FXB GRADUATE TRACER STUDY

TRACING THE EVOLUTION OF THE FXB-VILLAGE MODEL AND ITS IMPACT ON PARTICIPATING HOUSEHOLDS

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List of Acronyms

ART: Antiretroviral Treatment
BCC: Behavior Change Communication
FXB: François-Xavier Bagnoud
ICP: International Comparison Program
IGA: Income Generating Activity
JMP: Joint Measurement Programme
MDGs: Millennium Development Goals
MUAC: Mid Upper Arm Circumference
NGO: Non-Governmental Organization
OVC: Orphans and Vulnerable Children
POC: Parish Orphan Committee
PPP: Purchasing Power Parity
UNAIDS: The Joint United Nations Programme on HIV/AIDS
UNICEF: United Nations Children's Fund
VOC: Village Orphan Committee
WASH: Water, Sanitation and Hygiene
WHO: World Health Organization

INTRODUCTION

Development experts agree that orphans and vulnerable children should remain in their communities whenever possible, but the global consensus is unclear on how best to support the families that care for them. For over 20 years, FXB International has refined its community-driven "FXB-Village" model into a structured program of household support and economic strengthening designed to empower particularly vulnerable families to escape extreme poverty and ensure the enduring wellbeing of the children in their care.

It follows that, as the capacities of the poorest households in the community are strengthened, there is an increased sense of dignity and prosperity among community members that transforms the wellbeing of the community as a whole. In the year 2010 alone, FXB-Villages directly served more than 42,000 children and their family members, and indirectly served over 115,000 neighbors and other community members.

Today's FXB-Village programs offer an integrated, holistic and innovative approach for poverty reduction, delivered at a grass-roots level and tailored to the specific needs of each community. This three-year package of basic support and counseling is provided to 80 of the most vulnerable households in each community (approximately 500 people). The package covers all aspects of wellbeing, including health and nutrition, water hygiene and sanitation, education, psychosocial support, family planning, food security, child rights, legal protection, income generating activities (IGAs)/livelihood projects, HIV/AIDS prevention and access to Antiretroviral Therapy (ART). A variety of community outreach events and trainings provide support to approximately 1200 other community members and additional services are made available to all participants through the government and private sector.

Sustainability and long-term impact are at the core of the approach from day one. Over the three-year program, FXB's financial input is gradually scaled down as participants gain a progressively stronger foothold in economic stability, food security, and health and are able to take greater responsibility for their own expenses. The ultimate goal is for participants to achieve and maintain a life of self-sufficiency.[1]

Numerous graduates have testified to the ways in which the program has changed their lives and the FXB-Village model has been recognized as a best practice by both UNAIDS (2002) and UNICEF (2008). Previous evaluations (Desmond, 2007) estimated that at least 86% of participating families are living well above the local poverty line at the end of the program. However, to date, there has been little in the way of follow-up assessments to evaluate the long-term impact of the FXB-Village. In fact, long-term impact evaluations for holistic, community-based programs are relatively uncommon in the wider development community.

In this paper, we present the results of a tracer study, assessing the current (2011) wellbeing of three groups of FXB-Village participants who graduated from the program at different times throughout the past decade. We discuss the impact that the FXB-Village has had on their lives and consider the evolution of the program, including changes to the participant selection process, the development of additional program components and the experiences and lessons learned that have informed decision making for subsequent programs.

[1] For a more detailed description of the program including the conceptual framework, see *Annex 1: Overview of the current FXB-Village model*.

BRIEF SUMMARY OF FINDINGS

From their starting point at baseline as the poorest households in their communities, the FXB-Village participants in all three study areas are, on average, now faring at least as well as nearby households in most aspects of wellbeing. The dimensions measured include income, savings, nutrition, child health, water, sanitation, housing and education.

In general, the communities in all three study areas are still extremely poor in 2011, with many households living close to the poverty line. However, there is a clear trend of increased financial stability across the three study areas, with each successive program showing an increase in savings and home ownership.

Country-specific differences were observed and recognized to be in line with national survey data. These include evidence of poor access to healthcare services in Uganda and higher levels of food insecurity in Rwanda.

The households with the highest standards of wellbeing several years after the end of the program were those who had diversified their sources of income (meaning they had more than one income source) and either scaled-up the traditional enterprises of animal husbandry or agriculture, or pursued a more highly skilled occupation such as mechanic or hairdresser.

FXB households reported a variety of hardships since the programs ended. However, the respondents in all three study areas spoke positively about the support they had received during the FXB-Village program itself. Several households said that the combination of material support, psychosocial support and economic training had been valuable to them. Respondents also spoke about the FXB-Village giving them renewed hope in life.

See 'Discussion and Overall Conclusions' section for more information.

METHODOLOGY

Objectives of the study

The purpose of this study was to trace the families that graduated from early FXB-Villages in Rwanda and Uganda and find out how they are living now in 2011, several years after the end of these programs. The study sought to address two main questions:

1. At enrollment, the households that participated in the FXB-Village were identified as being among the poorest and most vulnerable in their communities. Now, several years after the end of the program, are these households doing at least as well as other, randomly selected households nearby in terms of economic stability, living conditions, nutrition, child health and education?

2. Looking back over the years since they participated in the FXB-Village, are there any specific characteristics that can predict positive or negative outcomes in wellbeing?

To give context to the results, this study also sought to note some of the more important changes that were made over time to the program model.

Selection of FXB-Village Programs for Study and Sampling of Respondents

FXB's founding philosophy, recognizing the inextricable link between health and human rights and working towards a world without poverty, has been integral to all of the programs since the organization's inception in 1989. Each successive program has built on the experiences of the previous programs and helped to shape the methodology for those that followed. The first programs to officially be called "FXB-Villages" (consisting of 80 participating households and their surrounding community) took place in 2000 in Kigali, Rwanda and were based on the pioneering work of FXB in Uganda in the late 1990s.

After the FXB-Village programs in Kigali, more FXB-Villages were started in 2003 in a rural setting near Gitarama (now known as Muhanga), Rwanda, and then more in Uganda in 2005. Below, table 1 shows a timeline of the FXB-Village programs in Rwanda and Uganda since 2000, including the regions in which the FXB-Villages were situated and their context in terms of urban or rural. The FXB-Villages highlighted in red show the two concurrent programs in each setting that were chosen to take part in the Tracer Study. They are the earliest FXB-Villages in each setting.

From the timeline, it is possible to see the expansion of programs in these two countries, from just three FXB-Villages in 2000 to 27 concurrent FXB-Village programs across Rwanda and Uganda in 2011. During this time, the FXB-Village has been continuously updated with additional and improved components, each program benefitting from the experiences and lessons learned during previous programs. It is important to note that each successive year has seen an evolution of the FXB-Village. The changes over time are discussed in more detail in the results sections.

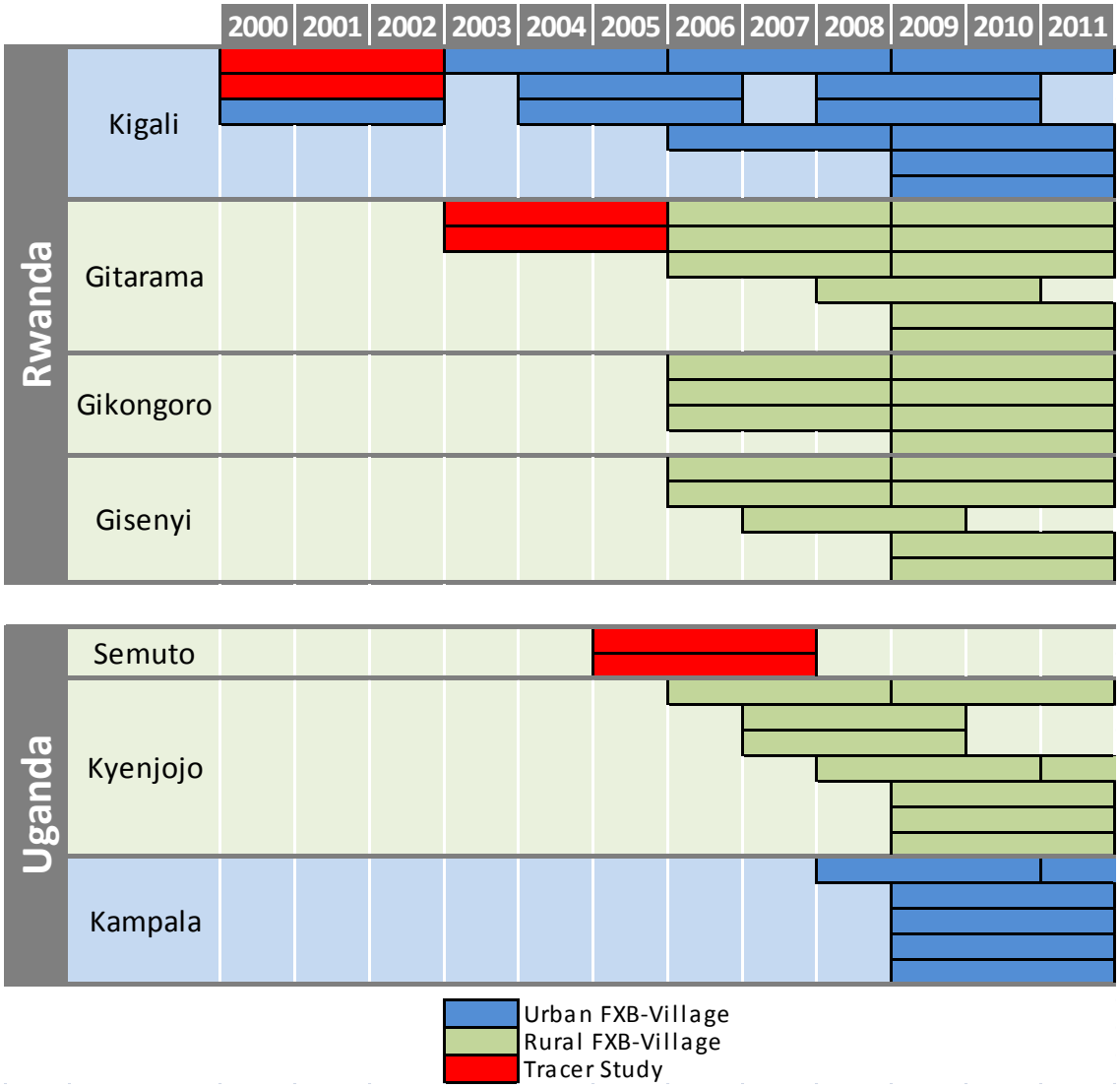

***Table 1: A timeline of FXB-Villages in Rwanda and Uganda**, showing the regions in which the programs were situated, their context (in terms of urban and rural) and which FXB-Villages took part in the Tracer Study*

In preparation for the Tracer Study, the research teams conducted preliminary investigations to track and locate every household that participated in the selected FXB-Villages (further details on this investigation are also available in the results section.) The complete list of graduating households for each pair of FXB-Villages (160 households) was then randomized and the research teams were instructed follow the list in strict order until approximately 25% of the households had been interviewed. In the event that a primary caregiver was not available to be interviewed during the first visit, the researchers were instructed to try again on at least two separate occasions before replacing this household with the next on the list.

