centers’ hours of operation to be inconvenient were more likely to drop out, supporting the hypothesis that members’ dissatisfaction with local health centers can negatively impact enrollment. Strangely, a longer distance from the nearest health facility, a potentially “restrictive factor,” resulted in a greater likelihood of enrollment and renewal. This shows that even SILC groups located relatively further from health facilities may still be interested in joining HMI. At the same time, the question, as posed in the survey, simply asked for the respondents’ distance from the nearest health center instead of the nearest health center *participating in HMI*. Therefore, this result may not necessarily indicate that those respondents living closer to health centers participating in HMI are less likely to enroll than those located further away.

2.3 FOCUS GROUPS WITH SILC MEMBERS

In addition to the individual survey, we conducted 12 focus groups to gather more in-depth information on SILC members’ experiences using the HMI product. SILC members voiced several concerns including: (1) a need for more information about the product; (2) a lack of means to pay premium to enroll all dependents; (3) dissatisfaction with the long wait times and quality of treatment at participating health centers; and (4) a desire to use HMI at public health centers.

Lack of information or misinformation. Although results from the survey suggested that most respondents had a good understanding of some characteristics of the HMI product, we observed a lack of understanding on other topics across all 12 SILC groups, particularly on exclusions. Many SILC members explained that they initially enrolled in HMI to lower health costs. However, some clients were unaware that certain treatments or services are not included in the insurance package and found it

⁶ In order to measure poverty levels among survey respondents, we included questions from the Benin Progress out of Poverty Index (PPI) Scorecard, a poverty measurement tool that uses the answers to 10 questions about a household’s characteristics and asset ownership to compute the likelihood that the household is living above the poverty line. In order to determine whether or not SILC members include the poorest of the poor, using our survey results we could compare the level of poverty between this sample of SILC members and the level given for the target region. These results may be explored in a separate report that provides more detailed explanation of survey results. For more information on Benin’s PPI see: <http://www.progressoutofpoverty.org/country/benin>.

frustrating when they learned upon arriving to the health center that their treatment was not covered under the HMI plan.

In addition, some clients found the need to renew membership unfair, particularly in cases where they did not use HMI during their enrollment period and only got sick once their plan had expired. For example, one young woman from the SILC group “Yakiboura” in Chabicouma expressed her frustration with the HMI product. She said that when she first enrolled, she enrolled herself and four dependents, but did not receive any benefits because no one in her family got sick. However, shortly after the date of expiration, one of her family members became sick but because their plan had expired the insurance was not applied to cover partial health costs. She became so discouraged that she has not renewed enrollment since that experience. Though this might not necessarily fall under “lack of information,” it indicates that further explanation about how insurance works through risk-pooling might help some SILC members better understand how the product works and why it is necessary to renew the product right after the date of expiration to ensure coverage under the HMI plan.

Another widely shared concern was a lack of understanding of the procedures necessary to claim the life insurance payout in the case of death. For example, in the SILC group “Lanhessire” in Chabicouma, a young man recounted the story of his mother who had recently passed away. Despite the fact that the HMI card clearly stated that her insurance plan was valid until January 31, 2015 (at the time, not past the expiration date), he said the Caritas field agent told him that her insurance plan had expired and so he was not eligible for the life insurance payout. Given that he is unable to read, he relied on the Caritas field agent for this critical information. The SILC group, “Yakiboura” in Chabicouma also mentioned that there had been two deaths of HMI clients in their group, but no payment had been received. Other groups generally had little understanding of what procedures to follow in order to receive the payout. Also related to life insurance, a couple of women from different SILC groups asked if this payout applied to stillbirths, suggesting a need to further explain what and who the product does and does not cover during informational sessions.

There were also several misunderstandings specific to certain groups. For example, members of the SILC group “Yakiboura” in Chabicouma became frustrated when they had to switch from using the booklets to using the small, laminated cards as they felt that as a result of this change, they had incurred a loss. In another SILC group, “Wareyin Kotopounga,” one woman explained that when she went to use the HMI card at the health center, they refused to apply the insurance because the name on the card did not match the name she gave for her child. This indicates that informational sessions should also emphasize that where possible clients should choose one name, with one spelling modality for the HMI; otherwise their card may not be accepted. In the SILC group, “Lanhessire” in Chabicouma one client also mentioned that the Caritas field agent said that if they enrolled in HMI and did not get sick during the period of enrollment they would receive a gift. Also, in about two of the twelve groups visited, clients did not know which health centers were participating in HMI.

Inability to pay premium for all dependents. In multiple SILC groups, interviewees discussed their desire to purchase HMI for all of their dependents but were not able to do so because they could not afford it. Many did not understand how they were supposed to choose between which children to insure and which to leave uninsured. For example, the SILC group, “Pouloussa” in Chabicouma explained that it felt unfair that although they were able to pay the premium for a few children, they were not able to pay for all of them and often, the uninsured child would become sick and overall, they would incur a loss. SILC group “Lanhessire” suggested that if they could have access to loans, they could increase their income-

generating activities in order to pay for the premiums for their dependents. Though they can access loans from their SILC group, they said this was insufficient for their credit needs.

Long waiting periods and poor reception at health centers. For many groups, long waiting periods and poor reception from staff at participating health centers was one of the top complaints, particularly for groups from Chabicouma. For example, a man from the SILC group “Lanhessire” described his experience, saying that “ . . . *quand tu tape la porte c’est comme c’est un chien qui aboie*, when you knock on the door [of the Chabicouma health center] they treat you as if you are a dog barking at them.” At least eight people said they had similar experiences at the same health center in Chabicouma. One woman said that even when the health center staff are available, they make those with HMI wait, and as a result, some are obligated to seek care at the public health center, despite the higher out-of-pocket health costs. SILC members from Chabicouma also said that the hours of operation at St. Joseph’s are inconvenient, compared to the public health center which is open 24 hours daily. One woman explained that she went to St. Joseph’s health center at night, when the health center was closed. She waited outside the health center and eventually gave birth but in the end, the newborn died. Many SILC members emphasized that these long waiting periods and inconveniences can have severe consequences for their own health and the health of their dependents.

Another SILC group from Chabicouma, “Pouwedehou,” had similar qualms. One woman described how she brought her child to St. Joseph’s recently, in December 2014, but because of the long waiting period, she eventually gave up and went to the public health center. Members of Pouwedehou said this frequently occurs because the health center staff view helping the insured members as unwanted volunteer work. In some cases, health center staff will treat the insured patient, but require them to return the next day to make the payment and retrieve their card. One individual suggested that the project hire a focal point at the health center that could process insured members to reduce waiting times.

Among SILC groups in Kotopounga, including “Tiboyake,” “Wareyin Tchantangou,” “Yimboma Tohou,” and “Tetoma” the main concern with Bodarima was the long waiting period due to the fact that the center is often flooded with patients. The SILC Group, “Tissanguire” was unique in that it was the only focus group that reported receiving high quality and timely service at the Bodarima health center. Participants described the number system, where each patient receives a number upon arrival to the health center. According to this system, patients are called in the order that they arrive with no regard to whether or not patients have insurance.

Desire to use HMI at public health centers. This theme ties closely into the previous topic of poor reception and long waiting periods at the participating health centers. As such, clients, particularly from Chabicouma seeking immediate care have no other choice but to go to the public health center even though these centers are not covered by HMI. Similarly in Kotopounga, if Bodarima is too busy, clients may also seek care at the Kotopounga public health center. In addition, some SILC groups must travel five kilometers or more to reach the participating, private health centers, even if there is a public center closer to their home. This is particularly relevant for communities in Yarikou, just outside of Kotopounga, who must travel at least 10 kilometers to reach Bodarima health center, though there is a public health center located much closer. For the SILC group in Yarikou, “Tissanguire,” integrating the public health center was their number one concern. From their SILC group to Bodarima, it would take about one hour to walk or 20 minutes by moto for 500 FCFA (\$1 USD).

Also, communities in Birni, just outside of Chabicouma are enrolled in HMI but have trouble accessing St. Joseph's health center. One man from the SILC group "Nannin," explained that although he was enrolled in HMI, last year when he fell gravely ill with malaria, he was so sick that he was unable to make the seven kilometer trip to this health center and instead sought care at the nearby public health center where he had to pay 20,000 FCFA (\$40 USD) for a blood transfusion. He was able to access credit to pay this cost with support from his SILC group but otherwise, would have preferred that his HMI plan be valid at the public health center where he sought care. When asked about transport costs to reach the participating health center in Chabicouma, participants said that it is about 1,000 FCFA (\$2 USD) total for a round-trip moto taxi. This cost may be prohibitively expensive for them and logistically, it may be difficult to find a moto taxi or a friend with a motorcycle in Birni and other rural areas in times of severe illness.

2.4 INTERVIEWS WITH KEY STAKEHOLDERS

Local Health Centers. Bodarima Health Center in Kotopounga has been involved in the HMI project and under contract with NSIA Assurances since the product's launch in 2012. Both of Bodarima's cashiers, responsible for processing patients' billing and payments, received training on the ICT solution, and specifically how to use mini-iPads and iFormbuilder to enter patient information, process receipts and send invoices electronically to NSIA in April and July 2014 from NSIA and CRS representatives. Bodarima receives about 2–3 insured patients per day, up to 10 maximum. Despite the training health center staff received from NSIA and CRS, the cashiers continue to experience difficulties using the mini-iPads, which slows down their work. For example, to search for different medicines, Ms. Chantel Toukoudjou, one of the cashiers at Bodarima, demonstrated how it takes time to scroll down the long list of medicines to find the right one. There have also been a few cases where the patient's name does not match the name in the database and there is no way for them to manually make modifications in iFormbuilder.

While these issues may seem small and easily resolved through minor adjustments, the Bodarima staff's level of dissatisfaction with the ICT solution seems to go beyond these technicalities. One explanation is that they prefer to use Microsoft Access to input all billing information instead of using a separate system for insured patients with the mini-iPads. This access to an alternative electronic system is unique to Bodarima health center as most rural health centers have limited to no access to technology and are limited to paper-based administrative processes. Bodarima staff is worried that if the number of insured patients increases, they will become overwhelmed by the work required to input patient information on the mini-iPads. They also suggested that the HMI project subsidize phone credit used to contact Caritas when they encounter technical difficulties. Also, Ms. Toukoudjou said HMI project staff often fix the technical problems independently, without explaining how she might be able to fix it herself in the future. In reflecting on how to improve this relationship between health center staff and HMI project staff from CRS, Caritas, and NSIA, she suggested that they provide more opportunities for her and her colleagues to learn from technical difficulties to reduce their reliance on HMI project staff.

Also at Bodarima, there seems to be an underlying sense of distrust in working with HMI project partners. For example, Mr. Georges Yeropa, an accountant and interim-manager commented that CRS, Caritas, and NSIA should reallocate funding used for their field visits directly to the health centers or project beneficiaries in order to increase social impact. In addition, since January 2014 Bodarima has been working with a local health mutual organization called "Tetoma," which will be described in further detail in the section "Competitive Analysis." They prefer Tetoma to the HMI product as it allows them to use their own software, Microsoft Access instead of the handheld tablets and iFormbuilder software,

which they find more complicated. They also find this community-based insurance plan, which covers more services at a lower premium to be more attractive than CRS, Caritas, and NSIA's HMI product and encourage their patients to join Tetoma instead of ICT4HMI. This could potentially impact future enrollment rates if SILC members find Tetoma's product more appealing. Compared to St. Joseph's Health Center in Chabicouma, Bodarima is more resistant to the ICT4HMI project because of their preference for Tetoma health mutual and the Microsoft Access software.

At St. Joseph's Health Center in Chabicouma, while Sister Ghislaine Zinsou,⁷ midwife and head of the health center seemed generally content with the new ICT system and willing to continue working with the HMI project. She also hinted several times that CRS should consider rewarding them for their role in the project, by helping them to repair their building, build a new laboratory and pharmacy, and purchase new medical supplies and equipment. Similar to Bodarima, they would also like to be reimbursed or subsidized for phone credit used to contact HMI project staff in the case of technical difficulties.

Sister Ghislaine and Ms. Virginie Bassale, a health aide, have attended trainings 2–3 times and have found the mini-iPads to be useful as they explained, the e-forms automatically calculate the 70% rate of coverage and apply the ceiling directly to patients' bills. Sister Jeanne, a nurse at St. Joseph's who has not been trained in use of ICT devices is now also interested in receiving the training. Health center staff use the mini-iPads 2–3 times per day, up to 10–15 times maximum. They did not report any problems in the reimbursement process with NSIA. However, in terms of the package of services, they thought the product should also cover basic supplies like cotton balls, soap and syringes.

Sister Ghislaine mentioned two benefits of HMI, including: (1) Increased number of patients, and thus increased revenues at the health center; and (2) lower out-of-pocket health expenses for patients at the time of service.

Caritas. Father Abraham, head of Caritas Natitingou, identified two areas for improvement of the HMI project including, (1) provide some type of motivation for health centers to continue to participate in HMI; and (2) provide refresher courses to SILC groups in the savings and lending methodology to improve SILC practices and increase availability of funds to allow SILC members to pay the HMI premium. He suggested that while the ICT solution has improved the management system of HMI by reducing the amount of paperwork, it is still not well accepted by the local health centers, particularly Bodarima.

