

Sustaining Health: The Role of BRAC's Community Health Volunteers in Bangladesh, Afghanistan and Uganda

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ACRONYMS AND DEFINITIONS

ARI	Acute Respiratory Infections
BDP	BRAC Development Programme
BHP	BRAC Health Programme
DOTS	Directly Observed Treatment – Short Course
CFPR-TUP	Challenging the Frontiers of Poverty Reduction – Targeting the Ultra Poor
CHP	Community Health Promoter (The term used in BRAC Uganda Health Programme)
CHW	Community Health Worker (The term used in BRAC Afghanistan Health Programme)
EHC	Essential Health Care
EPI	Expanded Programme on Immunization
MNCH	Maternal, Neonatal and Child Health
PHC	Primary Health Care
PPP	Purchasing Power Parity
SK	<i>Shasthya Kormi</i> – (Female, salaried supervisor of the SS)
SS	<i>Shasthya Shebika</i> (The term used in BRAC Bangladesh Health Programme)
VO	Village Organization

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I have tried to address the range of comments and suggestions received on several earlier drafts of this report. A study of this size and scope undoubtedly omits a range of data and analyses that could have improved the overall report. We accept full responsibility for these omissions.

EXECUTIVE SUMMARY

This study fills an important gap in current understanding about a critical aspect of BRAC's health programmes – the financial sustainability of the community health volunteers (commonly referred to as *Shasthya Shebikas* in Bangladesh) that are the cornerstone of BRAC's health programmes. *Shasthya Shebikas* (SS) are a cadre of female volunteers that are recruited and trained by BRAC to provide a range of essential healthcare services to their communities. What is unique about BRAC's approach is that, while these women can be considered volunteers they do not receive a salary or monthly stipend, they are provided with financial incentives on the sale of basic medicines and selected health commodities to their community. This sets BRAC apart from other health programmes that rely on either entirely salaried or volunteer cadres of community health workers (CHW) and raises important questions about the financial and programmatic sustainability and replicability of BRAC's approach.

CHWs like the SSs play a crucial role in terms of human resources for health in Bangladesh and other countries. The 2007 Bangladesh Health Watch reports a shortage of 800,000 health workers in Bangladesh. Relying on formal institutions to train health workers requires significant time and financial investment, therefore, the SSs can be a critical and cost-effective input into the provision of essential health services in Bangladesh. BRAC was among the first organization to set up a community health volunteer (CHV) programme in Bangladesh in the 1970s. Its original CHV programme recruited and trained male paramedics to treat minor illness for which they received a small fee for referrals. Lessons from BRAC's early CHV experience included issues related to remuneration, supervision and accountability. BRAC addressed these issues by recruiting and training cadres of female health volunteers. Since then, BRAC has adapted and revised the programme in response to programmatic and community needs and has effectively scaled up the programme from 1,080 SSs in 1990 to 80,000 SSs operating in 64 districts in Bangladesh today. The SSs are an impressive force in terms of their numbers, geographic coverage, and quick mobilization. The 80,000 SSs provide home visits to 18 million households every month (BRAC 2009).

The BRAC Health Programme operating model clearly relies on the successful recruitment, training, and retention of female CHVs. The rationale for BRAC's approach is that community-based financial incentives of a volunteer community health workforce can achieve wide programme coverage and respond to community essential healthcare needs while providing income opportunities to its female volunteers.

This study addressed two main research questions:

- 1) Is the *Shasthya Shebika* approach of the BRAC Health Programme a financially viable model for the SSs themselves as well as for BRAC?; and
- 2) Is this approach generalizable to other countries?

In addition to review of the published and unpublished literature and relevant programme documents on CHWs internationally and in Bangladesh, the study collected primary data related to specific aspects of the SS experience – e.g., monthly income, incentives, procurement of supplies, and competition. This data was collected through a structured questionnaire administered to a sample of 270 SSs in Bangladesh, 210 CHWs in Afghanistan, and 158 Community Health Promoters (CHP) in Uganda. Survey data were analyzed using summary statistics and cross tabulations to provide descriptive information to inform questions of sustainability and replicability of the programme. While this study was conducted in three countries, it is not intended as a direct comparison between the three health programmes. The underlying programme context, age, scale and scope are so different it makes any direct comparison impossible.

Major programme-relevant findings

Review of BRAC health programme's revenues and expenditures between 2007 and 2010 suggest that in some areas it is successfully self-financed. (e.g., BRAC Brace and Limb Centre) and other programmes, such as the Essential Health Care (EHC) Programme are partially financed by BRAC. However, the majority of revenue sources remain donor grants (86% in 2007). In Uganda and Afghanistan, both more recent programmes, the health programmes are entirely donor-financed.

BRAC health programme model relies on the SSs; ensuring their financial sustainability which will reduce dropout rates will help ensure programmatic sustainability. The unit cost to BRAC of recruiting and training a *shebika* in Bangladesh is US\$ 89.48 (PPP-adjusted \$245) in the first year and US\$ 34.20 (PPP-adjusted \$94) in the second year. In Uganda, the costs are significantly higher and estimated to be US\$ 394 (PPP-adjusted \$1204) in the first year and US\$ 208 (PPP-adjusted \$636) in the second year. In BRAC Afghanistan programme the costs are US\$ 247 (PPP-adjusted \$427) and US\$ 84 (PPP-adjusted \$145). Clearly there are large cost differences between the programmes and these reflect the different pricing and cost structures in different settings. Salary costs, for example, are much higher in Uganda than Bangladesh. The Bangladesh programme is also much older and more established and can benefit from economies of scale that the newer programmes cannot. The wide variation in programme costs per *shebika* in different settings also signals the need for flexibility – in terms of programmatic design and financial adaptations when BRAC begins programmes in new settings.

SSs, CHPs, and CHWs are active. In all countries in the study, BRAC's CHWs are quite active. The average number of hours SSs in Bangladesh reported working each

day was 3.6 hours and SSs reported that, on average, they could visit 14 households a day. In Uganda, CHPs reported working 3.2 hours per day visiting an average of 9 households per day. In Afghanistan, women reported working 3.6 hours per day and visiting 5 households a day. The fewer number of households visited in Afghanistan likely reflects the increased distance between homes and the geographic and cultural challenges associated with travel for women in Afghanistan.

Replenish inventory between refresher trainings. Eighty percent of the SSs in Bangladesh and 85% in Uganda replenished their product supply between refresher training which suggests that they are able to move at least some of their inventory. It could, however, also suggest that SSs do not have income to purchase and hold a lot of inventory each month. It is financially more convenient for them to buy fewer supplies more frequently. Interestingly, 10% of the SSs in Bangladesh said that they purchased medicines or supplies outside of BRAC to use in their work suggesting that there is community demand for specific products. This may be an area that the programme wants to examine more closely as it has implications for inventory management.

There was a wide range of reported monthly income between the three country study sites. For the SSs in Bangladesh, the reported mean monthly income in the last month was Tk. 360 (PPP \$14.07) and mean income per average month was slightly higher at Tk. 374 (PP \$14.62). Almost all women reported monthly fluctuations in sales. In Uganda, the average monthly income was UX 38,222 (PPP \$58.40) and in Afghanistan it was Af 143 (PPP \$4.94). Because of differences in cost of living and general economic situations, comparing income between such different settings is not possible. For example, the relatively lower monthly income reported in Afghanistan likely reflects that the Ministry of Public Health in Afghanistan does not allow CHWs to sell medicines, thus reducing their income potential.

Characteristics of high performing SS. Basic statistical analysis of survey results suggests that high performers in Bangladesh were more likely to have a current loan with BRAC than low performers. The correlation between length of time working with BRAC and SS's monthly income is positive and statistically significant, which suggests that those SSs who have worked with BRAC for a longer period are more likely to earn more than those working with BRAC for a shorter time. The fact that high performers are more likely to have received health-related training outside BRAC is a potentially interesting result. Rahman and Tasneem (2008) also found an association between SSs' income and additional training from outside BRAC. This may be a useful additional selection criterion for recruiting SSs.

Expanding product mix. In the surveys in Bangladesh and Afghanistan, 30% of SSs and CHWs said that they wished they could sell additional health commodities, medicines and/or non-health commodities. In Uganda, 67% of CHPs wished to sell other commodities and medicines. This is an important programmatic question as it has implications for procurement, inventory management and pricing. It also raises questions about how much the programme will respond to community demands for non-health commodities such as school supplies for children.

The self-reported motivations for becoming an SS were primarily related to financial incentives in all settings except Afghanistan. Non-financial incentives were reported less frequently than financial incentives in Bangladesh and Uganda suggesting that women see their role as an SS as income-earning opportunity. Many SSs reported that their monthly earnings made a financial difference to their household. Seventy-five percent reported that their SS income makes a big difference to household income. Seven percent of the SSs in Bangladesh reported of 'obtaining financial independence' as an initial motivation for becoming an SS, yet 97% reported that being an SS had given them financial independence. In Uganda, 80% of the CHPs reported that being a CHP has given her financial independence. In Afghanistan, 15% of the women reported their working as a CHW gave her financial independence.

Utilization of microfinance is variable. Sixty-eight percent of the SSs in Bangladesh said that they had ever borrowed a loan from BRAC and 34% had current loan with BRAC. Thirteen percent had more than one loan with BRAC and 36% had loan with another NGO. In Uganda it was 86%. In Afghanistan, 27% of the CHWs reported of having loan from BRAC. This suggests that access to microfinance loan is not necessarily an incentive for all SSs. This may be an area where the programme needs to adapt some flexibility. It appears that not all SSs want or need access to microfinance. Several CHPs in Uganda said that they did not want to take another loan because they were having trouble repaying it while also managing to purchase their CHP supplies on a monthly basis. In Afghanistan, the low numbers of CHWs with current microfinance loans may reflect that in Afghanistan programme VO membership is not a selection criteria for becoming a CHW.

Current VO membership is not universal and there is variation between study countries. Forty-one percent of the SSs in Bangladesh reported that they were current VO members despite this being a SS selection criterion (except in Afghanistan). Thirty-six percent of the VO members had dropped out. VO membership rates are much higher in Uganda (91%) and much lower (10%) in Afghanistan. In Afghanistan, the programme is structured closely with the government of Afghanistan (MoPH). Therefore, VO membership is not a selection criterion as it is in other BRAC country programmes. Basic statistical analysis of survey results suggest that high performers were more likely to currently have a loan with BRAC than low performers.

These results may suggest the need to re-examine the role of VO membership in recruiting SSs. We asked the respondents to describe how being a BRAC VO member affects her work and productivity as an SS. In Bangladesh, 22% said that people trusted her more because she was a VO member, and 13% said that it made it easier for her to sell products. Only 2% reported that being a BRAC VO provided her the necessary microfinance to purchase products to work as a SS and 30% reported that it had no effect. In Uganda, 31% reported that people trust her more because of her VO membership and 36% said that it made it easier to sell products while 32% reported that VO membership had no effect. In Afghanistan, the reported benefits of VO membership were slightly higher: 52% said that people trust her more

and 21% said that they needed loan to buy supplies – but the overall numbers of VO members are lower in Afghanistan. However, when we compared high and low performing SSs in Bangladesh, 51% of the high performers reported being VO members as compared to 36% of the low performers. Furthermore, 96% of the high performers replenished their supplies between refresher training as opposed to 73% of the low performers.

Financial incentives

In terms of financial incentives the quantitative and qualitative data suggest several things. Firstly, the SSs are financially motivated to sell medicines and health commodities and the time use data suggest that they spent significant proportion of their time in these activities. Secondly, the majority of SS/CHP/CHW would like to expand the products they sell to include additional health and non-health products. These new products include antibiotics, malarial treatments, ulcer treatments, and non-health products like school supplies for children, sugar, and cooking oil. Clearly there is a potential programmatic trade-off here between increasing the SS's ability to respond to community demand and in turn increase her sales and monthly income, while ensuring the preventative and health education aspects of the programme are sufficiently addressed.

SS comparative advantages

The SSs in each of the settings reported that they felt competition from pharmacies, private clinics, and other providers that limit their income. It is important that the comparative advantage of the SS be maximized to address this competition. Her first comparative advantage is that she provides household delivery of healthcare and products. By expanding the product range or mix of products that she provides to households she could potentially increase her income and compete more effectively in the local market. It appears from the qualitative and quantitative data that BRAC is mostly meeting the demand for medicines. However, SSs report that there are a range of health commodities and non-health products that the community is demanding. There are two major trade-offs here – the first is the added programme costs for procuring, storing, and transporting additional products to branch offices. If some of these goods were produced by BRAC enterprises this could keep costs down, at least in Bangladesh where production centres are functional throughout the country. This may be more cumbersome in programmes like Uganda that are newer, do not have BRAC enterprises established and face more challenging procurement requirements. The second is the potential that as more products are added to her inventory, the SS will spend more time selling products and less time on the preventative aspects of her role as SS. Questions about whether or not SS are becoming a sales workforce as opposed to a health workforce could be raised.

The SSs' second comparative advantage is the BRAC name or 'brand'. Ensuring that BRAC products are responding to community demands and are seen as high quality will be critical to SS sales performance. In each country some respondents said that they had difficulties in selling products because people do not prefer BRAC

products (29% in Afghanistan; 46% in Uganda; and 25% in Bangladesh). Performing market research to better understand the perception of the BRAC brand could improve the likelihood that SS can sell products and compete with other distribution outlets. The fact that 10% of the SSs in Bangladesh reported buying products outside BRAC for sale may be in response to a particular community demand for a product. In order to capitalize on both of their comparative advantages (household delivery and BRAC brand), additional training in social marketing could help SSs maximize their monthly sales and income.

When asked if they ever considered quitting their work as an SS, 13% replied yes. Of them, 83% had considered quitting their work because of too low payment, 6% said because the work is difficult; and less than 1% attributed the reasons to better paid job alternatives, the need to care for their children, and disapproval of husband or in-laws. It is also interesting to note that SSs do perceive that they have other economic opportunities available to them and yet they continue to work as SS.

Non-financial incentives

Non-financial incentives, while more difficult to measure, must also be addressed. The survey results found that 'increased social recognition' is only somewhat important. In Bangladesh, 18% of the SSs said that increased social recognition was an advantage to working as an SS; in Uganda it was reported to be 11% and in Afghanistan 16%. In Afghanistan, 'social recognition' was mentioned by 40% of the CHWs as the reason for becoming a CHW. It is possible that the incentive of social recognition wanes over time and as recognition is achieved. This may suggest that additional non-financial incentives might be required to continue to recognize the SS. These may include certificates for special training received, awards recognizing extremely high sales in a period or of a particular product or activity, or providing a *saree* or *salwar-kameez* in recognition of long-term service.

Another non-financial incentive is to offer additional specialized training for SS. In all of the settings, many SS requested additional and specialized training to learn additional health skills such as taking temperature and blood pressure and screening for diabetes. Such training would increase her skill and potentially make her more competitive in the community. The trade-off is that training add cascading costs to the programme – from master trainers to supervisors – and not all SSs will be interested in receiving additional training. In addition, if BRAC responds to the request of some SSs for additional and more complicated health activities, it might need to revisit the literacy requirement for recruiting SS.

An additional practical training in social marketing and inventory management can be offered. As BRAC expands its product line in programmes like Uganda, those women who have social marketing skills tend to be higher performers. Others, who are unable to manage their inventory or cannot pay back their loan(s), will not be able to perform up to their potential. These women may benefit from some training in social marketing as well as basic financial and inventory management.

Future research agenda

The results of this study suggest a rich research agenda for the future:

Better understanding of inventory management and its barriers. Eighty percent of the SSs in Bangladesh replenished their product supply between refresher training. Why are they choosing to replenish supplies between refresher training? Is it because they do not have income available to purchase and hold sufficient inventory each month and it is financially more convenient for them to buy fewer supplies more frequently? Is it because they are responding to a particular household need or demand? Further research on how SSs manage their inventory could help identify slow or fast-moving items. Also, 10% of women in Bangladesh said that they purchased medicines or supplies outside BRAC to use in their SS work. Further examination of which items they purchase outside BRAC and why they do so is also important for the programme to understand.

Competition and its effect on SS performance. The SSs in all the countries face competition from pharmacies and public and private clinics. A careful study of how such competition impacts her ability to sell medicine and commodities could provide useful information for the programme. It will also be important to document the community perspective of the medicines and commodities sold by the SS. For example, are they perceived to be more expensive than drug shops?

Document and understand the community perspective. How does the community perceive the role of the SS? How does the community perceive BRAC products? Are community members skeptical of SS quality and ability? If so, what could be done to increase community awareness about the SS and her role?

Role of VO membership in SS performance and productivity. How does being a VO member help or hinder an SS in carrying out her activities?

General lessons learned and recommendations

While this report does not make direct comparison between the three country programmes, when taken as a whole, this multi-country study provides useful lessons learned and recommendations.

Generate and foster government support

Because of its long duration, the Bangladesh programme enjoys a history of developing a strong relationship with the government. The fact that the BHP works in partnership with the government of Bangladesh on several national programmes is testament to this. As BRAC moves into new countries, establishing and negotiating its relationships with the government and especially the ministry of health is extremely important. Experience also suggests that this is an unpredictable and time consuming process. BRAC has been very effective in building public-private partnerships in both Uganda and Afghanistan. In Afghanistan the process was

guided by establishment of BSPH. In Uganda, however, BRAC had to develop these relationships from the ground up. There are important lessons in terms of process and resource allocation here that other country programmes can learn from.

Be willing to change the programme and be flexible

Country experience suggests that the SS programme is replicable in other countries but with necessary adjustments to respond to the local environment. In Uganda, for example, the number of households SSs are able to visit is being reconsidered because the geographic distance and terrain is very different than in Bangladesh. In Afghanistan, it was difficult for the CHWs to visit 120 households in a month. This was due to both the geographic distance between homes; population clustering around water sources; the conservative nature of the culture that makes travel for women difficult; and ethnic differences within catchment areas making it difficult for some women to visit the homes of other ethnic groups/identities.

Have a clear assessment of SS performance and expectations

It was not always clear how the programmes defined high and low performing SS. Making performance assessments more transparent may help the SS/CHP/CHW in setting individual performance goals. There is also a question of how the performance of SSs/CHPs/CHWs should be assessed. Monthly sale of products may be too narrow a measure and neglect a host of other activities and benefits (e.g., health education) that the SS provides her community.

Do not lose sight of non-financial incentives

As the programme aims to be financially sustainable, it should not do so at the neglect of the range of services that SS provides her community, many of which are not immediately financially remunerated. While it may be possible to model the appropriate product mix and profit margin to make the programme financially sustainable, there needs to be continued and careful tending to the other aspects of how the SS spends her time. There is a potential tension between maximizing the sales of medicines and health commodities versus providing basic health education and preventative care in the community. It may be important in future to think about ways to incentivize general preventative health interventions. One approach might be to reward SS for overall improvements in basic health social indicators in her catchment area. These could be measured using BRAC's existing MIS system and measured on an annual basis to identify trends. The SS is not just a medicine seller, she promotes the overall health and well-being of her community. Finding ways to reward her for overall health improvements in her community would incentivize her to focus on preventative activities, such as health education, that are currently not financially incentivized.

Empower SS to manage inventory appropriately

Ensuring regular and affordable supplies to the SS is critical to her success. In Bangladesh this system has been developed over years and is efficient and well-

functioning. In Uganda, the programme started by giving each CHP a loan for her first set of supplies. She was expected to pay this back in 40 installments. For some women, this has not been a problem. These women may be better off or may simply be better managers of their money or have higher sales and profits from which to pay back their loans. Other women, and especially those with more than one loan, may fall behind on repayments for their CHP supply loan creating a situation where they are unable to resupply and, therefore, cannot earn the money required to repay the loan. This vicious cycle makes her unable to function properly as a CHP.

Re-examine importance of microfinance as an incentive

SSs are to be recruited from the VOs and are provided access to microfinance loans to support not only their work as an SS but to other economic opportunities as well. The data from this study suggest that not all the SSs take advantage of their access to microcredit. Nineteen percent of SSs in Bangladesh; 4% of CHWs in Afghanistan; and 60% of CHPs in Uganda reported of using microfinance loans to support their work. It is thought that SS may perform better with the support of her VO and the social capital that comes with VO membership. The fact that so many SSs are not active VO members raises a critical question of how important SS links with VO are. When asked how being a VO member affects their role as SS/CHW/CHP 30% of SSs, 32% of CHPs, and 21% of CHWs said that being a VO member had no effect. In Bangladesh 22% of the women said that being a VO member increased community trust in their work and 13% said that it made it easier to sell products. Further exploration of how important VO membership is for the recruitment and retention of SS will be important for BRAC to consider.

Describe notions and understanding of 'volunteerism'

The SSs are a volunteer cadre but are also financially incentivized by the creation of community demand for drugs, commodities, and basic health services. In Uganda, CHPs expressed concern that their community did not understand that they were volunteers. The community thought they were receiving a monthly salary from BRAC (which they got when they went to the refresher training) and that they were selling drugs to make additional profit. Several CHPs said that if the community understood better that they were volunteers it would make their work as CHP easier. Misunderstanding or misperceptions of what it means to work and serve as a volunteer did come up in discussions with SSs in all three settings. Furthermore, understanding of what it means to be a volunteer is culturally bounded and influenced by local context.

Generalizability of BRAC SS approach

The quantitative, qualitative, and participant observation data from this study suggest that the BRAC Bangladesh SS approach is generalizable to other settings – or at least to the contexts of Uganda and Afghanistan. These programmes have, however, had to explicitly adapt the model to reflect the local context. There are some useful lessons in these examples for BRAC as it branches into other countries. The

adaptations these country programmes have made are in three main areas: 1) health policy and health systems; 2) socio-cultural environment; and 3) management and logistics. It may be useful to generate a checklist of major issues in these areas that other programmes have had to adapt or are considering adapting.

This study helps to document the unique and fundamental role that SSs play in BRAC's Health Programme and their community. The results suggest that long-term financial sustainability is possible but complicated by ensuring that all the components of the SS role are maintained. The SSs are a mixed motive cadre – not entirely volunteers, but not salaried either. The data from this study suggest that it is a combination of financial and non-financial factors that motivate a SS to continue her service to BRAC and her community.

INTRODUCTION

This study was carried out between December 2008 and September 2009 in response to a grant from the Rockefeller Foundation to BRAC USA (Grant #2008/018).

This study fills a gap in current understanding about a critical aspect of BRAC's health programmes – the financial sustainability of the community health volunteers (commonly referred to as *Shasthya Shebikas* in Bangladesh) that are the cornerstone of BRAC's health programmes. *Shasthya Shebikas* (SS) are a cadre of female volunteers that are recruited and trained by BRAC to provide a range of essential health care (EHC) services to their communities. What is unique about this approach is that while these women are considered as volunteers they do not receive salary or monthly stipend. They are not entirely volunteers because they are provided financial incentives to sell basic medicines and selected health commodities to their community. This sets BRAC apart from other health programmes that rely on either salaried or volunteer cadres of community health workers (CHW) and raises important questions about financial and programmatic sustainability and replicability of BRAC's approach.

While there have been studies and reviews of the BRAC Health Programme (BHP), there have been few detailed analysis of BRAC's community health volunteer (CHV) approach from a business or financial perspective (Rahman and Tasneem 2008). Nor have there been studies that specifically address the question of the long-term financial sustainability of the CHV approach from the perspectives of both BHP and the SS herself.

Financial and programmatic sustainability are important issues for BHP which provides a wide range of health services and programmes all over Bangladesh. Some of these programmes like the malaria programme and Water, Sanitation and Hygiene (WASH) programme rely primarily on donor funds. Other programmes, such as EHC programme, are partially self-sustaining. BRAC is committed to improving the financial sustainability of its EHC programme. BRAC's commitment to sustainability is a driving force behind this study and it is hoped that these results will inform the financial sustainability of the SS approach and, therefore, protect BHP from potential fluctuations or reductions in donor funding.

This study also addresses the issue of the replicability or transferability of BRAC Bangladesh's CHV approach to other settings – specifically to Afghanistan and Uganda. This is especially timely as BRAC International programmes expand in scale and scope. The question of how well the SS model, developed in Bangladesh decades ago, transfers into settings with different health systems and regulatory,

policy and legal environments is critical. Afghanistan and Uganda are useful examples in which to examine questions of transferability. They provide regional diversity and both are settings which may yield valuable lessons as BRAC becomes increasingly involved in other post-conflict areas such as Sudan, Sierra Leone and Liberia. This is a unique study for BRAC as it is one of the first multi-country comparative studies that BRAC has undertaken.

While this study provides useful information for BRAC Bangladesh, BRAC International programmes, and BRAC USA, it also provides valuable lessons and insights for the broader public health community. The study results inform larger questions related to the role of unpaid health volunteers in the provision of primary healthcare services; the role of private providers and non-state sector entities in the public health system; and overall questions related to the measurement of financial and programme sustainability in community health programmes. The results are, therefore, very relevant for and of potential interest to other NGOs and the international donor community.