Comparison Group

For community-based programs with more than one component or intervention, each additional component increases the complexity of defining and measuring a scientifically accurate control group. For the FXB-Village, a genuine control would consist of families that were experiencing the same level of poverty, vulnerability and socio-environmental factors as the FXB participants at the beginning of each program and were not then subjected to any external assistance or influence that

was not also present for FXB participants. Logistically, identifying and tracking such a group over time would be difficult.

In this Tracer Study, comparisons were made against nearby households in the community. Researchers were instructed to spin a pen or bottle on the ground in front of each FXB household, follow the direction in which it pointed and then interview the next household reached. In this way it is possible to get a rough idea of the status of FXB-Village graduates in the context of their own community.

These nearby households act as a useful comparison group; however, they should not be referred to as a control group for the following reasons:

1. They are not taken from the same initial population in terms of poverty, vulnerability, HIV status, and other factors. The selection process for FXB-Village participants is not random – FXB intentionally selects the most vulnerable households to participate in the program. Working on the assumption that this is true, any nearby households would not have been as vulnerable at the start of the program.

2. As the FXB-Village developed a strong community focus, involving other community members in trainings and outreach events as well as encouraging participating households to share their knowledge and experience with peers, it is conceivable that nearby households would have themselves benefitted to some extent from FXB's presence in their community.

Research Teams and Questionnaire

In Uganda, the fieldwork was carried out by a team from the Centre for Basic Research under the direction of Josephine Ahikire, Department of Social Work, Makerere University. In Rwanda, the fieldwork was carried out by a local Rwandan team supervised by Frederick Golooba-Mutebi of the Makerere Institute of Social Research, Makerere University.

A 24 page, two-part questionnaire was developed. Part 1 comprises quantitative questions taken from a detailed household questionnaire that has been implemented in all FXB-Villages in East Africa since 2009. It covers household demographics, nutrition, child health, water, sanitation, housing and education. Part 2 is more qualitative in nature and designed to elicit more detailed information on the sources and amounts of household income and any problems or pertinent events in the past few years.

The questionnaire was reviewed by the research teams in Uganda and Rwanda, as well as William Kibaalya of FXB Uganda and Dr. Chris Desmond and Dr. Mary Kay Smith Fawzi from Harvard University. It was translated into Luganda and Kinyarwanda and piloted in both countries with FXB and non-FXB respondents.

The research teams were given explicit instructions not to mention FXB at any point during the interview so as not to bias the responses and to give more accurate results to questions that asked about external assistance.

PPP conversion and Poverty Line calculations

To be able to make comparisons of incomes, living standards and poverty across countries, it is necessary to use a common currency or scale. The U.S. dollar is the obvious choice; however, it is not sufficient to convert the local currency (Rwandan Francs or Ugandan Shillings) directly into U.S. dollars at the international banking exchange rate as this will produce distorted results. The reason

for this is that 1 U.S. dollar buys more in Rwanda than it does in the U.S. In effect, 1 U.S. dollar has a different real world value depending on the country and the price of goods and services in that country.

To take these differences into account, the Purchasing Power Parity (PPP) rate is used – a statistical estimate calculated for each country by the International Comparison Program (ICP) of the World Bank. The PPP rate is defined as "the number of units of a country's currency required to buy the same amount of goods and services in the domestic market as a U.S. dollar would buy in the United States". The PPP exchange rates are used for all international poverty line calculations, including the United Nations Millennium Development Goals (MDGs).

One of the original targets of the Millennium Development Goals was to "Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day". However, since the MDGs were officially established in 2000, the 'dollar-a-day' estimate for poverty has been "re-calibrated" and currently stands at $1.25 a day. In addition, the World Bank now advises that instead of measuring income directly, it is better to measure consumption, where consumption includes all expenditure and money put into savings:

> *"Consumption is the preferred welfare indicator for a number of reasons. Income is generally more difficult to measure accurately. […] Moreover, consumption accords better with the idea of the standard of living than income, which can vary over time even if the actual standard of living does not."*
>
> ***Source: World Bank, Poverty data: A supplement to World Development Indicators, 2008***

However, to get an accurate value for household consumption (and therefore an accurate estimate of the household's standing relative to the poverty line) it is necessary to place a value on everything the household consumes. This includes commodities the household has produced themselves on their own land, in addition to anything they may have spent, purchased or received in donations or assistance from outside.

For this Tracer Study we collected information on possession of crops and animals, as well as the fraction of income spent on food in the household, but only the income data is fully quantifiable in dollar terms.[2] Therefore, we can only roughly estimate a household's standing in relation to the $1.25 a day international poverty line. Our estimate does not include the value of food, fuel and other goods consumed by the household from their own production and therefore it is not directly comparable to the United Nations Millennium Development Goal data.

The method for calculating household income per person per day (for comparison with the $1.25 poverty line) is also subject to debate. To accurately compare material wellbeing based on income or consumption, it is necessary to also consider the composition of the household. Two concepts, known as "adult equivalents" and "economies of scale" are often used in the calculation and these can impact the proportion of households seen as living above the poverty line.

Adult Equivalents corresponds to the notion that children (especially very young children) do not consume the same quantity of resources as adults. Therefore, if two households, each with six members, have an identical quantity of resources available, but household 'A' has four adults and two children and household 'B' has two adults and four children, then the household with fewer

[2] Household hunger and fraction of income spent on food provide measures of how close a family is to living in absolute poverty that may be at least as meaningful as the $1.25 a day criterion.

adults (household 'B') is likely to be better off. To correct for this it is necessary to establish the number of "adult equivalents" that each household has.

Children of different ages use different levels of resources – a six month old baby does not consume the same as a 16 year old. However, as an average, children are typically said to use between 0.5 and 0.7 the resources of an adult. Using 0.7 with the examples above, household 'A' would have 5.4 adult equivalents (between which the income and other resources must be split), and household 'B' would have 4.8 adult equivalents:

Table 2: Example of Adult Equivalent Calculation

Household	Adults	Children	Calculation (assuming each child uses 0.7 times the resources of an adult)	Adult Equivalents
A	4	2	4 + (2 * 0.7)	5.4
B	2	4	2 + (4 * 0.7)	4.8

Economies of scale corresponds to the notion that larger households require fewer resources per person than smaller households. A household with four members does not consume double the resources and pay twice as much in rent and bills as a household with two members. This effect is observed in both rich and poor countries. Unfortunately, there is no entirely satisfactory way to calculate economies of scale, but an adjustment parameter of between 0.7 and 0.9 is quite common for household surveys in developing countries (where 1 is equivalent to no adjustment).

Economies of scale are usually combined into an overall value for Adult Equivalents (AE) using the equation:

$$AE = (N_{adults} + \alpha\, N_{children})^{\theta}$$

where α measures the resource cost of a child relative to an adult, and θ is a parameter that captures the effects of economies of scale.

For this study, we will perform two calculations with the income data. The first will use a simple per capita split (with no adjustment for children or economies of scale), and the second will use the above formula with children costing 0.7 times the adult equivalents and a very small adjustment of 0.9 for economies of scale. By only using small adjustments, we are able to take household size and composition into consideration while still remaining faithful to the original income data.

RESULTS

The results will be presented in three sections – one for each of the three study areas:

1. Kigali (Rwanda) FXB-Village operated from July 2000 – June 2003
2. Gitarama (Rwanda) FXB-Village operated from Jan 2003 – Dec 2005
3. Semuto (Uganda) FXB-Village operated from Jan 2005 – Dec 2007

Each section will begin with an introduction to the study area and an overview of the baseline demographics of FXB participating households in that region. This will be followed by details of the preliminary investigation in preparation for the Tracer Study, and finally the Tracer Study results themselves.

In summary, for each **Study Area**, there will be:

- Background & Baseline Demographics
- Findings from the Preliminary Investigation (tracking participant households)
- Tracer Study Results
    - *Study groups*
    - *Income and Household Economic Status*
    - *Food Security*
    - *Household Condition, including Water and Sanitation*
    - *Child Health*
    - *School Attendance*
    - *Recurring Themes in the Qualitative data*
    - *Conclusions*

The discussion and overall conclusions will follow after the results have been presented.

The FXB-Villages (July 2000 – June 2003) – Kigali, Rwanda

Background & Baseline Demographics, Kigali

FXB started work in East Africa in 1990 with programs to support orphans and their caregivers in regions of Uganda affected during the civil war. The programs (overseen by AMREF) provided psychosocial support, HIV prevention, school support (including classroom reconstruction) and basic income generation. After the 1994 genocide in Rwanda devastated the Rwandan population, leaving countless children without homes or families, the experience FXB had gained through the Uganda programs was invaluable. FXB started a series of programs in 1995 in Rutobwe (Gitarama region of Rwanda) helping to reconstruct homes, find foster families for orphans and support the foster families to get back on their feet.

Then, in 1999, in collaboration with existing institutions who worked with People Living with HIV (PLHIV), FXB selected 80 of the most impoverished and vulnerable HIV-positive caregivers looking after large numbers of children to take part in a six month project in Kigali, Rwanda. The project covered school support, medical support, psychosocial support, IGAs, basic family planning and condom distribution. Stakeholders in the project were impressed with the results and the decision was made to start three longer projects, each lasting three years. A natural continuation of FXB's philosophy and field experience from the previous decade, these programs were the first to be known as FXB-Villages.

As with the project mentioned above the 80 participant households for each FXB-Village were selected from existing lists of PLHIV, based on their vulnerability and the number of children in their care. At baseline (2000), 82% of the primary caregivers were known to be HIV positive while the

remaining 18% of households had key members who were HIV positive. The average age of primary caregivers was 35, with 88% of them female and over 70% of these widows.

On average, each primary caregiver had 5.3 dependents in their care (with an average of 1.3 orphans per household).[3] Average household income was just $0.38 per person per day ($0.55 when adjusted for household size and composition). Based on per capita income, 95% of households were living below the international $1.25 poverty line (89% when adjusted for household size and composition). In comparison, World Bank data puts the national average at 77% living below $1.25 in the year 2000.

Over the course of the next three years, FXB guided participants' development and made various refinements to the model, adding to or improving the program components that existed earlier. Examples include:

- The original cash installments given to participants to help them develop IGAs were changed to in-kind donations to make it easier for participants to make full use of the support (some had previously been tempted to spend the money on consumables instead of using it to secure their financial situation).
- A review process was set up to help participants choose successful IGAs according to the season and current market conditions.
- A child protection component was added to educate families about the rights of their children.
- Trainings were provided to improve household access to safe water, adequate sanitation, and proper hygiene (WASH).