The project coordinator and project supervisor at Caritas, Mr. Valentin Kouagou and Mr. Jean-Pierre Bagri also shared some challenges in working with CRS on the HMI project and generally feel that the project consortium, composed of CRS, Caritas, and NSIA does not work well together as one, united team. First, Caritas staff have found that CRS staff are not always available to help with urgent needs regarding technical or operational difficulties in project implementation. Second, Caritas staff feel they do not have the adequate materials to do their job effectively. They lack access to a consistent source of power and internet. For printing HMI membership cards, Mr. Bagri prints out each sheet of cards one-by-one, manually laminates this sheet of paper on both sides, and then proceeds to cut each card out by hand with scissors; this process is time-consuming and slows down the delivery of the cards to project beneficiaries.

⁷ Note: We were recently notified that Sister Ghislaine is no longer working with the St. Joseph's Health Center in Chabicouma.

In terms of the HMI product design and delivery, Caritas staff made the following recommendations: (1) Improve populations level of understanding of the HMI product; (2) Motivate health centers to participate; (2) Integrate public health centers—although project staff have experienced difficulty gaining the support of public health centers, Mr. Kouagou and Mr. Bagri emphasized that not all of the health centers are the same. Also, several of the health center administrators that were previously uncooperative have recently been replaced and this change in leadership may present an opportunity for the HMI project; (3) Remove life insurance from package of services, remove exclusions, and increase rate of coverage to 80%—Caritas staff have observed numerous problems with processing the life insurance payout. For example, deaths have occurred in which beneficiaries never received a payout due to lack of information or failure to follow the correct procedures. They also explained that the procedures required to receive the payout are not adapted to the local context. HMI members seeking reimbursement must get a death certificate, which means the head of the nearest participating health center has to travel to the village where the death occurred to serve as a witness, though transport costs are not provided and they are often too busy to make this visit. Another issue is that the beneficiary of the payout must have identification, which is not widely accessible among rural populations. Among families who have received the payout, this new influx of cash may increase conflict and gender inequality within households. For example, Mr. Bagri said that though women are more likely to participate in SILC groups and thus, enroll in HMI, there is a danger of men retaining control of any money received from a life insurance payout.

Other recommendations included: (4) Refine ICT solution by making the beneficiary codes automated, reducing the number of fields required to input registration information, and showing the HMI plan's expiration date when health centers input patient information; (5) Hold periodic meetings for project stakeholders to improve collaboration; (6) Recruit field agents with a minimum basic level of education to handle mini-iPads; (7) Provide capacity building support to weaker SILC groups.

NSIA. All NSIA staff members interviewed for the evaluation, including Mr. Edmond Boussou, Director General of NSIA's life insurance department, Dr. Arnaud Makoutode, Medical Advisor, and Mr. Brice Ahouansou, Head of IT department, echoed one major concern: **the enrollment rate is too low and as a result, the project is not an attractive investment for NSIA long-term.** Dr. Makoutode explained that for this reason, HMI is currently not a priority for NSIA. Because NSIA does not have a microinsurance department or specialist in microinsurance he is responsible for the project in addition to his regular workload. He suggested that though NSIA continues to remain a partner on paper, their patience with the project is waning. At this rate, Dr. Makoutode made it clear that if the project continues to progress with 1,000 to 2,000 adherents, NSIA will no longer continue the project in the long-term, especially not without support from CRS and external funding.

In addition, Dr. Makoutode said that the project lacks organization. For example, he said that CRS and NSIA hold joint-meetings only when the STA for Microfinance visits from the U.S. and recommended more frequent meetings to coordinate project activities. He suggested that CRS project staff organize a 2–3 day meeting in Cotonou or Natitingou that would allow everyone to discuss each partner's role in the project and the project's strengths and weaknesses. He explained that currently, each partner completes his or her tasks in silos and there is little appreciation for how their combined efforts help to achieve overall project objectives.

In discussing possible solutions to motivate local health centers, Dr. Makoutode suggested that NSIA could give each health center a lump sum of 10,000 FCFA for each 1,000 insured patients that the health

center receives. Dr. Boussou said they could hold more frequent trainings for health center staff. However, when asked if NSIA would be willing to give a percentage of the total earned premium to the health center to reimburse them for their administrative costs they said this would not be possible. Dr. Makoutode explained that this is because it is not clear what budget line this would fall under and that it would be difficult to institute a control mechanism to ensure that health centers are accurately recording these administrative costs. Besides, Dr. Makoutode said, NSIA is not responsible for paying health center staff salaries; they are primarily concerned with the HMI product itself.

In discussing the package of services covered by NSIA, he said that it is not possible to expand services to cover the snakebite serum, mentioned as an important treatment by several SILC members, because it is too expensive; if NSIA were to cover it and the patient went to the health center to get the snakebite serum treatment, the annual limit or ceiling on the health insurance would be completely absorbed within one visit. He also said NSIA cannot cover basic supplies like cotton, syringes, and soap because there is no good way to monitor whether the amount used is correct. For example, the health center could report that for one treatment they used 1 kg of cotton, but how would NSIA know if the health center 1 kg of cotton was in fact used for the treatment indicated or if the health center is inflating the amount in order to receive reimbursement from NSIA? This explains why exclusions are necessary for practically all insurance products including HMI.

CRS. Since introducing the ICT solution, Mr. Xavier Toviho, MEAL Officer for ICT4HMI, said the HMI management system has vastly improved. The automated system using digitalized forms allows him and his counterpart at NSIA to more easily access and monitor data. He also identified two main challenges that the project faces, including: (1) poor functionality of SILC groups; many SILC groups do not practice savings and lending methodologies as intended which prevents SILC members from participating in HMI; (2) and ongoing technical issues at Caritas and the participating health centers and a need to e-forms according to feedback from local partners.

Overall, Mr. Toviho says that the ICT solution's strength is that it is reliant on local expertise rather than external support. However, the entire ICT system is heavily dependent on Mr. Toviho, which constitutes a major risk. When the project first started, 60% of his time was allocated to ICT4HMI and 40% to another project. Now, though technically dedicated 100% to the ICT4HMI project, he is often asked to support other projects and project proposals because of his valuable skills in ICT and monitoring and evaluation. Also, it is important to recognize that Mr. Toviho is completely self-taught on iFormbuilder, the software used for HMI's ICT solution and said he would benefit from formal, advanced-level training opportunities. In discussing the project's heavy reliance on his competencies, he described the need to train other CRS MEAL Officers on use of ICT tools as well as ICT specialists at NSIA and Caritas to ensure the project's long-term sustainability. Mr. Jerome Dadjo, ICT4HMI Program Manager, acknowledged the project's possibly unhealthy dependency on Mr. Toviho for technical support, noting that if he were to leave it would be "catastrophic" for the project's continuation.

In terms of working with the public health centers, Mr. Dadjo said that he was surprised when they encountered difficulties. He explained that before officially launching the HMI product all the public health centers in the targeted zones were involved in the feasibility study, initial meetings and workshops and seemed willing to participate. Mr. Dadjo said he recognized the importance of integrating the public health centers into the project as he finds that the general population has more confidence and a preference for the public centers, compared to the private centers. He said he also worked continuously with relevant local government authorities to gain their support and ensure the public health centers were on board. Despite these efforts, increasing difficulties working with the public

health centers ultimately led the project to discontinue working with them in 2013. Complaints at the public health centers began when staff said that the administrative processes were too burdensome, though this was a general complaint across both public and private centers. Mr. Dadjo explained how he tried to reach out to government authorities and health center administrators, but often they were unavailable or unresponsive. In particular, staff from the public health center in Chabicouma never showed up to trainings on the new ICT solution in 2013 even though CRS had purchased project materials designated to their health center. This has discouraged Jerome from working with the public health centers, so much so that even when communities in Birni asked Caritas and CRS to integrate their public health center, Mr. Dadjo did not reach out to them based on his negative experiences working with other public health centers in the region. He said that perhaps that it is a “game” between the public health centers and the government authorities in which the staff at health centers earn a profit on selling medicines and distribute the bounty accordingly. Therefore, he suggested they are not interested in providing HMI, which would require them to submit receipts and operate under controls that they find inconvenient for their side operation selling medicines under-the-table. As a result, he would like Caritas field agents to speak with project beneficiaries to explain why the project cannot work with public health centers.

On the subject of *Regime d'Assurance Maladie Universelle (RAMU)* and *l'Agence National de l'Assurance Maladie (ANAM)*, the government's national healthcare scheme and the agency in charge of its implementation, Mr. Dadjo recounted further frustrations. After going back and forth between meetings with the Ministry of Health and ANAM, there have not been any concrete steps forward to establish a meaningful partnership. For example, he repeatedly tried to contact the Director of Partnerships at ANAM. At first they rescheduled numerous meetings and after a while, he completely stopped responding. Finally, he reached out to him to see if the Director was available to meet for the evaluation and he agreed. Despite the numerous difficulties he has encountered, Mr. Dadjo said that hopefully this year there will be some progress.

When asked if CRS would consider offering HMI outside of the SILC groups, Mr. Dadjo insisted that offering HMI through the SILC groups is the CRS model. If NSIA or others want to expand beyond the SILC groups, that would be up to them, but CRS is sticking by its vision of working through the SILC groups. This is mainly because he has learned from health mutual organizations that their biggest challenge is lack of affordability among target populations. Even when premiums are low, often people do not have the cash in hand to pay membership fees. By offering HMI through SILC groups, CRS is able to target an organized group of individuals who have access to funds to cover the cost of HMI premiums. At the same time, overall, the goal of the HMI project is to bring private health insurance companies to rural markets—to provide a product similar to classic health insurance to rural populations. If the pilot is successful and NSIA and ANAM determine that it is a worthwhile investment, then perhaps the government would ask NSIA to expand the product to cover a larger segment of the population, beyond SILC groups.

In discussing other challenges in project implementation, Mr. Dadjo has found that NSIA has been reluctant to make a meaningful contribution and significant investment in the project's success. Also, because project beneficiaries still report long waiting periods at the participating health centers and poor reception of insured patients by HMI staff, he questions the success of the ICT solution in its ability to address these issues.

Local and Regional Government Officials. Government officials interviewed for this evaluation expressed their enthusiasm and support for the HMI project. Mr. Celestin Hounkpe, Coordinating

Physician of Koande was especially impressed with the project's use of an e-system to record and track data in a centralized database in real time, which could also help reduce cases of fraud. He seemed to be well informed about the project but was unaware that the project had experienced problems working with the public health centers, specifically the Chabicouma public health center in his district. The Departmental Health Director, Mr. Jacob Nambowi had much less understanding of the project than Mr. Hounkpe. He said he had heard of the project from an NSIA representative but did not receive any follow-up information. In order to better support the project he would like to participate in a demonstration of the ICT tools at the local health centers.

Both Mr. Hounkpe and Mr. Nambowi were supportive of establishing a partnership between the HMI project and RAMU. Mr. Hounkpe in particular shared the challenges that RAMU is facing in attracting enrollees. RAMU has been operating in his health zone for two months, but insurance agents have not yet enrolled a single adherent despite an extensive marketing campaign. Mr. Hounkpe speculates that the cost of the premium is prohibitively expensive for the target population. A payment of 12,000 FCFA (\$24 USD) is required per person per year and must be paid up front in a one-time installment. He suggested that if ICT4HMI project staff could present the project's achievements to date to national Ministry of Health officials and prove that the HMI model can attract more enrollees at a low cost, the government would be more than willing to collaborate. Mr. Nambowi also suggested that the HMI project continue to share information and updates with government officials, to keep them informed throughout the project's lifecycle.

National Government Officials. The Ministry of Health (MoH) is the major decision-making body on health insurance in Benin. The MoH oversees *L'Agence Nationale de L'Assurance Maladie (ANAM)*, which carries out the implementation of the national health insurance scheme, RAMU. We had the opportunity to speak with both government agencies. First, Mr. Lucien Toko at the MoH explained that the Government of Benin is currently at the "stage of reflection" on how to best work with *mutuelles de santé* and other community-based organizations to further their mission of universal healthcare. In order to establish a partnership with RAMU, he suggested CRS draft up a contract in which CRS would work on behalf of the MoH to offer health insurance in pre-identified target areas and health centers. So instead of rolling out RAMU alongside HMI as potentially competing products, the government would contract out this work to CRS, Caritas, and NSIA and closely monitor and evaluate the project to determine if it should be scaled up to other regions. He said that this would resolve the difficulty in working with public health centers, because the MoH would coordinate with local government authorities and the health center administrators directly to ensure their cooperation. He suggested that the reason CRS has been facing challenges in working with the public health centers is because CRS has focused on gaining the support of local and regional government officials instead of national MoH authorities who have more political influence.

Mr. Christian Lodjou, Director of Partnerships, Communication and Resource Mobilization at ANAM, echoed this sentiment and encouraged CRS to draft up a contract and send it to him and the Director General of ANAM. In addition, he emphasized that CRS should present a compelling argument to convince ANAM that they can attract a large pool of enrollees.