Project description

Study rationale and research questions

This study addresses two main research questions:

- 1) Is the *Shasthya Shebika* approach of the BRAC Health Programme (BHP) a financially viable model for the *Shasthya Shebikas* themselves as well as for BRAC?; and
- 2) Is this approach generalizable to other countries?

To answer these questions, the study addressed four research objectives:

- 1) To determine BHP's financial operating model;
- 2) To describe how financially sustainable and viable the BHP has been for BRAC as an organization and for the SSs themselves;
- 3) To describe the key strengths and weaknesses of the community health volunteer model; and
- 4) To determine to what extent the model is replicable and sustainable in other countries (i.e., Afghanistan and Uganda).

Study caveats

There are several qualifications to this study:

- Because BHP has a range of activities and programmes that rely on the SS, it was necessary to limit the study to a manageable size and scope in the Bangladesh study. This was done in consultative discussion with senior management in BHP, BRAC RED, and BRAC International programmes and it was decided to focus this study on those SS providing EHC services in rural areas of Bangladesh.
- The study does not assess the health impact of BHP as this is beyond the scope of the study. It is in no way an analysis or evaluation of BHP in any of the study country sites.
- The units of analyses in this study are BRAC and the CHVs themselves. It does not take into account the perspectives of community members or the patients of the SS.
- BRAC's CHWs are referred to by different terminology in each country study sites; in Bangladesh they are referred to as SS, in Uganda they are called CHPs, and in Afghanistan they are called CHVs. The report uses the term SS except when referring specifically to Afghanistan or Uganda.
- This is a study of BRAC's CHWs in three countries and similar research instruments and methods were standardized to the degree it was possible. However, direct comparisons between the countries are not possible (nor intended) due to the significant variation between the programmes in terms of age, size and scale, and country level factors.

Organization of the report

This report is organized into five sections. The first section describes some general findings from a review of the international literature on CHWs and financial and economic costing of CHW programmes; section two briefly describes BRAC and BHP; the third section describes the study design and methodology; the fourth section presents the study results for Bangladesh, Afghanistan, and Uganda; and the fifth section discusses findings and conclusions in terms of sustainability and generalizability.

UNDERSTANDING OF COMMUNITY HEALTH WORKER MODELS AND FINANCIAL COSTING APPROACHES: A LITERATURE REVIEW

Since 1978 and the Alma Ata Conference on Primary Health Care (PHC) there has been international interest in the role of community health workers (CHW) in the provision of basic health services. In response, CHW programmes were established in many developing countries. In the 1970s and 1980s CHWs were considered the foundation for providing primary healthcare (Haines *et al.* 2007) and there was great enthusiasm for their role. The focus on PHC addressed two underlying goals; to address shortages of health professionals with a low cost alternative; and, more fundamentally, to create political change agents in communities (Standing and Chowdhury 2008). Interest in CHW programmes diminished somewhat in the 1990s for several reasons including the challenges of scaling up CHW programmes in a sustainable manner while still maintaining their effectiveness (Haines *et al.* 2007). Other problems included institutional constraints such as “poor supervision; lack of training and equipment; tensions between preventive and curative roles” (Standing and Chowdhury 2008) and the view that vertical programmes were more successful (Haines *et al.* 2007).

International interest in the potential role for CHWs in health programmes has been rejuvenated in part because of concerns about limitations and constraints in human resources for health, particularly in rural, hard-to-reach areas (Joint Learning Initiative 2004, Haines *et al.* 2007) and in light of WHO’s renewed focus on primary healthcare (World Health Report 2008). Pressure to achieve the Millennium Development Goals has also led to current interest in an increased role for CHWs (Haines *et al.* 2007).

A wide range of terms have been used to refer to CHWs in the international literature and this has led to some confusion about their role and definition. They are sometimes referred to as ‘community health workers’; ‘village health workers’; ‘lay health workers’; ‘auxiliary health workers’; ‘community health volunteers’; and ‘health promoters’ among other terms. Despite the different terminology, the description and role of CHWs is generally similar. The WHO has defined community health workers as those workers “who live in the community they serve, are selected by that community, are accountable to the community they work within, receive a short, defined training, and are not necessarily attached to any formal institution” (Swider 2002, p12). There are other models or understandings of CHWs. Standing and

Chowdhury (2008) usefully highlight four different models and roles for CHWs in the future: 1) generic community health worker; 2) specialist CHW that are trained to focus on a particular disease or set of diseases; 3) expert patient/advocate approach; and 4) community mediator.

These workers, usually women, are often referred to as the ‘cornerstone’ of any primary health system. They are usually provided some limited training but do not have formal professional or paraprofessional certification. In some settings, they are considered to be part of the formal health workforce but do not replace the need for facility-based health services.

Arguments for CHW programmes

The main arguments for CHW programmes have been that they are a more appropriate and cost-effective way to provide basic health services to under-served populations compared to clinic-based services. In addition to being viewed as less costly, CHW programmes have also been promoted as reducing social distance, cultural and linguistic gaps and fostering self-reliance and local participation (Walker and Jan 2005, Walt 1988). Additionally, they can provide a link between the formal health system and the community (Bender and Pitkin 1987).

Assessments of the impact and effectiveness of CHW programmes have been mixed but are generally positive. Lewin *et al.*'s (2008) systematic review of 48 studies of lay health workers (LHW) concluded that inclusion of LHWs in health programmes resulted in improvements in immunization rates, breastfeeding practices, morbidities related to child illnesses, and TB treatment. Haines *et al.* (2007), in their evaluation of CHW studies, conclude that, CHWs “...can reduce the costs of transport and lost productivity for recipients associated with seeking health care, both of which can act as barriers to utilization” (page 2125). CHWs can also improve quality of care. A study in Bangladesh that compared the quality of care provided by health professionals versus other care givers found that low-level community based workers (family welfare visitors and nursing aides) did a better job in providing rational prescription of antibiotics and advice compared to other caregivers (Haines *et al.* 2007). An additional benefit of using CHWs is in emergency situations – such as the earthquake in Pakistan in 2005 where 8,000 CHWs were quickly mobilized to respond to their local communities in earthquake affected areas.

While there is encouraging evidence that CHWs can increase access to care in a potentially equitable and cost-effective manner, others have cautioned that the CHW role can ‘be doomed by overly high expectations, lack of a clear focus, and lack of documentation’ (Swider 2002, p19). One critical issue related to CHW programmes is a tendency for high rates of attrition. A comprehensive review of CHW programmes found attrition rates ranged between 3.2 to 77% with higher rates usually associated with volunteers. CHWs who are financed by their community have two times the rate of attrition as those who are government salaried (Bhattacharya *et al.* 2001). An additional programme concern includes the tendency to overload the CHW with additional responsibilities (Walley *et al.* 2008).

Compensation of CHWs

How to remunerate and compensate CHWs is a fundamental question and challenge for CHW programmes and there are several country examples to draw upon. There is a range of financial incentives including: offering a small honorarium; paying a small monthly salary from the state; payments for attendance at training sessions; and provision of cash incentives for drug sales. The source of payment for CHWs also varies and may come from the community, NGOs, the government or for-profit companies.

A review of incentives and disincentives for CHWs suggest that payment of CHWs can bring unforeseen problems. The money can create distrust on the part of the community about the CHWs underlying motives and the community may start to see them as employees of the government. The money tends not to be considered enough by many of the CHWs creating issues for programme management; sustainability of monetary payment is challenging and projects often face irregularities in payment or may have to phase out payment when a project ends; and comparison of salaries and compensation can generate tensions between CHWs and other health workers (Bhattacharya *et al.* 2001).

Many programmes use incentives other than financial remuneration. These include in-kind payments of food, housing, childcare or material items such as bags and umbrellas as well as preferential treatment for CHWs and their families for credit or literacy programmes and at health facilities. “Alonso and Hurtarte (2000) have found, however, that incentives given too often or in too many forms are unsuccessful and demotivating in the long term” (Bhattacharya *et al.* p18). Regardless of the type of compensation that is provided, prior experience suggests that despite their short-term positive effects, they may pose problems or issues in terms of long-term sustainability. Bhattacharya *et al.*'s (2001) review of CHW programmes finds that “incentives were implemented ad hoc rather than as part of a systematic programme...new incentives are often proposed in reaction to a crisis of low morale rather than as part of an overall programme effort to maintain high morale.” Furthermore, they recommend that “[p]rogrammes should consider systematic effort to plan for multiple incentives over time to build CHW's continuing sense of satisfaction and fulfillment” (p36).

Pakistan, for example, pays its Lady Health Workers (LHW) a monthly salary and considers them to be part of the government health system. The LHW programme recruits and provides basic training to young married women who provide door-to-door health services in their communities: these LHWs are rural women who serve 200 households in their community. They are given a 15-month training and they provide maternal and child health services, general health promotion and education, and referral to local health facilities. They collect routine health statistics in their catchment area and must register all women and children in their area. While Pakistan has roughly 90,000 LHWs, there is variation in regional LHW coverage. About one-third of rural communities in Sindh, Punjab, and NWFP provinces have an LHW whereas in Balochistan province only 10% of rural areas have an LHW (Mir and

Rashida 2007). The LHW programme has been in existence since 1994 and it has been externally evaluated three times (at the time of this writing it was undergoing its fourth evaluation). A thorough evaluation of the programme in 2002 found that the LHW programme did have positive impacts in terms of health and fertility outcomes including: increased childhood vaccination rates; increased uptake of antenatal services; better provision of iron tablets to pregnant women; increased levels of child growth monitoring; and lower rates of childhood diarrhoea (OPM 2002). The 2002 OPM review of the Pakistan LHW programme also highlights some challenges that are relevant to other CHW programmes. These include: maintaining stock and supplies (95% of LHWs in the survey had been out of ORS for more than three months); supervision of LHW performance – particularly in rural areas; and receiving salary on time (only 1/3 of LHWs had been paid in the last month and 1/3 had not been paid for four or more months).

Iran, on the other hand, utilized an entirely volunteer cadre of women to successfully provide family planning education and services. Other countries utilize a mix of financial and non-financial incentives for CHWs. In Honduras, AIN-C monitors are community-based volunteers motivated mostly by non-financial or non-material incentives. They do however receive one time and annual incentives including free ministry of health care; a carrying bag; a diploma; and a party at end of the year. These workers were found to be cost-effective; scenario analyses found that if monitors were paid the equivalent daily wage of agricultural day labourers the total costs during the 6-year phase-in period would increase by 20% and long-term annual recurrent costs would increase by 35%. Furthermore, the MoH provided services are nine times more expensive than AIN-C services (Fielder *et al.* 2008).

A literature review supports the importance of non-financial incentives in managing CHW programmes. Some suggest that “[n]on-financial approaches to improving performance such as use of visual identification (badges, T-shirts, etc.), acquisition of skills, and flexible hours, may have less potential to distort care than fee-for-service payments or those associated with drug sales.” Concerns have been raised that “fee-for-service payments or payments associated with drug sales may encourage inappropriate treatment at the expense of prevention and overuse of medications” (Haines *et al.* 2007, p2127). As a result, many recommend that policymakers consider using a mix of financial and non-financial incentives tailored to local circumstances.

Dieleman *et al.* (2003) describe the main factors that influence job motivation at the commune and district health centres in rural areas of North VietNam. They found that community recognition and appreciation were critical motivating factors in the programme. They concluded that “salaries and working conditions are important to retain staff, but alone are insufficient to lead to better staff performance; recognition and feeling of achievement are more likely to influence staff motivation and therefore their performance” (page 9 of 10). Nonmonetary incentives such as adequate training and supervision and community support are also necessary for any successful CHW programme.

Whether and how CHWs are remunerated also has important implications for programmatic sustainability in terms of how programmes motivate CHWs and ensure CHW accountability and performance. “Arguments for community support of CHWs are that it fosters community participation in the health of their community and gives the community a feeling of responsibility over meeting their own health needs” (page 519). Haines *et al.* (2007) review of financial incentives and remuneration for CHWs suggests there are few examples of CHW programmes that are sustained solely by community financing. “Even non-governmental organizations tend to find ways of financially rewarding their community workers...Even when the workload is light and can be fulfilled on a part-time basis, the costs entailed by lost economic opportunities may be too high” (page 2127). There are fewer examples that describe volunteers who receive financial incentives such as the BRAC *Shebika* approach.

Costing and cost-effectiveness of CHWs

Despite general agreement that CHWs play a potentially important role in the provision of basic health services, there is surprisingly little data on their cost-effectiveness. One reason for this is the challenge of examining CHWs in traditional economic analyses. Non-financial values such as volunteerism and sense of duty or social pressure are not easily reflected in conventional forms of economic analysis (Walker and Jan 2005). The data on cost-effectiveness that does exist suggests that CHWs can provide services in a cost-effective manner (e.g., primary healthcare provision in Kenya). CHWs were found to improve immunization coverage because houses were chosen with better precision and vaccination days were selected to suit parents, thus improving uptake. Several studies suggest it is more cost-effective to use CHWs than government programmes in the provision of TB care. A BRAC study in Bangladesh found that the cost of BRAC CHWs was US\$64 per patient cured versus US\$96 for the government programme (Hadi 2003).

The economic costing approach of CHW programmes raises two main issues: whether the cost savings from using a CHW approach is simply shifting costs from the health sector to the community; and whether the cost of volunteer labour is calculated as a ‘shadow’ price that reflects prevailing wage rates. Traditional approaches to economic evaluation usually treat volunteer and paid labour interchangeably. “The problem with this approach is that notions of “volunteerism” may be tied in with other institutional characteristics such as social capital and trust” (page 227). An additional challenge is measuring time forgone in order to provide informal care. The economic evaluations of CHWs that have been carried out tend to focus on very narrow outcomes (e.g., vaccinations administered or patients treated) which may neglect key community-based elements of the programme (Haines *et al.* 2007).

DESCRIPTION OF BRAC AND BRAC'S HEALTH PROGRAMME

Background on BRAC

BRAC began in 1972 as a small relief and rehabilitation project in response to the post-war challenges facing Bangladesh. Since then it has expanded its efforts toward integrated sustainable development and poverty alleviation and is currently one of the largest NGOs in the world. In Bangladesh, BRAC serves 110 million people across 70,000 villages and 2,000 urban slums in each of the 64 districts of Bangladesh. It operates using 117,000 staff and 80,000 community health volunteers (CHV) in 4,500 offices (BRAC 2009). BRAC, through its international programmes, has been expanding its efforts in some of the neediest countries in the world, with a particular focus on post-conflict settings. In 2002 it started in Afghanistan, its first programme outside Bangladesh. Since then, it has developed programmes in Sri Lanka, Tanzania, Pakistan, Liberia, Uganda, Southern Sudan, and Sierra Leone.

BRAC's overall approach and philosophy is one of integrated development to achieve sustainable poverty reduction through education, health, water and sanitation, and microfinance interventions. In addition to its multifaceted development approach, BRAC emphasizes the organizational development of the poor and capacity building at a national scale. BRAC has several core programmes: 1) Economic Development Programme (EDP); 2) BRAC Education Programme (BEP); 3) BRAC Health Programme (BHP); 4) Social Development, Human Rights and Legal Services; and 5) Disaster Management, Environment, and Climate Change.

The BRAC development programme improves the livelihood of the poor and has organized 7.2 million poor people into 254,673 VOs to foster economic opportunities with microfinance services. VO-based credit schemes offer communities a range of loan products including general loans (for any profitable income generating activity) and programme loans (e.g., poultry or fisheries where BRAC provides technical assistance and training in addition to the loan). BRAC's microfinance is self-sustaining and generates a surplus for the organization. BRAC's microfinance programme uses a 'credit ladder' approach that addresses the extreme poor, moderately poor, and vulnerable non-poor. BRAC emphasizes poverty reduction through targeting the ultra poor who are often neglected by other programmes and development interventions. In this regard, in 2002 BRAC initiated the Challenging the Frontiers of Poverty Reduction – Targeting the Ultra Poor (CFPR-TUP) programme

which targets the poorest 15% of the population, individuals too poor to qualify for traditional microcredit services.

In addition to its broad range of social development programmes, BRAC has set up a wide range of commercial enterprises that help to subsidize and support its development and poverty alleviation programmes. Financial self-sustainability is a strong underlying goal of BRAC. As a result, BRAC has become less donor dependent over time. In 2008 BRAC's annual expenditure was US\$ 535 million of which 73% was self-financed (BRAC 2009).

BRAC Health Programme (BHP)

BHP is a core programme and one of the original programmes of BRAC. In 1980s it successfully administered the Oral Therapy Extension Programme (OTEP) throughout the country to reduce deaths and disability related to diarrhoeal diseases. In 1990s it expanded its focus to provide more comprehensive service-based programmes like the Women's Health and Development Programme. Currently BHP has a holistic set of programmes with massive coverage based on its platform programme of EHC which started in 1985. EHC grew out of the community-based distribution of ORS and family planning supplies. By 1996 it included water and sanitation, immunization, health and nutrition education, family planning, and basic curative services.

EHC remains the core programme of the BHP and serves as the foundation for introduction of other health programmes such as WASH, tuberculosis (TB) control, and maternal, neonatal and child Health (MNCH) programmes. Currently, EHC includes seven components: health and nutrition education; water and sanitation; family planning; immunization; pregnancy-related care; basic curative services; and TB control. In some areas the EHC programme includes additional activities such as MNCH and malaria treatment. The EHC programme works in 54 districts and reaches over 92 million people; 86 million people are reached through its TB Control Programme alone (BRAC 2009). The EHC programme collaborates with the government in the implementation of national programmes such as vitamin A supplementation and family planning. EHC is also provided for the ultra poor through the TUP programme.

BRAC Health Programme approach

BHP is built on a village extension concept and a unique feature of BRAC's health programmes is its reliance on a cadre of female health volunteers, known as *Shasthya Shebikas* (SS). BRAC recognized early on the importance of health volunteers as a way to overcome critical human resource limitations in the health sector – particular in rural and under-served areas. *Shasthya Shebikas* are provided basic training to enable them to provide door-to-door health education, treatment of basic health problems, collect health information, sell medicines and health commodities, and make referrals to health centres as necessary.

BRAC was among the first organization to set up a CHV programme in Bangladesh in the 1970s with four curative health clinics staffed by doctors and using locally recruited men as paramedics. These men were high school graduates who were trained to treat minor illnesses and make referrals for a small fee. In an attempt to make it self-sustaining, a health insurance system was tried. The programme had 30% cost recovery from the insurance premium but was stopped after evaluations found that the programme was not reaching the poor (Standing and Chowdhury 2008). Problems with BRAC's early CHV programme included issues of remuneration, supervision, and lack of accountability. As a result, BRAC revised the programme to recruit and train a new cadre of female health volunteers. Females were thought to be more effective as CHVs because they lived in the community and the clients were mainly women.

In the mid-1970s in BRAC's Sulla programme in Sylhet district, BRAC recruited and trained local women to promote family planning services and provide health and hygiene education (this was done even before the government programme) (Standing and Chowdhury 2008). The *Shebika* programme was piloted in 1977 as part of the Manikganj Integrated Development Project and since then, "... has grown into one of the largest national-scale community health volunteer programmes in the world" (BHP Annual Report 2007, p3). While BRAC had been training community health volunteers since the late 1970s it did not scale them up until the 1990s. The growth in scale of these community health volunteers was impressive: in 1990 there were 1,080 SS in BHP and today there are 80,000 SS functioning in 64 districts all over Bangladesh. The SS started with selling oral contraceptives and then BRAC included other items based on community needs and experiences such as WHO essential drugs, and soap or ash for hand washing. There are currently 21 basic items that every SS offers for sale (see Table 6 for list of these items).

BRAC provides several underlying arguments for its EHC approach using the SSs. One is an economic argument. The alternative to using SS in the provision of EHC services is to recruit and hire graduates to market the same medicines and health commodities. This would not only be much more expensive but recruiting them to work in rural and underserved areas would likely be a challenge. The second argument is increased programme coverage. Because the SS live in the communities they serve it is easier to increase the geographic accessibility to essential health services. The SS play a crucial role in terms of human resources for health in Bangladesh. The 2007 Bangladesh Health Watch reports a shortage of 800,000 health workers in Bangladesh. Relying on formal institutions to train health workers requires significant time and financial investment. BRAC believes that an appropriate alternative given the time and resource limitations is to train CHWs within the communities in which they live (RED staff, personal interview). The SSs are an impressive force in terms of their numbers and geographic coverage and one that can be mobilized quickly. The 80,000 SSs provide home visits to 18 million households every month (BRAC 2009). As a result, millions of people can be reached with health messages all over the country in a matter of hours if necessary (RED staff, personal interview). A third argument is that it generates community participation and

ownership in the overall health of the community and in conjunction with BRAC's other development interventions.

The basis for the EHC programme is, therefore, cost recovery and sustainability, while achieving the underlying goal of improving health equity and overall community development. Using the SSs in the delivery of EHC is seen as an important mechanism for filling gaps in remote and underserved areas. In addition, the SS become agents for community development. In terms of their impact on health outcomes there is sufficient evidence to suggest that SS have improved health outcomes particularly for TB. One study found that TB prevalence was half the rate in BRAC areas as compared to those areas where BRAC was not present (Chowdhury *et al.* cited in Standing and Chowdhury 2008).

Initially the SSs were supposed to work completely voluntarily, but attrition was high because they had to earn some income. In response to this attrition, BRAC decided to provide the SSs with financial incentives. However, BRAC decided the financial incentives should come from the community rather than from BRAC directly in order to make it sustainable (Interview with programme staff, RED). Several programmes in BHP are already or very close to being financially self-sustaining. For example, the BRAC Limb and Brace Centres cover the bulk of their costs through cross-subsidies and scholarships. BRAC approaches the introduction of new health programmes with the issue of long-term financial sustainability in mind.

Who are Shasthya Shebikas?

In theory, the SSs are recruited from among VO members and are microfinance borrowers. VO group members are asked to select a woman based on the following criteria; 25-36 years old, youngest child is older than two years, not living near a health facility or a bazaar, and willing to work 2-3 hours per day. BRAC then assesses the nominees. Their catchment area should be reachable in a 15-20 minute walk and she should not live near a health facility to avoid competition in the provision of medicines. Table 1 summarizes the selection criteria. In non-EHC programmes the SSs are recruited and trained based on the specific needs of the programme and, therefore, do not always exactly match the profile of the EHC SS.

Table 1. Selection criteria for EHC Shasthya Shebikas

She is a current member of a BRAC village organization
She is married and her youngest child is not less than two years of age
She is 25 years or older
She is willing to provide voluntary services
She is socially acceptable to the village
Her family agrees to her involvement as an SS
She does not live near health facility or bazaar to avoid competition

SSs are expected to visit 250-300 households per month or approximately 10-30 homes per day. They provide basic health promotion and education; treatment of common ailments; and sell key health-related items some of which are produced by

BRAC enterprises and some of which are procured by BRAC from the market. It is the sale of these items in addition to referral fees that generates a monthly income for these non-salaried volunteer women. Table 2 narrates their duties and responsibilities.

Table 2. *Shasthya Shebikas'* responsibilities and duties

Health promotion and education	Treatment of common ailments	Other medical duties	Sale of drugs and health commodities
Hygiene	Fever	Early diagnosis and treatment of malaria	Paracetamol
Nutrition	Common cold	Provision of essential newborn care	Vitamins
Family planning	Anemia	Identifying TB suspects	Anti-histamines
Pregnancy-related care	Peptic ulcer	Referral for sputum examination	Oral rehydration saline
Childhood immunization	Diarrhoea	Ensuring DOTS for TB patients	Antacids
Safe water and sanitation	Amoebic dysentery	Referral to government facility for temporary or permanent contraceptive methods	Anti-helminthics
Mobilization for national immunization days	Goiter	Identify pregnant woman and refer her to SK	Health commodities
	Scabies	ARI prevention and treatment services	Iodized salt
	Helminthiasis		Soap
	Ring worm		Sanitary napkins
	Pneumonia		Condoms
	Angular stomatitis		Contraceptive pills
			Safe delivery kits
			Reading glasses

Sources: BRAC Annual Health Reports

Shasthya Shebikas' training and supervision

After her selection, the SS is given an 18-day basic training held at the BRAC regional office. She also participates in monthly refresher training and is provided specific orientation training on issues like TB, acute respiratory infection (ARI), and malaria as needed. The SSs are provided direct and continuous supervision and their

performances are assessed by their immediate supervisors, the *Shasthya Kormis* (SK). There are 7,000 SKs and each SK supervises 10-12 SSs. Unlike the SSs, SKs are paid a monthly salary. To qualify to be a SK she must be married, acceptable to the community and have passed class 10 in school. In addition to their role of supervising the SSs, SKs conduct monthly health forums, provide antenatal care and post-natal care, and carry out immunization programmes. The SKs are supervised by programme organizers (PO) who in turn are supervised by the Area Programme Manager. Medical officers provide overall technical supervision.