Findings from Preliminary Investigation, Kigali (tracking participant households)

According to The World Bank, the number of people between the ages of 15-49 in Rwanda in 2000 was 3,453,599. UNAIDS estimates that HIV prevalence in this age group was around 4%, which puts the number of people living with HIV between the ages of 15 and 49 at approximately 138,144.

Recent UNAIDS estimates put the number of people dying annually from AIDS in Rwanda in the years 2000, 2001 and 2002 at 21,000 people per year. The estimates for the years 2003 and 2004 are slightly reduced, with a possible 20,000 deaths attributable to AIDS. This amounts to a potential 103,000 AIDS related deaths between 2000 and 2004.

Given that it usually takes at least a few years for HIV infections to lead to the onset of AIDS and the associated opportunistic infections that lead to mortality, it is reasonable to assume that a large proportion of these 103,000 AIDS deaths came from the existing HIV positive population in 2000 (approximately 138,144 people). It is therefore not difficult to see how bleak the survival prospects were for PLHIV and their dependents in Rwanda in 2000.

In preparation for the Tracer Study, the research team conducted a preliminary investigation to establish how many of the original FXB families still exist, whether the original primary caregiver is still alive and where the family is living now, in 2011. The result of this investigation found that, of the primary caregivers who were HIV positive at baseline, 86% of them are still alive (11 years after the program began). Given the national statistics for mortality from HIV/AIDS, this is already a notable achievement, especially considering the initial poverty levels of FXB participants. Overall, 88% of the original primary caregivers (HIV positive and non HIV positive) who started the program in 2000 were still alive when the Tracer Study research took place in 2011.

[3] Here, orphan is defined as a child who has lost one or both parents

Tracer Study Results, Kigali (eight years after the end of the program)

Study group (Kigali)

For the Tracer Study in Kigali, a total of 59 households were interviewed (30 FXB households and 29 nearby households). Eighteen of the nearby households (over 60%) were 'complete' families (with a mother and father living with their children), compared to just five (17%) FXB households. There were more widow or widower headed households than any other type among FXB households. The statistically significant p-value confirms that FXB households have a different composition than those nearby.

Table 3: Households that took part in the Tracer Study in Kigali

Household Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)
Mother and Father with children	5 (17%)	18 (62%)
Single parent with children	6 (20%)	3 (10%)
Grandparent with children	8 (27%)	1 (3%)
Widow/widower with children	9 (30%)	3 (10%)
Other	2 (7%)	4 (14%)
Total	**30**	**29**

*p-value for entire table (calculated using Fisher's exact): p=0.000***
(highly statistically significant)

Income and Household Economic Status (Kigali)

At baseline in 2000, the average household income for participants in Kigali was 2,887 Rwanda Francs a week (the equivalent of approximately 15 U.S. dollars at the 2000 PPP conversion rate). This amounts to approximately $0.55 per person per day (adjusted for household size and composition), with 89% of participating households living below the $1.25 international poverty line based on their income.

Data from the Tracer Study, 11 years later, shows that while some households are still living in poverty, there have been significant improvements. In 2011, the average household income increased to 16,077 Rwandan Francs a week (approximately 50 U.S. dollars at the most recent [2009] PPP conversion rate). This is an average of $1.55 per person per day (adjusted for household size and composition), with less than half (47%) of households still living below the $1.25 international poverty line.[4] This compares very similarly to nearby households, whose average income is $1.72 per head per day, with 48% living below the poverty line.

The most recent national statistics from the World Bank are several years out of date (2005). At that time, 77% of the population in Rwanda was thought to be living below the $1.25 international poverty line. However, this is a national average – the figure for urban areas is expected to be lower as there are fewer people living in poverty in urban areas than in rural areas.

Table 4: World Bank poverty data for Rwanda

Country Name	Indicator Name	Indicator Code	2000	2005
Rwanda	Poverty headcount ratio at $1.25 a day (PPP) (% of population)	SI.POV.DDAY	76.56	76.79

(Source: http://iresearch.worldbank.org/PovcalNet)

[4] Based on income alone (not consumption/expenditure value)

Given the inherent difficulties in measuring income, it is important to also consider other measures of poverty such as food security (discussed below), home ownership and savings. The Tracer Study data shows that most past FXB participants (63%) own their house and therefore do not have to pay rent (a further 7% are living rent-free in borrowed accommodations). This is a significant improvement since baseline, when only 34% of participant families owned their house. It is also higher than respondents from nearby households, 48% of whom said they owned their house. In contrast, nearby households are more likely to have savings than the FXB households (34% and 10% respectively).

Table 5: Overview of economic data from Kigali
(Tracer Study data from eight years after the end of the program)

	Description	**FXB Baseline (2000)**	**FXB Tracer Study (2011)**	**Tracer Study nearby households (2011)**	***p-value***
	Average Weekly Household Income (in Rwandan Francs)	2,887 FRW	16,077 FRW	14,836 FRW	*p=0.7876 (rank-sum)*
	PPP conversion rate (from http://unstats.un.org)	193.73 (2000)	326.12 (2009)		
	Average Weekly Household Income (in US Dollars)	$14.90	$49.30	$45.49	*p=0.7876 (rank-sum)*
	Average household size	6.34	6.5	5.67	*p=0.1756 (rank-sum)*
Based on **income data only** (not consumption value)	Average daily ***income*** per person in U.S. dollars (adjusted for household size and composition)	$0.55	$1.55	$1.72	*p=0.9655 (rank-sum)*
	↘ Poverty Headcount Ratio: Proportion of population living below $1.25 poverty line according to ***income only*** (adjusted for household size and composition)	89%	47%	48%	*p=0.554 (Fisher's)*
	Per capita daily ***income*** in U.S. dollars (***without adjustment*** for household size or composition)	$0.38	$1.10	$1.29	*p=0.9195 (rank-sum)*
	↘ Poverty Headcount Ratio: Proportion of population living below $1.25 from unadjusted per capita ***income***	95%	64%	67%	*p=1.0 (Fisher's)*
	% of households with savings	no data	10%	34%	*p=0.030*** (Fisher's)*
	% of households owning their home	34%	63%	48%	*p=0.467 (Fisher's)*

NB: 'rank-sum' = Two-sample Mann–Whitney–Wilcoxon rank-sum test
** = statistically significant; ** = highly statistically significant*

Food Security (Kigali)

Food security is a useful measure of how close a family is to living in absolute poverty. To measure a household's food security it is important to look not only at the quantity and consistency with which food is available, but also at whether the household has the sufficient resources to obtain food. A simple measure for resources is to look at the fraction of household income that is spent on

food – if a household spends more than half of their income on food, it is problematic for food security.

In this study, 48% of FXB households report that, on at least one occasion, someone in the household has gone to bed hungry in the past three months – for nearby households the figure is 32%, although the difference is not statistically significant. Very few households in either group said that this has happened many times, and the child health data (discussed later) shows us that no children under five are showing obvious symptoms of severe malnutrition or Kwashiorkor. This suggests that food availability is an intermittent rather than regular problem for many households.

However, the majority of households in both groups said that they spend more than half of their income on food. The figure was especially high in FXB households (83%), compared to 55% in nearby households, with the difference between the two groups being highly statistically significant. This suggests that, from a resource perspective, the FXB households are less food secure than nearby households, and this is likely to be a factor of two things: larger household sizes in FXB households and lower incomes per capita.

Table 6: Food Security in Kigali
(Tracer Study data from eight years after the end of the program)

Description	**FXB Tracer Study (2011)**	**Tracer Study nearby households (2011)**	***p-value (Fisher's exact)***
% of households reporting that, on at least one occasion, someone in the household had gone to bed hungry in the past three months	48%	32%	*p=0.302*
↘ % of households reporting that this happened many times	7%	4%	
% of households reporting that they spent more the half of their income on food	83%	55%	*p=0.025***

***** = statistically significant; ****** = highly statistically significant*

Household Condition, including Water and Sanitation (Kigali)

The FXB-Village programs have no detailed baseline information available for household condition, water or sanitation, so comparisons can only be made between the two groups interviewed for the Tracer Study (FXB and nearby households) and the available national statistics from the World Health Organization (WHO). According to WHO data, Rwanda has actually seen a steady decrease in access to improved water sources in urban areas since 2000 and a steady increase in improved sanitation facilities. However, as with the poverty data from the World Bank, the latest figures are several years out of date.

Table 7: WHO JMP data on water and sanitation for Rwanda (urban)

Country Name	Indicator Name	Indicator Code	2000	2005	2008
Rwanda	Improved water source, urban (% of urban population with access)	SH.H2O.SAFE.UR.ZS	85	80	77
Rwanda	Improved sanitation facilities, urban (% of urban population with access)	SH.STA.ACSN.UR	43	47	50

(Source: World Health Organization and United Nations Children's Fund, Joint Measurement Programme (JMP) (http://www.wssinfo.org/)

The Tracer Study data shows us that FXB and nearby households are identical (p=1.0) in terms of their access to improved water and sanitation. All of the households get their water from a public tap or standpipe or have it piped directly into their plot. The numbers for improved sanitation are slightly lower than one might expect from the national statistics, but this is most likely due to the fact that many households in poor regions of the city are forced to share a toilet or latrine. Shared latrines are not counted as 'improved sanitation' by the WHO JMP definitions.

Any differences that might exist for the behavioral-based indicators such as water treatment and ensuring that cooking facilities have appropriate ventilation are not enough to be statistically significant.

Table 8: Household Condition, Water and Sanitation in Kigali
(Tracer Study data from eight years after the end of the program)

Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
% of households with an improved water source (according to WHO JMP definitions)	100%	100%	*p=1.0*
% who treat their water to make it safer to drink	83%	69%	*p=0.233*
% of households with improved sanitation facilities (according to WHO/JMP definitions)	43%	45%	*p=1.0*
% of households with appropriately ventilated cooking facilities	90%	83%	*p=0.648*

Child Health (Kigali)

In addition to questions about the household, each primary caregiver was asked a series of questions about the children in the household, including if they had birth registration and if young children had experienced illness. Researchers collected additional malnutrition data for children under five who were present at the time of the interview.

Although not statistically significant, the birth registration figures between the two groups hint that there could be a disparity, with 81% of children under five in nearby households having official birth registration, compared to just 64% in FXB households. This could reflect the more vulnerable background of FXB participants and the fact that child protection was not a fully developed component of the FXB-Village at this stage. There is no discernible difference in the prevalence of diarrhea or severe coughs between children under five in the two groups.