2.5 ICT SOLUTION⁸

Looking back at the project objectives enumerated in July 2013, we find that the management quality of HMI has improved. The HMI system **is operational** but at the current level of functioning it **is not sustainable, nor scalable**. This is largely due to the heavy reliance on the CRS MEAL Officer, revealing the importance of transferring knowledge and skills to NSIA and Caritas. If investment in capacity building for project staff is increased significantly, the ICT system can be sustained and brought to scale.

The ICT solution aimed to meet the following intermediate results:

1. Identify an Android solution for cost effective hardware and software to significantly speed up the health service delivery process for insured SILC members and covered dependents;
2. Insurance agents use the e-system to register the clients and process insurance premiums;
3. **SILC members have the option of paying their premiums using a mobile money solution;**
4. Health centers use the e-system to serve insured clients;
5. **Health centers reduce the waiting time for insured patients to receive health services;**
6. NSIA reduces the time for reimbursement of health center invoices; and
7. NSIA adopts the automated management system to deliver health microinsurance services.

The intermediate results not met include: (3) the mobile money solution which requires CRS project staff to continue working with MTN to determine its feasibility in the zone of intervention; and (5) reduced waiting time at health centers, which may not change until health centers feel they are appropriately compensated for the additional work of inputting patient information and processing invoices on the mini-iPads.

Compared to the former, paper-based system, the ICT solution has led to the following improvements:

- Eliminated administrative paperwork during registration and renewal of enrollees, contributing to faster enrollment and renewal process for HMI clients and faster entry of patient information at health centers (when used by trained and high-performing health center staff members; for example, Sister Ghislaine at St. Joseph's Health Center said it only takes her 2–3 minutes to input patient information on the mini-iPads)
- Improved ability to track and monitor enrollment data and health center invoices in real time on the iFormbuilder cloud database
- Faster production of membership cards using the Bartender software which inputs patient information automatically onto cards, instead of writing out patient information by hand
- Faster processing of invoices and reimbursement by NSIA—Under the previous system, health centers would wait until NSIA made field visits (once every few months) to submit receipts. Now, with the ICT system, NSIA processes reimbursements every 30 days.
- Lower registration costs with the new cards, compared with the previous booklets which required new members to purchase photos
- Improved client satisfaction with the smaller, laminated cards, compared to the former, bulkier booklets. Enrollees prefer the new cards, not only because they no longer require them to pay for photos, but because they are water-resistant and personalized, so that primary policyholders and each of their dependents have their own cards. Also, the old booklets limited the number of enrollees per household to six because there was a limited amount of space in the booklet. Now with the new cards primary policyholders can add as many dependents as they would like.

⁸ This section heavily relies on the observations made by ICT Specialist, Valentin Gbenou, hired specifically to evaluate the strengths and weaknesses of the ICT system.

Challenges specific to implementing the ICT solution and corresponding recommendations are listed as follows:

| Challenges | Recommendations |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Caritas field agents and health center staff currently enter the beneficiary codes manually, which can lead to errors. For example, if a Caritas field agent accidentally inputs the wrong code into the system, it will register the enrollee as a new member rather than a renewal, creating errors in the database. | Create an automated system for beneficiary codes using Bartender and barcodes. Currently, there are barcodes on each of the membership cards, but they are not yet in use. As a next step, project staff should update the iFormbuilder forms, purchase the proper barcode scanning equipment, and train local partners in its use. |
| In the iFormbuilder e-forms, health care staff at both health centers explained that they have to scroll through the list of medicines to search for the one they're looking for, which slows down their work. For some medicines, the coverage rate (70%) is not automatically applied to patients' bills. | Create a list of medicines covered by NSIA and those not covered by NSIA and create corresponding barcodes for each medicine. Then, instead of searching for the proper medicine, health center staff can simply scan the code, which automatically fills the appropriate field in the form. AND/OR: Update iFormbuilder to newest version, which includes search function so that staff can search for the desired medicine rather than scrolling through the list. Review e-forms to insure that 70% rate of coverage is applied uniformly to the medicines in the HMI package |
| Health center staff and Caritas field agents have identified other technical improvements to iFormbuilder forms that have not yet been made. | Refine e-forms so that entry fields in can be filled automatically wherever possible (e.g. dates, information for dependents). |
| The repetition of work at Bodarima center, as they use their own system (Microsoft Access) and must repeat the same work on the mini-iPads. This increases their workload and therefore, may increase the waiting period for enrollees. | Work with Bodarima to adapt Microsoft Access to ICT4HMI and make an exception to allow them to use this system instead of the mini-iPads to prevent duplication of work. |
| The MEAL Officer tracks key indicators (e.g. dropout rate, enrollment rate, growth rate, coverage rate, renewal rate, etc.) manually which can result in errors and inefficiencies. | Create a statistical database linked with data from iFormbuilder |
| There is poor internet connection in certain localities, particularly in Chabicouma, which delays data synchronization and a poor internet connection (sometimes no internet for 2–3 weeks) at Caritas Natitingou. | Purchase an internet modem from MTN or MOOV that Caritas can use in case of internet outage; In case of poor internet connection in Chabicouma, Caritas field staff should provide immediate support to ensure synchronization. |
| The inexistence of mobile money in the zones of project intervention, which elevates the risk of mishandling cash during premium collection. | Develop a plan to introduce mobile money; Reinforce partnerships with MTN and MOOV to advocate for coverage in these regions. |
| There is a poor understanding of the use of ICT devices among local partners (particularly Caritas field agents). | Create a users' manual for the ICT devices and disseminate to all participating health centers and Caritas Natitingou; Recruit field agents with at least a high school level of education to use ICT devices and/or familiarity with ICT tools (if possible); Increase frequency of trainings and refresher trainings (at least 2 per year, following the initial training) |
| There is no system in place to facilitate communication among project partners. | Implement a "helpdesk" using the "TeamViewer" software to assist users by activating messaging system on mini-iPad |
| Caritas staff experience technical difficulty in retrieving photos from DropBox for membership cards | Find technical solution by addressing problem internally or seeking help from GKIM at CRS headquarters |
| Caritas field agents cannot register more than 80 | Purchase external storage for mini-iPads. |

| | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| members at a time on the mini-iPads. | |
| Caritas field agents have access to change the server address on the mini-iPads, which may lead to technical difficulties. | Restrict this functionality. |
| The inauthenticity and poor quality of certain equipment and software that was acquired locally for Caritas (recharging cables for the mini-iPads, Microsoft windows and Microsoft office suite, Bartender software, desktop computer) has led to delays in project activities. | For future purchases of equipment and software, allow enough time (at least 3 months) to select service provider who can deliver high quality products locally or internationally if necessary |
| There is a heavy reliance on Xavier Toviho, MEAL Officer for technical support and management of the ICT system. | Provide training opportunities for Xavier Toviho and at least one other MEAL Officer or support staff member at CRS who can also provide technical support; train Brice Ahouansou and Prudence Gandebagni from NSIA (or at least two representatives) in ICT system, including iFormbuilder and Bartender; These four representatives from NSIA and CRS can then train Caritas staff, field agents, and health center staff; Hire technical, external consultants as needed to provide further training and capacity building support. |

To expand the project to other regions, the project should consider introducing Android tablets instead of the Apple iPad Mini (Wifi+4G Cellular, 64 GB). Androids may be a more cost-effective option at \$326 per tablet compared to the mini-iPads at \$565 per tablet. Before replacing mini-iPads with Androids entirely, project staff are recommended to pilot the use of Androids at two health centers for a period of six months to determine the compatibility of Androids with the iFormbuilder software. This will also require rigorous monitoring and evaluation before, during and after the six-month test period.

For expansion of the ICT solution, the following additional technical expertise will be needed (See Appendix H for more detail):

- One consultant to provide a training of trainers on iFormbuilder, Java and the WinDev e-system
- One consultant to conduct an evaluation on the feasibility of expanding use of Android tablets
- Two consultants to create an interface with the iFormbuilder platform and WinDev, a computer-based e-system, for those health centers (Bodarima) that prefer to use their own computers instead of the handheld tablets

2.6 COMPETITIVE ANALYSIS

This section will evaluate ICT4HMI in comparison with two “competitors”: (1) a health mutual organization and (2) the national health insurance scheme.

Tetoma mutuelle de santé. Health mutual organizations (HMOs) or *mutuelles de santé* are popular in Benin and throughout West Africa. In 2011, the number of HMOs in Benin was estimated at over 200, covering nearly 50% of the country with an enrollment rate of 200,000 adherents (6% of the total population). HMO’s are nonprofit entities characterized by voluntary membership, participatory decision-making, and the promotion of mutual solidarity, and like insurance schemes, they are based on risk-pooling and risk-sharing (Fonteneau & Galland, 2012). Members of HMO’s typically elect their leaders (who are often unpaid) to manage complaints, controls and cash flows.

Though the HMO model is widely regarded as successful in improving target populations’ access to health services, some HMOs face low enrollment because they do not target a specific, organized group,

but rather offer voluntary membership to the population at large. In addition, HMO's can be difficult to form initially as they function as stand-alone organizations rather than an additional product offered through existing institutions, like the ICT4HMI project (Fonteneau & Galland, 2012).

Tetoma, a health mutual organization in Kotopounga, was founded in January 2014 with support from SOLIDEV, a local NGO based in the neighboring town, Natitingou. They originally set a goal of 500 members as a target for the first year of operation. However, after the marketing efforts of newly trained insurance agents failed to reach the desired goal, they eventually reduced their projections to 200 adherents. The main reason for low enrollment, according to Mr. Andre Kassa Santa, a treasurer for Tetoma, was the lack of trust among the local community, as many have experienced fraudulent schemes in the past. Despite the challenges they faced in recruiting enough enrollees, Tetoma field agents were able to reach their goal of 200 members by January 2014 and remain optimistic that after these enrollees experience the benefits of enrollment, they will encourage their friends and neighbors to join. The Tetoma health mutual covers all basic health services at an 80% coverage rate with no limits or ceilings. The cost of the premium is 1,000 FCFA (\$2 USD) per household and 2200 FCFA (\$4.40 USD) per person per year. The total cost and coverage rate was determined by a feasibility study in which SOLIDEV asked three people from each village about the most common types of illnesses. There is no restriction on who joins and there are no mechanisms in place to avoid adverse selection or moral hazard.

Nine villages in Kotopounga currently participate in the Tetoma health mutual. Seven people per village have received training from SOLIDEV and among these seven individuals three serve in an executive board, including the president, treasurer and secretary for each village. This group of nearly 30 local agents meets regularly as an assembly to address any challenges and make adjustments. For example, this year they plan to reduce the cost of the premium from 2200 to 2000 FCFA.

Tetoma works with three local health centers: Yarikou (public health center), Bodarima (private) and Kotopounga (public) and the zone hospital in Natitingou (public). Mr. Kassa Santa showed us an example of the reimbursement process for Bodarima. For the December 2014, Bodarima received nine Tetoma members; the total reimbursement was 19,880 FCFA (\$39.76 USD) and the total amount paid by Tetoma members was 12,770 FCFA (\$25.54 USD).⁹ He said that Bodarima has been the easiest of the three health centers to work with, though at first Bodarima healthcare providers were skeptical. They said they would work with Tetoma for one month during a probationary period. After the first month, they decided to continue working with Tetoma. The public health centers are harder to work with because "*il faut suivre la loi*—you must follow the law." You cannot add arbitrary premiums to prices and he said this angers the public health center staff.

RAMU. In response to the growing need for access to affordable health services, the Government of Benin (GoB) officially launched *the Regime d'Assurance Maladie Universelle* (RAMU), a universal healthcare policy in December 2011. The GoB also created an entirely new agency, *l'Agence Nationale de l'Assurance Maladie* (ANAM), to oversee the progressive rollout of RAMU throughout the country, starting with six pilot health zones targeting formal sector employees and gradually expanding to cover all 33 health zones and the informal sector.

RAMU offers an attractive healthcare plan, covering 100% of services at public health centers or zone hospitals, 90% of services at regional hospitals and 80% of services at university hospitals, however,

⁹ ICT4HMI's reimbursement to Bodarima was 63,995 FCFA for the same period.

government agents face significant challenges in increasing enrollment, particularly among rural populations working in the informal sector.

PACE Analysis. A competitive analysis using the “PACE” guide shows that the ICT4HMI model has relative advantage over Tetoma and RAMU (See Appendix I for full analysis). The PACE tool was developed by ILO’s Microinsurance Innovation Facility to assess the client value of microinsurance products through four different aspects of client value:

1. **Product:** Includes package of services, exclusions, waiting periods, rate covered by insurance plan, eligibility criteria, ceilings or limits and value added services
2. **Access:** Includes choice and registration, information and knowledge of insurance product, payment process, and proximity and number of participating health facilities
3. **Cost:** Includes cost of premium, other expenses, and control mechanisms
4. **Experience:** Includes reimbursement procedures, time taken to process reimbursement, administrative policies and customer care/ feedback mechanisms

Figure 3 is a graphical representation of the scoring results in Table 5 for each insurance product in these four categories (product, access, cost and experience). Each category was scored according to the criteria described above and elaborated in a detailed table in Appendix I.