The SK provide timely feedback to the SS at the monthly refresher training when they solve problems and review individual performance. SSs must report on their activities either orally or written (for those SSs who cannot write, they sometimes have their children write for them). There is also an independent monitoring department that measures inputs/outputs and quarterly performance. The health programme produces performance data and based on that the MIS is built. These data can be used to look at health status and identify gaps in knowledge.

STUDY DESIGN, METHODOLOGY AND DATA ANALYSIS

The study employed four methods of data collection:

1. **Literature review of existing programme documents and published/unpublished international and national literature related to community health workers.** An attempt was made to collect documents relating to BRAC's SS programme. A series of interviews with BRAC staff from across the organization were carried out and included requests for any materials related to the *Shebika* programme. A review of the published literature on CHWs and costing of CHW programmes was also carried out.
2. **In-depth interviews with a range of programme staff in BRAC, Bangladesh head and field offices and in BRAC, Afghanistan and BRAC, Uganda offices.** The selection of these respondents was based on programme responsibility and also snowball sampling methods. Appendix II provides a list of individuals who were interviewed.
3. **Secondary analysis of health programme cost data related to the SS programme.** This included analyzing the overall programme budgets for the BHP including revenue, funding and expenditure detail for the last 3 years. The sources for this data were BHP and the Finance and Accounts Division in BRAC's head office. Data were also collected from field offices whenever possible. BRAC's revenue and expenditures were broken down to identify specific investments and expenditures related to the SS programme. Mr. Shimul Shafiun, a health economist and the co-author of this study, was responsible for collecting and analyzing these data.
4. **Primary data collection and analysis of surveys of SSs in Bangladesh, Afghanistan, and Uganda.** In addition to designing and fielding a survey questionnaire in each of the three countries, programme data were collected and reviewed, and programme staff interviewed to understand the pricing, procurement, inventory, ordering, distribution, and payment models. Survey data were analyzed using summary statistics and cross-tabulations to provide descriptive information on CHWs.

Sampling frame and design

Country case selection

Because this is a multi-country study the sampling design was adapted based on differences between countries. In Bangladesh where there is national coverage of SSs and the programme has been operating for several decades, a 30-cluster sample frame was used. In Afghanistan where security and geographic accessibility are issues, a purposive sampling frame was used. And in Uganda, a newer programme, a convenience sample of all the CHPs who, at the time of the survey, had been working since the launch of the health programme was used. The sampling frame for each country is described in more detail below.

Sampling frame for Bangladesh study

We employed the 30-cluster survey method (Milligan *et al.* 2004) because it is well-known, standardized and relatively quick and easy to implement. We started by listing all the relevant *upazilas* in each of the six divisions of Bangladesh. After discussion with BRAC Bangladesh staff it was decided to focus the study only in rural areas where SSs are providing the EHC programme. As a result we excluded *upazilas* in urban areas and *upazilas* where specific donor-funded programmes like MNCH and malaria were being implemented. We excluded about 100 *upazilas* from our listing for a total of 376 *upazilas*. Once we determined the *upazilas* to include in each division we calculated the distribution of study *upazilas* proportionate to the size of the division (Table 3).

Table 3. Distribution of study *upazilas* proportionate to the size of the divisions

Division	Total no. of <i>upazilas</i>	% of total	No. of sample UHCs out of 30
Dhaka	105	28	8
Chittagong	54	14	4
Rajshahi	101	27	8
Khulna	58	15	5
Barisal	40	11	3
Sylhet	18	5	2

We randomly sampled the appropriate number of *upazilas* from each division for a total sample of 30 clusters. We requested the *upazila* Manager from each of these 30 clusters to rank all of the SSs in the *upazila* based on their performance measured in terms of last monthly sales plus service charges for each SS. Performance was classified into the following three categories:

High performing SSs were classified as those with sales and service charges of Tk. 501 or more in the last month;

Medium performing SSs were classified as those with sales and service charges of Tk. 301-500 in the last month; and

Low performing SSs were classified as earning Tk. 300 or less in the last month.

From these lists generated by the *upazila* manager, each interviewer systematically sampled three SSs from each performance category using a random start. This selection was done in the presence of the *upazila* manager. As a result, the study had a total sample size of 270 with 90 SSs in each of the performance categories – high, medium, and low.

A two-day training of interviewers was carried out in March 2009 at BRAC Centre. Seventeen interviewers were organized into 5 teams of 3 with 2 women and 1 male on each team. The remaining 2 trained interviewers provided supervision and quality checks in the field. Data collection took longer than anticipated because of the travel times required to maintain the random nature of the sample. In some cases, individual SS lived in villages that could only be reached by foot. As a result, the interviewers remained in the field for more than 15 days.

To ensure quality control, spot checks were carried out in the field. One study team had to be replaced when it was found that there were questions raised regarding the quality of the data. This further delayed data collection but replacing the study team in this district ensured the overall quality of the data.

The trained interviewers administered the quantitative survey. Survey data were entered into SPSS by BRAC RED staff. In addition to the quantitative survey, in-depth interviews with several low and high performing SSs were carried out to further understand the barriers and opportunities to their financial sustainability.

Sampling frame for Afghanistan study

Based on discussions with BRAC International and BRAC, Afghanistan staff, three study sites were selected taking into account security, geographic accessibility, and budget considerations. It was decided to include two Dari and one Pashto speaking areas in order to examine possible regional differences. The study sites selected were Balkh, Nangarhar and Parwan. Seventy CHWs were randomly sampled in each of the sites.

Parwan is a one-hour drive from Kabul, and Nangarhar and Balkh are two-and-half and nine-hour drive from Kabul, respectively. From each province 70 respondents were randomly selected. The population of the study was 320 CHWs in Nangarhar, 305 CHWs in Parwan, and 744 CHWs Balkh. In Nangarhar 23 from Khiwa, 24 from Surkhrood and 23 from Behsood districts were selected for interview and all the respondents were female. In Parwan, 24 from Jabal Siraj, 23 from Charikar, and 23 from Bagram were selected and all of them were females. In Balkh, the respondents were selected from Dehdadi and Balkh. In Balkh BRAC has both male and female CHWs whereas in Nangarhar and in Parwan, BRAC has only female CHWs. Among the 70 respondents in Balkh, 10-12 were male CHWs.

Survey data were entered in BRAC Afghanistan's head office in Kabul. Shimul Shafiun traveled to Afghanistan in May to perform quality checks, provide support during the data entry process, and interview programme staff.

Sampling frame for Uganda study

Because Uganda is a newer programme established in 2006, we selected the entire cohort of CHPs who had been originally trained (N=180). This allowed for at least 12 months of CHP experience to inform the survey. The survey instrument was adapted to the Ugandan context after pre-testing. Selection and training of interviewers were organized and supervised by the Research and Evaluation Unit (REU) at BRAC Uganda office in Kampala. Survey data were entered and cleaned by REU staff in Kampala and they performed initial data analysis as well.

In addition to the quantitative survey, in-depth interviews were carried out with high performing and low performing CHPs in Kampala and Iganga districts. Focus group discussion with four high performing CHPs and in-depth interviews with two low performing CHPs were also carried out. These interviews were carried out in the local language and translated into English at the time of the interview. These were tape recorded and transcribed for analysis.

RESULTS

For the sake of organizational clarity the report presents a summary of some of the key findings from the multi-country analysis followed by detailed description of the results of each country study separately and in the following order (Bangladesh; Afghanistan; and Uganda). For each country we present: 1) financial analysis of the health programme; 2) socio-demographic characteristics of the SSs; 3) performance-related characteristics of the SSs; and 4) description of barriers and challenges. Section 5 provides overall discussion and presents some recommendations based on the earlier analyses.

Multi-country study results

Financial analysis

To determine financial sustainability we calculated estimates of the programme costs to develop an SS in the first year and the costs of maintaining that same SS in the second year. Table 4 presents those estimates for each of the three study sites. It presents results in US\$ and in PPP adjusted US dollars. Clearly the PPP adjusted costs are highest for Uganda (\$1,204 in the first year) and lowest for Bangladesh (\$245 in the first year). All of the costs dropped significantly in the second year when refresher training and supervision are the main financial inputs of the programme.

Table 4. Comparative per unit cost to BRAC for developing a SS/CHP/CHW per year ¹

	Bangladesh		Afghanistan		Uganda	
	\$US or Taka	I\$US (PPP adjusted)	\$US or Afghanis	I\$US (PPP adjusted)	\$US or Shillings	I\$US (PPP adjusted)
Total cost in the first Year	\$89	\$245	\$247	\$427	\$394	\$1,204
Total cost in the second year	\$34	\$94	\$84	\$145	\$208	\$636
SS income received in average month	374 Taka (Mean)	\$US 14.61	143 AFG (Mean)	\$US 4.95	UX 38,222 (Mean)	\$US 58.40

Table 5 presents some selected comparative results from the three study sites. It is striking to note despite the many similarities between the three sites (age; number of

¹ See Appendix 2 for detailed breakdown of the analysis.

hours worked each day; similar health training outside BRAC), there are many areas of difference between the sites. One, for example, is the percentage of current VO members; this is highest in Uganda and lowest in Afghanistan.

Table 5. Selected comparative characteristics between three study sites

	Bangladesh N=270	Uganda N=158	Afghanistan N=210
Age	39 years	36 years	36 years
Years of schooling	5	10	5.6
Number of family members	5	7	8.5
Currently a VO member	41%	91%	10%
Monthly household income			
Monthly income is always greater than expenditure	14%	38%	6%
Monthly income is always less than expenditure	24%	3%	29%
Monthly income is equal to expenditure	30%	6%	28%
Importance of SS earnings for family			
H/H could not continue without SS income	4%	18%	15%
SS income makes a big difference	75%	69%	11%
SS income makes no difference	5%	7%	33%
How SS income is used			
Spend on children	24%	40%	65%
Give to husband	10%	1%	73%
Pay school fees	6%	12%	19%
Buy food	17%	20%	3%
Save	13%	7%	.5%
Pay back loans	2%	2%	1%
Hours work as SS per day	3.6	3.2	3.6
Replenish SS supply between refresher trainings	80%	85%	6%
Bought medicines or health commodities outside BRAC	10%	1%	3%
Loan used to buy SS supplies	19% (of 183 women)	65% (of 134)	4% (of 134)
If yes, amount spent from loan on supplies	1530 Taka (Mean)	UX 170,000 (Mean)	AFG 3000 (Mean)
Number of visits required to sell medicines			
1 visit	26%	2%	9%
2 visits	50%	9%	38%
3-4 visits	21%	30%	34%
4+ visits	.7%	60%	19%
Number of visits required to sell health commodities			
1 visit	44%	1%	3%
2 visits	40%	9%	49%
3-4 visits	12%	18%	32%
4+ visits	1%	72%	15%
Monthly income in last month (mean)	360 Taka PPP\$ 14.07	UX27,680 PPP\$ 42.29	145 AFG PPP\$ 5.01
Income received in average month (mean)	374 Taka PPP\$14.62	UX 38,222 PPP\$58.40	143 AFG PPP\$4.94

Table 5 continued.....

.....Continued Table 5

Monthly fluctuations in sales	97%	67%	11%
SS Loan status			
Ever borrowed a loan from BRAC	68%	99%	13%
Current loan with BRAC	34%	88%	4%
More than one loan with BRAC	13%	36%	2%
Loan with another NGO	36%	0.8%	n/a
Why became an SS			
Source of income for household	86%	22%	34%
Financial independence	7%	3%	4%
Social recognition	3%		40%
To learn something new	3%	47%	12%
To help my community	1%	27%	2%
Being an SS has given her financial independence	97%	80%	15%
How has BRAC VO membership affected work as SS			
People trust me more	22%	31%	N/A
Easier to sell products	13%	36%	
Need loan to buy products	2%	1%	
Has no effect	30%	31%	
Wish to sell other health commodities and medicines	30%	67%	30%
Health related training outside BRAC	12%	16%	9%
Minimum monthly salary (without commissions) required	Taka 1339 (Mean) PPP\$51.80 Taka 1000 (Median) PPP\$36.68	UX 173,150 (Mean) PPP\$264.57 UX 100,000 (Median) PPP\$152.80	3643 AFG (Mean) PPP\$126 3500 AFG (Median) PPP\$121.15

In Uganda the CHPs tend to be better educated and a higher percentage of them are better off than the CHWs in Afghanistan and Bangladesh. In all three countries the majority of the SS/CHP/CHW income is spent on their children except in Afghanistan where 73% of women reported giving their income to their husbands. In all the three countries, the majority of women required at least two household visits to sell medicines and health commodities, but in Uganda, 60% and 72% of women require making four or more visits to sell medicines and commodities respectively. This may reflect that some of the CHP transactions are done on credit and thus, women have to make several visits in order to receive payment. Or it could be due to the newness of the programme.

The remainder of this section describes the results of each country study in detail.

Study results for Bangladesh

Financial analysis of BRAC Health Programme

BHP data and BRAC Accounts programme data for the past three years were reviewed to understand the revenue mix of the programme. This process was more difficult than expected because of the complex nature of the accounts data and the

fact that there are many sources of revenue and expenditure. Data collection was further hampered by a change in project staff responsible for the accounts data.

BRAC has several funding sources (including grants, donations, and self-financing) which have been used to fund the health programme in the last several years. BHP can be divided into two broad areas: 1) the Essential Health Care (EHC) programme which is partially funded through the EDP of BRAC and the other BHP programmes which are funded by individual donors (for example, Urban Maternal and Neonatal Health Project (known as MANOSHI) which is funded by the Bill and Melinda Gates Foundation; malaria and TB control programmes supported by the Global Fund on AIDS, TB and malaria, and WASH programme by RNE); and 2) other smaller programmes and pilot programmes funded by individual donors.

Table 6 shows BHP expenditure for 2005, 2006, and 2007. The results show the difficulties of examining programme expenditure over time with dynamic programmes. During this time, some programmes were discontinued while new programmes were initiated. Funding sources for the programmes are shown whenever possible. Those programmes that are entirely self-funded by BRAC are highlighted.

Table 6. BRAC health programme expenditure (in Taka) for 2005, 2006 and 2007

Programme detail	2005	2006		2007	
Essential Health Care	208,174,353	373,775,146	BRAC; DFID; CIDA; NOVIB	238,304,497	RAC; DFID; CIDA; NOVIB; Ausaid
National Nutrition Programme	424,261,561	230,244,204		Not listed in annual report for this year.	
Poultry for Nutrition	25,818,817	Not listed in annual report for this year.		Not listed in annual report for this year.	
Nutrition Gardening Project	28,809,295	Not listed in annual report for this year.		Not listed in annual report for this year.	
Tuberculosis Community-based TB control	7,207,323	11,020,126		Not listed in annual report for this year.	
TB control	312,883,146	471,651,398	GFATM	514,154,078	GFATM
Strengthening DOTS	6,554,827			Not listed in annual report for this year.	
Public Private Partnership	496,210	Not listed in annual report for this year.		Not listed in annual report for this year.	
Early Childhood Development	5,902,433	514,710		Not listed in annual report for this year.	
HIV AIDS Prevention	11,710,736	32,066,500	World Bank	10,107,883	UNICEF
Community based Arsenic Mitigation	14,462,185	326,786	UNICEF	Not listed in annual report for this year.	
Microhealth Insurance	2,546,214	1,024,981	BRAC	369,257	BRAC

Table 6 continued....

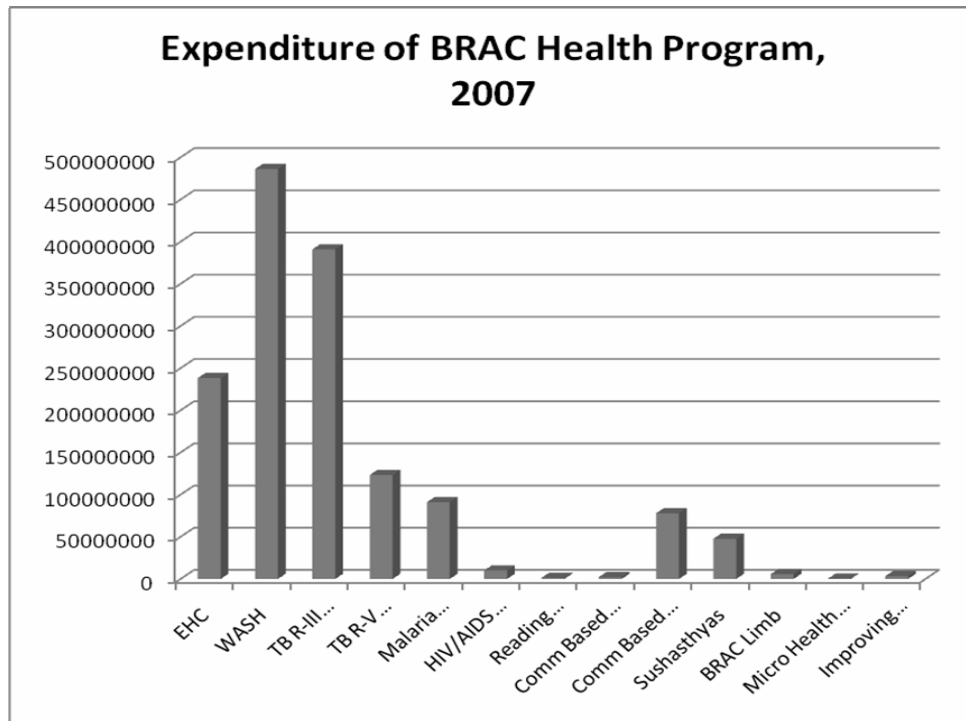
.....Continued Table 6

Shushasthya(BRAC Health Centre)	44,594,592	48,071,007	BRAC	47,695,593	BRAC
BRAC Limb and Brace Fitting Centre	1,989,202	5,075,575	BRAC ICRC-SFD	5,663,875	BRAC ICRC-SFD
Distribution of water purifying tablets	565,419	1,891,960		Not listed in annual report for this year.	
Inter personal communication	477,000	Not listed in annual report for this year.		Not listed in annual report for this year.	
Management training to NNP manager	4,916,942	Not listed in annual report for this year.		Not listed in annual report for this year.	
Women domestic violence health policy	655,773	86,669		Not listed in annual report for this year.	
Water, Sanitation and Hygiene		86,088,339	Royal Netherlands Embassy	486,195,713	Royal Netherlands Embassy
Strengthening community based health care Programme in Chittagong Hill Tracts	Not listed in annual report for this year.	6,917,972		Not listed in annual report for this year.	
Improving sexual and reproductive health	Not listed in annual report for this year.	5,878,207	IDS, Sussex	3,283,985	IDS, Sussex
Scojo-BRAC Reading Glasses Pilot Project	Not listed in annual report for this year.	773,478	BRAC; Scojo Foundation	1,385,539	BRAC; Scojo Foundation
Malaria Control	Not listed in annual report for this year.			91,090,436	GFATM
Community-based Maternal, Neonatal, Child Health – Rural	Not listed in annual report for this year.			22,174,33	BRAC
Community-based Maternal, Neonatal, Child Health – Urban	Not listed in annual report for this year.			77,894,834	Gates Foundation
Total	1,123,813,686	1,275,410,058		1,496,320,023	

Sources: BRAC Health Programme Annual Reports for 2005; 2006 and 2007; BRAC Annual Reports 2006 and 2007.

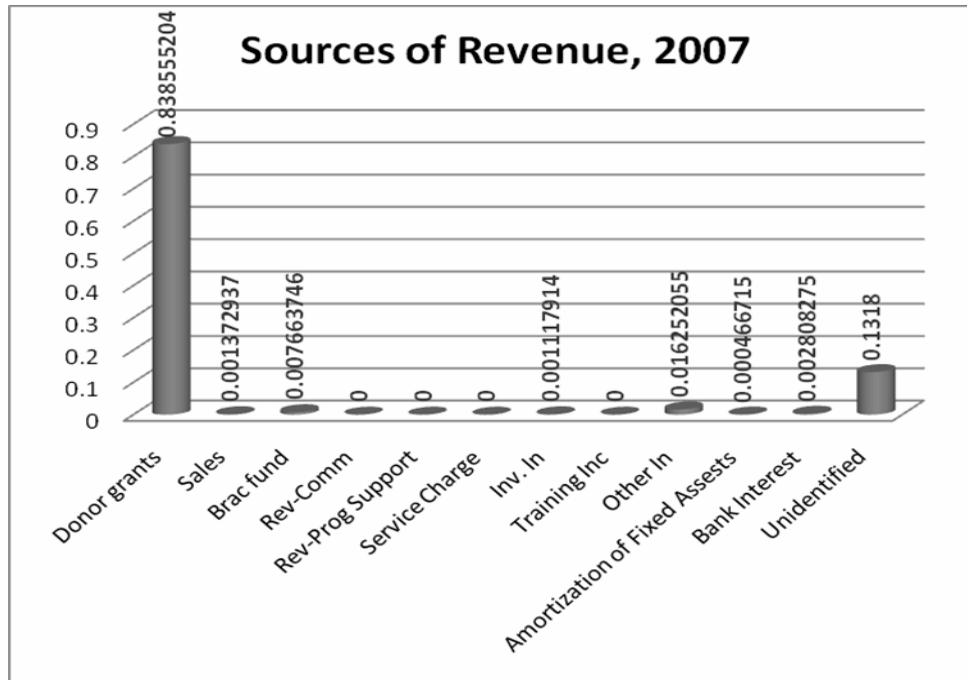
Figure 1 shows the expenditures of BHP in 2007. The greatest expenditure went to the water and sanitation programme (WASH), followed by tuberculosis. The EHC programme was third in terms of expenditures.

Figure 1. Expenditure of BRAC Health Programme 2007 (in Taka)



We tried to examine all sources of revenue for these three years. This was a difficult exercise as the sources were not easily available from accounts data for reasons described earlier. We were more confident that data for 2007 were accurate and more complete. Figure 2 presents the percentage of source of revenue for the health programme for 2007. Our analysis suggests that approximately 84% of BHP funds were from donor grants in 2007.

Figure 2. Sources of funds for BRAC Health Programme, 2007



Methodology for calculation of programme cost per SS/CHW/CHS

The SS is clearly the foundation for BHP as she is involved in almost all health activities of BRAC. Because of their pervasiveness, breaking down the costs related to recruitment, training, and retention of *Shebikas* is a challenging undertaking. We reviewed programme cost data and interviewed field and head office staff to estimate the cost to BRAC of developing an SS per year. A similar analysis was previously carried out (Ahmed J 2007) and we based our analysis on this initial costing.

The key methodological challenges were: a) determining up to which level of employee the costing calculation should include; and b) identifying and including direct or indirect costs. To avoid complexity only direct costs from BRAC side were included in this costing exercise. The social costs were not included. Employees directly involved in supervision and assistance of SSs were included. The proportion of their time spent directly on SS is included in the costing analysis. For example, interviews with programme staff in the field found that SK spent almost 60% of her time on SS supervision or SS-related activities and the remaining 40% is spent on activities not directly related to SS. So if her salary is X amount per month and if she is responsible for Y number of SSs, then per SS salary cost of SK per year is: $(X/Y)*60%*12\text{months}$. Salary costs for other human resource were calculated using a similar approach. To find out costs other than salary, 10% overhead cost was assumed. Then all other costs other than staff cost such as training cost, material

cost, etc were included. The first year is more costly as basic training is required while in the subsequent years less costly refresher trainings are conducted. As it is a difficult task to measure the cost of community health volunteers, 5% uncertainty was also assumed to address sensitivity analysis. All costs were converted into US dollars using both official exchange rate/nominal exchange rate and PPP adjustment of that exchange rate.

It is important to note that the programme cost per CHVs will vary over time because the scale of the programme is different in three countries. Bangladesh is a much older programme and is operating on a large scale while for newer programmes in Afghanistan and Uganda this is not the case. It is more likely that cost per SS in Bangladesh will be less than that of Afghanistan and Uganda for CHW/CHP because of economies of scale (when large number is produced the average cost declines). This may suggest that the costs in Afghanistan and Uganda will decline over time as the programmes become more established and increase in size. The cost calculated here is neither incremental cost nor marginal cost but is simply the average cost per CHW in each of the countries.

Table 7 presents the results of the costing analysis. Based on our estimate, it costs BRAC roughly US (PPP) \$245 to train and supervise a *Shebika* in her first year. The total cost in the second year drops to \$94 with the main cost components being monthly refresher trainings and salaries of the supervisory staff. These cost estimates include 10% overhead on the salaries of all supervisory staff including SKs, POs, *upazila* managers and SHC. We incorporated estimates of the proportions of time that these staff reported spending on the SS programme based on interviews with field staff. Finally, these cost estimates are after deductions for monthly sales income. The detailed spreadsheet on how these calculations were determined can be found in Appendix 1.