No children under five in either group are showing obvious symptoms of severe malnutrition or Kwashiorkor.[5]

Table 9: Child Health in Kigali
(Tracer Study data from eight years after the end of the program)

Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
Number of children aged 6 – 59 months showing signs of acute malnutrition (measured using Mid-Upper Arm Circumference)	0/19 (0%)	0/13 (0%)	*p=1.0*
% of children under five showing signs of Kwashiorkor	0/19 (0%)	0/13 (0%)	*p=1.0*
% of children under five with official birth registration	14/22 (64%)	13/16 (81%)	*p=0.296*
% of children under five with up-to-date immunization card for their age	21/21 (100%)	14/14 (100%)	*p=1.0*
% of children under five experiencing an episode of diarrhea in the past month	2/22 (9%)	2/16 (6%)	*p=1.0*
% of children under five experiencing a severe cough in the past month	4/22 (18%)	2/16 (13%)	*p=0.815*

School Attendance (Kigali)

At baseline only 36% of FXB participant children between the ages of 5 and 17 were reported to be attending school. Eleven years later, this has increased to 82%. This is comparable to nearby households where 83% of children were reported to be attending school (however, it should be noted that school attendance figures for nearby households were not known at baseline, so it is possible that they have seen a similar increase). Looking at the subset of these results for children of primary school age (usually 7 to 12 in Rwanda), 97% of primary school aged children in FXB households are attending school compared to 81% in nearby households with the difference being statistically significant. The 19% of children in nearby households who are not in school were reported to have dropped out or were never enrolled.

Table 10: School Attendance in Kigali
(Tracer Study data from eight years after the end of the program)

Description	FXB Baseline (2000)	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
% of children aged 5-17 attending school	36%	82%	83%	*p=0.380*
↘ % of children aged 7-12 attending primary school	no data	97%	81%	*p=0.053**

** = statistically significant; ** = highly statistically significant*

[5] Kwashiorkor is a form of malnutrition that occurs when there is not enough protein in the diet.

Recurring Themes in the Qualitative data (Kigali)

The most prominent theme in both FXB households and those nearby was problems paying school fees for their children, especially for secondary school. Additionally, the households who were renting said that it was not easy to find money for rent.

> **Question:** "*Have you ever received help from an NGO? If so, please name the NGOs that have helped you, and explain how they have helped.*" [6]

In response to this question 100% of households who participated in the FXB-Village said they had received help from FXB. The most commonly mentioned services were nutritional support, school fees and developing IGAs. Of the nearby households only three (out of 29 total) had ever received external support – one from Caritas and two from FARG (the Government Fund for the Support of Genocide Survivors).

Group	ID	Quote
FXB household	181	*"Yes. I received help from an NGO called "Bagnoud" [FXB]. They paid school fees for my children when they were studying in primary school. FXB provided us food like beans, maize flour and cooking oil. I was also given psycho-social support because I was living with HIV/AIDS. I really appreciated their help because I was desperate and they gave me hope in life."*

> **Question***: "Think back 10 years ago. How have things been going financially for you and your family since then?"*

Most of the households who participated in the FXB-Village program said that the support they received from FXB helped to improve their income and living standards, but several reported difficulties after the support ended, especially with paying school fees.

Group	ID	Quote
FXB household	197	*"In 2000 when I received help from FXB, things were very difficult; I had nothing. The FXB support helped me a lot."*
FXB household	221	*"Since FXB stopped helping us, our life became difficult because I had to pay school fees for the children."*

Several of the FXB households said they encountered problems sustaining their IGAs after the program finished. Many were too reliant on one earner, which meant if that person fell ill for an extended period, the economic shock was often enough for the IGA to collapse. In cases of severe illness and hospitalization, a few households were forced to sell all of their business and household assets to pay for treatment, leaving them with nothing to restart their IGA. The most common cause given for long term hospitalization was tuberculosis resulting from AIDS.

Group	ID	Quote
FXB household	223	*"The business lasted until 2006 when I fell ill and was admitted in Kabutare hospital [...] and I sold everything."*
FXB household	207	*"… at times I would prosper in my business and make money, but later I would fall ill. Like in 2007 I spent the whole year in hospital and lost all my money"*

[6] Research teams were given explicit instructions not to mention FXB to the respondents at any point during the interview.

In almost all of the FXB households, women led the IGAs with little support from a partner or husband. In a few households, it was reported that the husband was actually making the situation worse.

Group	ID	Quote
FXB household	187	*"While hospitalized, my husband sold the land and iron sheets. He could not continue the business of selling bananas and potatoes and the business collapsed."*
FXB household	211	*"My husband is not disciplined. He gets drunk and we keep fighting."*

In contrast, the majority of nearby households said that the husband was the main earner (62% of nearby households had the mother and father living in the household compared to just 17% of FXB households – this is most likely due to FXB's criteria for participant selection at baseline, supporting the most vulnerable households). The nearby households also reported illness affecting income, but not as many cases of severe illness (probably due to fewer people living with HIV). Approximately 60% of households reported that their everyday life was "difficult".

Group	ID	Quote
Nearby household	197	*"Generally speaking things are difficult. Getting food, clothing and school fees for the children at the same time isn't an easy thing here in Kigali. We try to deal with challenges as they arise, with a lot of difficulty."*

In general the households doing the best in 2011 are those who consistently reinvested profits from their IGA into expanding their business or used a basic IGA as a springboard to other, more profitable IGAs (such as driving, mechanics, or watch repair). In FXB households, 4 out of 5 of the top earning families had more than one earner and had diversified their IGAs into more than one source of income.

In almost all cases where households had tried to maintain a small-scale "traditional" IGA (such as selling fruit or charcoal), they had run into difficulties due to illnesses or other unforeseen events.

Table 9: Sources of Income for Highest and Lowest Earners in Kigali
(Tracer Study data from eight years after the end of the program)

	FXB Tracer Study (2011)	Tracer Study nearby households (2011)
Sources of income for households with the *highest* 5 incomes in each group	1. House rent / owns a bar 2. Selling second hand clothes 3. Spare car parts / Grocery Store 4. Cleaner / Waitress / Car Parts 5. Mechanic / Grocery Store	1. Security Guard / Grocery Store 2. Mechanic 3. Teacher / House Rent 4. Driver for Travel Agency 5. Mechanic
Sources of income for households with the *lowest* 5 incomes in each group	1. Selling charcoal 2. House rent 3. Odd Jobs 4. Selling fruit 5. Lives off donations from others	1. No income (living off savings) 2. No income (living off savings) 3. Odd Jobs 4. Pension (retired soldier) 5. No income (living off savings)

Conclusions (Kigali)

While there was no data collected from nearby households at baseline in 2000, FXB's selection criteria is backed up by strong anecdotal evidence that program participants were among the poorest and most vulnerable in their communities. Therefore, the fact that these participants are faring very similarly to nearby households in 2011 is a result to be commended. From a financial perspective, incomes are roughly equivalent, however FXB households are less likely to have savings than nearby households. This could be because the savings and microfinance components of the FXB-Village were not fully developed at the time of these programs. It could also be due to costs associated with extended periods of illness caused by HIV/AIDS.

None of the children under five years old in either group were showing obvious signs of acute malnutrition or Kwashiorkor, however the food security situation seems to be quite fragile in these communities, with the majority of households in both groups, but significantly more FXB households, saying that they spent more than half of their income on food. This is almost certainly a combination of the urban environment, rapidly rising food costs in the region and large household sizes.

Many households said that there had been at least one day when someone had gone to bed hungry in the past three months, but very few households said this was a regular occurrence (with no statistically significant difference between FXB households and those nearby). This suggests that, despite the large drain that food costs are having on household income, almost all households are managing to eat regularly.

The national statistics for water and sanitation from the World Bank and WHO (*see Table 7*) suggest that, despite massive foreign aid investments, Rwanda has only seen small improvements in national averages between 2000 and 2008 (the most recent data). In 2011, both the FXB households and others nearby in their communities are doing better, on average, than the most recent national statistics for urban communities.

In the qualitative data, FXB households talked about the FXB-Village program giving them hope when they were desperate. There were several reports of illnesses leading to economic difficulties in the years following the program. However, the hardships associated with paying rent were abated for the 63% of FXB households who own their own home. The households who were most resilient to economic shocks were those with more than one earner and those who had diversified their IGAs.

Data regarding primary school attendance shows that children of primary school age in FXB households are more likely to be attending school than those in nearby households; however, the cost of secondary school education was mentioned by both groups as being a considerable burden and source of stress.

Considering that all of the FXB households have key members living with HIV (among primary caregivers alone, 82% were known to be HIV positive at baseline) it is significant to note that in 2011, eight years after the program ended, 88% of caregivers are still alive. The Rwandan government did initiate a push to get Antiretroviral Treatment (ART) into all hospitals in Rwanda in 2002, however they were not widely available or affordable until at least 2004. Without ART, the untreated illness can have a severe impact on the capacity to work and earn money. It is therefore reasonable to infer that the FXB households would be in a much worse position today if they had not received some form of external assistance that increased their resiliency and capacity to deal with their situation by themselves. Qualitative data suggests that for many of these households, the only form of external assistance they received was from FXB between 2000 and 2003.

The Rural FXB-Villages (Jan 2003 – Dec 2005) – Gitarama, Rwanda

Background & Baseline Demographics, Gitarama

During the implementation of the first FXB-Villages in Kigali (2000–2003), FXB continued its house construction and foster family programs in the Gitarama region (now part of Muhanga District) that had been running since 1995. As part of the Rwandan government's push to get ART into all hospitals in Rwanda in 2002, they also made HIV testing more widely available. However, at the time, there was very little information available on the scale of the HIV epidemic in the communities around Gitarama and few organizations were addressing the situation.

In response, FXB held a town meeting in a community on the outskirts of Gitarama and offered free transport to anyone who wished to get a free HIV test at the regional hospital. The response was compelling with 535 people agreeing to take part. Approximately 15% of those who volunteered to be tested were found to be HIV positive. Coupled with the higher poverty levels known to exist in these rural communities, it was apparent that more support was needed for the population there.

The first FXB-Villages in Kigali were nearing completion and stakeholder feedback was positive, therefore FXB decided to initiate two more FXB-Village programs in Gitarama region. Due to the lack of other organizations working with HIV positive people in the region, FXB joined forces with the local authorities to get more people tested and assessed for overall vulnerability. As before, the 80 participating households for each FXB-Village program were selected based on the HIV status of key household members, the number of children in their care, and the overall poverty and vulnerability of the household.

At baseline in 2003, 84% of the primary caregivers were known to be HIV positive while the remaining 16% of households had key members who were HIV positive. The average age of primary caregivers was 38, with 83% of them female and 87% of these widows. On average, each primary caregiver had 5.4 dependents in their care (with an average of 1.7 orphans per household). Average household income was just $0.13 per person per day with 99% of selected households living below the international $1.25 poverty line (at 2000 rates).