ICT4HMI’s strengths. This analysis shows that ICT4HMI is particularly strong in **cost**—in terms of offering an affordable product with a lean cost structure by working with Caritas agents and appropriate control mechanisms by relying on NSIA’s expertise. In comparison, Tetoma offers a lower cost of premium than ICT4HMI but has limited control mechanisms for fraud and none for adverse selection. Tetoma members are also at a disadvantage compared to ICT4HMI because they must purchase photos before registration. RAMU has the highest premium of the three models, additional fees in the form of transport costs to reach insurance agents and an extensive level of controls that may prove to be too burdensome since to date, RAMU has not reimbursed a single health facility.

Another strength of ICT4HMI compared to the other models is **experience**. ICT4HMI offers an ICT solution for registration and processing insurance claims which potentially speeds up these processes, though these tools are still being refined. Also, Caritas is an accepted and trusted community-based organization and insurance agents for ICT4HMI have worked with the targeted SILC groups since 2006. Caritas agents live within the local communities and are easily accessible to answer questions from HMI enrollees. In comparison, Tetoma processes new enrollees and reimbursements manually, though at its small scale (200 enrollees) this does not seem to prevent them from meeting client needs. RAMU is quite low in this area primarily because they have not yet reimbursed a single health facility and local committees are not yet in place to respond to clients’ questions or concerns.

ICT4HMI’s weaknesses. First, as far as weaknesses in comparison with the other models, the ICT4HMI **product** design is not as appealing as that of Tetoma and RAMU. The competitors’ products offer an expanded package of services with virtually no exclusions at the local health centers; a higher coverage rate (Tetoma: 80%; RAMU: 100%); and no ceilings or limits. Also, the ICT4HMI product is also exclusive to SILC groups whereas the others are open to all. The final category in the PACE analysis that is problematic for ICT4HMI is “**access**.” While ICT4HMI is easily accessible through Caritas field agents for registration and offers the most flexible payment option (6 months or 12 months), policies around life insurance are not well understood by clients, and it covers the fewest participating health centers.

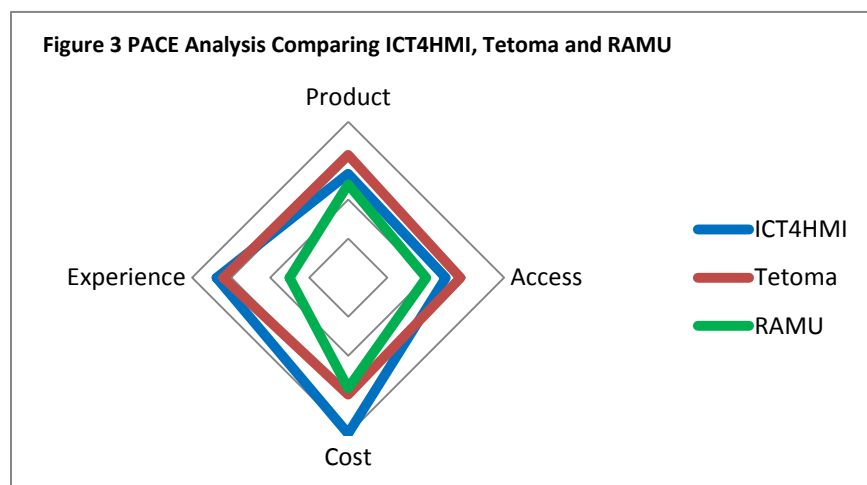
While ICT4HMI is the strongest product in among the three options according to the PACE analysis, Tetoma health mutual ranks a close second. Our findings reveal the importance of staying up-to-date on

competing products. This analysis also provides a compelling case that can be used by ICT4HMI project staff to convince government actors of the advantages of the HMI product in serving hard-to-reach populations, compared to RAMU.

Table 5 shows the scoring results for each of the three products across the four categories, Product, Access, Cost and Experience. The highest scores for each category are emphasized in bold. These results are graphically displayed in Figure 3.

Table 5 PACE Analysis Scoring

| | ICT4HMI | Tetoma | RAMU |
|-------------------|--------------|-------------|------|
| Product | 2.67 | 3.15 | 2.39 |
| Access | 2.50 | 2.88 | 2.00 |
| Cost | 4.00 | 3.00 | 2.83 |
| Experience | 3.38 | 3.20 | 1.50 |
| TOTAL | 12.54 | 12.22 | 8.72 |



2.7 FINANCIAL ANALYSIS AND PROJECTIONS

Financial Assessment

The financial assessment projects costs and revenues over a period of 10 years from NSIA's perspective for two different scenarios (See Appendix J).

Scenario 1: CRS receives private sector contributions and donor funding from USAID for a 5-year project extension and continues to support costs until the fifth year, when the project is fully transferred to NSIA. It is assumed that after the fifth year, NSIA is able to maintain an enrollment rate of 75,000 individuals. In this scenario, NSIA is expected to contribute total direct costs, which include NSIA staff

salaries, field visits, travel and transport and supplies throughout the 10 years. However, with external funding, it will not have to cover costs of project activities at Caritas Natitingou or Caritas Abomey or costs of supplies (mini-iPads, software, etc.) until year five. NSIA will also incur costs of claims for reimbursing health centers across the 10 years which was calculated by taking the total premium received annually times the claims rate times the rate covered by NSIA (number of enrollees * premium * claims rate * NSIA's coverage rate). The only revenues collected by NSIA are the revenues from insurance premiums calculated by taking the number of enrollees per year times the premium per individual, per year (number of enrollees * premium). This scenario is based on enrollment targets for the project's extension by Mr. Jerome Dadjo, ICT4HMI Project Manager at CRS.

Table 6 Enrollment Projections Scenario One

| Year | 0 | 1 | 2 | 3 | 4 |
|--------------------------|--------|--------|--------|--------|--------|
| Target Population | 75 000 | 75 000 | 75 000 | 75 000 | 75 000 |
| Coverage Ratio | 8% | 20% | 47% | 73% | 100% |
| Total Enrollees | 6 000 | 15 000 | 35 000 | 55 000 | 75 000 |

All costs and revenues assume a constant rate of 2.90% inflation throughout the ten years and a constant corporate tax rate of 30% applied to any profits made. Costs and revenues are then adjusted using a discount rate of 10.00% to determine the project's net present value (NPV). This was calculated by taking the long-term risk free rate, the current market rate on a 10-year U.S. government bond (2.01%), plus an additional adjustment for project specific risk (6.43%) based on the average risk for insurance companies. This gives us a discount rate of 8.44%, which is rounded up to 10.00% to account for an additional risk for microinsurance, a nontraditional insurance product.

After applying these rates, scenario one yields a positive NPV, generating profits in year two. Under this scenario, if we relax our assumption of the enrollment projections as shown in Table 6, the total number of enrollees needed to breakeven is 37,000.

Scenario 2: CRS does not receive additional funding for the project and NSIA must continue the project independently for the next 10 years. In this scenario, NSIA covers the cost of its staff and project activities as well as costs incurred by Caritas Natitingou and Caritas Abomey and the costs of supplies. Revenues remain the same, but enrollment targets are adjusted under the assumption that NSIA will not be able to target the same number of enrollees. Assuming that NSIA can reach half of the desired target population (37,500), attain the same coverage ratio, and maintain this number after the fifth year, this yields the following enrollment projections.

Table 7 Enrollment Projections Scenario Two

| Year | 0 | 1 | 2 | 3 | 4 |
|--------------------------|--------|--------|--------|--------|--------|
| Target Population | 37 500 | 37 500 | 37 500 | 37 500 | 37 500 |
| Coverage Ratio | 8% | 20% | 47% | 73% | 100% |
| Total Enrollees | 3 000 | 7 500 | 17 625 | 27 375 | 37 500 |

After adjusting for inflation, taxes and the discount rate, scenario two yields a negative NPV. Under this scenario, if we relax our assumption of the enrollment projections as shown in Table 7, the total number of enrollees needed to breakeven is 60,000.

Enrollment projections. Given Mr. Dadjo’s desired enrollment rate of 75,000 enrollees within 5 years, we find the following projections as shown in Table 8.

Table 8 Enrollment Projections

| Year | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|-------------------|--------|--------|--------|--------|--------|--------|
| Target Population | 75 000 | 75 000 | 75 000 | 75 000 | 75 000 | 75 000 |
| Coverage Ratio | 2% | 8% | 20% | 47% | 73% | 100% |
| Total Enrollees | 1 351 | 6 000 | 15 000 | 35 250 | 54 750 | 75 000 |

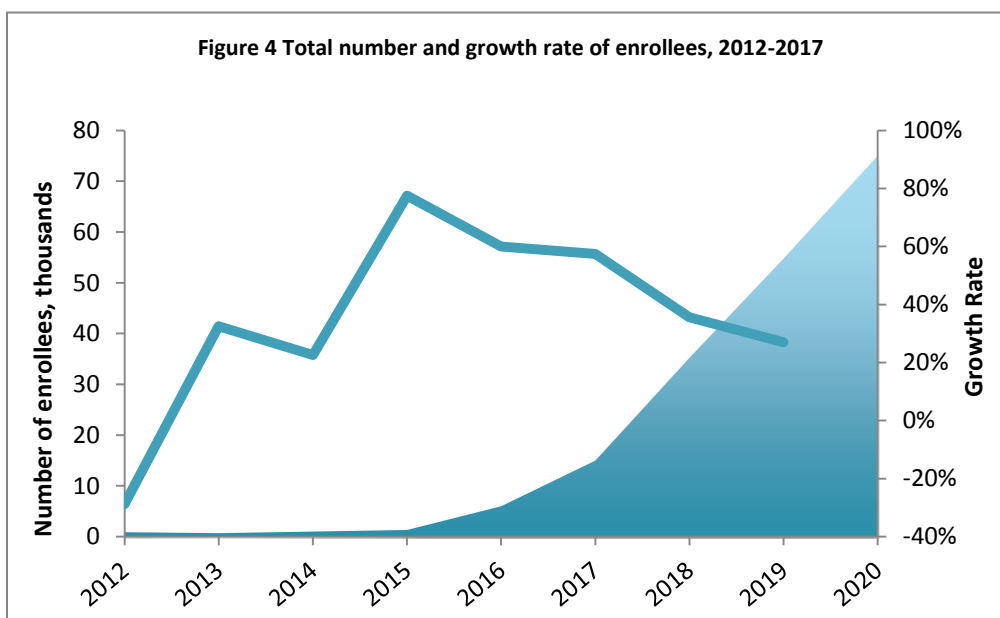


Figure 4 shows that for the past three years (2012, 2013, and 2014) enrollment has been largely stagnant around 1,000 enrollees, a growth rate above 30% which subsequently dropped from 2013–2014 by 10% and has since rebounded. In order to reach the desired enrollment number of 75,000 by 2020, enrollment growth rates will need to reach an average of 52% per year, meaning that in addition to renewing those individuals who enrolled in the previous year, the project must rapidly recruit new members at an average of 12,000 new enrollees per year.

Table 9 Enrollment Projections, Old and New Enrollees

| Year | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|-----------------|-------|-------|--------|--------|--------|--------|
| Old enrollees | 1 046 | 1 351 | 6 000 | 15 000 | 35 250 | 54 750 |
| New enrollees | 305 | 4 649 | 9 000 | 20 250 | 19 500 | 20 250 |
| Total enrollees | 1 351 | 6 000 | 15 000 | 35 250 | 54 750 | 75 000 |

How will project staff recruit the desired number of 75,000 enrollees? First, we can break down this number into the following groups, assuming the project expands activities to the Zou region:

- **Atakora region: 9,500.** This assumes there are 190 eligible SILC groups, 25 members per SILC group, 50% willing to join HMI at a rate of 4 individuals joining per household.
- **Zou region: 15,250.** This assumes there are 244 eligible SILC groups, 25 members per SILC group, 50% willing join HMI at a rate of 5 individuals joining per household.

- **Other SILC groups: 50,250.** This assumes there are 804 eligible SILC groups, 25 members per SILC group, 50% willing to join HMI at a rate of 5 individuals joining per household. “Other SILC groups” may include groups that have been trained by other NGOs or new groups that CRS will train before offering HMI.

Then, each of these groups can be broken down further to design the appropriate strategies and targets. When developing these strategies project staff should consider the following:

- Dig deeper into the category “Other SILC groups”—Is it realistic to find over 800 pre-existing SILC groups or develop new ones while simultaneously managing the HMI project? This may potentially require project staff to consider expanding the target population outside of SILC groups such as other borrowers of microfinance institutions.
- How should HMI be rolled out progressively? Should project staff target Atakora and Zou first, and at the same rates before expanding to the “Other SILC groups” category?
- What specific strategies will maximize enrollment by locality? For example, project staff may consider tracking indicators such as dropout rates, renewal rates, and number of dependents enrolled per individual to see if there are differences between localities.
- Given that renewal will be a critical strategy to meet enrollment targets, as the desired rate requires continual growth, project staff should consider providing a discount or reward (e.g. 10% off of premium) for renewing their enrollment.