Table 7. Cost to BRAC, Bangladesh of developing a *Shebika* per year 2

	Taka	\$US	IUSD (implied PPP adjusted)
Total Cost in the First Year	6,263.78	\$89.48	\$244.82
Total Cost in the Second Year	2,393.78	\$34.20	\$93.56
Total Cost in 1st year (Min)*	5,950.59	\$85.01	\$232.58
Total Cost in 1st year (Max)*	6,576.96	\$93.96	\$257.06
Total Cost in 2nd year (Min)*	2,274.09	\$32.49	\$88.88
Total Cost in 2nd year (Max)*	2,513.46	\$35.91	\$98.24

Dropout rates of *Shasthya Shebika*

An important determining factor for programme financial sustainability is the dropout rate of SSs. As the unit programme costs are significantly higher in the first year (PPP \$245) as opposed to the second year (PPP \$94), minimizing the need to replace SS is a strategic way to achieve financial sustainability.

² See Appendix 1 for detailed breakdown of the analysis.

This study included active SSs only. However, BHP provided data for 2006, 2007, and 2008 for SS dropouts in three divisions of the country (Table 8).

The total dropout rate for these three divisions including 4 districts of Dhaka division is 11.62%. The dropout rates for Dhaka division are higher (15.5% in 2008) than for rural divisions (11.6%).

Given that this study is focusing on the rural EHC SS, it is most appropriate to consider an average dropout rate of 12% for EHC SS in 2008. This dropout rate is relatively low compared to other programmes internationally. It is also lower than earlier studies of BRAC SS dropout rates which found a dropout rate of 22% but with regional variation (Khan *et al.* 1998).

Table 8. Shasthya Shebika dropout, 2006 – 2008

Divisions	Years								
	2006			2007			2008		
	# of SS	Drop out	% of Drop	# of SS	Drop out	% of Drop	# of SS	Drop out	% of Drop
Raj – 1	6765	715	10.57	7777	828	10.65	8720	876	10.05
Dhaka (4 districts)	3296	525	15.93	3417	420	12.29	3849	596	15.48
Raj – 2	8904	897	10.07	10459	1035	9.90	14014	1620	11.56
Khulna	8135	872	10.72	7906	1328	16.80	7895	915	11.59
Total	27100	3009	11.10	29559	3611	12.22	34478	4007	11.62
Total SS (EHC)	68029	7551	11	70000	8554	12	80159	9314	12

Source: BRAC Health Programme

Incentive and income structure for Shasthya Shebikas

Given the costs to BRAC associated with recruiting and training a *Shebika*, ensuring their continued contribution and active participation in the programme is critical in terms of financial and programmatic sustainability. As these women are volunteers who are expected to give up several hours of each day to provide services in their community, understanding the incentive structure and how women respond to those incentives is critical for ensuring sustainability.

There are two main financial incentives for the SS. One comes from the access to an additional microfinance loan from BRAC as part of her SS role and the second is the small commission she makes selling medicines and health products. In addition to these sales she also earns a nominal amount from service charges for antenatal care (ANC) and referral fees to other health facilities. At the time of this study, for ANC referrals the SS received Tk. 2 for each VO member referred and Tk. 3 for each non-VO member she referred. The SKs conduct the ANC and the SSs get the referral fee for these services during their monthly refresher trainings.

She also receives some financial incentive when someone installs a slab latrine or tubewell. While this is a relatively rare occurrence, she receives 10% of the cost. So, the financial incentive model for the SS is as follows:

Financial incentives for SS = Sales of medicines + sales of health products + referral fees + service charges

For those SSs working in areas where the TB DOTS programme is in operation there is an additional financial incentive. In this case, if a SS identifies a suspected TB case and that person is smear-positive, the SS initiates directly observed treatment (DOTS) regimen for that patient. If she successfully follows-up the entire course of TB treatment, she receives Tk. 150 per TB patient. Initially BRAC structured the TB DOTS treatment so that the incentive came from the patient who paid a Tk. 300 deposit as a guarantee of treatment compliance but 20% of patients were unable to pay. Since the programme shifted to SS incentive, there is a 93% adherence rate of TB DOTS (RED Staff, personal interview).

Pricing and procurement for the SS programme

Shasthya Shebikas rely on the sale of a range of basic medicines and health products to contribute to their monthly income and sustain their work financially. Clearly without a regular and reasonably priced supply of products they cannot function effectively. Therefore, the pricing, production, and procurement of these supplies are critical to the sustainability of the programme.

The SS receives all of her supplies at the BRAC area branch office. BRAC must supply 2,400 outlets throughout the country to ensure that SS have the necessary supplies. There are three routes of product supply to BRAC area branch offices: 1) central supply from BRAC head office; 2) from local sources; and 3) from BRAC production centres located throughout Bangladesh that produce ORS, sanitary napkins and iodized salt.

For supply of medicines and drugs, BRAC currently uses three pharmaceutical companies. (In 2007, BRAC used five pharmaceutical companies but they limited it to three in 2008 because some of the drug labeling was difficult for SS to read and interpret properly.) While there is no single formula for acquiring the supply of drugs, the general procedure is that BHP provides a list of desired drugs (they use the WHO Prescribed List for non-qualified doctors (CHW) to BRAC procurement and requests the procurement process be initiated. BRAC Procurement department advertises a call for tenders in newspapers. The Procurement department negotiates with the bidders and in the end the pharmaceutical company provides drugs to BRAC at the institutional price. The SS sells the drug at the manufacturing and retail (MRP) price and BRAC gets the institutional price reimbursed plus the small markup the SS keeps as her profit. (Table 9 provides these prices for medicines).

Several health commodities such as sanitary napkins, delivery kits and iodized salt are produced at BRAC Production Centres. The prices for these goods are set by the BRAC Procurement Unit. These are supplied to the branch office directly from

the regional production centres. Other products that are not produced by BRAC are procured by BRAC from the market at very low rates.

The SSs order and refill their supplies at the monthly refresher training which are organized by the Programme Organizers (PO). If they need supplies at other times they can go each Thursday to the branch office to replenish their supplies. The PO writes down the amount required by each SS and then the PO prepares an order plan which she sends to her respective *upazila* (Sub-district) manager. For medicines, the *upazila* manager sends this request to the medical representatives of the pharmaceutical companies selected by BRAC head office. During the last week of each month the PO submits a requisition to the Head Office for supplies. The supplies arrive at the branch office on the first day of the month.

Table 9 provides the details of the medicines and health commodities that are sold by the SS in 2008. It also shows the institutional purchase price that BRAC pays, the amount they sell it for to the SS, and the amount of profit per unit that the SS makes. Those items highlighted are produced by BRAC.

Table 9. Medicines and health commodities sold by SS (in Taka) (January–December 2008)

Medicine	Form/ Strength	Purchase by BRAC	Sold to SS	BRAC's margin	Incentive for SS
1. Paracetamol	Tablet	0.41	0.43	0.02	0.13
2. Paracetamol	Syrup	10.13	10.50	.38	1.64
3. Histacin	Tablet	0.16	0.16	0.01	0.05
4. Histacin	Syrup	10.65	11.00	.35	2.50
5. Iron	Tablet	0.15	0.15	0.01	0.03
6. Iron	Syrup	20.72	21.50	0.78	4.50
7. Metronidazol	Tablet	0.76	0.80	0.05	0.21
8. Metronidazol	Suspension	17.71	18.00	0.29	5.25
9. Vitamin C	Tablet	1.12	1.15	0.04	0.15
10. Vitamin B complex	Tablet	0.32	0.33	0.01	0.12
11. Vitamin B complex	Capsule	0.49	0.50	0.02	0.07
12. Vitamin B complex	Syrup (100ml)	16.81	17.50	0.70	3.30
13. Vitamin B complex	Syrup (200ml)	27.80	28.50	0.70	9.00
14. Riboflavin	Tablet	0.16	0.17	0.01	0.06
15. Antacid	Tablet	0.44	0.45	0.03	0.09
16. Antacid	Suspension	25.85	26.00	0.16	6.00
17. Whitfield Ointment	Ointment	11.00	12.00	1.00	1.00
18. Benzylbenzoate	Emulsion	15.75	16.00	0.25	2.20
19. Albendazole	Tablet	1.94	2.25	0.26	1.15
20. Mebendazole	Tablet	0.52	0.55	0.03	0.22
21. Mebendazole	Suspension	11.50	12.00	0.50	2.60
22. Cotrimoxazole	Suspension	16.00	16.50	0.51	4.50

Table 9 continued.....

.....continued Table 9

Health Commodities					
Pregnancy test strip	Single Pouch	4.98	6.00	1.02	14.00
Oral contraceptive pill	Femicon Pill	9.63	10.00	0.38	2.00
	Nordette-28 pill	25.30	26.00	0.70	3.86
Condom	Hero/piece	1.53	1.60	.07	0.40
	Panther/3 pc/pack	7.50	8.00	0.05	2.00
	Sensation/3 pc/pak	7.83	8.00	0.17	2.00
	ORS Sachet	Single sachet	2.19	2.40	0.21
Soap	Aromatic Beauty	12.25	12.50	0.25	3.50
	Aromatic Gold	12.25	12.50	0.25	3.50
Sanitary Napkin	Nirapad, 10 in one pack	25.00	26.00	1.00	2.50
Delivery Kit	Kallayani, Single Plastic Sachet	17.00	18.00	1.00	2.00
Iodized Salt	Transparent 1 KG plastic pack	10.25	11.00	0.75	2.50

Source: BRAC Health Programme

There are currently 21 items that the *Shobika* can supply her community. BHP is considering some additional medicines and health products such as tooth powder; ½ kilogram bags of salt; and laundry detergent powder for pregnant women to reduce their physical burden.

How Shasthya Shebikas spend their time

While the recruitment, management and incentive structures for the SS are clearly defined by BHP, there is less detailed understanding of how SSs spend their time and what factors influence the amount of financial income they receive as SS. The quantitative survey designed and administered for this study provides a wealth of data about the basic characteristics of SS and some context about the factors that contribute to their financial success. The full questionnaire can be found in Appendix 2.

Table 10 presents some basic socio-demographic characteristics of the study sample. As described in Section 3, this is a random sample representative of SS providing EHC in rural areas of Bangladesh.

Table 10. Socio-demographic characteristics of SS in study sample (N=270)

Indicator	Average
Age	39 years
Number of years of schooling	5
Number of family members	5
Currently a VO member	41%

Interestingly, 41% of the women reported to be current VO members despite this being considered a selection criterion for being an SS. Of those that had been VO members, 36% had dropped out of the VO. These results are similar to Rahman and Tasneem's (2008) study of SSs in Nilphamari which found that 40% of SSs were VO members before becoming an SS.

The survey asked several questions to ascertain the economic situation of the SS household. Almost one-quarter of the women reported their household monthly income to be always less than their expenditure. Only 14% of women reported that their monthly household income is always greater than expenditure. While only 4% said that their households could not continue without their SS income, 75% did report that their SS income made a big difference to household income and 97% reported that being an SS had given them financial independence.

In terms of how they used their earnings as SS, 24% reported spending their income on children; 17% bought food for the household; and 13% of women reported that it was saved (Table 11).

Table 11. Household financial status and monthly income

Monthly household income	
Monthly income is always greater than expenditure	14%
Monthly income is always less than expenditure	24%
Monthly income is equal to expenditure	30%
Importance of SS earnings for family	
H/H could not continue without SS income	4%
SS income makes a big difference	75%
SS income makes no difference	5%
How SS income is used	
Spend on children	24%
Give to husband	10%
Pay school fees	6%
Buy food	17%
Save	13%
Pay back loans	2%

The results related to SSs' performance suggest that the majority of SSs are quite active. Women reported that, on average, they worked for 3.6 hours and could visit 14 households a day. However, 95% of the women said that community members come to their home to buy medicines and it is unclear whether or not this was counted as a household visit in their response. Eighty percent of the respondents replenished their product supply between refresher trainings suggesting that they are able to move at least some of their inventory. It could, however, also suggest that SSs do not have income available to purchase and hold a lot of inventory each month but that it is financially more convenient for them to buy fewer supplies more frequently. Interestingly, 10% of the women said they purchased medicines or supplies outside BRAC to use in their SS work.

Based on their reports of the number of visits required to sell medicines and health commodities, it appears that SSs are required to make more than one visit – particularly in the case of selling medicines where 50% of the SSs reported that two household visits are required (Table 12). This may reflect the SS responding to an individual demand from a community member or her identification of a particular illness in a household. Or it could reflect that she is not keeping a large inventory of medicines and that in order to respond to specific demand for medicines she has to resupply and then return to the household.

On average, selling health commodities required fewer visits – 44% of the SSs said it only required one visit. This could reflect that the community easily recognizes health commodities such as iodized salt or sanitary napkins and/or that demand for these commodities are more regular and predictable.

Table 12. Performance-related characteristics

Years working as an SS	5.8 years (average)
Reported number of h/h visits possible per day	14 visits(average)
Hours work as SS per day	3.6 hours (average) (5% reporting working 5 hours per day)
Replenish SS supply between refresher trainings	80%
Bought medicines or health commodities outside BRAC	10%
Loan used to buy SS supplies	19% (of 183 women)
If yes, amount spent from loan on supplies	1530 Taka – Mean
Women come to SS house to buy health commodities and medicines	95%
Number of visits required to sell medicines	
1 visit	26%
2 visits	50%
3-4 visits	21%
4+ visits	.7%
Number of visits required to sell health commodities	
1 visit	44%
2 visits	40%
3-4 visits	12%
4+ visits	1%

Financial performance and monthly income of SS

BRAC categorizes SS performance in three ways: 1) very active – those that earn Tk. 300-500 per month; 2) moderately active – those that earn Tk. 150-300 per month; and 3) low performing – these SS are superficially involved and show up for monthly refreshers but have low sales.

For the SS in the survey, the mean monthly income in the last month was Tk. 360 (PPP\$14.07) and the median was Tk. 250 (PPP\$9.75). The reported mean income per average month was Tk. 374 (PPP\$14.62). Almost all women reported monthly fluctuations in sales. Sixty-eight percent of the respondents said that they had ever

borrowed a loan from BRAC. This suggests that access to a microfinance loan may not be a strong financial incentive for all SS. Thirty-four percent had a current loan with BRAC; 13% had more than one loan with BRAC; and 36% had a loan with another NGO³ (Table 13).

Table 13. Monthly income, financial performance and incentives of SSs

Monthly income in last month	360 Taka – Mean (PPP\$14.07) 250 Taka – Median (PPP\$9.75)
Income received in average month	374 Taka – Mean (PPP\$14.62) 250 Taka – Median (PPP\$9.75)
Monthly fluctuations in sales	97%
SS Loan status	
Ever borrowed a loan from BRAC	68%
Current loan with BRAC	34%
More than one loan with BRAC	13%
Loan with another NGO	36%
Why became an SS	
Source of income for household	86%
Financial independence	7%
Social recognition	3%
To learn something new	3%
To help my community	1%
Being an SS has given her financial independence	97%
How has BRAC VO membership affected work as SS	
People trust me more	22%
Easier to sell products	13%
Need loan to buy products	2%
Has no effect	30%
Not a VO member	33%

Eighty-six percent of the respondents said that they became an SS to contribute as a source of income to their household. Only 3% reported ‘social recognition’ as their motivation for becoming an SS and 1% reported ‘helping her community’ as her initial motivation for becoming an SS. Interestingly, 7% of the SSs said that obtaining financial independence was an initial motivation for becoming an SS yet 97% of them reported that working as an SS has given them financial independence. This may suggest that the expectations of SS change and grow as she spends time working as an SS and that what initially motivated her to join as an SS are no longer sufficient.

We also asked the SS how being a BRAC VO member affects her work and productivity as an SS. Forty-one percent were current VO members while 36% of the sample had dropped out as VO members. Twenty-two percent said that people trusted them more and 13% said that it made it easier for them to sell products. Only 2% reported that being a BRAC VO provided her the necessary microfinance to purchase products to work as an SS.

³ The study did not record which NGO.

Time allocation of SS

We asked SSs to report the frequency and average time spent in the last month on activities related to financial incentives. Unfortunately, this means we do not have any data on the amount of time SSs spend on health education and promotion. Because this was a study on financial aspects of the SS programme we did not include it in the questionnaire. However, this is an important area that should be addressed in future. The majority of SSs reported that they spent their time selling medicines and health commodities. Only 2% said that they did not sell medicines. For each of the main activities expected of the SSs we asked whether or not she provided it in the last month, the average time to perform the activity, and the average number of times each month she provides the activity. This provides a rough picture of how SSs are spending their time. The results are summarized in Table 14.

The biggest portion of the SS time spent in attending refresher training (275 minutes per month) followed by selling medicines (216 minutes per month) and selling commodities (120 minutes per month). Seventy-seven percent had performed pregnancy identification in the last month. In terms of activities for which there is a financial incentive for the SSs, fewer (14%) reported providing referrals to BRAC Health Centres (although this likely reflects the fact that BRAC Health Centres are not everywhere); and 59% were attending delivery and newborn care.

Table 14. SS reported activities related to financial incentives and how she spent her time in the last month

Activities related to financial incentives	Provided in the last month	Average time to perform service	Average number of times provided	Average total number of minutes per month
Pregnancy identification	Yes – 77% No – 23%	20 minutes	2	40
Attending delivery and providing newborn care	Yes – 59% No – 41%	27 minutes	3	81
Referral to <i>Shushatya</i> (BRAC health referral centre)	Yes – 14% No – 26% No BRAC <i>Shushasthya</i> – 60%	17 minutes	2	34
Referral to government clinic or hospital	Yes – 41% No – 59%	31 minutes	2	62
Treat TB (DOTS)	Yes – 40% No – 56% No DOTS Programme – 4%	14 minutes	2	28
Attending refresher training	Yes – 92% No – 8%	275 minutes	1	275
Selling medicines	Yes – 98% No – 2%	12 minutes	18	216
Selling health commodities	Yes – 97% No – 3%	10 minutes	12	120

Previous analysis suggests that SSs spent 60% of their time selling medicines and 40% of their time selling health commodities (Ahmed J, personal communication). BRAC would like to increase the proportion spent on selling health commodities but they recognize that this requires social marketing skills.

Competition and other constraints on SS performance

In the survey the SS was asked whether she felt the presence of other service providers in her area (such as pharmacies or shops that sell medicine, village doctor, TBA, NGOs, public and private facility etc.) affect her income. Seventy-four percent of the respondents said that they have pharmacies or shops that sell medicine in their area and about 80% of these respondents said that this limited their income. Sixty-seven percent reported that they felt competition from private and public clinics in their areas while 76% and 33% respondents said that the village doctors and traditional healers limited their income respectively. Competition from the traditional healers was lower at 33% (Table 15). The survey data, therefore, suggest that SSs face the greatest competition from village doctors followed by pharmacies or drug shops.

In interviews with SSs, it was stated that in some cases village doctors recommend lower quality and lower priced drugs that are easily available in local drug shops. Often these are lower priced than the drugs that SSs are selling which sometimes makes it difficult for SSs to sell their products. In other cases the SSs reported that people are less aware about the brand they were selling and therefore were more skeptical of their quality. SS drugs are sometimes more expensive than drug shops and, therefore, some villagers are skeptical of SS quality and ability and the high price they charge. The SSs reported, however, that once they were able to sell their higher quality product it becomes easier for them to do so in the future.

Table 15. Competition and other potential constraints to performance

Other health providers	Existence in SS area	If yes, these limit SS income
Pharmacy or shop that sells medicines	74%	80%
NGOs	10%	65%
Government clinic or hospital	34%	67%
Private clinic	data not interpreted	
Village doctor	74%	76%
Traditional healer	53%	33%
TBA	49%	16%
Have any trouble selling BRAC suggested medicines or health commodities	25%	
If trouble selling products, why?	Frequency	Valid Percent
People buy products from shops	30	44%
Product is too expensive/cheaper elsewhere	18	27%
Less preference for BRAC products	17	25%
People do not trust SS	2	3%
Wish to sell other health commodities and medicines	30% - Yes 70% - No	

There is some anecdotal evidence that SSs face less competition from government facilities in part due to the perceived and actual limitations of government facilities. For example, while government facilities generally provide good quality drugs, they often do not have sufficient supply to meet the local demand. In addition, government facilities often suffer from problems in drug distribution – sometimes drugs, even those of high quality, are given in loose form without any foil pack which can reduce or destroy the efficacy of the drug and can make prescribing it for patients difficult. BRAC selects drugs with clear labeling and packaging. Finally, there are often hidden costs at the hospital and they do not provide door-to-door services.

In the survey, 30% of the SSs said that they wished they could sell additional health commodities or medicines (Table 16).

Table 16. Medicines and health commodities SS reported they wish to sell

Name of medicine/health commodity	Responses (%)	Percent of cases
Renitidine (for stomach upset)	14	28
Femicon (Eye drops)	8	17
Cinkara (Herbal tonic for range of symptoms)	5	10
Napa (Paracetamol)	5	10
Diclofenac (Anti-inflammatory/pain reliever)	5	10

It is interesting to note that among 10% of the SSs who reported buying supplies from outside BRAC purchased several of these medicines (Table 17).

Table 17. Medicines/commodities purchased outside of BRAC for sale as SS

Name of medicine/health commodity	Responses (%)	Percent of cases
Renitidine (for stomach upset)	17	37
Napa (Paracetamol)	5	11
Civit	3	7
Histacin (Anti-histamine)	3	7
Femicon (Eye drops)	3	7

While a detailed analysis of products was beyond the scope of this report, we asked SSs to report the medicines and health commodities that they sold most and least frequently. The results are shown in Tables 18 and 19. Because women could select up to three responses and due to individual differences, some items, such as soap, appear as most frequently and least frequently sold. Paracetamol, vitamins and antacids are the most frequently sold medicines (and were not mentioned as least frequently sold medicine). Soap, salt, and saline are the most frequently sold health commodities (although soap and salt also were mentioned by some SSs as a least frequently sold commodity).

Table 18. Most frequently sold medicines and health commodities

Medicine	Responses (%)	Percent of cases
Paracetamol	16	45
Vitamin-B-Syrup	10	28
Antacid Plus	9	24
Histacin (anti-histamine)	8	24
Iron Tablets/Syrup	8	22
Health commodities		
Soap	38	83
Salt	28	70
Saline (ORS)	22	55
Delivery kit	7	17
Sanitary napkin	6	15

Table 19. Least frequently sold medicines and health commodities

Medicine	Responses (%)	Percent of cases
Dermin Balm (Skin ointment to relieve pain and itching)	18	39
Ascabiol(Lotion for treatment of scabies and body lice)	13	28
Histacin (anti-histamine)	9	20
Riboson (Vitamin B2)	8	18
Mebendazole (Treatment for pinworms)	7	16
Health commodities		
Sanitary napkin	38	73
Delivery kit	32	61
Condom	8	15
Salt	5	9
Soap	4	8

We asked women to describe the advantages and disadvantages associated with working as an SS. The main advantages reported were that she could work from her home; more prestigious in their community; better hours; and the expectation of better earnings in future. The main disadvantage that was expressed was less earnings in future. Forty-three percent of the respondents said there was no disadvantage to being as an SS. When asked how being an SS affects carrying out their household duties, the majority (66%) said that being an SS did not affect their household responsibilities. Thirty-three percent reported of working harder at household because of their role as SS (Table 20).

Table 20. Advantages and disadvantages of working as an SS⁴

What are the advantages of working as an SS	N	Percent	Percent of cases
Better earning in future	104	18.1%	39.1%
Better work environment	29	5.1%	10.9%
Can work from home ⁵	150	26.1%	56.4%
Better hours	111	19.3%	41.7%
More prestigious among the community	104	18.1%	39.1%
Family approves	33	5.7%	12.4%
Less distance to travel	31	5.4%	11.7%
No advantage	7	1.2%	2.6%
What are the disadvantages of working as an SS	N	Percent	Percent of cases
Less earnings in future	134	47%	51%
Not good work environment	2	.7%	.8%
Must work outside of home	12	4.2%	5%
Hours not convenient	2	.7%	.8%
Less prestigious among the community	3	1.0%	1%
Family disapproves	4	1.4%	2%
Greater distance to travel	8	2.8%	3%
No disadvantage	122	43%	46%
How does being an SS affect household duties			
Does not affect h/h duties or responsibilities		66%	
Have to work harder in h/h duties		30%	
Less time for children		3%	
Less time for cooking		.4%	

Economic opportunity cost and dropouts

Clearly a major factor in determining the financial sustainability of the SS programme is minimizing the number of dropouts. As the financial cost data presented earlier show the initial training costs for each SS are substantial. Replacing each dropout becomes very expensive for the programme. BRAC considers an SS to be active if she participates in two consecutive refreshers and visits 15 households per month.

⁴ More than one response possible.

⁵ The survey response 'can work from home' is slightly misleading as the SS job requires moving outside her home to make household visits. It is likely that the response "work from home" reflects a broader response of flexible working hours and conditions.

Khan *et al.* (1998) found total EHC SS dropout to be 22% but with significant regional variation (31% in Mymensingh compared to 44% in Fulbaria). This in-depth qualitative study identified the following as some of the reasons for SS dropout: lack of time because of the need to care for children and household chores; lack of profit for the amount of effort; family disapproval; and not enough time to visit BRAC office. While not a part of this study, there is anecdotal evidence that SS dropout rates are higher in urban areas, because they have greater economic opportunities (garment sector or work as domestic help) available to them (S. Taskeen, personal interview).