The fact that these communities were rural in nature presented new opportunities for improving the FXB-Village model. New activities for income generation were introduced such as pig rearing and agriculture. However, the program suffered a setback towards the end of 2003 when a viral outbreak[7] decimated the local pig population and put many participants back to square one with their IGAs. FXB responded by enlisting the help of local veterinarians to educate participants on improved methods for housing and feeding the pigs to minimize the risk of future infection and helped to restock pigs in the households who wished to continue pig rearing. FXB also placed greater emphasis on encouraging households to diversify by having more than one IGA if possible.

Further development of the FXB-Village model continued throughout the lifetime of these programs, including:

- The enlistment of part-time help from other local experts who could provide technical training sessions on specific IGAs
- Group meetings – gathering participants together on a monthly basis to share thoughts and experiences with each other on overcoming various issues

[7] The outbreak was attributed to either the African Swine Fever Virus [ASFV] or Classical Swine Fever [CSF] – also known as "Hog Cholera". The clinical symptoms of each are indistinguishable without detailed laboratory analysis.

- The recruitment of a full time Child Rights Officer to provide training and support to participants in all matters relating to child protection (including topics such as birth registration, inheritance rights and child abuse)
- The provision of nutritional support to households during the first 9 months of the program (deemed long enough to allow them to grow their IGAs without becoming dependent on the support)

Findings from Preliminary Investigation, Gitarama (tracking participant households)

The preliminary investigation in preparation for the Tracer Study found that 74% of the original HIV positive primary caregivers are still alive eight years after the start of the program. Overall, nearly 80% of primary caregivers are still alive. This is notable because FXB began working with these beneficiaries in 2003, before treatment became available to the rural poor in Rwanda. Despite the Rwandan government's push to distribute ART to hospitals in 2002, it wasn't until late 2004 that ART started becoming more widely available in rural health centers and even then the drugs were still unaffordable for people living below the poverty line.

With poverty being more prevalent in the rural areas, and greater challenges with access to health institutions and medication, it is expected that the survival prospects for someone living with HIV in Gitarama were worse than in Kigali. Therefore, it is likely that, without some kind of external assistance during this time period, many of these caregivers would not have survived.

Tracer Study Results, Gitarama (five years after the end of the program)

Study group (Gitarama)

For the Tracer Study in Gitarama, a total of 91 households were interviewed (46 FXB households and 45 nearby households). Again, more of the nearby households were 'complete' families, with 28 (over 60%) consisting of a mother and father living with their children, compared to just 12 (26%) of FXB households. As with Kigali, there were more widow- or widower-headed households than any other type among FXB households. The statistically significant p-value confirms that FXB households have a different composition to those nearby.

Table 12: Households that took part in the Tracer Study in Gitarama

Household Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)
Mother and Father with children	12 (26%)	28 (62%)
Single parent with children	7 (15%)	5 (11%)
Grandparent with children	2 (4%)	3 (7%)
Widow/widower with children	17 (37%)	8 (18%)
Other	8 (17%)	1 (2%)
Total	**46**	**45**

*p-value for entire table (calculated using Fisher's exact): p=0.006***
(highly statistically significant)

Income and Household Economic Status (Gitarama)

The average household income for participants in Gitarama at baseline was 722 Rwanda Francs a week (the equivalent of just $3.73 at the 2000 PPP conversion rate). When split between the household members, this amounts to just $0.13 per head per day (adjusted to household size and composition). This figure is shockingly low, even for a rural community where basic food and fuel can be produced at home or scavenged from the land. In fact, many households reported having no source of income whatsoever at baseline, and 99% of participant households were living below the $1.25 international poverty line.[8]

In 2011, Tracer Study data shows that the average per head, per day rate has increased ten-fold to $1.31, with an average household income of 11,549 Francs a week. The nearby households show a slightly larger weekly income of 12,651 Rwandan Francs, but due to smaller house sizes, the per head rate, at $1.59, is large enough to be significantly different. The proportion of FXB households living below the $1.25 poverty line according to income data only is 65%, compared to 49% of nearby households. World Bank estimates are the same as for Kigali (there is no separation of rural and urban for the $1.25 international poverty line).

Table 13: World Bank poverty data for Rwanda

Country Name	Indicator Name	Indicator Code	2000	2005
Rwanda	Poverty headcount ratio at $1.25 a day (PPP) (% of population)	SI.POV.DDAY	76.56	76.79

(Source: http://iresearch.worldbank.org/PovcalNet)

In Rwandan culture, rural households typically save their money by investing in livestock (which can later be sold to redeem funds) rather than placing the money in a bank account. Therefore, livestock ownership must be taken into account when assessing rural poverty. Tracer Study data shows, with statistical significance, that more FXB households have savings and/or large livestock than those nearby (85% and 67% respectively, *p=0.053*). In addition, home ownership among past FXB-Village participants is significantly higher than among nearby households (85% to 64% respectively, *p=0.020*).

[8] Based on income alone (not consumption value)

Table 14: Overview of Economic data from Gitarama
(Tracer Study data from five years after the end of the program)

	Description	FXB Baseline (2003)	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value*
	Average Weekly Household Income (in Rwandan Francs)	722 FRW	11,549 FRW	12,651 FRW	*p=0.1614 (rank-sum)*
	PPP conversion rate (from http://unstats.un.org)	193.73 (2000)	326.12 (2009)		
	Average Weekly Household Income (in US Dollars)	$3.73	$35.41	$38.79	*p=0.1614 (rank-sum)*
	Average household size	6.44	5.5	4.53	*p=0.0253** (rank-sum)*
Based on **income data only** (not consumption value)	Average daily ***income*** per person in U.S. dollars (adjusted for household size and composition)	$0.13	$1.31	$1.59	*p=0.0951* (rank-sum)*
	↘ Poverty Headcount Ratio: Proportion of population living below $1.25 poverty line according to ***income only*** (adjusted for household size and composition)	99%	65%	49%	*p=0.141 (Fisher's)*
	per capita daily ***income*** in U.S. dollars (***without adjustment*** for household size or composition)	$0.09	$0.95	$1.21	*p=0.0701* (rank-sum)*
	↘ Poverty Headcount Ratio: Proportion of population living below $1.25 from unadjusted per capita ***income***	100%	78%	65%	*p=0.238 (Fisher's)*
	% of households that have savings and/or large livestock	no data	85%	67%	*p=0.053* (Fisher's)*
	% of households owning their home	57%	85%	64%	*p=0.020** (Fisher's)*

NB: 'rank-sum' = Two-sample Mann–Whitney–Wilcoxon rank-sum test
** = statistically significant; ** = highly statistically significant*

Food Security (Gitarama)

Food security, which provides another measure of absolute poverty, did not show any statistically significant differences between FXB Households and those nearby. However, as with Kigali, the majority of households in both groups said that they spent more than half of their income on food. In addition, approximately 20% of households (in both groups) said that someone had gone to bed hungry at least once in the past three months, however no households reported that this had happened many times.

Table 15: Food Security in Gitarama
(Tracer Study data from five years after the end of the program)

Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
% of households reporting that, on at least one occasion, someone in the household had gone to bed hungry in the past three months	22%	17%	*p=0.854*
↘ % of households reporting that this had happened many times	0%	0%	
% of households reporting that they spent more the half of their income on food	70%	53%	*p=0.134*

Household Condition, including Water and Sanitation (Gitarama)

As with the urban data, WHO JMP data for rural Rwanda shows a steady decrease in access to improved water sources between 2000 and 2008 and a steady increase in improved sanitation facilities. There is no more recent data available than 2008.

Table 16: WHO JMP data on water and sanitation for Rwanda (rural)

Country Name	Indicator Name	Indicator Code	2000	2005	2008
Rwanda	Improved water source, rural (% of rural population with access)	SH.H2O.SAFE.RU.ZS	64	63	62
Rwanda	Improved sanitation facilities, rural (% of rural population with access)	SH.STA.ACSN.RU	40	49	55

(Source: World Health Organization and United Nations Children's Fund, Joint Measurement Programme (JMP) (http://www.wssinfo.org/)

All the households in the Tracer Study have access to an improved water source (in most cases a protected spring or protected well, but a few households also have piped water). Approximately 70% of households also treat their water to make it safer to drink and 80% have appropriately ventilated cooking facilities. The only possible difference between the groups is improved sanitation facilities, where 76% of the nearby households have access to improved sanitation, compared to 61% of FXB households. The p-value indicates that, while there may indeed be a difference here, it is not large enough to be strongly statistically significant.

Both the values for improved water source and improved sanitation facilities are greater than the most recent WHO estimates. It could be that considerable progress has been made at a national level since 2008, but it could also be a result of external interventions in these specific communities.

Table 17: Household Condition, Water and Sanitation in Gitarama
(Tracer Study data from five years after the end of the program)

Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
% of households with an improved water source (according to WHO/JMP definitions)	100%	100%	*p=1.0*
% who treat their water to make it safer to drink	70%	69%	*p=1.0*
% of households with improved sanitation facilities (according to WHO/JMP definitions)	61%	76%	*p=0.178*
% of households with appropriately ventilated cooking facilities	78%	82%	*p=0.793*

Child Health (Gitarama)

The data on nutrition and Child Health does not show any statistically significant differences between FXB households and those nearby. However, it should also be noted that, while few, there are some signs of malnutrition in children under five. None of the children are suffering from acute malnutrition, but 3 (out of 41 children with malnutrition data) are 'at risk' and showing some symptoms of Kwashiorkor – 1 child in the FXB households and 2 in nearby households. Some cases of diarrhea and severe coughs in children under five have also been reported, but not in sufficient numbers to raise serious concerns.

Table 18: Child Health in Gitarama
(Tracer Study data from five years after the end of the program)

Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
Number of children aged 6 – 59 months showing signs of acute malnutrition (measured using Mid-Upper Arm Circumference)	0/15 (0%)	0/26 (0%)	*n/a*
Number of children aged 6 – 59 months "at risk" of malnutrition (measured using Mid-Upper Arm Circumference)	1/15 (7%)	2/26 (8%)	*p=1.0*
% of children under five showing signs of Kwashiorkor	1/15 (7%)	2/26 (8%)	*p=1.0*
% of children under five with official birth registration	12/17 (71%)	15/27 (56%)	*p=0.360*
% of children under five with up-to-date immunization cards for their age	17/17 (100%)	26/27 (96%)	*p=1.0*
% of children under five experiencing an episode of diarrhea in the past month	2/17 (12%)	2/27 (7%)	*p=0.476*
% of children under five experiencing a severe cough in the past month	0/17 (0%)	1/27 (4%)	*p=0.194*

School Attendance (Gitarama)

School attendance among FXB households in Gitarama was higher at baseline than in Kigali (54% of children aged 5-17 in Gitarama were attending school compared to 36% in Kigali). As with Kigali, the attendance figures in Gitarama have increased since baseline with 88% of children in FXB households now attending school (90% in nearby households). Among primary school age children (7-12 in Rwanda) 100% are now attending school from FXB households and 97% from nearby households.