3. Recommendations

(Actions to be implemented in the next 0–3 months, 3–6 months, 6–12 months, 12 months+)

3.1 IMPROVE MARKETING AND MESSAGING STRATEGIES

- **0–3 months:**
 - Develop, print, laminate and distribute a copy of basic information and frequently asked questions about HMI product to each participating SILC group and each participating health center.
- **3–6 months:**
 - Establish a feedback mechanism by designating a point person within each SILC group, who fields any questions or concerns about HMI and informs those who missed any learning conversations with Caritas field agents. This point person would be responsible for reporting the group’s concerns regularly to Caritas field agents, who would then record any complaints in a notebook and share this information with Caritas project coordinator and project supervisor who follow the status of the issue and ensure that the issue is addressed. Once action has been taken to address the issue Caritas field agents should then communicate this response to the point person in SILC group.
 - Review content and timing of learning conversations modules and any predetermined financial education modules that the project plans to implement with Caritas and CRS staff (bring in technical staff if needed) to discuss efficacy of topics covered, content, length, and frequency of discussions to determine if changes need to be made.
 - If significant changes are made, ensure that Caritas project coordinator, the supervisor, and Caritas field agents are properly trained in updated methodologies.
 - Monitor client understanding of insurance product and financial literacy and make adjustments as appropriate.

- **6–12 months:** Develop new, engaging marketing materials to share with SILC groups (e.g. video¹⁰, skit, pictorial presentation); Disseminate these materials and messaging through various communication channels (e.g., local radio, publicity events, annual or bi-annual registration campaigns).

3.2 REVIEW PRODUCT DESIGN

- **3–6 months:**

- Conduct a study to review the product and pricing and consider the feasibility of the following options:
 - Instead of pricing the product at 290 FCFA per month, adjust it to a rounded number like 300 FCFA or 250 FCFA for simplicity (Imagine you are an HMI member and you want to explain it to your neighbor, what would be the simplest way to describe it?);
 - Offer a discounted pricing option for entire families or entire SILC groups;
 - Offer a discounted price for children or a discounted price as the number of dependents increases to incentivize adding dependents;
 - Offer flexible payment options (every month or every 3 months);
 - Provide a renewal incentive for those already enrolled, such as a 10% discount or reward for renewing their HMI plan if they didn't get sick in the previous enrollment period;
 - Assess strengths and weaknesses of the life insurance component and either remove it completely from the HMI package (as suggested by Caritas) in exchange for a lower premium, higher rate of coverage, or expanded package of health services or, if NSIA decides to continue offering the life insurance component then it is recommended to adjust the claims procedures according to the local context (for example, a community leader could serve as the credible witness to sign the death certificate in the place of the health center staff; beneficiaries of the life insurance payout could use voter cards as ID or receive the payment through Caritas staff instead of requiring beneficiaries to present forms of ID that are more difficult to obtain);
 - Provide SILC groups with different savings/financing options and mechanisms to help cover the cost of the premium.

3.3 STRENGTHEN PARTNERSHIPS

- **0–3 months:**

- Set up meeting with NSIA to create 3-month work plan (repeat each trimester)
- Draft up contract to work with ANAM and send to ANAM's Director General and Director of Partnerships and contacts at the DNSP. This should include a plan to integrate local public health centers in target areas, including Yarikou, Kotopounga, Birni, and Chabicouma.
- Set up meeting with Mr. Koto, President of *mutuelles de santé* (contact recommended by the MoH), Afriq'Mutualité, and NSIA, to brainstorm solutions to motivate health centers.

¹⁰ For an example of low cost videos that can spread virally over cellphone see Purdue University's video demonstration of how to improve crop storage here: <https://www.youtube.com/watch?v=RZN-lqukCPw>.

- Recommended option to motivate health centers: Permit health centers to charge an administrative fee to HMI members seeking care at a rate to be negotiated with health care providers. Presumably, this could be as low as 100 FCFA per patient and would not pose a significant cost burden to HMI members while providing health care providers some compensation for the extra administrative costs of registering HMI members and costs of phone credit used to contact HMI project staff. It would also bypass NSIA's unwillingness to allocate a percentage of the premium to health centers, as health centers could charge this fee in addition to the 30% copay. If this change is pursued, it should be clearly communicated with SILC members and included on the FAQ and informational policy document.
- **3–6 months:**
 - If deemed necessary and contingent on funding, hire a partnerships manager at CRS to work with all the different actors and respond to their needs (this could even be a temporary 12-month position to set up consistent communication channels and establish strong linkages between partners).
 - Hold a meeting with St. Joseph's health center in Chabicouma and a group of representatives HMI enrollees to discuss claims of poor treatment and reception by Chabicouma staff members and propose a solution to make improvements;
 - Hold first periodic meeting (recommended twice annually) with key stakeholders in which each party explains their role in the project.
 - Establish who has authority over which parts of the project and who will be held accountable for the project's success;
 - Clearly define what constitutes success for the project (e.g. minimum number of enrollees within certain timeframe); Conduct breakout sessions to discuss project's strengths, weaknesses, threats and opportunities;
 - Conduct breakout sessions to identify project activities and tasks; identify project board or MEAL working group with 3–5 representatives to track key indicators as a team;
 - Create project charter that is distributed to each member, to make sure everyone is on the same page and roles and responsibilities are clearly defined and explain how roles and responsibilities will change over the course of the project as NSIA assumes full responsibility.
 - Organize a field mission for local government officials to visit participating health centers to see how ICT solution for HMI works firsthand.
 - Develop system to keep government authorities updated every 6 months on progress through briefings, check-in phone calls or meetings.
 - Purchase improved materials for Caritas project coordinator to print, cut, and laminate cards.
- **6–12 months:**
 - Review training methods on use of ICT tools for Caritas field agents and consider introducing other training methods such as video or experiential learning opportunities to practice using ICT tools under the supervision of trainers from CRS and NSIA;
 - Hire data collectors, separate from the Caritas field agents who hold learning conversations with a minimum level of education, specifically for collecting data on the tablets.

- Introduce the Private Service Provider (PSP) model,¹¹ in which agents are recruited, trained and paid by the project for a limited period, then undergo PSP certification to operate independently and be paid by the community. This will allow the project to sustainably manage costs incurred by insurance agents (phone credit, gas costs).

3.4 REFINE ICT SOLUTION

- **0–3 months:**
 - Update iFormbuilder forms and integrate feedback from local partners.
 - Resolve technical difficulty at Caritas Natitingou in using the Bartender software to produce HMI cards (link to photos in DropBox, connecting to enrollee database).
 - Develop a procedures manual and distribute to key stakeholders.
 - Purchase a Wi-Fi modem for Caritas Natitingou.
- **3–6 months:**
 - Identify supplier and purchase Android tablets and any accessories (tablet covers, chargers, external batteries).
 - Procure any other ICT supplies specific to Android and QR Barcode scanners.
- **6–12 months:**
 - Integrate the use of QR Barcode scanners in the iFormbuilder forms.
 - Print and distribute a list of health services covered by the HMI plan with corresponding barcodes and a Barcode scanner for each participating health center.
 - Pilot use of Android tablets instead of Apple products for 6 months and conduct an evaluation to determine feasibility of expanding its use.
 - Install a helpdesk on the tablets to facilitate access to technical support as needed, linking Caritas field agents and health center staff to technical experts at CRS, Caritas and NSIA.
 - Strengthen and maintain the partnership with MTN and MOOV to gain their support in introducing mobile money; collaborate with these partners to launch mobile money in a targeted sub-district to determine feasibility of expanding.
- **12 months+:**
 - Conduct a training of trainers (CRS MEAL Coordinator and NSIA Head of IT) on iFormbuilder, WinDev, Java Mobile and Android.
 - Automate the beneficiary codes using QR Barcode scanners.
 - Create a statistical database that links the iFormbuilder cloud database with a system that can output relevant data (e.g. dropout rate, renewal rate, claims rate, etc.).
 - Implement a system to manage patient data specifically for health centers such as Bodarima that prefer to use a computer-based system over the handheld tablets.

4. Lessons Learned

(1) The ICT4D solution has proven to be a successful model to collect and monitor data through a cloud-based system, accessible by multiple partners. Introducing mini-iPads at the Caritas field agent level increased efficiency of the registration and renewal process. In addition, beneficiaries prefer this system to the old paper-based system because they no longer have to pay for photos and each dependent has their own card. At the local health centers, staff no longer wait to send invoices to NSIA for

¹¹ For more details: <http://www.crsprogramquality.org/storage/pubs/microfinance/private-service-provider-implementation-manual.pdf>

reimbursement. Simply by synchronizing the mini-iPad, they can send invoices electronically, which can then be processed by NSIA in Cotonou.

However, although there have been significant efficiency gains in the overall management system, there are still organizational challenges that can block efficiency. This includes an inability of the ICT solution to address the root problem of long wait times for insurance patients which is due to a lack of motivation among health center staff, who do not feel they are appropriately compensated for their work; and low capacity among field agents in use of ICT tools, as some Caritas field agents and health center staff are not comfortable using the devices and CRS is too heavily reliant on the MEAL Officer for technical support.

(2) Another lesson learned is that for projects in which the private sector is expected to take over the project long-term, a financial analysis to assess long-term profitability must be conducted early on in the project's lifecycle, preferably before implementation. At this stage, it is highly recommended to use the financial analysis in this report as a starting point to ensure financial sustainability before expanding the project to other regions. In general, it cannot be assumed that all project partners will provide continued support if there is no incentive for them to be involved. In the case of HMI, this applies to health centers, who claim to be overwhelmed with their regular workload and as a result have no incentive to support HMI, and NSIA, who will not continue the project long-term if it is not a financially attractive investment.

(3) Finally, as this project is in the "pilot" stage, it is important to prove its viability before scaling up. Therefore, monitoring and evaluation must be more frequent and rigorous. For example, if the project is extended to the Zou region, the project should consider dedicating funds to conduct a randomized control trial, dividing SILC groups into control and treatment groups to better assess the impact of health microinsurance on health status and health behaviors. This will require a more in-depth and continued collaboration with Johns Hopkins University as the project goes forward. CRS and NSIA must also frequently monitor enrollment and renewal data to assess whether the project is meeting enrollment targets every 6 months. For example, this would allow project staff to recognize when certain districts or SILC groups are dropping out or not renewing enrollment and take action to address these challenges immediately.

5. Appendices

APPENDIX A: REFERENCES

- Agnila, J., Agossou, C., Akoutey, V., Boi Kilanyoussi, O., Davodoun, P., De Baeremaeker, D., Toumoudagou, O. (2012). *Vers la couverture maladie universelle au Bénin: Réflexions et perspectives*. CTB Benin, 1–170.
- Banerjee, A., & Duflo, E. (2011). *Poor economics: A radical rethinking of the way to fight global poverty*. New York: Public Affairs.
- Chandani, T., & Garand, D. (2013) Lessons learned and good practices in health microinsurance. *Microinsurance Network*, 1–76.
- Criel, B., & Waelkens, M. P. (2003). Declining subscriptions to the Maliando mutual health organization in Guinea-Conakry (West Africa): what is going wrong? *Social Science & Medicine*, 57(7), 1205–1219.
- De Allegri, M., Sanon, M., Bridges, J., & Sauerborn, R. (2006). Understanding consumers' preferences and decision to enrol in community-based health insurance in rural West Africa. *Health Policy*, 76(1), 58–71.
- Dixon, J., Luginaah, I., & Mkandawire, P. (2014). The national health insurance scheme in Ghana's upper west region: a gendered perspective of insurance acquisition in a resource-poor setting. *Social Science & Medicine*, 122, 103–112.
- Hamid, S. A., Roberts, J., & Mosley, P. (2011). Evaluating the health effects of micro health insurance placement: evidence from Bangladesh. *World Development*, 39(3), 399–411.
- Harms, J. (2011). Microinsurance product design: consumer preferences in Kenya. *International Labor Organization (ILO) Microinsurance Innovation Facility*, 1–35.
- Innovations for Poverty Action. (2012). Health Microinsurance Education Project Evaluation Northern Region, Ghana: Final Endline Report. *IPA*, 1–71.
- Jaffré & Olivier de Sardan, J.-P.(Eds.). (2007). *État et corruption en Afrique*. Paris: APAD-KARTHALA.
- Jutting, J. P. (2004). Do community-based health insurance schemes improve poor people's access to health care? Evidence from rural Senegal. *World Development*, 32(2), 273–288.
- Lagomarsino, G., Garabrant, A., Adyas, A., Muga, R., & Otoo, N. (2012). Moving towards universal health care coverage: health insurance reforms in nine developing countries in Africa and Asia. *Lancet*, 380(9845), 933–943.
- Lalaye, C., Batchabi, D., & Laly, L. (2010). Rapport de l'étude de l'offre et de la demande en santé pour les populations de Kotopounga et Chabicouma dans le cadre de la mise en place d'un system de micro assurance santé communautaire. *Catholic Relief Services*. 1–45.

Leatherman, S., Geissler, K., Gray, B., & Gash, M. (2012). Health financing: a new role for microfinance institutions? *Freedom from Hunger Research Paper No. 16*, 1–16.

Ridde, V., Haddad, S., Yacoubou, M., & Yacoubou I. (2010). Exploratory study on the impacts of mutual health organizations on social dynamics in Benin. *Social Science & Medicine*, *71*, 467–474.

Schneider, P. (2005). Trust in micro-health insurance: an exploratory study in Rwanda. *Social Science & Medicine*, *61*, 1430–1438.