Our study sample did not include SS dropouts, so our sample may be biased towards those SS who are less likely to dropout. However, when asked if they ever considered quitting their work as SS, 13% replied yes. Of these women, 83% said that they had considered quitting their work because the payment is too low; 6% said because the work is difficult; and less than 1% attributed the reasons to better paid job alternatives, the need to care for their children, and disapproval of husband or in-laws. The SSs were asked whether or not a fixed monthly salary would encourage them to be more active as SS; 92% felt that a monthly salary would motivate them to work harder. The minimum monthly salary they expected was Tk. 1,339 (PPP-adjusted \$51.80) (mean response) (without commissions from sale of medicines or drugs).

Economic opportunity cost of SS

Clearly the decision whether to continue as an SS is closely influenced by the availability of other economic opportunities and how she might use her time otherwise. This study attempted to address the economic opportunity cost of the SS by asking if the SS had done or was currently doing other work while serving as an SS, whether this work was regular or seasonal, and what was the mean earning in an average month? We also asked about her perceptions of other work available to her. Three-fourth of the women (74%) reported that they had or were concurrently raising poultry while working as SS. On average, this provided women an additional Tk. 298 per month and was regular rather than seasonal work. Handicraft work was the next most frequently reported work in addition to being an SS with 26% reporting this mostly regular work (Table 21).

Other economic opportunities that pay more than the average monthly income for the SS tend to be regular work that does not have the flexibility in terms of hours and location that the SS work does. For example, women reported the average earnings of factory work to be Tk. 1,300, but 2% of the SSs in the survey reported having ever done or were currently doing that work. Factory work generally requires long and regular hours, which would constrain her from carrying out her duties as an SS.

We also asked the respondents to identify what other jobs would be available to them if they were not an SS and to report the monthly average income possible from that job. Poultry raising had the highest average monthly income possible followed by factory worker and tailor (Table 22).

Table 21. Reported work that SS has done or currently does while also working as an SS

Type of work	Has done or currently doing	Regular or Seasonal	Mean earnings in an average month
Factory worker	Yes – 2%	Regular – 83%	1300 Taka
	No – 98%	Seasonal – 17%	(PPP\$ 50.29)
Handicraft	Yes – 26%	Regular -80%	616 Taka
	No -74%	Seasonal -20%	(PPP\$ 24.07)
Poultry raising	Yes – 74%	Regular -98%	298 Taka
	No -26%	Seasonal -2%	(PPP\$ 11.65)
Agriculture	Yes – 13%	Regular -46%	833 Taka
	No -87%	Seasonal -54%	(PPP\$ 32.55)
Small business/hawking	Yes – 9%	Regular -80%	1088 Taka
	No -91%	Seasonal -20%	(PPP\$ 42.52)
Tailor	Yes – 13%	Regular -91%	611 Taka
	No -87%	Seasonal -9%	(PPP\$ 23.88)
Domestic worker	Yes – 5%	Regular -79%	585 Taka
	No -95%	Seasonal -21%	(PPP\$ 22.86)
Midwifery/TBA	Yes – 14%	Regular -92%	276 Taka
	No -86%	Seasonal -8%	(PPP\$ 10.79)

Table 22. Availability of other jobs and monthly income possible

Other jobs available	Average monthly income possible (In taka)
Factory worker	Tk. 246 (PPP\$ 9.62)
Handicraft	166 (PPP\$ 6.50)
Poultry raising	459 (PPP\$ 17.94)
Agriculture	109 (PPP\$ 4.26)
Small business/hawking	199 (PPP\$ 7.78)
Tailor	230 (PPP\$ 8.91)
Domestic worker	51 (PPP\$ 1.99)
Midwifery	51 (PPP\$ 1.99)

It is interesting to note that, except for poultry raising, the perception of the average monthly income possible from alternative jobs is relatively low and certainly in the range of what she can or is already making as an SS. It is especially interesting that the perceived salary for a factory worker is so low (Tk. 246) as compared to the reported average monthly earnings of those SS who work as factory workers (Tk. 1,300). This may suggest that there are misperceptions or imperfect information about the financial potential of other economic alternatives available to these women.

It is also interesting to note that the SSs do perceive that other economic opportunities are available to them. And despite the availability of these jobs, they continue to work as SS.

Factors that account for SS income performance

Identifying potential factors that explain why some SS earn more monthly income may yield useful lessons for BHP and its sustainability. The survey data were examined to identify some of the key factors that might explain why some SS perform better in terms of monthly income.

There were 47 SSs in the sample who fit the criteria of a high performing SS as earning more than Tk. 501 in the last month. Of them 51% were current VO members, 43% currently had a loan from BRAC, and they work an average of 3.4 hours each day.

Table 23 shows other descriptive characteristics of these high performing SSs.

Table 23. Selected descriptive statistics for high performing SS (n= 47) and low performing SS⁶ (n=149)

Indicator	Average for High Performing SS (n=47)	Average for low performing SS (n=149)
Age	41 years	39 years
Number of years of schooling	6	5
Number of family members	5	4.7
Currently a VO member	51%	36%
Monthly household income		
Monthly income is always greater than expenditure	21%	12%
Monthly income is always less than expenditure	26%	22%
Monthly income is equal to expenditure	23%	32%
Currently have BRAC loan	59%	48%
Loan used to buy drugs and SS Supplies	27%	23%
Replenish supplies between refresher trainings	96%	73%
Buy medicines or health commodities outside BRAC	17%	7%
Average hours worked per day	3.4	4
Any health related training outside BRAC	19%	10%
Minimum monthly salary (without commissions) required	Mean – 1757 Taka (PPP\$ 60.67) Median - 1500 Taka (PPP\$ 50.62)	Mean – 1244 Taka (PPP\$ 48.62) Median – 1000 Taka (PPP\$ 39.08)

The study findings suggest that high performers were more likely to currently have a loan with BRAC than low performers. Having more than one loan did not affect performance however. The correlation between length of time working with BRAC and SSs' monthly income is positive and statistically significant. This suggests that the SSs who worked with BRAC for a longer period are more likely to earn more than those who are with BRAC for short time. Having children aged <2 years is not a

⁶ Low performers defined as earning less than 300 Taka in last month (n=149).

predictor of SS performance. There was no statistical association between educational status (having primary education) and monthly earning.

The fact that high performers are more likely to have received health-related training outside BRAC is a potentially interesting result. Rahman and Tasneem (2008) also found an association between SS income and additional training from outside BRAC. This may be a useful additional selection criterion for recruiting SS.

An important factor that might explain the performance of an SS, beyond the number of hours she works each day, is how she spends her time as an SS. We tried to compare this for low and high performing SSs in the two charts below. These represent average number of minutes spent per month on each SS activity. While these should be viewed cautiously because they are averages, it is striking to note the differences in the reported number of minutes spent on selling medicines and commodities between the two groups (Fig. 3 and 4). While it is not surprising that the high performers would be selling more medicines and commodities, the additional amount of time they spend on these activities is quite significant – 171 minutes more per month for selling medicines and 110 minutes more per month for selling health commodities. In this analysis high performers spent more time on average each month in these particular SS activities than did low performers – 1,158 versus 751 minutes. It is also important to note that the questionnaire did not ask SS to report the amount of time spent on health education and health promotion as that is currently not financially incentivized in the SS programme.

Figure 3. High performing SS – average minutes per month on selected SS activities

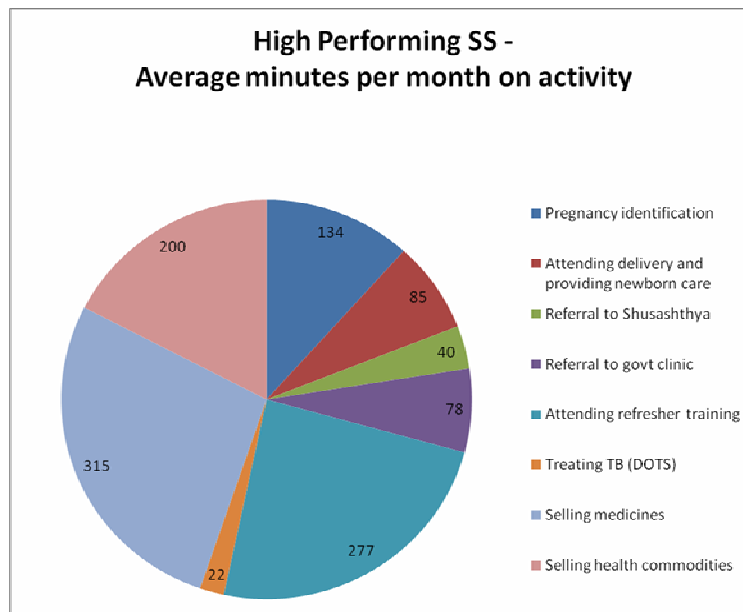
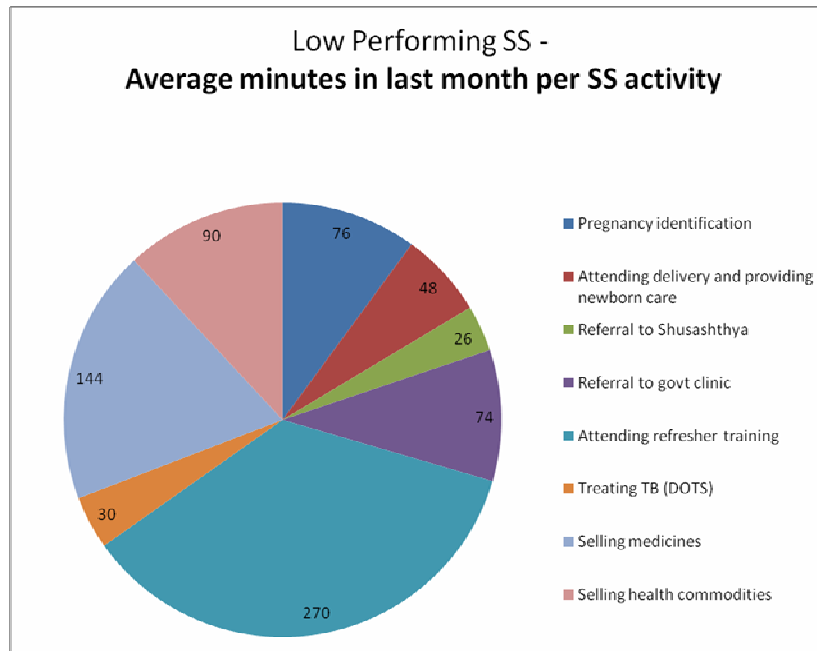


Figure 4. Low performing SS – Average minutes per month on selected SS activities



Study results for BRAC Afghanistan

BRAC Afghanistan, the first BRAC programme outside Bangladesh, began operations in 2002. The health conditions and status in Afghanistan are extremely poor due to decades of war, challenging physical terrain that limits access to services, and generally poor knowledge and awareness of health conditions and health-seeking behaviour. Social and development indicators are generally poor: life expectancy at birth is 43.6 years; adult literacy is 28%; maternal mortality is extremely high at 1,600 deaths per 100,000 as is infant mortality (165). Afghanistan ranked 181st out of 182 countries in the Human Development Index, a composite measure of human well-being and development.

BRAC operates in all 34 provinces in the country and includes 2,100 Health Posts, 66 Basic Health Centres and has over 3,600 CHWs. The programme has both male and female CHWs and the catchment area is smaller than in Bangladesh. The health programme treated over 130,000 patients in 2007 (BRAC Afghanistan Annual Report 2007).

BRAC Afghanistan initiated and introduced the concept of Community Health Volunteers (CHV) in 2002. During that period, there was no unique policy from the Ministry of Public Health (MoPH) with regard to CHV activities in the field. Several

NGOs were working in the health sector according to their own policies and strategies. Some of the NGOs trained community people and called them CHWs and paid them varying amounts of salaries between US\$2 to US\$50 per month.

The CHV, which BRAC Afghanistan initiated in 2002, were all female, working voluntarily, and not paid any salary. BRAC Afghanistan recruited female CHWs to supervise on average 10 CHVs. The CHWs were paid about 750 Afghani per month (equivalent to US\$15).

In 2004, the Afghan MoPH introduced a new strategy called the Basic Package of Health Care Services (BPHS) throughout the country. The objective of the BPHS is to improve quality and access to health services, particularly for women and children. Following the introduction of BPHS, the MoPH established a mechanism for contracting out the delivery of health care services throughout Afghanistan. This changed how local and international NGOs provided health services. The local and international NGOs were contracted to implement the BPHS in 34 provinces of Afghanistan. This was intended to help the MoPH coordinate efforts in the health sector and minimize duplication. Under the implementation of BPHS, the NGOs are responsible to establish Health Posts beside the Basic Health Centres (BHC), Comprehensive Health Centres (CHC) and district hospital (DH). The health post is, in fact, the house of the CHW. As per this policy, the NGOs are responsible for training two CHWs (one male and one female) for every 100-150 households. In BPHS the role of the CHW is clearly identified.

The CHW programme of BRAC Afghanistan

At the time of this study, BRAC Afghanistan health programme was operating in 7 provinces out of 34 provinces in the country. BRAC Afghanistan provides healthcare services through 7 districts hospitals, 20 CHC, 67 BHC, 44 Sub Health Centres and 2,055 Health Posts. A total of 3,483 CHWs are working in the catchments areas of the above mentioned health facilities in 7 provinces. Unlike in other BRAC programmes, both male and female CHWs are working under BRAC health programme. About 61% of all CHWs are female. However, BRAC still has only female CHWs in two provinces (Nangarhar and Parwan). Since introduction of BPHS, BRAC Afghanistan must follow the MoPH policy for its CHWs in Afghanistan. Province-wise information about the CHWs is provided in Table 24.

Incentives for CHWs

Because of its close and institutionalized partnership with the Afghanistan government, the CHW programme is different from the SS programme in Bangladesh and Uganda. In Afghanistan, where BRAC is being contracted to provide services by the government, BRAC must follow the MoPH policy in terms of the services provided. The government regulations do not allow CHWs to sell drugs so the financial incentive structure for the Afghanistan programme is slightly different than Bangladesh or Uganda.

Table 24. Description of BRAC Afghanistan CHW coverage

Province	Project/ Donor	# of Health Post	# of Female CHWs	# of Male CHWs	Total CHWs	Notes
Badghis	PPA/World Bank	331	331	331	662	There are 7 districts in Badghis and whole province is covered
Balkh BRAC	PPA/World Bank	372	406	338	744	There are 15 districts in Balkh province, all the districts are covered
Balkh BDN	PPA/World Bank	656	553	509	1062	BDN is implementing partner of BRAC in Balkh province
Nimroz		150	140	150	290	There are 5 districts, all the province is covered
Nangarhar	CBHP/ Oxfam Novib	241	362	58	420	There are 22 districts in Nangarhar, BRAC works only in five districts
Parwan	CBHP/ Oxfam Novib	305	305	0	305	There are 10 districts in Parwan, BRAC works in 3
Total		2055	2097	1386	3483	61% are female

Source: BRAC, Afghanistan Country Office

The financial incentives for CHWs in BRAC, Afghanistan are:

CHWs get 100 AF (PPP\$ 3.46) for attending refresher training in Balkh whereas every attendee gets 60 AF (PPP\$ 2.07) in Nangarhar and in Parwan;

- CHWs get 50 AF (PPP\$ 1.73) for detection of a TB patient and 150 AF (PPP\$ 5.19) for completion of TB treatment;
- CHWs get 20 AF (PPP\$ 0.69) per delivery;
- Sale of iodized salt and delivery kit; and
- CHWs get 5 AF (PPP\$ 0.19) for referring women for injectable family planning services.

Fourteen items of drugs are given to CHWs during the refresher training. These are provided and paid for by the donor.

CHW training

Trainings for the CHWs are different than those for SS in Bangladesh. CHWs are provided more training which is provided in three phases rather than a single two-week session. In the first phase they have three weeks of training; in the second phase they have another three weeks of training after spending two months in the community; and in the third phase they have another three weeks after two months in the community. The monthly refresher training are three hours in length.

Because of these fundamental differences associated with the BPHS programme, the cost structure of developing a CHW per year is also quite different. We tried to use the same costing approach as we did for Bangladesh and Uganda. The cost in the first year is about \$PPP 247 per CHW and for the second year is about \$PPP 83 which includes the cost of refresher training and the staff cost. Results are summarized in Table 25 and detailed analysis is found in Appendix 2.

Table 25. Cost to BRAC, Afghanistan of developing a CHW per year

	Afghani (AFN)	US\$	IUS\$ (PPP-Adjusted)
Total Cost in First Year	12,248	246.96	\$427.38
Total Cost in Second Year	4,178	83.56	\$144.61
Total Cost in First Year (min)	11,113.20	234.61	\$384.65
Total Cost in First Year (max)	13,582.80	259.31	\$470.12
Total Cost in Second Year (min)	3,760.20	234.61	\$130.15
Total Cost in Second Year (max)	4,595.80	87.74	\$159.07

The basic socio-demographic characteristics of the CHWs in our sample highlight some of the contextual differences in Afghanistan as compared to Bangladesh and Uganda. The CHWs in our study have less education (mean of 5.6 years); larger family sizes (mean of 8.5); and higher numbers of children (mean of 4.4 children). Only 10% of women are VO members but this likely reflects the programmatic change in VO membership not being a selection criterion in response to government regulation (Table 26).

When looking at the performance characteristics of CHWs in the sample it is clear that they are active as CHWs. The mean number of years worked as a CHW is 3.7 and the mean number of hours worked per day is 3.6 hours and reported number of possible household visits per day is 5.3. Ninety-five percent report that women come to their home to buy health commodities and medicines. It is not clear whether these are reported as household visits by the CHWs. The majority of women report needing to make two or more visits to sell both medicines and health commodities (Table 27). Only 10% of CHWs were VO members and this is likely influenced by the MoPH removal of VO membership as a requirement for being a CHW.

Table 26. Socio-demographic characteristics of CHWs in study sample (N=210)

Indicator	Average
Age	36 years
Number of years of schooling	5.6 years (Mean)
Number of family members	8.5 (Mean)
Number of children	4.4(Mean)
Number of children under 2 years of age	14 %
Currently a VO member	10 %

Table 27. CHW performance-related characteristics

Years working as a CHW	3.7 years (mean)
Reported number of h/h visits possible per day	5.3 (mean) 4 (Median)
Hours work as CHW per day	3.6 hours (mean) 3 hours (median)
Number of household visits expected from BRAC	36 (mean) 30 (median)
Replenish CHW supply between refresher trainings	6 %
Bought medicines or health commodities outside BRAC	3 %
Loan used to buy CHW supplies	4% (of 134 women)
If yes, amount spent from loan on supplies	AFG 3000 – Mean (PPP\$ 104)
Are you a VO member?	10%
Women come to CHW house to buy health commodities and medicines	95 %
Number of visits required to sell medicines	
1 visit	9%
2 visits	38%
3-4 visits	34%
4+ visits	19%
Number of visits required to sell health commodities	
1 visit	3.3 %
2 visits	49 %
3-4 visits	32 %
4+ visits	15 %

Financial performance and monthly income of CHW

The reported average monthly income was PPP\$ 4.95. The fact that the MoPH does not allow the CHWs to sell medicines obviously limits the monthly income for these CHWs. Only 11% of the women reported monthly fluctuations in income. Relatively fewer CHWs had ever borrowed a loan from BRAC (13%) and 4% of the women currently had a BRAC loan. Access to BRAC loan was not a big incentive for becoming a CHW (2% reported this as reason for becoming a CHW). The most common reason for becoming an SS was 'social recognition' (40%) and 'source of income for household' (30%). In the culturally conservative setting of Afghanistan, the opportunity for increased social recognition is likely to be a strong incentive. The majority of CHWs (79%) also reported that being a CHW had increased her status within her household significantly (Table 28).

Table 28. CHW monthly income, financial performance and incentives

Monthly income in last month	145 AF – Mean (PPP\$ 5.01) 110 AF – Median (PPP\$ 3.81)
Income received in average month	143 AF – Mean (PPP\$ 4.95) 100 AF – Median (PPP\$ 3.46)
Monthly fluctuations in sales	11 %
SS Loan status	
Ever borrowed a loan from BRAC	13%
Current loan with BRAC	4%
More than one loan with BRAC	2%
Loan with another NGO	
Why became an SS	
Source of income for household	34%
Financial independence	4%
Social recognition	40%
To learn something new	12%
To help my community	8%
To get BRAC loan	2%
Being an SS has given her financial independence	15%
How has BRAC VO membership affected work as SS	Data not available.
People trust me more	
Easier to sell products	
Need loan to buy products	
Has no effect	
Not a VO member	
How CHW status has changed in household	
Importance increased significantly	79%
Importance increased somewhat	12%
No change at all	3%
Importance decreased somewhat	3%
Importance decreased significantly	3%

The average reported time to perform CHW activities is greater in Afghanistan than in the other study countries. This likely reflects the distance between houses, the more difficult terrain in some parts of Afghanistan, and the socio-cultural constraints on female mobility in many parts of the country. Referral to government and NGO clinics takes the most time (51 minutes on average) while treating TB/DOTS takes the least (41 minutes) (Table 29).

In terms of the activities performed almost all CHWs had provided family planning counseling and services in the last month (96%) and a large number had identified pregnancy and attended a delivery in the last month (88% and 87%, respectively). Ninety-six percent had referred patients to a BRAC Health Centre in the last month. They spent the most time providing medicines in the last month (650 minutes).

Table 29. CHW reported activities and how she spent her time in the last month

Activity	Provided in the last month?	Average time to perform service	Average number of times provided	Total average number of minutes
Pregnancy identification	Yes – 88% No – 11%	47 minutes	4	188
Attending delivery and providing newborn care	Yes – 87% No – 10%	46 minutes	4	184
Referral to BRAC Health Centre	Yes – 96% No – 3%	43 minutes	5	215
Referral to Government, NGO clinic or hospitals	Yes – 66% No – 19%	51 minutes	2	102
Treat TB (DOTS)	Yes – 73% No – 12%	41 minutes	8	328
Provide Family Planning Services and Counseling	Yes – 96% No – 1%	48 minutes	7	336
Attending refresher training	Yes – 85% No – 6% Don't know–7%	182 minutes	1	182
Providing medicines	Yes – 80% No – 17%	50 minutes	13	650
Providing health commodities	Yes – 63% No – 31%	45 minutes	9	405

The reported advantages of working as a CHW are better earnings in future (55%), increased social prestige in the community (16%) and better work environment (19%). It is interesting that so many women reported better earnings in future given that 38% reported financial reasons for becoming a CHW. The most frequently reported disadvantage of working as a CHW was 'less earnings in the future' (50%). It is possible that women initially were motivated to become CHWs for non-financial reasons but as they serve as CHWs they are more motivated to earn income (Table 30).

Forty-two percent reported no disadvantages of working as a CHW and the majority of women reported that being a CHW does not affect her household duties.

Relatively fewer women reported other work while also serving as a CHW. The most commonly reported concurrent work activity was 'handicraft' which 13% of CHWs reported having done or currently doing. For most women (82%) this was seasonal work as opposed to regular opportunity. Twelve percent reported working in poultry raising and 8% in agricultural activities. The range of monthly average income from these activities was roughly PPP\$ 50 to PPP\$ 109. Obviously this is much higher monthly income than the average CHW income (PPP\$ 4.95) (Table 31).

Table 30. Advantages and disadvantages of working as a CHW

	N	Percent
What are the advantages of working as a CHW		
Better earning in future	116	55%
Better work environment	39	19%
Can work from home	5	2%
Better hours	5	2%
More prestigious among the community	34	16%
Family approves	4	2%
Less distance to travel	2	1%
No advantage	2	1%
What are the disadvantages of working as a CHW		
Less earnings in future	104	50%
Not good work environment	3	1%
Must work outside of home	1	.5%
Greater distance to travel	2	1%
Hours not convenient	3	1%
Less prestigious in community	4	2%
Family disapproves	3	1%
No disadvantage	87	42%
How does being a CHW affect household duties		
Does not affect h/h duties or responsibilities	87	42%
Have to work harder in h/h duties	42	20%
Less time for children	28	14%
Less time for cooking	19	9%
Less time for cleaning	9	4%
Miss out on family events	20	10%

Competition

The CHWs were asked whether the presence of some service providers (such as pharmacies or shops that sell medicine, village doctor, TBA, NGOs, public and private facility etc.) affected their income. Fifteen percent responded that they had pharmacies or shops that sold medicine and 15% said that there were village doctors in their community. About 50% respondent said that having the presence of pharmacy limited their income. Forty-five percent said they felt competition from a private and public clinic in their area. Forty-five percent and 44% of the respondents said that the village doctors and TBAs respectively limited their income. For the traditional healer this rate is 33%. It appears that CHWs faced the most competition from pharmacies or drug shops followed by public and private health facilities and village doctors and TBAs.

In terms of other limitations on their performance, 2% reported of having trouble in selling BRAC medicines or commodities. Only 30% wished they could sell or provide other health commodities or medicines (Table 32).