Table 19: School Attendance in Gitarama
(Tracer Study data from five years after the end of the program)

Description	FXB Baseline (2003)	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
% of children aged 5-17 attending school	54%	88%	90%	*p=0.246*
↘ % of children aged 7-12 attending primary school	no data	100%	97%	*p=0.463*

Recurring Themes in the Qualitative data (Gitarama)

In both groups (FXB and nearby), 70% of the households said that their everyday life was okay and they were able to solve problems when they arise. Most households were able to make use of land around their house to grow crops that could partially cover their nutritional requirements.

Group	ID	Quote
FXB household	10	*"In general, I feel that things are going on well in my everyday life because I have my own house, I farm my own land to get something to eat and I also earn money from selling beer."*
FXB household	68	*"Things are going well in my everyday life. My mother who I live with has enough land that I cultivate to grow different crops for the family and for the market. I have two children and I am able to satisfy their basic needs. In my free time and during the dry season, I also make handcrafts in order to earn some extra money in addition to that from farming. I am able to solve problems when they arise."*
Nearby household	9	*"In general, I feel that things are going well in our everyday life. I grow some crops like soya, beans, sweet potatoes and cassava so that we don't have problems finding something to eat. My husband's income also helps us to buy other things we don't grow. We try to solve problems when they arise according to our limited means."*
Nearby household	53	*"Things are going well in our everyday life. If we have a good season or weather, we get good harvests. We live in our own house and we mainly eat food from our own land. The income we earn is used to buy what we don't grow and to pay school fees and materials for the children. We try to solve problems when they arise."*

Question: "*Have you ever received help from an NGO? If so, please name the NGOs that have helped you, and explain how they have helped.*" [9]

All of the 46 FXB households mentioned support from FXB, and 15 out of the 46 FXB households (33%) also mentioned other NGOs in addition to FXB. The most frequently mentioned was the USAID-funded "Higa Ubeho" program (which launched in 2010), with Caritas and CARE International also receiving mentions. However, it seems that in all cases, the help received from these organizations was limited to school fee subsidies, usually for just one child in each household.

Group	ID	Quote
FXB household	56	*"My brother is currently helped at school by Caritas. They pay a half of the school fees."*
FXB household	18	*"Now we are members in HIGA-UBEHO, formerly CHAMP, which helps with school expenses for our daughter."*
FXB household	44	*"I have recently registered with the former CHAMP, now called HIGA-UBEHO (for people living with HIV). They have not yet started helping me."*

In contrast, not one of the nearby households had ever received help from an NGO, however three had received support from the Rwandan Government for medical insurance and three said they used to receive support from a local association for people living with HIV.

Group	ID	Quote
Nearby household	67	*"As my husband and I are living with HIV/AIDS, we are in an association of people living with HIV/AIDS and this association used to give us food and to pay for medical care but they are no longer supporting us. They do not have a donor."*
Nearby household	10	*"No NGO has helped us except the government which pays medical insurance for us."*

All of the FXB households spoke positively of the support they had received from FXB. Many said the FXB-Village program was a turning point in their lives and talked about the combination of material and psychosocial support that FXB provided.

Group	ID	Quote
FXB household	77	*"Since enrollment in FXB, the livelihood of my whole family has changed. I got food to feed my son, nieces and nephews and my mother who is old. My financial situation improved […] I cannot also forget the psychosocial support from FXB because before this support I had lost hope in life. But after enrollment in FXB I started having new hope. "*
FXB household	54	*"When FXB started helping me I was in a terrible situation. I even didn't have enough food to eat with my children. I was also very depressed because I had learnt that I was HIV positive, I had no hope of life. The first things FXB did was to restore my hope and encourage me to work. FXB also gave us food, they paid school fees to my children and they gave me money to start business of selling food crops in the market."*

[9] Research teams were given explicit instructions not to mention FXB to the respondents at any point during the interview

Question: *"Think back 10 years ago. How have things been going financially for you and your family since then?"*

When discussing the development of IGAs, several FXB households spoke of the importance of economic skills training and work discipline that accompanied the material IGA support.

Group	ID	Quote
FXB household	1	*"FXB not only helped us to get food and school fees but most importantly, they taught us how to work."*
FXB household	37	*"The most important thing I still have from FXB is education. They taught me how to use few resources to earn an income. I can say that things have gone well for me in the past years. I have been able to run my small business and make money. My business helps me to feed my family and it is also growing."*
FXB household	17	*"FXB taught us the culture of working."*

Compared to the study group in Kigali, there were fewer reports of IGAs collapsing in the FXB households in Gitarama, and only one IGA collapse was due to illness. Other causes of failure included animal disease (three occurrences) and changes in government policy on land usage that meant households were forced to abandon land or grow specific crops, even if they were not profitable (three occurrences).

Among nearby households, some spoke about their financial situation improving in the past 10 years, but many said their financial situation had stayed much the same.

Group	ID	Quote
Nearby household	17	*"It is difficult to say whether there hasn't been any change because my husband hasn't changed the job and his salary hasn't changed."*
Nearby household	25	*"Since we got married with my husband (more than ten years) our financial situation has been constant. We always depend on farming our own land so that we are sure to get something to eat."*

In general the households in each group who were struggling were those without land of their own who worked as laborers on other people's land. Despite having better income than some of the households who simply farmed their own land, the fact that they had to buy all of their food at the market created financial problems. The households who owned their own land were doing okay (even if they had very limited financial income), and those who owned land but also had other sources of income were doing well.

Table 20: Sources of Income for Highest and Lowest Earners in Gitarama (Tracer Study data from five years after the end of the program)

	FXB Tracer Study (2011)	Tracer Study nearby households (2011)
Sources of income for households with the *highest* 5 incomes in each group	1. Hairdresser / Bar work 2. Driver 3. Storekeeper / House Rent 4. Police Officer 5. Runs bar / Security / Sells Pork	1. School Teacher / Artist 2. Selling small items at market 3. Selling shoes 4. Selling shoes / Grocery store 5. School Headmaster
Sources of income for households with the *lowest* 5 incomes in each group	1. Farming 2. Farming 3. Farming / Selling Milk 4. Selling Beer and Rice 5. Farming	1. Farming 2. Farming / Odd Jobs 3. Farming 4. Odd Jobs 5. Farming / Odd Jobs

Conclusions (Gitarama)

Despite the low incomes, over 70% of both FXB households and those nearby said that life was going well. This adds weight to the World Bank argument (see page 6) that income is not the best measure of poverty, especially in rural areas where it does not accurately represent the added "value" of household produce. In general, the respondents in Gitarama described a more positive wellbeing status than those in Kigali.

As with the Kigali households, FXB participants in Gitarama have shown a significant improvement in their economic situation (eight years since baseline and five years since the program ended) and are now living on a weekly household income that is in line with other nearby households. However, from the income data alone, a considerable proportion of households in both groups are still living below the international $1.25 poverty line.

The majority of households said that they spent more than half of their income on food, which suggests that food security may be fragile. This is surprising for a rural community, especially when many households talked about supplementing their food requirements with food from their own production. Some households did say that people had gone to bed hungry in the past three months, but none of them said this happened many times. The high spending on food is likely to be a reflection of low incomes coupled with high food prices, but the issue of land fragmentation in Rwanda could have an influence as well.

In other economic indicators, FXB households are significantly more likely than nearby households to own their home and have savings, suggesting that some kind of advice or assistance has been afforded to FXB households. Given the statistical significance of these results and that the FXB intervention is the only distinct disaggregating factor in the selection of these two survey groups, it seems likely that these differences are a result of the FXB program.

In all other metrics, there were no statistically significant differences between FXB households and nearby households. Despite being identified as a particularly poor community at the start of the FXB-Village program in 2003, both groups show positive results for water, sanitation, and child health that are above the most recent national averages from the World Bank and WHO.

Many of the FXB households spoke of the FXB-Village program as being a turning point in their lives. Several said that the program gave them "new hope" and praised the combination of material and psychosocial support. The economic skills and work discipline training were also mentioned several times as valuable contributions from the FXB-Village program.

The Uganda FXB-Villages (Jan 2005 – Dec 2007) – Semuto region, Uganda

Background & Baseline Demographics, Semuto

FXB started work in Uganda in 1990 with programs to support orphans and their caregivers in communities that suffered during the civil war. The programs (overseen by AMREF) provided psychosocial support, HIV prevention, school support (including classroom reconstruction) and basic income generation. FXB pioneered several new schemes that later took off in other communities across Uganda, such as a service for providing school children with lunch and the creation of community volunteer committees to manage services for local orphans, known as Parish Orphan Committees (POCs) and Village Orphan Committees (VOCs). FXB also introduced committees to oversee program implementation at parish, sub-county and district levels.

In 2001, FXB started a series of training programs on child protection and WASH (Water Sanitation and Hygiene), helped renovate a regional health center in Semuto and recruited a team of trained nurses to travel to remote communities providing medical assistance to families who had difficulty accessing healthcare. The following year, FXB partnered with the Joint Clinical Research Center to establish the first ever community ART program in Uganda.

In 2005, following the success of programs in Rwanda, FXB initiated an FXB-Village program in Uganda to provide a holistic package of support to vulnerable households and the children in their care. Two crucial improvements were made to the participant selection process:

- Experience in Rwanda had shown that providing support only to households affected by HIV was not helping to reduce stigma from surrounding communities. In fact, people were starting to assume that anyone receiving support from FXB must be HIV positive. This was detrimental to community cohesion and hampering the principle of empowerment that was central to FXB's philosophy. So, while HIV prevention would remain a core program component, FXB opened up the participant selection process to include any impoverished or vulnerable households that were caring for children and willing to work themselves out of poverty.
- To strengthen ownership of the project at the community level, the selection process would be done in collaboration with key figures in the community (such as elders and community leaders), with additional input from local authorities. Approximately 150 potential participant households were selected for each program and, through a series of needs assessments, the list was refined to the final 80.

At baseline, 14% of the primary caregivers were known to be HIV positive (although many had not yet been tested). The average age of primary caregivers was 46, with 66% of them female. On average, each primary caregiver had 6.2 dependents in his or her care with an average of 3.9 orphans per household (a few households were caring for a very large numbers of orphans). There is no baseline data available regarding the specific level of household income; however 90% of households said they had no income at all.