APPENDIX B: NSIA’S HEALTH MICROINSURANCE TERMS AND CONDITIONS

| | |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| A—HEALTH/ACCIDENT | Overall reimbursement ceiling: 40,000 FCFA/assured/year (≈\$80) |
| Cost of consultation: curative, prenatal and postnatal consultation | -Covered at 100% -Limited to 300 FCFA (≈\$0.60) per visit and -Maximum of 3 consultations per year |
| Cost of care: | -Covered at 70% -Copay of 30% |
| Cost of pharmaceutical products and medicines sold at the participating health centers | -Covered at 70% -Maximum of 4,000 FCFA (≈\$8) each time -Maximum of 3 times per year |
| Medical costs for local hospitalization | -Covered at 70% -Maximum of 5,000 FCFA (≈\$10) per year |
| Simple births | -Covered at 70% -Maximum of 6,000 FCFA (≈\$12) per year |
| Small surgeries | -Covered at 70% -Maximum of 3,000 FCFA (≈\$6) per year -Maximum of 2 times per year |
| B—LIFE | |
| Death or incapacitation of the insured | Capital: assured at 100,000 FCFA (\$200) |

Source: Tapscott, R. (2012). Improving access to health for rural populations: A study of CRS’ health microinsurance pilot in Benin. *Catholic Relief Services*, 1–54.

APPENDIX C: DETAILED TIMELINE

January 2006—CRS Benin becomes one of the first country programs to implement the Savings and Internal Lending Communities (SILC) methodology. The first Country Program in West Africa piloting the SILC program.

2008–2009—A number of SILC groups ask Caritas and CRS to help find a solution to cover medical costs

April 2010—CRS identifies a private sector partner, NSIA, to test a health microinsurance product

June 2010—CRS Microfinance Lifeline Fund awards CRS Benin a grant to pilot a health microinsurance project targeted to SILC groups in northern Benin

September 2010—CRS hires a team of consultants to carry out a feasibility study

March 2012—HMI product launched in Chabicouma and Kotopounga

April 2012—RAMU launched

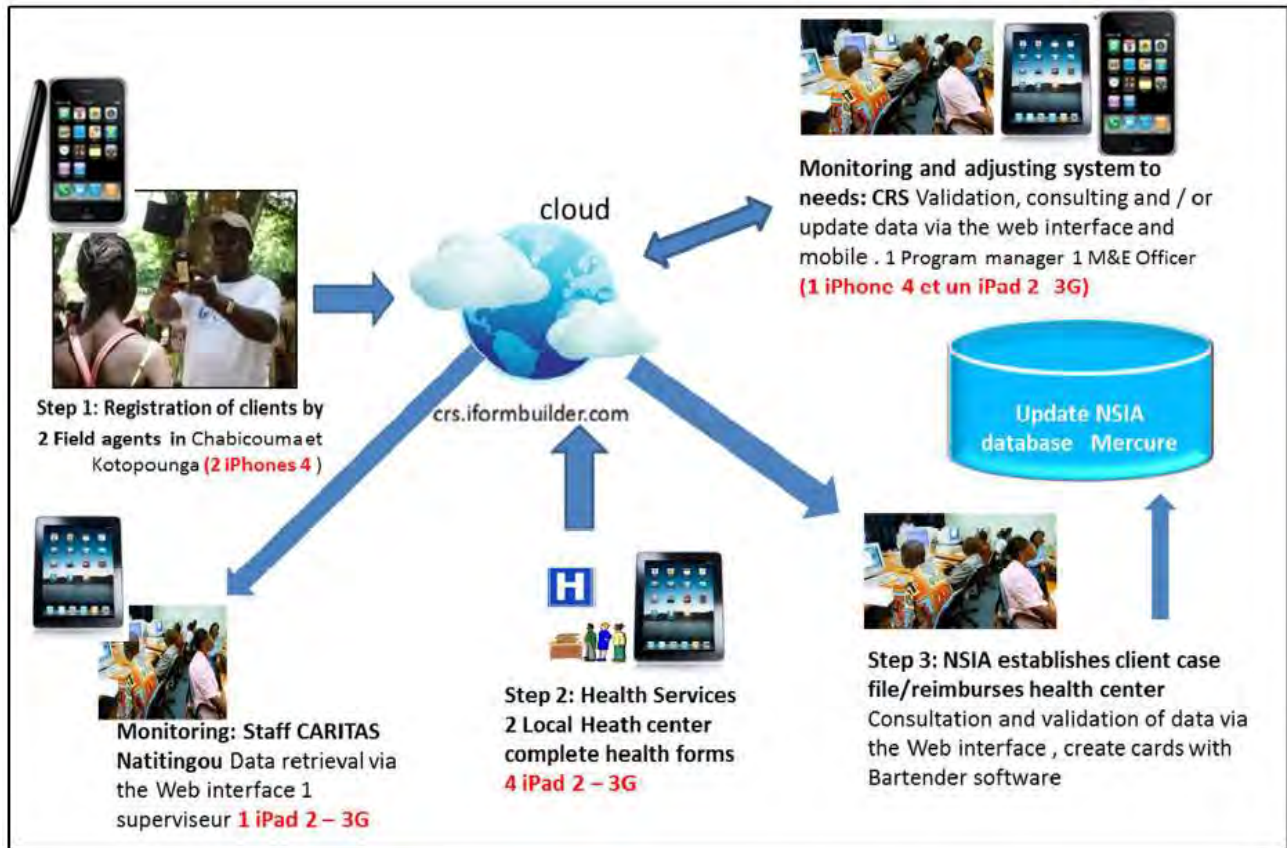
July 2012—CRS hires Tufts University PhD student to carry out preliminary evaluation

November 2013—CRS introduces an ICT solution to reduce the administrative burden of HMI at local health centers

January 2014—Tetoma health mutual launched in Kotopounga

January 2015—CRS hires consultants to carry out evaluation; CRS submits Concept Note to USAID for GDA funding to scale up project to the Zou region

APPENDIX D: ICT4D E-SYSTEM



APPENDIX E: LIST OF SILC GROUPS

The following list provides information for all 12 SILC groups selected for the survey and focus groups. It also gives the number of women, men and total number of participants in the focus groups.

| No. | Commune | District | Village | SILC Group | No. women | No. men | No. |
|--------------|------------|------------|-----------------|---------------------|------------|-----------|------------|
| 1 | Kouande | Birni | Birni | Nannin | 0 | 8 | 8 |
| 2 | Kouande | Chabicouma | Papatia | Yaki_boura | 13 | 0 | 13 |
| 3 | Kouande | Chabicouma | Alikparè | Pere | 4 | 3 | 7 |
| 4 | Kouande | Chabicouma | Chabicouma | Lanhessire | 6 | 2 | 8 |
| 5 | Kouande | Chabicouma | Sakason | Pouwedehou | 8 | 4 | 12 |
| 6 | Kouande | Chabicouma | Chabicouma | Pouloussa | 13 | 2 | 15 |
| 7 | Natitingou | Kotopounga | Yakpangoutingou | Tiboyake | 8 | 6 | 14 |
| 8 | Natitingou | Kotopounga | Pouya | Yinboman_tohou | 15 | 0 | 15 |
| 9 | Natitingou | Kotopounga | Yarikou | Tissanguire | 9 | 4 | 13 |
| 10 | Natitingou | Kotopounga | Pouya | Tetoma | 17 | 1 | 18 |
| 11 | Natitingou | Kotopounga | Kotopounga | Wareyin_kotopounga | 10 | 1 | 11 |
| 12 | Natitingou | Kotopounga | Tchantangou | Wareyin_tchantangou | 8 | 2 | 10 |
| Total | | | | | 111 | 33 | 144 |

APPENDIX F: LIST OF KEY STAKEHOLDERS

| No. | Name | Title | Organization | Location |
|-----|------------------------------|----------------------------------------------------------------------------------------|----------------------------|------------|
| 1 | Father Abraham | Head of Caritas | Caritas | Natitingou |
| 2 | Valentin Kouagou | Program Supervisor | Caritas | Natitingou |
| 3 | Jean-Pierre Bagri | Program Coordinator | Caritas | Natitingou |
| 4 | Valentin Dakou | Field Agent | Caritas | Kotopounga |
| 5 | Francois Bamakassi | Field Agent | Caritas | Chabicouma |
| 6 | Georges Tchankpéka Yeropa | Accountant | Bodarima Health Center | Kotopounga |
| 7 | Richard N. Katango | Nurse | Bodarima Health Center | Kotopounga |
| 8 | Israel Gnassingbe | Nurse | Bodarima Health Center | Kotopounga |
| 9 | Chantal Kokalom Toukoudjou | Cashier | Bodarima Health Center | Kotopounga |
| 10 | Sister Ghislaine | Midwife; Head of Health Center | St. Joseph's Health Center | Chabicouma |
| 11 | Ms. Virginie BASSALE | Health Aide | St. Joseph's Health Center | Chabicouma |
| 12 | Sister Jeanne Chantal Zammou | Nurse | St. Joseph's Health Center | Chabicouma |
| 13 | Dr. Célestin Hounkpe | Coordinating Physician | Ministry of Health | Kouande |
| 14 | Jacob Nambowi | Departmental Health Director | Ministry of Health | Natitingou |
| 15 | Pagré Andre Kassa Santa | Treasurer | Tetoma Health Mutual | Natitingou |
| 16 | Paul Kassape | Secretary | Tetoma Health Mutual | Natitingou |
| 17 | Mèmounatou Kadiri Garba | Executive Director | SOLIDEV | Natitingou |
| 18 | Edmond Boussou | Director General | NSIA Vie | Cotonou |
| 19 | Cyriaque Lalèyè | Economist, Technical Specialist in Economic Development and Health, Executive Director | Afric' mutualité | Cotonou |
| 20 | Christian Marcel Lodjou | Director, Partnerships | ANAM | Cotonou |
| 21 | Dr. Arnaud Makoutode | Medical Advisor | NSIA | Cotonou |
| 22 | Prudence Gandebagni | Intern/ Project Assistant | NSIA | Cotonou |
| 23 | Jerome Dadjo | Program Manager | CRS | Cotonou |
| 24 | Xavier Toviho | MEAL Officer | CRS | Cotonou |
| 25 | Brice Ahouansou | Head of IT Department | NSIA | Cotonou |
| 26 | Dr. Toko | Adjunct Director | Ministry of Health | Cotonou |

APPENDIX G: STATA OUTPUT

The following STATA output shows that the difference in means is significant for those p-value differences in bold.

| variable | Demographics | | | | | | | | | | | | |
|-----------------------|----------------|--------|---------------|-----|---------------|-------|------------------|--------|--------------|------------------------------------|-------|-------|--------------|
| | Never enrolled | | Ever enrolled | | Did not renew | | | | | | | | |
| | obs | mean | SE | obs | mean | SE | obs | mean | SE | p-value diff | | | |
| female | 60 | 0.750 | 0.056 | 120 | 0.833 | 0.034 | 60 | 0.817 | 0.050 | 0.628 | | | |
| has children | 60 | 0.933 | 0.032 | 120 | 0.975 | 0.014 | 60 | 0.967 | 0.023 | 0.563 | | | |
| N children | 59 | 1.712 | 0.119 | 120 | 1.658 | 0.064 | 60 | 1.533 | 0.090 | 0.051 | | | |
| age | 60 | 38.567 | 1.393 | 120 | 41.575 | 1.127 | 60 | 43.017 | 1.626 | 0.202 | | | |
| polygamous | 60 | 0.450 | 0.065 | 120 | 0.375 | 0.044 | 60 | 0.433 | 0.065 | 0.190 | | | |
| monogamous | 60 | 0.533 | 0.065 | 120 | 0.592 | 0.045 | 60 | 0.517 | 0.065 | 0.096 | | | |
| no education | 60 | 0.617 | 0.063 | 120 | 0.700 | 0.042 | 60 | 0.793 | 0.058 | 0.430 | | | |
| primary education | 60 | 0.233 | 0.055 | 120 | 0.167 | 0.034 | 60 | 0.133 | 0.044 | 0.331 | | | |
| woman can read | 58 | 0.138 | 0.046 | 117 | 0.188 | 0.036 | 58 | 0.172 | 0.050 | 0.671 | | | |
| has car | 60 | 0.400 | 0.064 | 120 | 0.625 | 0.044 | 60 | 0.550 | 0.065 | 0.091 | | | |
| no phone | 60 | 0.250 | 0.056 | 119 | 0.235 | 0.039 | 60 | 0.233 | 0.055 | 0.960 | | | |
| no land | 60 | 0.283 | 0.059 | 120 | 0.317 | 0.043 | 60 | 0.250 | 0.056 | 0.118 | | | |
| | | | | | | | | | | health and health services related | | | |
| | Never enrolled | | Ever enrolled | | Did not renew | | Current enrolled | | p-value diff | | | | |
| variable | obs | mean | SE | obs | mean | SE | obs | mean | SE | obs | mean | SE | p-value diff |
| own health | 58 | 2.000 | 0.125 | 120 | 2.450 | 0.093 | 60 | 2.467 | 0.133 | 60 | 2.433 | 0.131 | 0.859 |
| death child | 60 | 0.217 | 0.054 | 119 | 0.118 | 0.030 | 59 | 0.186 | 0.051 | 60 | 0.050 | 0.028 | 0.021 |
| health dependents | 59 | 2.034 | 0.111 | 119 | 2.311 | 0.083 | 59 | 2.271 | 0.099 | 60 | 2.350 | 0.134 | 0.638 |
| N poor health | 60 | 1.883 | 0.133 | 118 | 1.873 | 0.091 | 59 | 1.831 | 0.128 | 59 | 1.915 | 0.131 | 0.645 |
| how far health center | 56 | 1.857 | 0.097 | 117 | 1.983 | 0.056 | 58 | 1.983 | 0.090 | 59 | 1.983 | 0.066 | 0.998 |
| poor service | 57 | 0.158 | 0.049 | 117 | 0.111 | 0.029 | 59 | 0.102 | 0.040 | 58 | 0.121 | 0.043 | 0.746 |
| little effort | 57 | 1.175 | 0.051 | 118 | 1.127 | 0.031 | 59 | 1.085 | 0.037 | 59 | 1.169 | 0.049 | 0.170 |
| wait over an hour | 50 | 0.300 | 0.065 | 111 | 0.315 | 0.044 | 53 | 0.264 | 0.061 | 58 | 0.362 | 0.064 | 0.272 |
| inconvenient hours | 57 | 1.298 | 0.061 | 119 | 1.412 | 0.045 | 60 | 1.333 | 0.061 | 59 | 1.492 | 0.066 | 0.081 |