Table 31. Reported work that woman has done or currently does while also working as CHW

Type of work	Has done or currently doing	Regular or Seasonal	Mean earnings in an average month
Factory worker	Yes – .5% No – 99.5%	Regular – 100% Seasonal – 0	450 AFG (PPP\$ 15.76)
Handicraft	Yes – 13% No -87%	Regular -18% Seasonal -82%	1527 AFG (mean) (PPP\$ 52.85) 1700 AFG (median) (PPP\$ 58.84)
Poultry raising	Yes – 12% No -26%	Regular -32% Seasonal -68%	1306 AFG (mean) (PPP\$ 45.20) 1000 AFG (median) (PPP\$ 34.61)
Agriculture	Yes – 8% No -92%	Regular -76% Seasonal -24%	3123 AFG (mean) (PPP\$ 108.09) 2000 AFG (median) (PPP\$ 69.22)
Small business/hawking	Yes – 3% No -97%	Regular -0% Seasonal -100%	3140 AFG (mean) (PPP\$ 108.68) 2000 AFG (median) (PPP\$ 69.22)
Tailor	Yes – 5% No -94%	Regular -27% Seasonal -64%	1490 AFG (mean) (PPP\$ 57.57) 1250 AFG (median) (PPP\$ 43.26)
Domestic worker	Yes – 0% No -100%	No data	No data
Midwifery/TBA	Yes – 3% No -97%	Regular -17% Seasonal -83%	2000 AFG (mean) (PPP\$ 69.22) 2000 AFG (median) (PPP\$ 69.22)

The three most frequently sold medicines were paracetamol, cotrimixazol (antibiotic) and ORS. The three least frequently sold medicines were oral pills, condoms and anemia tablets.

The three most frequently sold health commodities were iodized salt, soap and toothbrushes. The three least frequently sold health commodities were condoms, toothpaste and soap.

Table 32. Competition and other potential constraints to performance

	Existence in CHW area	If yes, these limit CHW income
Other health providers		
Pharmacy or shop that sells medicines	29%	50%
NGOs	7%	11%
Government clinic or hospital	18%	45%
Private clinic	16%	47%
Village doctor	32%	45%
Traditional healer	Data not available	33%
TBA	35%	44%
Have any trouble selling BRAC suggested medicines or health commodities	2%	
If trouble selling products, why?	Frequency	Valid Percent
People do not prefer BRAC products	2	29%
People buy products from shops	2	29%
Product is too expensive/cheaper elsewhere	2	29%
People do not trust CHW	1	14%
Wish to sell other health commodities and medicines	30% Yes 70% No	
If yes, which ones (selected)	Rubbing alcohol Amoxicilin syrup Ampicillin Antibiotics Eye drops Pampers for children Plasters	

There are several important differences between the BRAC CHW programme in Afghanistan, Bangladesh and Uganda.

1. Health system differences

The context in which the health system functions is different in Afghanistan. Most of the population is deprived of very basic facilities, particularly in the rural areas. Most professional medical doctors prefer to migrate to other countries and those who do stay, prefer to be in Kabul and are reluctant to go outside Kabul. Afghanistan is a particularly conservative and follow traditional culture for women. Women do not leave their home or compound very often and have few opportunities to interact with others. It is thought that they can be effectively utilized for the betterment of the community, and serving as a CHW is one way to do that.

2. Non-financial incentives versus financial incentives

While the context of Afghanistan suggests that non-financial incentives (e.g., social recognition, helping ones community) will be driving aspects of sustaining the programme, it is also recognized that if CHWs cannot earn in the long run it will jeopardize programme sustainability. However, programme staff feels that the programme can be considered sustainable in terms of its approach because the communities have accepted the concept, although there is some variation by province. BRAC, Afghanistan's future plan is to ensure generation of income for the CHWs so that they will continue to work as CHWs. Possible considerations are to sell some health commodities and to strengthen their involvement with other programmes thus increasing the incentives for service charges and referrals. However, because this is a partnership with the government, these changes will have to be carefully negotiated with that in mind.

3. Public-private partnership

BRAC, Afghanistan can be considered an example of a successful public-private partnership. BRAC works very closely with the government and the government is supportive of BRAC's work and has asked BRAC to participate on many projects. The careful collaboration and adherence to government regulation has inevitably changed some of the fundamental aspects of the SS programme. For example, originally the BRAC, Afghanistan included VO membership as a selection for being a CHW but this was removed because of government regulations.

Study results for BRAC Uganda

CHP programme - financial and economic analysis

Description of BRAC Uganda

While the GDP per capita in Uganda is \$1,500 and its growth rate is 5-7%, 85% of the Ugandan population lives on less than \$1 per day. Furthermore, many of those at the bottom of the economic scale remain without basic services, including healthcare. As part of its mission to help the poor and reach those most affected in post-conflict settings, BRAC began its operations in Uganda in 2006 with 10 branch offices. Since then it has opened 64 branch offices in 23 districts and created over 3,000 VOs with 76,000 group members and has become one of the largest NGOs in the country. As of the time of this study it was providing loans to 100,000 women.

BRAC Uganda has two area offices in Kampala and Iganga districts. These two offices cover seven districts and each area office covers 5-8 branches. Each branch organizes 60-90 village lending groups. All BRAC borrowers are within 5 km of a branch office.

BRAC Uganda health programme receives funding from two sources: 1) Living Goods (LG) and 2) the Master Card Foundation (MCF). LG began supporting BRAC

Uganda in 2007. In September 2008 Master Card Foundation provided a two year \$19.6 million dollar grant. At the time of this study the health programme was working in 80 branches.

BRAC Uganda health programme

BRAC began its health programme in Uganda in July 2007. The BRAC Uganda health programme is very much based on the model of BHP in Bangladesh. It relies on female volunteers called Community Health Promoters (CHP) who are recruited from BRAC VOs. The EHC programme in Uganda has 10 components: health and nutrition education; safe water, sanitation and hygiene; family planning; immunization and vitamin A; basic curative care; pneumonia; pregnancy related care; malaria control; tuberculosis control; and HIV/AIDS.

Uganda faces a range of challenges in its health sector that BHP felt it could directly respond. A major problem facing the health sector in Uganda is a severe shortage of health workers. Only 49% of the population lives within 5 km of a health facility. Reliable and safe drug supply is another problem facing the Ugandan health system. Irregular supply of drugs and problems related to drug quality, price and stockouts are common and mismanagement and corruption in the health sector means that drugs are often sold for several hundred percent of their cost. There is a heavy reliance on an unregulated private sector which results in overprescribing and missed diagnosis. Public health sector facilities are overburdened and poorly supplied and underfunded. The landscape for drug sales in Uganda is fragmented with no chains or franchise networks. In response to this scenario, BRAC Uganda felt they could cut out one or more middlemen in the distribution of drugs and health commodities.

Community Health Promoters (CHP)

BRAC Uganda supports networks of CHP to target the provision of basic and primary health care particularly for women and young children. An additional goal is to create a sustainable livelihood for the health workers, CHPs, and themselves. Based on the same BRAC approach in Bangladesh, the programme relies on female volunteers recruited from BRAC VOs in their communities to provide basic health education, referrals and the sale of medicines to address basic health problems.

Initially, CHPs were assigned to cover 200-240 households every month and expected to visit 10-15 households each day. It became apparent that in some areas this was too large a catchment area and CHPs, because of physical distance between households and travel times, were not able to visit all of these households. Since then the coverage expectations are being reconsidered by the programme staff.

As in Bangladesh, CHPs are selected from among the VOs. They are usually nominated by their peers in their VO group or they can volunteer themselves. The training of the CHP is 12 days at the branch office. Before CHPs can sell they must complete a health survey of the households in their area. This allows them to build

trust and also to better understand the health needs of their community. CHPs have a probationary period of 30-60 days during which they only do household visits and health education. After their training and this initial field work they are given an inventory loan and can begin selling health commodities.

Each branch office has two Community Health Assistants (CHA) which, like *Shasto Kormis* in Bangladesh, supervise the CHP and provide additional health services like ANC. CHAs work 5 days a week, and on Saturdays they are in branch office. Each CHA supervises 10 CHPs. They visit each CHP at least twice a month. On Saturdays they are involved in refresher training and dispensing drugs and supplies at the branch office. The CHAs spend much of their time moving around visiting CHPs at their houses. The CHA tracks progress of each CHP in a 'CHP Movement Register' which is kept in the home of each CHP. They keep a copy and give a copy to Project Officer.

Project Officers (PO) are responsible for one area which includes 5 or 6 branches. The POs move around to visit the CHAs and CHPs and supervise their progress. BRAC provides them with a motorcycle but the distance between some branches is as great as 40-50 km which is difficult by motorcycle so they often travel by bus. There are currently four Regional Health Coordinators (RHC), all male Bangladeshis, who provide overall supervision of the health programme.

Specific costs for CHP programme

As with the analysis for the SS programme in Bangladesh, we collected and analyzed data from programme staff to determine an average cost of recruiting, training and managing a CHP per year. We employed a similar methodology as in Bangladesh and attempted to standardize as much as possible to compare between the programmes. Programme cost data for Uganda is clearly much higher than that in Bangladesh. The estimates of US\$1,204 (PPP adjusted) in the first year and US\$636 (PPP adjusted) in the second year reflect the higher costs of salaries and basic supplies in Uganda and also the newness of the programme. Table 33 summarizes the total costs. Appendix 2 provides detailed analysis.

Table 33. Cost to BRAC, Uganda of developing a CHP per year⁷

	Ugandan shillings	\$US	I\$US (implied PPP adjusted)
Total cost in the first year	UGX 788,254	\$394.13	\$1,204.45
Total cost in the second year	UGX 416,555	\$208.28	\$636.49
Total cost in 1st year (min)*	UGX 709,429	\$354.71	\$1,084.01
Total cost in 1st year (max)*	UGX 876,080	\$433.54	\$1,324.90
Total cost in 2nd year (min)*	UGX 374,899	\$187.45	\$572.85
Total cost in 2nd year (max)*	UGX 458,210	\$229.10	\$700.14

⁷ See Appendix 2 for detailed breakdown of the analysis.

Incentive and income structure for CHP

The CHPs are entirely incentivized through the sale of medicines and health commodities. The programme is considering adding pregnancy identification and ANC check-up which would provide additional financial incentives for service charges.

Procurement of inventory for the CHPs requires more time and resources than it does in Bangladesh. Procurement in Uganda must involve the head office, unlike in Bangladesh where it is decentralized. The logistics and supply component of the programme is very complicated and BRAC Uganda is considering hiring two staff to manage procurement and supply logistics. In Bangladesh, BRAC is able to contract with pharmaceutical companies once a year to supply all branches. While Uganda has pharmaceutical companies, they do not have all the essential medicines in stock. As a result, the programme is considering importing medicines from Bangladesh. Other CHP products such as diapers and sanitary napkins are imported from Egypt.

The CHPs have an inventory of 30 products including in its product mix a range of traditional health commodities (e.g., ORS) but also basic consumer items (e.g., soap and sanitary napkins) to bolster CHP sales and increase the likelihood that they will achieve financial sustainability.

BRAC purchases the products (or in some cases receives them for free) at the lowest possible price. The CHP buys the products from BRAC at the wholesale price and then sells them to her community at a markup thereby making a profit. The profit margin on health products varies based on the product but in general the margin for BRAC is 10% and the profit margin for CHPs is 15% (Table 34).

Each CHP starts with a complete set of products. She is provided this initial inventory based on a revolving loan fund. They are expected to pay back this loan on a monthly basis. They can qualify again for revolving fund if necessary.

Efficiently and effectively supplying the CHPs is a critical function to ensure sustainability. Each branch office has a storeroom in which they try to maintain at least two months of stock. Initially the procurement of supplies was not based on need and, therefore, the storerooms became very crowded. Even maintaining just two months of stock means that there is sometimes not enough space as the BRAC branch offices are not large and all BRAC programmes (health, education and microfinance) are operating in the same branch office. Some of these items, like sanitary napkins and pampers, require a lot of storage space.

For renewing supplies, branch offices make a requisition to the Kampala office and usually receive supplies in a week or less. Transport of supplies is by hired truck between Kampala and the branches or sometimes manufacturers and distributors supply the branches directly. Previously CHPs could come anytime to the branch office to resupply their medicines but recently they were told to come only on Saturdays. There was concern that because of the time and cost of coming during the week it reduced the time CHPs had to make their household visits.

Table 34. BRAC health programme: branch product and price list

Req	Product description	Brand	Retail pack	Price CHP sells for
	Pain, cold, and cough			
R	Pain reliever (500 mg)	Panadol	4 tabs	100
R	Cold capsule - 2 tab blister pack	Cold cap	1 Tab	100
	Cough mixture - 100ml	Delesed	Bottle	2,200
	Family planning and reproductive health			
R	Oral contraceptive	Pillplan	1 cycle	300
R	Condoms 3 pack	Protector	3 pack	250
R	Condoms 3 pack	Lifeguard	3 pack	250
R	Mama kit	PSI	1 kit	10,000
	Health – Other			
R	ORS	Medipharm	1 sachet	200
R	De-worming Albendazole (size) 200 or 400 mg	Bendex	1 pill	200
	Eye drops - Gentamycin	Tetra	1 bottle	500
R	NEW zinc tabs	tbf	Tbd	-
	Malaria prevention and treatment			
R	Anti malarial	Kamsidar	3 tabs	300
R	Bed net - Long lasting 5x6	Permanent (LLN)	1 net	12,000
	Sanitation and hygiene			
R	Sanitary pads	Perfect	1pad	1,200
R	Sanitary pads	Allways	1pad	1,500
	Disposable gloves	Glovemax	1 pair	100
	Toothpaste – 70 ml	Delident	1 tube	700
R	Hand soap - 25 g	Samona	25 g Bar	900
R	Water purification	Waterguard	1 Tab	40
	Vitamins and supplements			
R	Vitamin A	0	2 tabs	200
R	Vitamin B	0	6 tabs	50
R	Iron tablets	0	6 tabs	75
	Multi-vitamin tablet (Vitamin A, B1+2, D)	0	6 tabs	100
	Multi-vitamin syrup – 100 ml (Vit A, B, B12, C, D, riboflavin)	Renavit	1 bottle	1,300
R	Iodized salt - 1/2 kg	Safi	0	450
	Wound Care			
	Antiseptic ointment – 20 g	Burnem cream	1 tube	1,100
	Antiseptic liquid – 100 ml	Savlon	1 100 ml bottle	2,150
	Miscellaneous			
	Facial Jelly - 50gms	Samona	50 g bottle	1,000
	Diapers - Size 2 (3-6 kg)	Pampers	1 Diaper	3,500
	Diapers - Size 3 (4-9 kg)	Pampers	1 Diaper	-
	Cotton 50 g	0	1 50 g pkg	500
	Laundry Soap Bar- 600 g	Mukwano	1 XX gm Bar	1,250

Source: BRAC Uganda office, May 10, 2009

Factors that influence CHP performance

Identifying and understanding the potential factors that influence performance of CHPs in terms of their monthly sales and profits is critical to thinking about whether or not the CHP programme can and will become financially sustainable. In order to understand this both quantitative and qualitative research was carried out.

Table 35 shows the selected socio-demographic characteristics of the CHPs in the sample. The majority of CHPs are current VO members (91%) and the majority is above the age of 35 years. Nineteen percent of the CHPs are either divorced or widowed. The mean number of family members (6.6) is quite high (Table 35). Sixty-nine percent of the respondents reported that the income they earned as an SS made a big difference to the household (Table 36).

Table 35. Socio-demographic characteristics of CHPs in study sample (N=155)

Indicator	Average	
Age		
	20-24 years	3.9%
	25-29 years	13.5%
	30-34 years	23.2%
	35-39 years	30.3%
	40 and above	29%
Marital Status		
	Married or living together	81%
	Divorced/separated	12%
	Widowed	7%
	Never married	0.6%
Number of years of schooling	10.10 (Mean)	
Number of family members	6.6 (Mean)	
Number of children	4.35 (Mean)	
Number of children under 2 years of age	19%	
Currently a VO member	91%	

Table 36. Household financial status and monthly income

Monthly household income	
Monthly income is always greater than expenditure	38%
Monthly income is always less than expenditure	3%
Monthly income is equal to expenditure	6%
Importance of CHP earnings for family	
H/H could not continue without SS income	18%
SS income makes a big difference	69%
SS income makes no difference	7%
How CHP income is used	
Spend on children	40%
Give to husband	1%
Pay school fees	12%
Buy food	20%
Save	7%
Pay back loans	20%

Examining performance-related characteristics suggests that most CHPs are active. They reported that on average they could visit nine households a day and work just over 3 hours each day. Eighty-five percent replenish their supplies between refresher training and 65% have used a BRAC loan to buy CHP supplies. The number of visits that are required to sell medicines is quite high – 60% of the CHPs reported to make four or more visits to sell medicine. For health commodities, such as bed nets, even a larger proportion reported to make four or more visits to sell health commodities (Table 37). This could reflect the generally higher price for commodities or that the CHP does not always carry these commodities with her when she makes her household visits. Also, commodities such as sanitary napkins and pampers are quite popular and some CHP said that these were not always in stock at the branch office.

Table 37. CHP performance-related characteristics

Years working as a CHP	
Less than one year	23%
1-2 years	51%
More than 2 years	26%
Reported number of h/h visits possible per day	9.2 (average)
Hours work as CHP per day	3.2 hours (average)
Replenish CHP supply between refresher trainings	85%
Bought medicines or health commodities outside BRAC	0.6%
Loan used to buy CHP supplies	
	65% (of 134 women)
If yes, amount spent from loan on supplies	UGX 169,204 – Mean UGX 180,000 – Median
Women come to CHP house to buy health commodities and medicines	
	98%
Number of visits required to sell medicines	
1 visit	2%
2 visits	9%
3-4 visits	30%
4+ visits	60%
Number of visits required to sell health commodities	
1 visit	1%
2 visits	9%
3-4 visits	18%
4+ visits	72%

Average monthly income and financial performance for CHPs

We asked CHPs what their income was in the last month from working as a CHP. The mean was UGX27,680 (PPP-adjusted \$42.29) and the median was UGX24,000 (PPP-adjusted \$36.67). This was slightly lower than the monthly income they reported in an average month (UGX38,222 or PPP-adjusted \$58.40) (Table 38).

Sixty-seven percent of the respondents reported that there was monthly fluctuation in sales. In our qualitative interviews we found that sales tend to increase around the time when children are going to school. At these times, there is an increased demand for sanitary napkins, soap, and other basic health and medicines that children take with them to school.

The majority of the CHPs has ever had or currently had a loan with BRAC (88%). Thirty-six percent of women had more than one loan with BRAC. In the qualitative interviews with high and low performing CHPs, the discussion of the ability to repay the CHP loan for supplies in addition to repaying another BRAC loan came up frequently. It was clear that some CHPs simply could not keep up with payments for both loans. The CHAs complained that because the Credit Officer (CO) was trained to collect repayments for the microfinance loan, the CO always reached the CHP first and successfully got her microfinance loan repayments. Once the CHA arrived, the CHP often said she had no money left to repay her CHP supply loan.

“The problem is that I have to meet my weekly installment but also need money to resupply. If the community requests a medicine from me but I don’t have it and don’t have the money to buy it then the community will lose trust in me.” CHP In-depth interview

Table 38. CHP monthly income, financial performance and incentives

Monthly income in last month	UGX27,680 – Mean (PPP-adjusted \$42.29) UGX24,000– (PPP-adjusted \$36.67) Median
Income received in average month	UGX 38,222 – Mean (PPP-adjusted \$58.40) UGX30,000– (PPP-adjusted \$45.00) Median
Monthly fluctuations in sales	67%
CHP Loan status	
Ever borrowed a loan from BRAC	99%
Current loan with BRAC	88%
More than one loan with BRAC	36%
Loan with another NGO	0.8%
Why became a CHP	
Source of income for household	22%
Financial independence and social recognition	3%
To learn something new	47%
To help my community	27%
Being a CHP has given her financial independence	80%
Ever considered quitting work as CHP	20% - Yes 85% - No
If yes, why considered quitting (N=26)	
Payment is too low	96%
CHP role is difficult	4%
How has BRAC VO membership affected work as CHP	
People trust me more	31%
Easier to sell products	36%
Need loan to buy products	1%
Has no effect	32%

It is interesting to note that 22% of the women said that they became a CHP to provide a source of income for the household. Forty-seven percent said that they did

it “to learn something new” and 27% reported it was in order “to help my community”. However, 80% reported that being a CHP had given them financial independence. This may suggest that her expectations about financial returns to being a CHP were much lower before she joined and that she did not necessarily appreciate the extent to which she could earn money as a CHP.

For many women the desire to help their community is likely linked with the health problems they have seen in their communities, particularly the devastation of HIV/AIDS. For many women, being a CHP is providing them a chance to be a part of the health workforce in their communities.

“Since I was born I wanted to be a nurse but I failed. But I have that interest. I had it inside my heart. So, that is why I raised my hand up and they picked me.”

Of the 20% of women (n=26) who reported that they had ever considered quitting their work as CHPs, 96% said it was because the payment was too low. So it appears that for a sub-set of CHPs, their financial expectations or goals are not being met.

In terms of the CHP activities that are being carried out, almost all of the CHPs reported providing pregnancy identification and attending delivery and providing newborn care in the last month. Almost all had sold medicines and health commodities in the last month. Ninety-four percent reported attending refresher training in the last month (Table 39).

It appears that in addition to attending the refresher training, CHPs are spending the bulk of their time selling medicines and health commodities. They reported an average of 46 medicine sales and 38 health commodity sales in the last month. It is striking that 72% of CHPs must make four or more visits to sell health commodities. This likely includes visits to obtain payment for the commodity from women who buy products on credit.

The three most frequently reported medicines that are sold are Bendex, Deworming tablets and Panadol. The least frequently sold medicines are Kevlon, Pill Plan (oral contraceptives) and vitamin syrup.

In the in-depth interviews with CHPs it became clear that the size and price of some of the CHP inventory were not competitive with what the market was selling.

Question: Are there any products you aren't selling or that people don't want?

Response: “Iron tablets are not moving – have to explain a lot about them....; Kevlon is not moving because people can't buy the whole tin...just do a cotton swab (individual treatment) but they don't pay for it. Samona (jelly) is expensive and of small size. So, the community is complaining about the size and price is too expensive. The community wants a bigger size.”

Table 39. CHP reported activities and how she spent her time in the last month

Activity	Provided in the last month?	Average time to perform service	Average number of times provided	Average total number of minutes per month
Pregnancy identification	Yes – 98% No – 2%	25 minutes	7	175
Attending delivery and providing newborn care	Yes – 97% No – 3%	28 minutes	7	196
Referral to Government, NGO clinic or hospitals	Yes – 88% No – 12%	21 minutes	11	231
Attending refresher training ⁸	Yes – 94% No – 6%	231 minutes	28	461
Selling medicines	Yes – 99% No – 1%	23 minutes	46	1058
Selling health commodities	Yes – 97% No – 3%	21 minutes	38	798

In terms of how CHPs coped with slow moving products, some adapted their pricing structure to sell products.

Question: Do you ever lower the price just to sell it?

Response: “Yes...like iron tablets...regular price is 10 tabs for 100 shillings now I am selling 15 tabs for 100 shillings. People like the ORS but they say that these are given for free in the hospital... Now I have to lower prices.”

Question: Do you ever give something for free if buying something else?

Response: “No.”

Question: Do you sell things for less profit to get rid of things?

Response: “When things are approaching the expiry date I will sell it at a lower price rather than throwing it out.”

CHP Turnover

The BRAC Uganda programme is very new so there are less data to draw upon than in the Bangladesh programme. While the CHPs have been recruited since 2007, they have only been fully functioning and selling medicines since 2008. Of the 180 original CHPs that were trained, 60 have dropped out.

⁸ Refresher trainings are held once a month; it is likely that some SSSs included visits to the branch office to resupply in their response to this question which is why there are more than one time listed in the last month.

The programme identifies a CHP as a dropout if they are not interested in selling products and are not attending the refresher training. The programme originally thought women who have shops outside the home would be successful CHPs but that was not the case. There was too much competition in terms of their time. As a result BRAC has changed the selection criteria to those women who have shops in their house or community but not in the market. Another perception about the high dropout rate is that the CHP's expectations about the income they could earn may have been too high.

While it is difficult to determine definitely the threshold at which a CHP drops out of the programme, the survey did ask CHPs if they would work for a salary and if so what that minimum salary would be. All the respondents said that a fixed monthly salary would motivate them to be more active as CHPs. Of those who responded as to what that minimum salary would be (n=97), 76% said that it would be in a range of 150,000 to 250,000 shillings per month (PPP-adjusted \$229 - \$382).

When asked what the advantages of working as a CHP, about 1/3 replied: better earnings in future, and can work from home. Interestingly, when asked about the disadvantages of working as a CHP, 57% said that less earning in future while 31% reported that there are no disadvantages to being a CHP. Ninety-one percent reported that being a CHP has no effect on carrying out her household duties and responsibilities with only a few women reporting it leaves them less time for caring for their children and cooking and cleaning (Table 40).