Further development of the FXB-Village model continued throughout the three year lifetime of these programs as lessons learned and experiences were shared from program to program. New components included:

- Insecticide impregnated mosquito nets were distributed to all participating households
- Participants were introduced to microfinance institutions
- Households were encouraged to open savings accounts
- In addition to the review of income generating activity (IGA) ideas by FXB staff and advisors, a peer review process was initiated to encourage participants to help each other develop their incomes
- 'Participant Groups' were strengthened with the addition of 'revolving funds' and group IGAs
- HIV-prevention training sessions were expanded to include all members of the surrounding community
- Materials for improved water quality were distributed to each household (for example water cans, saucepans, and washing bowls)
- Where possible, all households were encouraged to develop a kitchen garden to increase the proportion of household food that came from their own production

Findings from Preliminary Investigation, Semuto (tracking participant households)

The preliminary investigation in preparation for the Tracer Study found that only one of the original primary caregivers from these programs had died (six years after the start of the program).

Tracer Study Results, Semuto (three years after the end of the program)

Study group (Semuto)

For the Tracer Study in Semuto, a total of 48 households were interviewed (24 FXB households and 24 nearby households). Of those interviewed, 14 of the nearby households were "complete" families (a mother and father living with their children), compared to nine of the FXB households. There were more widow- or widower-headed households among FXB households than those nearby. However, the p-value is not statistically significant. This implies that any differences observed between the two groups could be due to chance.

Table 21: Households that took part in the Tracer Study in Semuto, Uganda

Household Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)
Mother and Father with children	9 (38%)	14 (58%)
Single parent with children	6 (25%)	6 (25%)
Grandparent with children	2 (8%)	1 (4%)
Widow/widower with children	6 (25%)	1 (4%)
Other	1 (4%)	2 (8%)
Total	**24**	**24**

p-value for entire table (calculated using Fisher's exact): p=0.262
(not statistically significant)

Income and Household Economic Status (Semuto)

During analysis of the Uganda data, it became apparent that the survey had not solicited the expected level of detail for quantifying the household income. While most of the respondents talked freely about their IGAs, very few gave quantifiable details. Out of a total of 48 questionnaires, only 13 (27%) had enough information to determine the full household income. A further 20 questionnaires (42%) contained partially disclosed income data, while the remaining 15 (31%) simply did not have enough information to establish the household income.

These issues came to light after the data collection had been completed in Uganda, but before the data had been collected in Rwanda. The research teams in Rwanda were therefore given additional instructions to probe for quantifiable income data, which resulted in the higher quality observed in the Rwanda data above.

To present the limited income data for Uganda as fully as possible, we will use two data streams – one covering the small sample of fully disclosed incomes and the other including both fully and partially disclosed incomes.

Table 22: Overview of Economic data from Semuto, Uganda
(Tracer Study data from three years after the end of the program)

		households with full income disclosed only		*households with either partially or fully disclosed income*	
	Description	**FXB Tracer Study (2011)**	**Tracer Study nearby households (2011)**	**FXB Tracer Study (2011)**	**Tracer Study nearby households (2011)**
	Number of households in sample	6/24 (25%)	7/24 (29%)	19/24 (79%)	14/24 (58%)
	Average Weekly Household Income (in Ugandan Shillings)	87,917 UGX	22,957 UGX	51,763 UGX	15,842 UGX
		*p=0.0223*** *(rank-sum)*		*p=0.0002*** *(rank-sum)*	
	PPP conversion rate (from http://unstats.un.org)	977.82 (2009)		977.82 (2009)	
	Average Weekly Household Income (in US Dollars)	$89.91	$23.48	$52.94	$16.20
		*p=0.0223*** *(rank-sum)*		*p=0.0002*** *(rank-sum)*	
	Average household size	8.8	8	8.1	7.6
		p=0.8802 (rank-sum)		*p=0.8064 (rank-sum)*	
	Average number of children per household	6.5	5.9	4.9	5.4
		p=0.7668 (rank-sum)		*p=0.0857** *(rank-sum)*	
Based on **income data only** (not consumption value)	Average daily ***income*** per person in U.S. dollars (adjusted for household size and composition)	$2.69	$0.67	$1.56	$0.47
		*p=0.0223*** *(rank-sum)*		*p=0.0001*** *(rank-sum)*	
	↘ Poverty Headcount Ratio: Proportion of population living below $1.25 poverty line according to ***income only*** (adjusted for household size and composition)	33%	86%	63%	93%
		p=0.103 (Fisher's)		*p=0.098** *(Fisher's)*	
	per capita daily ***income*** in U.S. dollars (***without adjustment*** for household size or composition)	$1.79	$0.44	$1.04	$0.30
		*p=0.0221*** *(rank-sum)*		*p=0.0001*** *(rank-sum)*	
	↘ Poverty Headcount Ratio: Proportion of population living below $1.25 from unadjusted per capita ***income***	67%	86%	84%	93%
		p=0.559 (Fisher's)		*p=0.620 (Fisher's)*	

NB: 'rank-sum' = Two-sample Mann–Whitney–Wilcoxon rank-sum test
*** = statistically significant; ** = highly statistically significant***

One of the most striking things about the data above is how large the households are. In fact, it appears that households caring for larger numbers of children have been more forthcoming with providing quantifiable information about their income, which is skewing the average household size. Looking at the whole dataset (including households without sufficient information to quantify their income) the average household sizes are as follows:

Table 23: Household size in Semuto, Uganda

	Entire Tracer Study (all households surveyed in Semuto)	
Description	**FXB Tracer Study (2011)**	**Tracer Study nearby households (2011)**
Average household size	7.8	6
Average number of children (under 18) per household	4.7	4

The other striking feature of the income data is the disparity between income in FXB households and income in nearby households ($2.69 to $0.67 respectively in households that have fully disclosed their income). So in this small sample of the overall survey population, the FXB households are faring significantly better than those nearby. The likelihood of this difference being a genuine reflection of the survey population is increased by data on savings (discussed below).

The apparent proportion[10] of FXB households living below the $1.25 poverty line based on income alone is just 33% compared to a very large 86% of nearby households (considering only the households who have fully disclosed their income and adjusted for household size and composition). In comparison, the World Bank data shows the national average poverty headcount ratio decreasing steadily over time with the most recent estimate suggesting that 51.53% of the population was living below the $1.25 poverty line in 2009.

Table 24: World Bank poverty data for Uganda

Country Name	Indicator Name	Indicator Code	2002	2005	2009
Uganda	Poverty headcount ratio at $1.25 a day (PPP) (% of population)	SI.POV.DDAY	60.49	57.37	51.53

(Source: http://iresearch.worldbank.org/PovcalNet)

When respondents were asked the question "Does the household get help from others, such as relatives or friends?", 18 FXB households (75%) said yes compared to just 10 (42%) of nearby households. This could indicate that members from FXB households were in a better position to live and work elsewhere and send remittances home.

Table 25: further economic data from Semuto, Uganda
(Tracer Study data from 3 years after the end of the program)

Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
% of households with savings	71%	17%	*p=0.000***
% of households owning their home	95%	79%	*p=0.320*

*** = statistically significant; **** = highly statistically significant*

The table above shows that 71% of FXB households have savings, compared to just 17% of nearby households. The accompanying "0.000" p-value suggests that this result did not occur by chance and that there is genuinely a clear difference between the groups. This goes some way towards

[10] This is only an apparent proportion because, with such a small sample, we cannot know the real values or the extent of the gap between these two groups.

authenticating the income disparity discussed above. In contrast, the home ownership figures in Uganda do not show a statistically significant difference between FXB households and those nearby.

Food Security (Semuto)

Food security, which is perhaps a more accurate measure of absolute poverty, appears to be generally very good in Semuto. None of the households in either group reported that someone had gone to bed hungry in the last three months, and very few households (approximately 10%) said that they spent more than half of their income on food. Statistically, there were no differences observed between the two groups.

Table 26: Food Security in Semuto, Uganda
(Tracer Study data from three years after the end of the program)

Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
% of households reporting that, on at least one occasion, someone in the household had gone to bed hungry in the past three months	0%	0%	*p=1.0*
% of households reporting that they spent more the half of their income on food	8%	13%	*p=1.0*

Household Condition, including Water and Sanitation (Semuto)

The WHO JMP data for rural Uganda shows a steady increase in access to improved water sources and improved sanitation facilities since 2000.

Table 27: WHO JMP data on water and sanitation for Uganda (rural)

Country Name	Indicator Name	Indicator Code	2000	2005	2008
Uganda	Improved water source, rural (% of rural population with access)	SH.H2O.SAFE.RU.ZS	53	60	64
Uganda	Improved sanitation facilities, rural (% of rural population with access)	SH.STA.ACSN.RU	45	48	49

(Source: World Health Organization and United Nations Children's Fund, Joint Measurement Programme (JMP) (http://www.wssinfo.org/)

In comparison to the WHO JMP data, FXB households are slightly below the national averages, but again fared slightly better than nearby households. In FXB households, 58% reported access to an improved water source, compared to just 46% of households nearby. Most households with an improved water source obtained their water from a borehole or protected spring, whereas those without an improved water source obtained their water from unprotected springs (and in two cases, surface water).

FXB households showed a reasonably significant *(p=0.072)* advance over nearby households when it came to treating their water to make it safer to drink (92% FXB to 67% nearby), but were not as good when it came to having appropriately ventilated cooking facilities (63% FXB to 88% nearby households, p=0.093). The overall figures for improved sanitation facilities are very close between the two groups, however the p-value reflects the imbalance behind these numbers – FXB households

were more likely to share pit latrines instead of using the unimproved 'hanging toilets' that were favored by nearby households.

Table 28: Household Condition, Water and Sanitation in Semuto, Uganda (Tracer Study data from three years after the end of the program)

Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
% of households with an improved water source (according to WHO JMP definitions)	58%	46%	*p=0.564*
% who treat their water to make it safer to drink	92%	67%	*p=0.072**
% of households with improved sanitation facilities (according to WHO JMP definitions)	42%	38%	*p=0.188*
% of households with appropriately ventilated cooking facilities	63%	88%	*p=0.093**

** = statistically significant; ** = highly statistically significant*

Child Health (Semuto)

Four children had low MUAC measurements (indicating that they could be suffering from acute malnutrition or be at risk of malnutrition). However, the research team in Uganda failed to record child age correctly. All the children with low MUAC measurements were known to be under one year of age, but the ages in months was not noted. Since MUAC should only be used as a measurement for malnutrition in children over six months old, we cannot be sure which of these measurements are valid and they have therefore been omitted from the table below.

Five children did show signs of Kwashiorkor (three from FXB households and two from nearby households), suggesting that there could still be problems with malnutrition in the community. This appears to be at odds with the claims from both groups that no one has gone to bed hungry in the past three months. However, it is possible that child malnutrition is caused by other factors such as recurrent diarrhea or malaria.

The number of children with current immunizations is generally low and several children in each group have experienced episodes of diarrhea in the past month. There is no statistically significant difference between FXB households and those nearby for immunization status and diarrhea prevalence. The only metric that does show a statistically significant difference is coughs and flu,[11] which appears more prevalently in FXB households than those nearby.