Next, this data shows the results of a multivariate analysis of the decision to enroll or stay enrolled in HMI.

| Demographics | | | |
|-----------------------|----------------------|-------------------------|---------------------------------|
| VARIABLES | (1) Ever enrolled | (2) Current enrolled | (3) Current enrolled/renewal |
| Female | 0.028 (0.142) | 0.040 (0.147) | 0.065 (0.214) |
| Has children | 0.628** (0.283) | 0.283 (0.293) | -0.281 (0.580) |
| Number children | -0.045 (0.055) | -0.113* (0.057) | -0.149* (0.083) |
| Age | 0.006* (0.003) | 0.002 (0.003) | -0.001 (0.004) |
| Polygamous | -0.284 (0.300) | -0.409 (0.309) | -0.463 (0.392) |
| Monogamous | -0.223 (0.296) | -0.439 (0.305) | -0.544 (0.388) |
| woman_read | 0.109 (0.114) | -0.002 (0.125) | -0.138 (0.162) |
| Has car | 0.159** (0.079) | 0.033 (0.082) | -0.014 (0.114) |
| No phone in the house | -0.032 (0.089) | -0.003 (0.092) | -0.014 (0.125) |
| Does not own land | 0.016 (0.087) | -0.057 (0.090) | -0.052 (0.122) |
| Farmer | -0.062 (0.119) | 0.044 (0.122) | 0.079 (0.167) |
| Formal employee | -0.133 (0.353) | 0.135 (0.375) | 0.518 (0.546) |
| Self-employed | 0.043 (0.199) | 0.212 (0.206) | 0.220 (0.281) |
| Unemployed | 0.126 (0.507) | 0.747 (0.521) | 0.735 (0.574) |
| Other profession | -0.106 (0.166) | -0.138 (0.171) | -0.176 (0.255) |
| Protestant | 0.179 (0.146) | -0.038 (0.150) | -0.158 (0.172) |
| Other christian | -0.192 (0.178) | 0.029 (0.184) | 0.363 (0.311) |
| Muslim | 0.160 (0.127) | 0.199 (0.130) | 0.102 (0.161) |
| Traditional | 0.287 (0.353) | 0.209 (0.363) | 0.030 (0.399) |
| Atheist | 0.147 (0.128) | -0.205 (0.131) | -0.340** (0.163) |
| No formal education | 0.059 (0.099) | 0.062 (0.148) | 0.034 (0.194) |
| Observations | 171 | 171 | 114 |
| R-squared | 0.159 | 0.125 | 0.202 |

Finally, this table shows a multivariate analysis of the decision to enroll in HMI for health-related variables.

| VARIABLES | (1) Ever enrolled | (2) Current enrolled | (3) Current enrolled/renewal |
|----------------------------------|----------------------|-------------------------|---------------------------------|
| Health own | 0.088** (0.044) | 0.067 (0.046) | 0.013 (0.056) |
| death_child | -0.122 (0.101) | 0.125 (0.104) | 0.279* (0.150) |
| Health dependents | 0.055 (0.053) | 0.028 (0.055) | 0.030 (0.067) |
| Number dependents in poor health | -0.044 (0.044) | -0.048 (0.045) | -0.044 (0.058) |
| Distance to health center | 0.178*** (0.060) | 0.124** (0.062) | 0.081 (0.090) |
| Poor health service | -0.123 (0.125) | -0.063 (0.129) | 0.015 (0.200) |
| Low effort of staff at HC | -0.115 (0.123) | -0.194 (0.127) | -0.243 (0.198) |
| Wait over hour | 0.049 (0.087) | 0.001 (0.090) | -0.037 (0.117) |
| Hours operation inconvenient | -0.004 (0.079) | -0.091 (0.081) | -0.137 (0.108) |
| Staff absence | 0.039 (0.078) | -0.011 (0.081) | -0.047 (0.105) |
| Observations | 155 | 155 | 105 |
| R-squared | 0.141 | 0.089 | 0.103 |

APPENDIX H: DESCRIPTION OF ICT EXPERTISE NEEDED

| Expertise needed | Description of mission | Cost, length, participants |
|---------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| One expert in iFormbuilder | <p>Training of trainers on iFormbuilder</p> <p>Train the ICT4HMI CRS MEAL Officer and NSIA's Head of IT Department in iFormbuilder to improve capacity in the management of the ICT4D e-system. This also ensures a transfer of skills to NSIA who will eventually assume responsibility of the e-system. It also allows them to train other specialists at NSIA and Caritas to ensure a transfer of skills.</p> | <p>\$3,000 (75 000 FCFA per participant/ per day)</p> <p>2 weeks</p> <p>2 participants (CRS Meal Officer and NSIA's Head of IT Department)</p> |
| One expert in the conception and development of mobile applications | <p>Feasibility study on the use of the Android platform for HMI</p> <p>Evaluate the migration of the e-system on mini mini-iPads to the Android and java mobile. This study will allow CRS, NSIA and Caritas to better assess the decision to replace mini-iPads with open source Androids, which are less expensive and potentially more cost-efficient.</p> | <p>\$4,000 (100 000 per consultant/ per day)</p> <p>4 weeks</p> |
| One expert in Java mobile/Open Development Kit (ODK de Google) | <p>Training of trainers on java and other ICT4D tools used to centralize information</p> <p>Train the ICT4HMI CRS MEAL Officer and NSIA's Head of IT Department in Java Mobile to improve capacity in the use of the Java platform under the condition that the project decides to replace the mini-iPads with the Android tablets using the Java application. This training will allow the CRS to further transfer the skills required for NSIA to manage the project independently once they assume full responsibility for continuing the project. It is suggested to find an international expert to conduct the training if local expertise is unavailable.</p> | <p>\$10,000 (Cost of training and mission fees)</p> <p>4 weeks</p> <p>4 participants (2 agents from Caritas, 2 agents from NSIA)</p> |
| A team of experts specialized in the development of IT systems | <p>Conception and introduction of a database or monitoring system in "WinDev" to monitor patient records at participating health centers to create an interface with iFormbuilder.</p> <p>For health centers like Bodarima who prefer to use pre-existing e-system on desktop computers to track patient data instead of the mini-iPads, this will provide an alternative solution. By installing WinDev 19 on their computers, this will create an interface between their computers and the iFormbuilder platform.</p> | <p>\$10,000 (5.000.000 FCFA for one computer engineer to build the database and one web developer)</p> <p>12 weeks</p> |
| One expert in Windev | <p>Training of trainers in WinDev</p> <p>Train the ICT4HMI CRS MEAL Officer and NSIA's Head of IT Department in WinDev to ensure the maintenance of the e-system and integrate the new functionalities in the statistical database used to track HMI indicators and patient data at the health centers.</p> <p>For more detail on PC Soft Paris training: http://www.pcsoft.fr/pcsoft/tarifs.htm</p> | <p>\$10,000 (\$6,500 for the training costs based on PC Soft Paris and \$3,500 for lodging and mission fees)</p> <p>2 weeks; 2 participants (CRS Meal Officer and NSIA's Head of IT Department)</p> |

APPENDIX I: PACE ANALYSIS

Each dimension on the PACE Analysis table is scored as follows. For more information on scoring and the PACE Analysis tool please see “How to conduct a PACE client value assessment: A technical guide for microinsurance practitioners” (2012).

| | | |
|---|---------------|----------------------------------------------------------------------------------|
| 1 | Poor | Ineffective and not appropriate to client needs |
| 2 | Below Average | Broad and not specific to client needs, some effectiveness but needs improvement |
| 3 | Average | Broadly effective and relatively useful in general situations |
| 4 | Above Average | Effective in many situations, but has moderate room for improvement |
| 5 | Strong | Effective in almost all situations with limited or no room for improvement |

| Description | CRS/Caritas/NSIA | Tetoma/ Solidev | RAMU |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Location | Atakora (Chabicouma and Kotopounga) | Atakora (9 villages in Kotopounga) | National; 32 Sanitary Zones |
| Date launched | March 2012 | January 2014 | Official launch: December 2011; operational launch: March 2013 |
| Number of years operational | 3 years | 1 year | 2 years |
| Target population | 10,500 | 8,914 | 10,320,000 |
| Number of enrollees | 1,351 | 200 | 21,280 |
| Coverage rate | 12.9% | 2.2% | 0.2% |
| Type of model | Partner-agent model; externally managed by NSIA | Community-based, health mutual, nonprofit organization | Externally managed by government |
| Source of funding/ Financial sustainability | CRS Private Funds; USAID funds pending approval. Has not yet reached financial sustainability | Society of Industrial Electricity and Building (SEIB-SA) and the Global Fund (health mutual no longer receives external funding, but during the start-up phase the Global Fund provided a guarantee fund of 500.000 F); non-profit organization with no access to external funding and health mutual leaders are not paid, potential risk for inability to sustain itself in the long-term | Traditional sources (including: national budget; local government budgets; contributions from technical and financial partners; grants and donations) and innovative sources (including: taxes on mobile phones, financial transactions, fuel, alcohol and tobacco, port taxes) ; However, potential inability to sustain itself in the long-term |

| 1. PRODUCT | 2.67 | 3.15 | 2.39 |
|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.1 Package of services | 3.0 -> Consultation (curative, prenatal and postnatal consultation); Care (including: pharmaceutical products and medicines sold at participating health centers, medical costs for local hospitalization, simple births, small surgeries) | 4.5 -> All basic health services offered at local, participating health centers and the zone hospital with minimal exceptions | 5.0 -> Consultation, care and hospitalization ; drugs, medical consumables and blood products; lab tests, radiology and medical imaging ; required vaccines, except for those covered by free programs ; Equipment provided by basic, locally-made devices necessary to maintain the patient's health; medical transportation to the health facility or between health facilities with the means provided or approved by the health system (ambulance); benefits related to pregnancy and childbirth with the exception of those provided by free programs. |
| 1.2. Exclusions | 3.0 -> Snake bite serum which is considered very important by clients; cotton, syringes, soap | 5.0 -> Unnecessary services or medicines | 5.0 -> Services provided by health facilities not contracted by the government (e.g. private facilities); complementary or "soft" medicine, weight reduction, cosmetic surgeries, alcohol or drug detox, attempted suicide, services provided outside the national territory, services covered by free programs, unnecessary pharmaceutical products. |
| 1.3. Waiting period | 5.0 -> No waiting period to enroll | 5.0 -> No waiting period to enroll | 3.0 -> 2 month waiting period from purchase of health insurance to ability to use insurance at health facilities |
| 1.4 Rate covered by insurance plan | 4.0 -> Consultation = 100%; Care = 70% | 4.5 -> 80% | 5.0 -> District or Commune health center or Zone Hospital = 100%; Departmental Hospital = 90%; University hospitals = 80% |