Question: What do you like the most about being a CHP?

Response: "Community looks at me as the person who brings ideas and knowledge to them. They come to me with issues and questions and I am able to give ideas to them. Been looked at by community so good. ... People come to me and I help them and they go out happy and preach to others that I can help the community."

Table 40. Advantages and disadvantages of working as a CHP

	N	Percent
What are the advantages of working as a CHP		
Better earning in future	52	33.1%
Better work environment	18	11.5%
Can work from home	50	31.8%
Better hours	17	10.8%
More prestigious among the community	17	10.8%
Family approves	3	1.9%
What are the disadvantages of working as a CHP		
Less earnings in future	87	57%
Not good work environment	3	2%
Must work outside of home	1	.7%
Greater distance to travel	15	9.8%
No disadvantage	47	31%
How does being a CHP affect household duties		
Does not affect h/h duties or responsibilities	141	91%
Have to work harder in h/h duties	5	3%
Less time for children	3	2%
Less time for cooking	3	2%
Less time for cleaning	2	1%
Miss out on family events	1	0.6%
Would fixed monthly salary encourage you to be more active as CHP?	100% (N= 155)	
What is minimum monthly salary that you would require?		
100,000 – 249,999 (PPP-adjusted \$152-382)	74	76%
250,000-500,000(PPP-adjusted \$382-764)	22	23%
Above 500,000 (PPP-adjusted \$764 and above)	1	1%

Economic opportunity costs for CHPS

Understanding the economic opportunity cost structure in Uganda, and identifying potential differences with Bangladesh are critical for designing the CHP programme that is financially sustainable. In Bangladesh, women are more likely to be involved in income generating activities within their home and then the males in the family will transport it or sell it in the market. In Uganda, women are more likely to go out themselves and run the business and/or market their products directly. Societal differences between the treatment and expectations of women also contribute to this. For example, there are many more female-headed households in Uganda compared to Bangladesh.

In this economic and societal backdrop, BRAC Uganda health programme is tackling a potentially difficult question. Can the CHP earn a sustainable income as a CHP? Or is it simply complimenting other work she is already doing and therefore providing value added to create a sustainable situation. The concept of sustainable income

and CHP incentives may need to be thought of differently in the Ugandan context because the economic opportunity cost for her may be different. We asked the respondents to identify what other jobs are available to them if they were not a CHP. The most frequently reported alternative jobs are small business/hawking, raising poultry, and agriculture (Table 41). Many CHPs are already engaged in additional jobs such as these and in qualitative interviews with them, they report that the biggest advantage of being a CHP is that it is easily integrated into the work or business they are already doing. If they are a seamstress at home or sell second hand clothes out of their house, they already have a clientele that is coming to their home. Interviews with BRAC Uganda programme staff mention that while Ugandan women are very mobile, the programme has found getting them to visit 10-15 households per day difficult. This may be due to their need to stay fixed at home or in a particular spot in the village to carry out their other work.

Table 41. Availability of other jobs as reported by CHPs

Other jobs available	Percent reporting availability
Handicraft	11%
Poultry raising	27%
Agriculture	20%
Small business/hawking	29%
Tailor	5%
Domestic worker	0.8%
Midwifery	8%

Non-financial incentives may be different in Uganda as well. In Bangladesh women are more likely to stay at home and work while Ugandan women are out running businesses outside home...this sets up a situation where Ugandan women are “sacrificing income” versus Bangladeshi women who are “sacrificing time”....therefore, their opportunity cost calculation is different.

Competition and potential constraints on performance

Both the quantitative and qualitative data suggest that CHPs face competition in their catchment areas. The most frequently mentioned source of competition were pharmacies or shops that sell medicines, private clinics, government clinics or hospitals, and traditional healers. The competition that they felt limit their income as CHPs are the pharmacies and the government and private clinics - 88% of the women reported that the presence of a government clinic limits their income. Some clinics are providing certain items that may be donated by international agencies of NGOs for free (condoms for example). This creates difficulties for CHPs who are trying to sell the same or similar products. Forty-six percent of those women who said they had trouble selling BRAC CHP products said that it was because people did not prefer BRAC products.

When asked if they wished to sell additional health products, 67% replied that selling additional products or medicines would be preferred. The list of these products was

quite long and a few of the more frequently mentioned responses are shown in Table 42. There are also many non-health items (lotion, cooking oil, rice, etc) that were mentioned and 69% of the women responded that they would like to sell additional non-health items as a CHP.

Table 42. Competition and other potential constraints to performance

	Existence in CHP area	If yes, these limit CHP income
Other health providers		
Pharmacy or shop that sells medicines	74%	78%
NGOs	29%	48%
Government clinic or hospital	62%	88%
Private clinic	74%	65%
Village health team	19%	48%
Traditional healer	44%	9%
TBA	29%	11%
Have any trouble selling BRAC suggested medicines or health commodities	36%	
	Frequency	Valid Percent
If trouble selling products, why?		
People do not prefer BRAC products	26	46%
People buy products from shops	18	32%
Product is too expensive/cheaper elsewhere	10	18%
People do not trust SS	2	4%
Wish to sell other health commodities and medicines	67% Yes 33% No	
If yes, which ones (selected)	Antibiotics Antimalarials Better contraceptives Fansidar Ulcer medicine	
Are there non-health-related products you wish you could sell or women ask about?	69% - Yes 31% - No	
If yes, which ones (selected)	Cooking oil Sugar Tea Toilet paper School books for children Lotions Rice	

When asked to describe the biggest challenges they face, one CHP replied:

“Some people ignore you in the community – especially new people in the community. In the beginning people don’t listen to you. And during the rainy season it is very hard to travel and visit -- in rainy season it is tough.”

In response to questions about being a ‘volunteer’ and how the community views their work as volunteers, many replied that there were misunderstandings in the

community that the CHPs were volunteers. Some community members believe that BRAC is giving the CHPs the medicines and commodities for free and she is selling them to make personal profit.

Table 43. Selected descriptive statistics for high performing CHP (n= 55) and low performing CHP (n=67)

Indicator	Average for High Performing CHP (n=55)	Average for low performing CHP ⁹ (n=67)
Age	35 years	36 years
Number of years of schooling	10	10
Current marital status		
Married/living together	82%	84%
Divorced/separated	11%	9%
Widowed	6%	7%
Number of family members	7	6
Currently a VO member	91%	91%
Monthly household income		
Monthly income is always greater than expenditure	24%	43%
Monthly income is always less than expenditure	4%	4%
Monthly income is equal to expenditure	9%	3%
Currently have BRAC loan	87%	85%
Currently have more than one BRAC loan	17%	41%
Loan used to buy drugs and SS Supplies	58%	62%
Replenish supplies between refresher trainings	91%	80%
Buy medicines or health commodities outside BRAC	0%	2%
Average hours worked per day	3.6	2.8
Any health related training outside BRAC	13%	24%
Ever considered quitting as CHP	15%	18%
Minimum monthly salary (without commissions) required	UGX 100,000-249,000 (49%)	UGX 100,000-249,000 (93%)
	UGX 250,000-500,000 (35%)	

When comparing basic descriptive statistics of low and high performing CHPs it is striking how many similarities there are between the two groups (Table 43). One major difference is whether or not the CHP has more than one BRAC loan. In this analysis, having more than one BRAC loan suggests that the CHP is more likely to be a low performer. This could reflect that the CHP is behind on paying back her loans and, therefore, does not have the financial resources to buy new supplies. This sets up a vicious cycle, for without resupplying she cannot sell items and cannot earn any income. In our qualitative interviews with low performing CHPs in the field this was a definite problem. Two of the women we talked to had not resupplied for the past 5–7 months because they were having trouble paying back their loans.

⁹ Defined as earning less than 24,000 on average per month

Another interesting difference is that the high performers are more likely to resupply between refresher training than low performing CHPs (91% versus 80% respectively). This may reflect that high performers have access to the financial capital required to resupply whereas the low performers might not.

Perhaps not surprisingly, high performers reported of working on average a greater number of hours each day than low performing CHPs (3.6 hours versus 2.8 hours). If low performers do not have medicines or commodities to sell, this will automatically limit the amount of time and the activities they are able to participate in as CHPs. In the in-depth interviews it became clear that high performers used different marketing techniques. Some purposefully did not return to areas for two weeks in order to build up demand; others always took different routes to the market to introduce herself to a larger community of clients; while others used her successful cases and cures to promote her business through word of mouth.

Even high performers had suggestions and ideas on how they could perform better and earn more.

Question: How do you think you are doing as a CHP? Can you earn more?

Response: "Yes, if I get a big stock. I am intending to open a shop next year. I could sell more if I had a big store, and the timing of buying. Now [in the] changed system we have to buy only on Saturday. Before I could buy every morning. New system will be difficult because on Friday I go for prayers (away and overnight) and getting back on Saturday is difficult. For me now I don't know how I'm going to do it. Now I have to wait until Saturday and I am out of soap and pads. Want to purchase more Bendex I only have one packet and I know it will get purchased today."

Many CHPs expressed a desire to learn more and have more training. "[We]...want a two-week training to understand more about checking blood pressure, temperature..." A focus group discussion with high performers suggested that BRAC build a clinic with a trained doctor and then each CHP would take shifts each week to assist the doctor as a way to earn more income.

Key successes and challenges

While the BRAC Uganda programme is heavily modeled on the Bangladesh programme, there are several important differences and adaptations that the BRAC Uganda programme has made since it began operating its health programme in 2007.

1. Products they sell are different

The health situation is different in Uganda than in Bangladesh and as a result, variation in not only the products offered is required but the training materials must also be adapted to reflect this. Malaria treatment is necessary everywhere in Uganda, unlike in Bangladesh. In Bangladesh SSs are doing ARI treatment while in Uganda

they currently cannot provide medicines for ARI treatment. Pit latrines may be more popular than slab latrines in Uganda and at the moment, the BRAC programme is not providing latrines – just health education on sanitation. However, it suggests the need to do careful background research on local needs and preferences in Uganda before introducing new products.

2. Health policy effects

A challenge faced by the BRAC health programme has been the health policy history of Uganda. The Ugandan government tried to implement volunteer village health teams (VHT) and drug distributors as part of its earlier programme. However, there were very high dropout rates and the programme, which was poorly funded, did not do well. Because of this generally negative experience, the Ugandan government and communities were skeptical that another volunteer community based approach could work. There is still a long memory of this as a failed health experience. In response to this, BRAC has worked very hard to collaborate closely with the Ministry of Health and gain the trust of the government. They now have a full-time position of a liaison with the ministry of health at district and national level.

Another health policy difference is that in Bangladesh SS can do TB identification and treatment. Uganda does not have GFTAM money and, therefore, CHPs do not provide TB treatment.

3. Difficult to recruit and hire trained medical officers

The Uganda health programme currently has a Medical Officer from Bangladesh because of difficulties the programme has had successfully recruiting and retaining a Ugandan qualified medical officer. There is a dearth of trained medical personnel in Uganda and among those that do exist, it is a challenge to incentivize them to move to rural areas where BRAC is operating. There is also a lot of competition with other NGOs, both national and international, which require medical doctors for their programmes and pay higher salaries than BRAC traditionally pays its Medical Officers. BRAC may have to reconsider its salary structure to ensure that it can recruit and retain Ugandan medical officers.

4. Procurement is more challenging and time consuming

There are no pharmaceutical companies in Uganda that are producing drugs so all drugs for the programme must be imported. This results in frequent price changes which is frustrating to both the CHPs and their clients. It also requires a huge time commitment on the part of BRAC Uganda Health programme as prices for drugs need to be renegotiated – sometimes as often as every 6-8 weeks. In Bangladesh there is a strong network and connectivity in Dhaka with pharmaceutical companies and depots that make distribution of products easier. In Uganda this is simply not the case. Furthermore, programme production of materials is more centralized in Uganda than it is in Bangladesh due to lack of infrastructure and materials. As a result producing items such as CHP training manuals are more time consuming and often more expensive in the Ugandan context.

5. Economic opportunity cost and motivations of CHPs are different

There is a perception among BRAC staff that women in Uganda are more commercial-minded and very much motivated by financial incentives as opposed to non-financial incentives. The programme suggested the need to do more motivational work with CHPs in terms of identifying appropriate non-financial incentives.

6. BRAC is becoming better known in Uganda

At the time of this study, BRAC was the largest NGO in Uganda. However, not all Ugandans understand what BRAC is or what they do. Many have a mixed or limited understanding of BRAC - "it is microfinance" while others say "it is health" and still others ask, "what is BRAC?" When the Programme Manager first recruited 60 staff, he advertised in the newspaper and received only 12 applications. Now 10-20 women show up each day to submit their application even when no job has been advertised. So, clearly the word of mouth of BRAC and what it is doing is creating demand for jobs.

The lack of common understanding about BRAC and what it does has negatively impacted their performance, according to several CHPs. Several CHPs said that community education and sensitization about BRAC and what they do would improve their performance and sales. Clarifying to the community that CHPs are volunteers and are not paid salaries and given the drugs they sell for free may help alleviate some of the mistrust and suspicion that some CHPs experience in their communities.

7. Strong relationship with the government of Uganda

BRAC currently enjoys a strong relationship with the Ugandan government and their ministry of health. However, when BRAC's programme manager first met the state minister for health he was asked how many ambulances BRAC was bringing to Uganda and was reminded that the previous health volunteer programme failed in Uganda. Despite this, BRAC got written permission to operate in 10 branches to start and then in 85 branches. BRAC signed an MOU and over time the relationship between BRAC and the government has become strong. While there is no financial support from the government, they are providing moral and other support. The state minister for health wrote a letter to districts to ensure their cooperation with project.

8. Issues related to sustainability

Programme staff in BRAC Uganda expressed concern about future and long-term donor support and they are actively thinking about the issue of programme sustainability. They expect it will take seven to eight years to achieve sustainability. The basis for this calculation is to project average household expenditure on CHP products each month. If each household spends \$1 each month on CHP items, then each CHP would be turning over \$200 per month by the year 7 or 8 of the project.

Currently 15% of profit goes to the CHP, so for \$200 this would mean a profit of \$35. BRAC has a 10% margin which would give them \$20 per CHP. Multiplied by 1,500 CHPs (their target in 8 years) = \$30,000 per month. The calculation of operating expenses for the health programme (including training cost for CHP) is \$75,000 per month. This is the current philosophy and thinking of BRAC Uganda regarding financial sustainability of the health programme.

DISCUSSION AND CONCLUSION

Study limitations

This study is potentially affected by several limitations and it is important to consider the results presented in this report. Firstly, in some cases, data were not available or were incomplete, and despite our best efforts we were unable to collect it. For example, data related to revenues and expenditures for BHP over several years were not complete or were collected in different forms in different years. This has not allowed us to reliably examine trends over time.

Secondly, some questions in the interview survey such as those about monthly income might be sensitive, and therefore, lead to misreporting and possibly over reporting. It is difficult to cross-check this reliably.

The study did not consider the patient or community perspective. For example, we cannot comment on how patients perceive the quality of the SSs – clearly an important influence on SSs monthly sales and performance.

Finally, we only included currently active *Shebikas* in the study. Because we did not include those *Shebikas* who had dropped out, this study sample may be biased towards women with more positive experiences. While we did try to ensure inclusion of high and low performing SS, our respondent selection and study results may still underestimate the constraints faced by SSs.

Despite these limitations, the findings from this study yield useful data to inform the question of sustainability and generalisability of BRAC's SS model. These are discussed below.

Sustainability

The BHP operating model clearly relies on the successful recruitment, training, and retention of female CHWs in each of the countries included in this study. The rationale for BRAC's approach is that community-based financial incentives of a volunteer community health workforce can achieve wide programme coverage and respond to community EHC needs while providing income opportunities to its female volunteers.

The costs to producing a SS or CHP or CHW are very real. This study suggests that in the first year it costs BRAC Bangladesh US\$ 89 to recruit, train, and supervise a SS. In Afghanistan and Uganda the costs are significantly higher (US\$247 and US\$374 respectively). While the costs in the second year drop, if BRAC has trouble retaining SS and experiences high dropout rates, the overall costs to the programme increase significantly.

Trying to minimize dropouts, therefore, is key to programmatic and financial sustainability. There are several ways to approach this and as the literature suggests, both financial and non-financial incentives may be required.

In terms of financial incentives the quantitative and qualitative data suggest several things. Firstly, SSs are financially motivated to sell medicines and health commodities and the time use data suggest they spend significant proportions of their time engaged in these activities. Secondly, the majority of SS/CHP/CHW would like to expand the products they sell to include more health and non-health products. These products include medicines like antibiotics, malarial treatment, ulcer treatment, and non-health products like school supplies for children, sugar, and cooking oil. Clearly there is a potential programmatic trade-off here between increasing the SS ability to respond to community demand and in turn increase her sales and monthly income, while still ensuring that the preventative and health education aspects of the programme are being sufficiently addressed.

Increasing financial performance and addressing competition

The SSs in each of the settings reported that they felt competition from pharmacies, private clinics, and other providers limited their income. It is important that the comparative advantage that the SS brings be maximized to address this competition. The first comparative advantage is that the SS provides household delivery of care and products. By expanding the product range or mix of products that she provides to households she could potentially increase her income and compete effectively in the local market. In each of the settings the *Shebikas* expressed an interest in expanding their product line to meet community demand. It appears from the qualitative and quantitative data that BRAC is mostly meeting the demand for medicines. However, there are a range of health commodities and non-health products that SS said the community was demanding. There are two major trade-offs here – the first is in terms of additional programme costs for procuring, storing, and transporting additional products to branch offices. If some of the goods were produced by BRAC enterprises this might keep costs down, at least in Bangladesh. The second is the potential for the SSs to spend more time selling products and less on the preventative aspects of her role as SS. Questions about whether or not SS are becoming a sales workforce might be raised.

The second comparative advantage that the SS has is the BRAC name or 'brand'. Ensuring that BRAC products are responding to community demands and are seen as high quality will be critical to SS sales performance. In each country some women

said that they had difficulty selling products because people do not prefer BRAC products (29% in Afghanistan, 46% in Uganda and 25% in Bangladesh). Performing market research to better understand the perception of the BRAC brand for products could improve the likelihood that SSs can sell products and compete with other distribution outlets. The fact that 10% of SSs in Bangladesh reported buying products outside BRAC for sale as SS may be in response to a particular community demand for a product. In order to capitalize on both of these comparative advantages (household delivery and BRAC brand), additional training in social marketing could help SSs maximize their monthly sales and income.

Non-financial incentives, while more difficult to measure, should not be ignored. Currently non-financial incentives are couched in difficult to measure concepts such as increased social recognition or prestige within the home or community. The survey results suggest that increased social recognition is important: in Bangladesh, 18% of SSs said that increased social recognition was an advantage to work as an SS; in Uganda it was reported to be 11%; and in Afghanistan it was 16%. It is possible that the incentive for social recognition wanes over time and as social recognition improves or is perceived to be achieved. This could suggest that additional non-financial incentives might be required to continue to satisfy or validate social recognition of the SS. There are tangible non-financial incentives that the programme could consider as additive to the overall incentive package. These may include certificates for special training received, certificates recognizing extremely high sales in a period or of a particular product or activity, providing a saree or salwar-kameez in recognition of long-term service. Clearly the costs of these would need to be carefully assessed, however, these tangible non-financial incentives might validate for the SS the appreciation that both BRAC and her community has for her volunteer services.

Another non-financial incentive is to offer additional specialized training for SS. In all of the settings, many SSs requested additional and specialized training to learn additional health skills such as taking blood pressure or taking temperature. Such trainings would certainly increase her skill set and potentially make her more competitive in the community. The trade-off here is that training add cascading costs to the programme – from master trainers to supervisors – and not all SSs will be interested in receiving additional training. In addition, if BRAC responds to the request of some SSs for additional and more complicated health activities, it might need to revisit the level of literacy required for SSs.

An additional and practical training may be considered in social marketing and inventory management. As BRAC expands its product line in places like Uganda, those women who have social marketing skills tend to be higher performers. Others, who are unable to manage their inventory or cannot pay back their loan(s), may not be able to perform up to their potential. These women may benefit from some training in social marketing as well as basic financial management.

Underlying this is the challenge of incentivizing SSs to perform a greater number of tasks while being careful not to overload them. Not all SSs necessarily want to do

more. It is important to note the high rates of satisfaction associated with being an SS: 43%, 31%, and 42% of SSs in Bangladesh, CHPs in Uganda and CHWs in Afghanistan said there was no disadvantage to being a CHW in BRAC programme.

Selection/recruitment of SS

The motivation for becoming an SS varies between countries. For many SSs, the initial motivation is a financial one. Several programme staff raised the question as to whether or not it is beneficial to recruit SS with more social marketing skills. Women who have received other health training or have worked for other NGOs seem to perform better in both Bangladesh and Uganda. This may serve as an informal additional assessment tool when recruiting SS.

Lessons learned and recommendations

- **Generate and foster government support**

Because of its long duration, the Bangladesh programme enjoys a history of developing an effective working relationship with the government. The fact that the BHP works in partnership with the government of Bangladesh on several national programmes is testament to this. As BRAC moves into new countries, establishing and negotiating its relationships with the government and especially the ministry of health is extremely important. Experience also suggests that this is very time consuming and can be unpredictable in how long it takes. BRAC has been very effective in building public-private partnerships in both Uganda and Afghanistan. In Afghanistan the process was guided by the establishment of the BSPH. In Uganda, however, BRAC had to develop these relationships from the ground up. There are important lessons here that other country programmes can learn from.

- **Be willing to change the programme and be flexible**

Country experience suggests that the programme must make adjustments to respond to the local environment. In Uganda, for example, the number of households is being reconsidered because the geographic distance and terrain is very different than in Bangladesh. In Afghanistan, it was difficult for CHWs to visit 120 households in a month. This was due to both the geographic distance between homes, populations clustering around water sources, the conservative nature of the culture that makes travel for women difficult, and ethnic differences within catchment areas making it difficult for some women to visit the homes of other ethnic groups/identities.

Clearly, not all SSs/CHPs/CHWs are VO members. The programme will have to continue to be flexible about this. Not all women require a microfinance loan.

- **Have a clear assessment of SSs' performance and expectations**

In some settings, the programme clearly defined high and low performing SSs in terms of monthly sales and monthly income. In other places, performance measurement was less clear. Making performance assessments more transparent may help the SSs/CHPs/CHWs set individual performance goals. Clearly assessing performance and using this as a form of motivation for the SSs is another mechanism to recognize goal achievement with non-financial means.

Another issue that this analysis raises is how the performance of SSs/CHPs/CHWs should be assessed. If it is solely on the sale of products and monthly income it may be too narrow a measure and neglect a host of other activities and benefits (e.g., health education and counseling) that the SSs provides her community.

- **Don't lose sight of non-financial incentives**

As the programme aims to be financially sustainable, it should not do so at the neglect of the range of important services that SS provide in her community many of which are not immediately financially remunerated. While it may be possible to financially model the appropriate product mix and profit margin to make the programme financially sustainable, their needs to be continued and careful tending to the other aspects of how SS spend her time. There is a potential tension between maximizing the sales of medicines and health commodities versus providing basic health education and preventative care in the community. Currently, responding to disease specific issues, such as TB management, is better incentivized than general preventative health. It may be important in future to think about ways to incentivize general preventative health interventions. The SS is not just a medicine seller; she plays a vital role in promoting the overall health and well-being of her community.

- **Empower SSs to manage inventory appropriately**

Ensuring regular and affordable supplies to the SS is critical to her successful functioning. In Bangladesh this system has been developed over years and is well-functioning. The SS is given revolving capital and not a loan. In Uganda, the programme started by giving each CHP a loan for her first set of supplies. She was expected to pay this back monthly in 40 installments. For some women, this has not been a problem. These women may be better off or may simply be better managers of their money or have higher sales. For some women with more than one loan, they fall behind on repayments for their CHP supply loan and get into a situation where they are unable to resupply and therefore cannot earn the money they require to repay the loan.

- **Re-examine role of microfinance as an incentive**

SSs are to be recruited from VOs and are provided access to microfinance loans to support not only their work as an SS but to other economic opportunities as well. The data from this study suggest that not all SSs take advantage of their access to microcredit. Nineteen percent of the SSs in Bangladesh; 4% of CHWs in Afghanistan; and 60% of CHPs in Uganda reported using microfinance loans to support their work. It is thought that one value of developing the SS out of the microfinance model is that it empowers SS to perform better with a VO supporting her and the social capital that comes with that. The fact that so many SSs are not active VO members raises a critical question of how important SS links with VO are. When asked how being a VO member affects their role as SS/CHW/CHP: 30% of SSs, 32% of CHPs, and 21% of CHWs said that being a VO member had no effect. In Bangladesh, 22% of women said that being a VO member increased community trust in her work and 13% said that it made it easier to sell products. Further exploration of how important VO membership is for the recruitment and retention of SS will be important for BRAC to consider.