| | | | |
|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.5 Ceilings or limits | 4.0 -> 40.000 F/assured/year; consultations limited at 300F per visit and 3 consultations per year; maximum pharmaceutical products = 4.000 F and max. 3 times per year; max hospitalization = 5.000 per year; simple birth max = 6.000 per year; surgeries max 3.000 and two times per year | 5.0 -> None | N/A -> Not yet defined |
| 1.6 Eligibility criteria | 3.0 -> Exclusive to SILC group members | 4.0 -> Inclusive of all groups | 4.0 -> Inclusive of all groups |
| 1.7 Value-added services | 4.0 -> Social network; Life insurance—capital: insured at 100.000 F | 3.5 -> Solidarity, participatory process | 1.0 ->None |
| 2. ACCESS | 2.50 | 2.88 | 2.00 |
| 2.1 Choice and registration | 4.0 -> Voluntary; electronic registration by Caritas field agents; easy registration process, no additional fees necessary; easily accessible because Caritas agents make field visits to register or renew members; could be more efficient in reminding clients to renew policies | 3.0 -> Voluntary; manual registration by field agents so possibility for errors; easy registration process but enrollees must purchase photos | 2.0 -> Voluntary (but will eventually become obligatory for government employees and other targeted groups); manual registration by government agents; enrollees must go to local treasury office and then seek out agent to register |
| 2.2 Information and knowledge | 2.0 -> Despite periodic “learning conversations” held by Caritas field agents there is an observed lack of understanding of details of HMI product benefits and limitations, health insurance package with list of exclusions is not readily available at health centers or for each SILC group; low level of understanding on how to receive life insurance pay out; no mechanism to in place to check if clients understand product | 2.5 -> Relatively easy to understand because virtually all health services are included and there are no limits or ceilings; field agents are close to target population and have held 6 informational sessions in the past year; uncertain if population has a good understanding due to lack of available information | 2.0 -> Information is disseminated via national radio and national TV stations, national marketing campaign, and a team of two agents per commune are responsible for collecting data and registering enrollees; Despite these efforts, many are still unaware of RAMU and how it functions, but it is gaining visibility |

| | | | |
|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.3 Payment process | 3.0 -> 6-month or 12-month payment options; due upfront; could include more flexible payment options such as monthly installments; SILC groups help members cover cost of premium through savings and lending | 2.0 -> 12-month payment due upfront; little flexibility but local agent will allow clients to pay in installments, though they do not receive membership until full payment is made | 1.0 -> 12-month payment due upfront; no flexibility or alternative payment options |
| 2.4 Proximity to participating health facilities/ Number of participating health facilities | 1.0 -> 2 Private health centers: Bodarima and St. Joseph's Chabicouma are located relatively close to target populations; must include public health centers and zone hospital to be effective | 4.0 -> 3 Public and Private Health Centers: Yarikou, Kotopounga, Bodarima, and Natitingou Zone Hospital; includes both public and private health centers and zone hospital, meets client needs well | 3.0 -> All public health centers and hospitals; meets client needs well, but could also include private health centers and hospitals |
| 3. COST | 4.00 | 3.00 | 2.83 |
| 3.1 Cost of premium | 3.0 -> Premium = 3.480 FCFA per year, per person (290 F per month); For a family of 6 (two adults, 4 children) = 20.880 | 4.0 -> Premium = 2.200 FCFA (plus 1.000 per household) per year; For a family of 6 (two adults, 4 children) = 14.200 | 2.5 -> Premium = 12.000 FCFA per year, per person; 1.000 per year for children under 18 years ; For a family of 6 (two adults, 4 children) = 28.000 |
| 3.2 Other expenses | 5.0 -> No other expenses or transaction costs | 3.0 -> Enrollees must buy two photos for registration but otherwise no extra costs | 3.0 -> Transport costs to reach local treasury office and health center for registration |
| 3.3 Controls | 4.0 -> Accounting and medical controls at NSIA; skilled claims team with expertise in health insurance; good fraud controls with photo on card and beneficiary code; good claims ratio for clients at about 50%; has lean cost structure through employment of Caritas field agents; controls adverse selection by targeting SILC groups | 2.0 -> Controls are managed by the president, treasurer and secretary based in each target village who have little previous experience in health insurance; lean cost structure through locally-managed system; no controls for adverse selection or fraud | 3.0 -> Three levels of control: 1) Medical advisors; 2) Accounting controls; 3) Citizen control, to ensure that the patient was actually seen at the health center indicated; However, cost structure seems high and controls system burdensome |

| 4. EXPERIENCE | 3.38 | 3.2 | 1.5 |
|--------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.1 Reimbursement procedures | 3.0 -> Health centers use mini-iPads to submit invoices electronically to NSIA; they have received training on use of ICT devices and data can be tracked in real time; simple process for health insurance but reimbursement becomes complicated for life insurance as it requires clients to produce submit documents that are not easily accessible | 3.0 -> Health facilities submit paperwork to Tetoma and reportedly find this process easier than CRS/NSIA/Caritas's method with the ICT devices though everything is done manually | 2.0 -> Health facilities submit paperwork to government, but there has been long delays in receiving invoices and processing reimbursements, indicated that the system is flawed |
| 4.2 Time taken to process reimbursement | 4.0 -> Monthly (every 30 business days)— These deadlines are well-respected by NSIA who gives health centers a 15-day grace period to submit invoices and has a written contract that NSIA must reimburse them within 30 days | 3.8 -> Monthly—agreement seems more informal and potentially inconsistent | 1.0 -> Monthly (but to date, ANAM has not reimbursed a single health facility) |
| 4.3 Administration | 3.0 -> Clients receive membership cards (laminated with photo); but because Caritas experiences technical difficulties printing the cards and must print, laminate and cut each card by hand it can take up to 1–2 months to receive the card | 3.0 -> Clients must buy photos and then they are given paper booklets; it can take 1–2 days to receive the booklet | 2.0 -> Enrollees must go to local treasury office, then go to the health center or zone hospital to sign up with the RAMU focal points, then the focal points send their information to Cotonou and they receive their insurance card (sturdy cards, similar to credit cards) within 1 week, then they must wait 2 months before using the health insurance plan. |
| 4.4 Customer Service/ Feedback mechanisms | 3.5 -> Caritas field agents are trusted in the community and live within close proximity and can therefore respond to their needs; however, they have limited capacity as each field agent covers around 20 SILC groups and needs further training and improved feedback mechanisms | 3.0 -> Field agents live in targeted communities and are available to answer questions and concerns but may have limited capacity to answer questions due to lack of training or capacity | 1.0 -> RAMU plans to assemble local committees composed of community leaders and representatives to respond to enrollees questions and concerns; currently, there are 32 teams of two agents (1 team per sanitary zone) who are the focal points for enrollees; however, this has not yet been implemented |

APPENDIX J: FINANCIAL ANALYSIS

| INPUTS SHEET | | | | | | |
|---------------------------------------|--------|---------------------------------------------------------------------------------|-------------------------------------------------------------------|--------|--------|--------|
| General | | | | | | |
| Length of Donor-funded Support | 5 | years | | | | |
| Incurred Claims Ratio | 50% | incurred claims/ earned premium based on NSIA's estimates Mar 2012—Nov 2013 | | | | |
| NSIA's Coverage Rate | 70% | | | | | |
| Conversion Rate | 480 | FCFA = 1 USD | | | | |
| Target Population—Atakora | 9,500 | individuals (244 eligible SILC groups * (50% * 25 SILC members) * 4 ppl per HH) | | | | |
| Target Population—Zou | 15,250 | individuals (804 eligible SILC groups * (50% * 25 SILC members) * 5 ppl per HH) | | | | |
| Target Population—other SILCs | 50,250 | individuals (190 eligible SILC groups * (50% * 25 SILC members) * 5 ppl per HH) | | | | |
| Number enrollees—Scenario 1 | | | | | | |
| Year | 0 | 1 | 2 | 3 | 4 | 5 |
| Target Population | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 | 75,000 |
| Coverage Ratio | 8% | 20% | 47% | 73% | 100% | 100% |
| Number Enrollees | 6,000 | 15,000 | 35,000 | 55,000 | 75,000 | 75,000 |
| Number enrollees—Scenario 2 | | | | | | |
| Year | 0 | 1 | 2 | 3 | 4 | 5 |
| Target Population | 37,500 | 37,500 | 37,500 | 37,500 | 37,500 | 37,500 |
| Coverage Ratio | 8% | 20% | 47% | 73% | 100% | 100% |
| Number Enrollees | 3,000 | 7,500 | 17,500 | 27,500 | 37,500 | 37,500 |
| Revenues | | | | | | |
| Insurance Premium | 7.25 | USD/ year | | | | |
| Costs | | | | | | |
| Total Direct Costs—NSIA | 97,038 | USD/ yr. | Total 5-year NSIA direct costs from GDA budget divided by 5 years | | | |
| Additional Costs—Supplies | 49,581 | USD/ yr. | Total 5-year costs of supplies from GDA budget divided by 5 years | | | |
| Total Direct Costs—Caritas Natitingou | 6,767 | USD/ yr. | Annual Caritas Natitingou costs * 25% = cost of PSP model | | | |
| Total Direct Costs—Caritas Abomey | 6,767 | USD/ yr. | Annual Caritas Abomey costs * 25% = cost of PSP model | | | |
| Inflation | | | | | 2.90% | |
| Current risk free rate | | | | | 2.01% | |
| Corporate tax rate | | | | | 30.00% | |
| WACC or Project Specific Risk | | | | | 8.00% | |

Discount Rate (WACC + Rf) 10.00%

**SCENARIO 1
FINANCIAL ANALYSIS WITH GDA**

| | Donor funded period | | | | | Donor funding ends |
|-----------------------------------------|---------------------|-------------------|-------------------|-------------------|-------------------|--------------------|
| | 0 | 1 | 2 | 3 | 4 | 5 |
| COSTS | | | | | | |
| Total Direct Costs—NSIA | 97,037.84 | 99,851.94 | 102,747.64 | 105,727.32 | 108,793.42 | 111,948.42 |
| Additional Costs—Supplies | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 57,199.91 |
| Total Direct Costs—Caritas Natitingou | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7,807.19 |
| Total Direct Costs—Caritas Abomey | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 7,807.19 |
| Insurance Claims | 15,225.00 | 39,166.31 | 94,038.32 | 152,059.96 | 213,367.77 | 219,555.43 |
| Total Costs | 112,262.84 | 139,018.25 | 196,785.96 | 257,787.28 | 322,161.18 | 404,318.16 |
| Total Costs at discount rate | 112,262.84 | 126,380.23 | 162,633.02 | 193,679.40 | 220,040.42 | 251,049.76 |
| NPV Costs at discount rate | 1,918,329.36 | | | | | |
| | 0 | 1 | 2 | 3 | 4 | 5 |
| REVENUES | | | | | | |
| Revenues from insurance premiums | 43,500.00 | 111,903.75 | 268,680.90 | 434,457.02 | 609,622.19 | 627,301.24 |
| Total Revenues | 43,500.00 | 111,903.75 | 268,680.90 | 434,457.02 | 609,622.19 | 627,301.24 |
| Total Revenues at discount rate | 43,500.00 | 101,730.68 | 222,050.33 | 326,413.99 | 416,380.16 | 389,504.71 |
| NPV Revenues at discount rate | 2,821,901.43 | | | | | |
| Profits before taxes (TR-TC) | (68,762.84) | (27,114.50) | 71,894.95 | 176,669.74 | 287,461.01 | 222,983.08 |
| Taxes | 0.00 | 0.00 | 21,568.48 | 53,000.92 | 86,238.30 | 66,894.92 |
| Profits after taxes | (68,762.84) | (27,114.50) | 50,326.46 | 123,668.82 | 201,222.71 | 156,088.16 |
| Total NPV of project after taxes | 903,572.07 | | | | | |

**SCENARIO 2
FINANCIAL ANALYSIS WITHOUT GDA**

| | 0 | 1 | 2 | 3 | 4 | 5 |
|---------------------------------------|---------------------|--------------|-------------|-------------|------------|-------------|
| COSTS | | | | | | |
| Total Direct Costs—NSIA | 97,037.84 | 99,851.94 | 105,727.32 | 115,194.93 | 129,150.13 | 148,995.01 |
| Additional Costs—Supplies | 49,581.37 | 51,019.22 | 52,498.78 | 54,021.25 | 55,587.86 | 57,199.91 |
| Total Direct Costs—Caritas Natitingou | 6,767.34 | 6,963.59 | 7,165.54 | 7,373.34 | 7,587.17 | 7,807.19 |
| Total Direct Costs—Caritas Abomey | 6,767.34 | 6,963.59 | 7,165.54 | 7,373.34 | 7,587.17 | 7,807.19 |
| Insurance Claims | 7,612.50 | 19,583.16 | 47,019.16 | 76,029.98 | 106,683.88 | 109,777.72 |
| Total Costs | 167,766.39 | 184,381.50 | 219,576.34 | 259,992.83 | 306,596.21 | 331,587.03 |
| Total Costs at discount rate | 167,766.39 | 167,619.55 | 181,468.05 | 195,336.46 | 209,409.34 | 205,889.46 |
| NPV Costs at discount rate | 1,998,760.77 | | | | | |
| REVENUES | | | | | | |
| Revenues from insurance premiums | 21,750.00 | 55,951.88 | 134,340.45 | 217,228.51 | 304,811.10 | 313,650.62 |
| Total Revenues | 21,750.00 | 55,951.88 | 134,340.45 | 217,228.51 | 304,811.10 | 313,650.62 |
| Total Revenues at discount rate | 21,750.00 | 50,865.34 | 111,025.17 | 163,207.00 | 208,190.08 | 194,752.36 |
| NPV Revenues at discount rate | 1,410,950.71 | | | | | |
| Profits before taxes (TR-TC) | (146,016.39) | (128,429.63) | (85,235.89) | (42,764.32) | (1,785.12) | (17,936.41) |
| Taxes | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Profits after taxes | (146,016.39) | (128,429.63) | (85,235.89) | (42,764.32) | (1,785.12) | (17,936.41) |
| Total NPV of project after taxes | -587,810.06 | | | | | |