- **Describe notions and understanding of ‘volunteerism’**

The SSs are a volunteer cadre but are also financially incentivized by the creation of community demand for drugs, commodities, and basic health services. In Uganda, CHPs expressed concern that their community did not understand that they were volunteers. The community thought they were receiving monthly salary from BRAC (which they got when they went to the refresher training) and that they were selling drugs to make additional profit. Several CHPs said that if the community understood better that they were volunteers it would make their work as CHPs easier. Understanding of what it means to be a volunteer are culturally bounded and influenced by local context. For example, in Uganda where HIV/AIDS has destroyed homes and communities, there is for many CHP a strong incentive to volunteer as a CHP “to give back to my community” or “to help my neighbours”. The CHP role may resonate more in Uganda as one of community service as opposed to a ‘health volunteer’. Misunderstanding or misperceptions of what it means to work and serve as a volunteer did come up in discussions with SSs in all three settings.

Generalizability of BRAC SS approach

The quantitative, qualitative, and participant observation data from this study suggest that the BRAC Bangladesh SS approach is generalizable to other settings – or at least to the context of Uganda and Afghanistan. These programmes have, however, had to explicitly adapt the model in order to reflect the local context. There are some useful lessons in these examples for BRAC as it branches into other countries. The adaptations these country programmes have made are in three main areas: 1) health policy and health systems context; 2) socio-cultural environment; and 3) management and logistics context. It may be useful to generate a checklist of major issues in these areas that other programmes have had to adapt or are currently considering adapting.

This study has just scratched the surface of critical questions about the sustainability and generalizability of BHP's SS approach. The results suggest that long-term financial sustainability is possible but complicated by ensuring that all the components of the SS role are maintained. The SSs are a mixed motive cadre – not entirely volunteers, but not salaried either. The data from this study suggest it is a combination of factors that motivate a SS to continue her work – both financial and non-financial.

This study helps document the unique and fundamental role that SSs play in BHP and her community. The SSs are not simply 'medicine sellers' and as one BRAC Uganda staff member aptly put it...“selling products is not the nature of the programme. Rather it is to change the health behaviour of customers.” It is through her role as a change agent in health behaviour that the BRAC CHW will improve the essential health of her community.

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APPENDIX

Appendix 1. Detailed breakdown for programme cost calculations

Official exchange rates:

1 US\$ = BDT 70

1 US\$ = AFN 50

1 US\$ = UGX 2000

Source: Official Exchange rate of 2008 (approximation): www.onda.com

Implied PPP (Purchasing Power Parity Exchange rate)

1 US\$ = BDT 25.585

1 US\$ = AFN 28.892

1 US\$ = UGX 654.451

Source: World Economic Outlook (WEO), IMF, 2008

Table A.1. Cost per SS in Bangladesh

Item	Spent per SS per year (BDT)	Spent per SS per year (US \$)	% of total cost of (1 st yr)	% of total cost of (2nd yr)
Salary SK	906.60	12.95	13.23%	30.38%
Salary PO	1024.56	14.64	14.95%	34.34%
Salary UM	270.00	3.86	3.94%	9.05%
Salary SHC	75.00	1.07	1.09%	2.51%
Total salary cost	2276.16	32.52	33.21%	76.28%
10% overhead cost	227.62	3.25	3.32%	7.63%
Total cost per SS per year(exc. Tra cost)	2503.78	35.77	36.53%	83.91%
Basic training cost	3910.00	55.86	57.05%	
Refresher training cost(40Tk/RT)	440.00	6.29	6.42%	
First year cost of training	4350.00	62.14	63.47%	
Second year cost of training	480.00	6.86		16.09%
Total cost in the first year	6853.78	97.91	100.00%	100.00%
Total cost in the second Year	2983.78	42.63		
Total cost in 1st year (Min)*	6168.40	88.12		
Total cost in 1st year (Max)*	7539.15	107.70		
Total cost in 2nd year (Min)*	2685.40	88.12		
Total cost in 2nd year (Max)*	3282.15	46.89		
*5% Uncertainty range assumed				
BRAC's earning from SS through sales/yr				
Total cost after deducting sales income				
Total cost in the first year	6263.78	89.48		
Total cost in the second year	2393.78	34.20		
Total cost in 1st year (min)*	5950.59	85.01		
Total cost in 1st year (max)*	6576.96	93.96		
Total cost in 2nd year (min)*	2274.09	32.49		
Total cost in 2nd year (max)*	2513.46	35.91		

note: 10 SS/SK, 40 SS/PO, 80 SS/UM, 480 SS/SHC assumed

Table A.2. Cost per CHP in Uganda

Item	Spent per CHP per year (UGX)	Spent per CHP per year (US \$)	% of Total Cost of (1styr)	% of Total Cost of (2nd yr)
Salary CHA	278400.00	139.20	35.32%	65.61%
Salary PO	66120.00	33.06	8.39%	15.58%
Salary regional coordinator	14250.00	7.13	1.81%	3.36%
Salary master trainer	12825.00	6.41	1.63%	3.02%
Total salary cost	371595.00	185.80	47.14%	87.57%
10% overhead cost	37159.50	18.58	4.71%	8.76%
Total cost per SS per year(exc. Tra cost)	408754.50	204.38	51.86%	96.32%
Basic training cost(first year only)	379500.00	189.75	48.14%	
Refresher training cost (from 2nd year)	15600.00			
First year cost of training	379500.00	189.75	48.14%	
Second year cost of training	15600.00	7.80		3.68%
Total cost in the first year	788254.50	394.13	100.00%	100.00%
Total cost in the second year	424354.50	212.18		
Total cost in 1st year (min)*	748841.78	374.42		
Total cost in 1st year (max)*	827667.23	413.83		
Total cost in 2nd year (min)*	403136.78	201.57		
Total cost in 2nd year (max)*	445572.23	222.79		

5% Uncertainty range assumed

note: 10 CHP/CHA, 100 CHP/PO, 200 CHP/RHC, 400 CHP/ MT assumed

Table A.3: Cost per community health workers in Afghanistan

Item	Spent per CHW per year (AFs)	Spent per CHW per year (US \$)	%of Total Cost of (1styr)	%of Total Cost of (2nd yr)
Salary CHW Supervisor-CHS	900	18	7.29%	21.54%
Salary PO	780	15.6	6.32%	18.67%
Salary medical officer	300	6	2.43%	7.18%
Salary master trainer	400	8	3.24%	9.57%
Total salary cost	2380	47.5	19.27%	56.97%
10% overhead cost	238	4.75	1.93%	5.70%
Total cost per CHW per year(exc. Tra. cost)	2,618.00	52.36	21.20%	62.66%
Basic training cost (first year only)	9730	194.6	78.80%	
First year cost of training	9730	194.6	78.80%	
Second year cost of training	1560	31.2		37.34%
Total cost in the first year	12,348.00	246.96	100.00%	100.00%
Total cost in the second year	4,178.00	83.56		
Total cost in 1st year (min)*	11,113.20	234.61		
Total cost in 1st year (max)*	13,582.80	259.31		
Total cost in 2nd year (min)*	3,760.20	234.61		
Total cost in 2nd year (max)*	4,595.80	87.74		

*5% Uncertainty range assumed

Note: One CHW Supervisor is Responsible for 10 CHW, One PO is Responsible for 10 CHW Supervisor,

One MO is Responsible for One PO

And there is one CHW Master Trainer at Provincial level

Appendix 2. Survey instrument

**Financial and economic analysis of BRAC's
Community Health Volunteers**

BANGLADESH: Survey of Shasthya Shebikas

TO BE READ TO EACH STUDY PARTICIPANT:

Hello my name is _____ and I work with BRAC. BRAC is carrying out a study of Shasthya Shebikas in your area to find out more about how Shasthya Shebikas spend their time, their monthly earnings, the products they sell, and other aspects of their job that affect them financially. The information from this study will help BRAC's Health Programme to better understand how the Shasthya Shebika programme can run as smoothly as possible .

We would like to ask you a series of questions to get your inputs into this study. There are about 65 questions and the entire questionnaire should take about 35 minutes of your time. Your answers to these questions will be kept entirely confidential and your responses will not affect your job in any negative way. Your participation in the study is completely voluntary and you can stop answering questions at any time during the survey if you choose to. If you choose not to participate or to stop the survey it will not negatively affect your work as an SS.]

Questions and filters		Responses and codes
A1.	Do you have any questions you would like to discuss at this point?	Yes-----1 No-----2 →Go to A3
A2.	[IF YES] what are the questions? [Specify]	_ _ _
A3.	May I start the interview? [If No, then complete A4-A9 and end interview]	Yes-----1 No-----2
I have read the informed consent and study description to the respondent and she has indicated her understanding.		Interviewer's Signature here _____
A4.	Name of Interviewer	_____
A5.	Date of Interview	_ _ _ Date Month
A6.	Result of Interview	Completed ----- 01 Partially completed ----- 02 Respondent is absent-----03 → End interview Refusal-----04 → End interview Other _____ 77 → End interview
A7.	Reason for no or incomplete interview	_____
A8.	Time interview started (write in 24 hours)	_ _
A9.	Time interview ended (write in 24 hours)	_ _
A10.	Questionnaire checked by in field (Name)	_____
A11.	Questionnaire checked by in office (Name)	_____
A12.	Questionnaire entered by (Name)	_____

Appendix 2 continued.....

Continued appendix 2.....

Identification of area and respondent

A13.	What is your name?		
A14.	What is the name of your Village/Mohalla?		
A15.	What is your Branch Code number?	DK/Can't recall	3
A16.	What is your VO Number?	DK/Can't recall	3
A17.	What is your Member Number?	DK/Can't recall	3
A18.	What is your age?		_____ years
A19.	How many years of schooling have you completed?		_____ years
A20.	Do you have any children under the age of two years?		[_____]

Household financial and economic information

B1.	How many members live in your household?	(a) Total family members _____		
B2.	On average, what is your household income/expenditure status each month?	Income is always greater than expenditure _____ 1 Income is sometimes greater than expenditure _____ 2 Income is equal to what we spend _____ 3 Income is sometimes less than expenditure _____ 4 Income is always less than expenditure _____ 5 Not sure/Don't know _____ 6		
B3.	What is your average monthly expenditure?	[_____] Taka _____ 1 Don't Know _____ 3		
B4.	Who is the main earner in your family and what is his/her average monthly earning?	Main earner	Average monthly earning	
		1) _____	Taka [_____] _____ 1 DK _____ 3	
B5.	Are you currently a VO member of BRAC?	Yes, current VO member (skip to B7) _____ 1 No, not a current VO member _____ 2		
B6.	Have you ever been a VO member of BRAC?	Yes, I used to be a VO member _____ 1 No, never been a VO member (skip to B14) _____ 2		
B7.	Were you a VO member when you first became a SS?	Yes _____ 1 No _____ 2		
B8.	Did you ever borrow a loan from BRAC?	Yes _____ 1 No (skip to B14) _____ 2		
B9.	Do you currently have a loan with BRAC?	Yes _____ 1 No (skip to B11) _____ 2		
B10.	Do you have more than one loan with BRAC?	Yes _____ 1 No _____ 2		
B11.	Do/did you use any of the loan(s) to buy medicines or other supplies for your work as a SS?	Yes _____ 1 No (skip to B14) _____ 2		
B12.	Approximately what amount of the loan is/was used to buy supplies for your role as SS?	[_____] Taka _____ 1 Can't recall/DK _____ 5		
B13.	How much is/are the current BRAC loan(s) now?	Loan 1 [_____] Taka _____ 1 Can't recall/DK _____ 3	Loan 2 [_____] Taka _____ 1 DK _____ 3	Loan 3 [_____] Taka _____ 1 DK _____ 3

Appendix 2 continued.....

Continued appendix 2.....

B14.	Do you have any loans with NGOs other than BRAC?	Yes _____ 1 No _____ 2
Employment details		
C1.	How long have you been working as an SS?	[] Years _____ 1 [] Months _____ 2
C2.	How many households are you able to visit in one day?	[] Number of households _____ 1 Can't recall/DK _____ 3
C3.	How many households are you responsible for each month?	[] Number of households _____ 1 Can't recall/DK _____ 3
C4.	How many hours on average do you work each day?	[] Number of hours _____ 1 Can't recall/DK _____ 3

C5.	Do you provide the following service in the last month?:	Provide this service in the last month	Average time (or number of visits) to perform service/transaction	Average number of people served in last month	Is last month performance about average for each month?
	Pregnancy identification	Yes _____ 1 No _____ 2 Cannot recall/DK _____ 3	[] minutes [] visits	[]	Yes _____ 1 No _____ 2 DK _____ 3
	Attending delivery and providing newborn care	Yes _____ 1 No _____ 2 Cannot recall/DK _____ 3	[] minutes [] visits	[]	Yes _____ 1 No _____ 2 DK _____ 3
	Referral to <i>Shushasthya</i>	Yes _____ 1 No _____ 2 Cannot recall/DK _____ 3	[] minutes [] visits	[]	Yes _____ 1 No _____ 2 DK _____ 3
	Referral to government clinic/hospital	Yes _____ 1 No _____ 2 Cannot recall/DK _____ 3	[] minutes [] visits	[]	Yes _____ 1 No _____ 2 DK _____ 3
	Attending refresher training	Yes _____ 1 No _____ 2 Cannot recall/DK _____ 3	[] minutes [] visits	[]	Yes _____ 1 No _____ 2 DK _____ 3
	Treating TB (DOTS)	Yes _____ 1 No _____ 2 Cannot recall/DK _____ 3	[] minutes [] visits	[]	Yes _____ 1 No _____ 2 DK _____ 3
	Selling medicines	Yes _____ 1 No _____ 2 Cannot recall/DK _____ 3	[] minutes [] visits	[] Numbers of people sold medicines to	Yes _____ 1 No _____ 2 DK _____ 3
	Selling health commodities	Yes _____ 1 No _____ 2 Cannot recall/DK _____ 3	[] minutes [] visits	[] Numbers of people sold health commodities to	Yes _____ 1 No _____ 2 DK _____ 3

Appendix 2 continued.....

Continued appendix 2.....

	Others (specify)	_____	[_____] Times per month
		_____	[_____] Times per month
		_____	[_____] Times per month
C6.	What are the three most frequently sold medicines (in order of frequency)? (Specify)	1) _____	
		2) _____	
		3) _____	
C7.	On average, how many household visits are required to sell medicines?	1 visit _____	1
		2 visits _____	2
		3-4 visits _____	3
		4+ visits _____	4
		Don't know _____	5
C8.	Do women ever come to your house to buy medicines?	Yes _____	1
		No _____	2
C9.	What are the least frequently sold medicines? (Specify)	1) _____	
		2) _____	
		3) _____	
C10.	Why do you think these medicines are not popular or difficult for you to sell?	_____	

C11.	What are the most frequently sold health commodities? (Specify in order of frequency)	1) _____	
		2) _____	
		3) _____	
C12.	On average, how many household visits are required to sell health commodities?	1 visit _____	1
		2 visits _____	2
		3-4 visits _____	3
		4+ visits _____	4
		Don't know _____	5
C13.	Do women ever come to your house to buy health commodities?	Yes _____	1
		No _____	2
C14.	What are the least frequently sold health commodities? (Specify)	1) _____	
		2) _____	
		3) _____	
C15.	Why do you think these health commodities do not sell well? (open-ended response)	_____	

C16.	Do you ever replenish your supplies of medicines or commodities between refresher trainings?	Yes _____	1
		No _____	2
C17.	Do you ever buy medicine or health commodities from outside of BRAC for selling purposes?	Yes _____	1
		No (skip to C19) _____	2

Appendix 2 continued.....

Continued appendix 2.....

C18.	If yes, which ones do you buy outside of BRAC for sale? (Specify)	[[[
C19.	Do you face any problems in the community selling BRAC suggested medicines or health commodities?	Yes _____ 1 No (skip to C21) _____ 2
C20.	Why do/did you have problems in the community with selling BRAC suggested medicines or health commodities? (circle all that apply)	People do not prefer BRAC products _____ 1 People buy products from shops _____ 2 Products are too expensive/cheaper elsewhere _____ 3 People do not trust me _____ 4 Other reasons (specify) _____ 5 _____
C21.	How does being a BRAC VO member affect your work as an SS? (specify)	People trust me more _____ 1 Easier to sell products _____ 2 I need the loan to buy supplies _____ 3 Being a BRAC VO member has no effect _____ 4 Other (specify) _____ 5
C22.	Are there other medicines or health products you wish you could sell as an SS or other products that your community asks about?	Yes _____ 1 No (skip to C24) _____ 2
C23.	If so, what are these? (Specify)	1) [_____] 2) [_____] 3) [_____] 4) [_____]
C24.	Are there products that are not health-related that women would be interested and willing to buy from you? (If yes, specify which products)	Yes _____ 1 Specify [_____] No _____ 2 Don't know _____ 3
C25.	Do you face any problems making referrals to <i>Shushasthya</i> ?	Yes _____ 1 No (skip to C27) _____ 2 Don't know _____ 3
C26.	What type of problems do you have making referrals to government clinics?	Staff do not treat referrals well _____ 1 Facilities are not always available _____ 2 Clinic does not have adequate supplies _____ 3 Too far away _____ 4 Other (specify) _____ 5
C27.	Do you face any problems making referrals to government clinics?	Yes _____ 1 No (skip to C29) _____ 2 Don't know _____ 3

Appendix 2 continued.....

Continued appendix 2.....

C28.	What type of problems do you have making referrals to government clinics?	Staff do not treat referrals well _____ 1 Facilities are not always available _____ 2 Clinic does not have adequate supplies _____ 3 Too far away _____ 4 Other (specify) _____ 5
Shasthya Shebika motivation and incentives		
C29.	How important are earnings from your SS activities for your household?	Household could not continue without SS income _____ 1 SS income makes a big difference to household _____ 2 Would not make a big difference if no SS income _____ 3 Would not make any difference if no SS income _____ 4 Don't know _____ 5
C30.	Does being an SS give you financial independence?	Yes _____ 1 No _____ 2
C31.	How do you use the money you make as an SS? (circle all that apply)	Spend on children _____ 1 Give to husband _____ 2 Pay for school fees _____ 3 Buy food _____ 4 Save _____ 5 Pay back loans _____ 6 Other (specify) _____ 7
C32.	Have you ever or do you currently work for other NGOs/health programmes/clinics while working as an SS?	Yes _____ 1 Specify [_____] No _____ 2
C33.	Have you received any health-related training outside of BRAC SS training?	Yes _____ 1 [If yes, specify which _____] No _____ 2
C34.	Does being an SS affect your ability to carry out your household responsibilities?	Have to work harder in household duties _____ 1 Less time for children _____ 2 Less time for cooking _____ 3 Less time for cleaning _____ 4 Miss out on family events _____ 5 Children's education suffers _____ 6 No, doesn't affect household responsibilities _____ 7
C35.	Why did you start working as a SS? (circle all that apply)	Source of income for household _____ 1 Financial independence _____ 2 Social recognition _____ 3 To learn something new _____ 4 To help my community _____ 5 To get BRAC loan _____ 6 Other (specify) _____ 7
C36.	Has working as an SS changed your status in your household?	Importance increased significantly _____ 1 Importance increased somewhat _____ 2 No change at all _____ 3 Importance decreased somewhat _____ 4 Importance decreased significantly _____ 5
C37.	What was your income from working as a SS last month?	[_____] Taka in last month

Appendix 2 continued.....

Continued appendix 2.....

C38. What is the total income you receive in an average month for your SS work?	[] Taka per month		
C39. Is there fluctuation in your monthly sales?	Yes _____ 1 No _____ 2 Don't Know _____ 3		
C40. For each of the following providers, ask:	Do any [] provide services in your area?	If yes, how many of them work in your area?	Do you feel these providers limit your income as a SS
Pharmacy or shop that sells medicine	Yes _____ 1 No _____ 2 DK _____ 3	[] Number _____ 1 DK _____ 2	Yes _____ 1 No _____ 2 DK _____ 3
NGO	Yes _____ 1 No _____ 2 DK _____ 3	[] Number _____ 1 DK _____ 2	Yes _____ 1 No _____ 2 DK _____ 3
Government clinic or hospital	Yes _____ 1 No _____ 2 DK _____ 3	[] Number _____ 1 DK _____ 2	Yes _____ 1 No _____ 2 DK _____ 3
Private clinic	Yes _____ 1 No _____ 2 DK _____ 3	[] Number _____ 1 DK _____ 2	Yes _____ 1 No _____ 2 DK _____ 3
Village doctor	Yes _____ 1 No _____ 2 DK _____ 3	[] Number _____ 1 DK _____ 2	Yes _____ 1 No _____ 2 DK _____ 3
Traditional healer	Yes _____ 1 No _____ 2 DK _____ 3	[] Number _____ 1 DK _____ 2	Yes _____ 1 No _____ 2 DK _____ 3
TBA (dai)	Yes _____ 1 No _____ 2 DK _____ 3	[] Number _____ 1 DK _____ 2	Yes _____ 1 No _____ 2 DK _____ 3
Other (specify)	Yes _____ 1 No _____ 2 DK _____ 3	[] Number _____ 1 DK _____ 2	Yes _____ 1 No _____ 2 DK _____ 3

Opportunity cost

C41. Please report any work you have done or currently do while also working as an SS:

JOB or WORK	Is this income regular or seasonal?	If seasonal how many months/weeks in last year?	How much do you earn from this work in an average month?
Factory worker	Regular _____ 1 Seasonal _____ 2	[] weeks _____ 1 [] months _____ 2 Can't recall _____ 3	[] Taka
Handicraft	Regular _____ 1 Seasonal _____ 2	[] weeks _____ 1 [] months _____ 2 Can't recall _____ 3	[] Taka
Poultry raising	Regular _____ 1 Seasonal _____ 2	[] weeks _____ 1 [] months _____ 2 Can't recall _____ 3	[] Taka
Agriculture	Regular _____ 1 Seasonal _____ 2	[] weeks _____ 1 [] months _____ 2 Can't recall _____ 3	[] Taka

Appendix 2 continued.....

Continued appendix 2.....

Small business/ hawking	Regular_____1	[_____] weeks____1	[_____] Taka
	Seasonal_____2	[_____] months____2	
		Can't recall____3	
Tailor	Regular_____1	[_____] weeks____1	[_____] Taka
	Seasonal_____2	[_____] months____2	
		Can't recall____3	
Domestic worker	Regular_____1	[_____] weeks____1	[_____] Taka
	Seasonal_____2	[_____] months____2	
		Can't recall____3	
Midwifery	Regular_____1	[_____] weeks____1	[_____] Taka
	Seasonal_____2	[_____] months____2	
		Can't recall____3	
Others (specify)_____	Regular_____1	[_____] weeks____1	[_____] Taka
	Seasonal_____2	[_____] months____2	
		Can't recall____3	
C42. What other jobs are available to you if you were not an SS? <i>Specify and list all mentioned</i>	Other jobs available	Monthly average income possible	
	Factory worker_____1	[_____] Tk/month____1	DK_____3
	Handicraft_____2	[_____] Tk/month____1	DK_____3
	Poultry raising_____3	[_____] Tk/month____1	DK_____3
	Agriculture_____4	[_____] Tk/month____1	DK_____3
	Small business/hawking____5	[_____] Tk/month____1	DK_____3
	Tailor_____6	[_____] Tk/month____1	DK_____3
	Domestic worker_____7	[_____] Tk/month____1	DK_____3
	Midwifery_____8	[_____] Tk/month____1	DK_____3
	Others (specify)_____9	[_____] Tk/month____1	DK_____3
C43. What are the advantages of working as an SS as compared to these other jobs?	Better earnings in future_____1		
	Better work environment_____2		
	Can work from home_____3		
	Better hours_____4		
	More prestigious among the community_____5		
	Family approves_____6		
	Less distance to travel_____7		
	No advantage_____8		
	Other (specify)_____9		
C44. What are the disadvantages of working as an SS as compared to these other jobs?	Less earnings_____1		
	Not good work environment_____2		
	Must work outside home_____3		
	Hours not convenient_____4		
	Less prestigious among the community_____5		
	Family disapproves_____6		
	Greater distance to travel_____7		
	No disadvantage_____8		
Other (specify)_____9			
C45. Have you ever considered quitting your work as an SS?	Yes_____1		
	No_____2		

Appendix 2 continued.....

Continued appendix 2.....

<p>C46. If yes, why?</p>	<p>Payment is too low _____ 1 SS role is difficult _____ 2 I can't keep up with H/H responsibilities/pressures _____ 3 Husband/in-laws disapproves _____ 4 Community disapproves _____ 5 I have a better paid job alternative _____ 6 Other (specify) _____ 7</p>
<p>C47. Would a fixed monthly salary encourage you to be more active as an SS?</p>	<p>Yes _____ 1 No (End Interview) _____ 2</p>
<p>C48. If yes, what is the minimum monthly salary (with no commission) that you would require?</p>	<p>[_____] Taka per month _____ 1 Don't know _____ 3</p>