[11] There was a problem with the translation of this question. Instead of "severe cough", it was translated as a "normal cough or flu".

Table 29: Child Health in Semuto, Uganda
(Tracer Study data from three years after the end of the program)

Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
% of children under five showing signs of Kwashiorkor	3/19 (16%)	2/22 (9%)	*p=0.649*
% of children under five with up-to-date immunization cards for their age	7/26 (27%)	10/24 (42%)	*p=0.285*
% of children under five experiencing an episode of diarrhea in the past month	8/26 (31%)	3/24 (13%)	*p=0.130*
% of children under five experiencing a "normal cough or flu" in the past month[12]	22/26 (85%)	14/24 (58%)	*p=0.009***

*** = statistically significant; **** = highly statistically significant*

School Attendance (Semuto)

There is no statistically significant difference between FXB households and those nearby relating to school attendance either in the entire 5 to 17 age range or the more specific primary school age range (6 to 12 in Uganda).

Table 30: School Attendance in Semuto, Uganda
(Tracer Study data from three years after the end of the program)

Description	FXB Tracer Study (2011)	Tracer Study nearby households (2011)	*p-value (Fisher's exact)*
% of children aged 5-17 attending school	90%	87%	*p=0.803*
↘ % of children aged 6-12 attending primary school	96%	85%	*p=0.199*

Recurring Themes in the Qualitative data (Semuto)

One of the most prominent themes among both groups is the prevalence of ill health among the primary caregivers and main earners in the household. In many cases this is attributed to age. The Tracer Study data from Semuto gives the average age of primary caregivers in FXB households as 55 and in nearby households as 49. For comparison, the latest figures (2009) from the United Nations World Population Prospects, state that the life expectancy at birth in Uganda is 53 years. Among the illnesses reported, there are a significant number of aches and pains.

Group	ID	Quote
FXB Household	26	*"She is asthmatic, has pain - backache, feels pain in the feet."*
FXB Household	29	*"With farming, I feel I am weaker. Not as strong as I used to be. I feel I have chest pain. It requires employing a person. I can no longer spray, I used to initially do heavy work, now I cannot manage."*

[12] as above

Nearby household	31	*"Has problems in farming. He cannot afford pesticides and pesticides affect his health. No protective gear when spraying crops. Difficulties in getting a pump for spraying."*
Nearby household	33	*"She has pain in the hands which affects her ability to dig."*
Nearby household	48	*"She has pain in the right arm which has hampered her digging, productivity. She says old age is also part of the explanation for her getting weak. She does not have help to solve the health problems. She just continues to work anyway."*

There may or may not be a link in this community between pesticide spraying and health problems; however, it is worth noting that the World Health Organization and the UN Environment Programme estimate that about 1 million to 5 million cases of pesticide poisoning occur every year among agricultural workers in developing countries and that, among other things, symptoms can include fatigue, dizziness, blurred vision, and muscular symptoms, such as stiffness and weakness.[13] Without further evidence though, old age is the most likely cause of health problems in our study population.

Both groups complain that, in the event of sickness, it is difficult to obtain medication as the health center is often lacking drugs.

Group	**ID**	**Quote**
FXB Household	21	*"Sometimes when we go to the government health facility, they tell us that there are no drugs."*
Nearby household	36	*"He has high blood pressure and ulceration which have affected his health. He goes to a health centre but usually there is no medicine or sometimes he has no money to buy medicine."*

Almost all of the households practicing agriculture reported problems with drought and plant disease destroying their crops, causing serious disruption to their income. Among FXB households, the effect was reduced because many of them had diversified their IGAs, whereas more of the nearby households relied only on farming. One household even said they were afraid of diversifying.

Group	**ID**	**Quote**
Nearby household	37	*"Financial returns are bad. The maize we cultivate has low prices, so the returns are low. Yet what we require is expensive. The family has been growing maize. The family fears to diversify because they require pesticide for the other crops such as tomatoes."*

Both groups mentioned the recent inflation surge in Uganda that has led to huge price hikes in staple goods such as soap, sugar, salt, charcoal and paraffin. The cost of diesel and petrol has also seen a big increase in recent months which affects almost everything that requires transportation.

> **Question:** "*Have you ever received help from an NGO? If so, please name the NGOs that have helped you, and explain how they have helped.*" [14]

[13] *Source: Childhood Pesticide Poisoning: Information for Advocacy and Action, 2004*

[14] Research teams were given explicit instructions not to mention FXB to the respondents at any point during the interview

Six FXB households and two nearby households reported that they had also been in contact with Plan International.

Group	ID	Quote
FXB Household	1	*"Plan international came here and registered my child in 2009 but we have not received any support."*
FXB Household	6	*"Plan international gave me matooke and I sell and get money."*
FXB Household	20	*"Plan International registered one child but the child got only exercise books."*
Nearby household	23	*"Plan International wrote my child's name but they did not give me anything."*

All of the FXB households talked about the support they had received from FXB, covering many different aspects of wellbeing. It is interesting to note the mentions of training and peer-education (passing lessons learned onto others in the community).

Group	ID	Quote
FXB Household	20	*"FXB supported children's education with uniform, exercise books and other scholastic materials. It reduced my burden of paying fees, they used to give us food during seminars on hygiene and sanitation, better farming methods, good nutrition."*
FXB Household	21	*"They taught us how to make energy saving cooking stoves, how to make manure and sensitized people about HIV prevention. They gave us seedlings-paw paws, orange, avocado and mango."*
FXB Household	1	*"They taught us how to grow vegetables, improved farming e.g. bananas, making cooking stoves. I have been earning through selling matooke and making cooking stoves for others. We were also taught by FXB to teach other people - 14 have benefited from this information."*

In order to help kick-start or boost existing IGAs, FXB bought bulls for all participating households. Most households reported raising the bull and selling it when it was older, either for a female cow (which could be used for milk production and producing calves) or for an injection of cash into their IGA. In 3 households (13%) the bull died before they were able to sell it. Some households also received pigs from FXB.

Group	ID	Quote
FXB Household	4	*"They gave me a cow which I sold at 180,000/- and bought a female cow. I added 30,000/- and bought a female one. It produced and I sold 100,000/- which I paid fees for one of my children."*
FXB Household	12	*"FXB gave me a cow which I exchanged with a female cow. It has produced twice and I sold them at 580,000/- which helped me with school fees, building a latrine and kitchen. I used to sell milk at 400/- per day and the rest of the milk we drank it. My health situation improved of drinking milk."*
FXB Household	23	*"He got one cow. This was sold later and he then bought a motorcycle."*

It is very interesting to see how many different outcomes resulted from the donation of one bull. The quotes above show the proceeds being used towards school fees, kitchen construction and a motorcycle. The full set of qualitative data shows that the sale of bulls in other FXB households helped to finance many different projects including purchasing a sewing machine, kick-starting a pole-selling business, paying for exam registration fees, buying iron sheets for toilet construction and purchasing a plot of land.

The table below shows the five households in each group with the highest and lowest incomes based on the available income data. However, due to the issues with sample size and data quality (discussed above), it is unlikely to be a completely accurate representation of these groups.

Table 31: Sources of Income for Highest and Lowest Earners in Semuto, Uganda (Tracer Study data from three years after the end of the program)

	FXB Tracer Study (2011)	**Tracer Study nearby households (2011)**
Sources of income for households with the *highest* 5 incomes in each group	1. Lorry Business 2. Farming / Animals / Quarry / Tailor* 3. Farming / Animals 4. Assistant Surveyor for road construction company 5. Taxi driver / Farming*	1. Farming 2. Farming 3. Farming* 4. Selling Coffee and Beer 5. Casual Work
Sources of income for households with the *lowest* 5 incomes in each group	1. Selling fruit* 2. Farming / Animals* 3. Brewing Alcohol* 4. Farming / Animals* 5. Farming / Animals*	1. Farming* 2. Farming 3. Farming* 4. Porter / Brick maker 5. Farming*

** = These households had only partially disclosed incomes*

Conclusions (Semuto)

Six years since baseline and three years since the program ended, FXB households appear to be doing significantly better than nearby households from an economic perspective, with higher incomes and savings.

However, it is concerning that nearby households appear to be doing so much worse. During the lifetime of these programs (Jan 2005 – Dec 2007), FXB introduced more activities to reach out to community members and encouraged the creation of community support groups to provide peer-to-peer assistance. It would be interesting to see data from subsequent FXB-Village programs to see whether the community outreach and group activities that were first piloted in Semuto were able to successfully take hold and be replicated within the community.

When attempting to establish the level of absolute poverty, a useful measure to consider is food security. In both groups, no households reported that someone had gone to bed hungry in the past three months, and very few households said they spent more than half their income on food. This suggests that, despite the apparently low incomes among nearby households, the vast majority of households in this community are food secure and therefore not living in absolute poverty.

There is no statistically significant difference in the prevalence of improved water sources and sanitation facilities between FXB households and those nearby, but it appears that both groups are below the national average. This is not unusual for a poor, rural community in Uganda - there is a relatively large poverty gap in the country which means that rural communities are likely to be below the national average.

Poor health, especially general aches and pains, appears to be a problem for both groups in this community. This problem is exacerbated by difficulties in accessing primary healthcare, especially

with the lack of medicine at the local health center. Child health and immunization levels are low in both groups (undoubtedly also linked to the limited availability of healthcare services and medical supplies). However, the suggestion that children under five in FXB households are more likely to experience coughs or flu appears to be at odds with the improved financial wellbeing of FXB households.

In rural communities, coughs in children under five are primarily caused by malaria or acute respiratory infections. However, another common cause is poor ventilation of the wood-burning stoves used for cooking, as mothers usually keep young children with them while they are cooking. The Tracer Study data suggests that FXB households are less likely to have appropriately ventilated cooking facilities[15] than nearby households. A more detailed breakdown of this data shows that FXB households are more likely to cook inside, whereas nearby households are more likely to cook outside where ventilation is not a problem.

In Uganda, it is culturally preferred to have a dedicated kitchen for cooking – households who can afford the space will usually cook under shelter. It is possible that the improved financial status of FXB households enables them to have larger households with space to cook inside, whereas the poorer households nearby are forced to cook outside. Further investigation would be needed to establish the validity of this explanation, but in the absence of further information, it seems plausible that there is a link between financial wellbeing, indoor-cooking and an increase in coughs.

From the qualitative data, both groups complained about hardships related to the recent and rapid price inflation of basic goods in Uganda, especially soap, sugar and fuel. However, many of the FXB households were able to cope better with this thanks to remittances sent home by children and relatives who had left the household. In addition, FXB households reported a variety of ways in which the support received during the FXB-Village program had boosted specific aspects of their daily life, including improvements to IGAs, household condition and the ability to pay for examination fees.

[15] FXB asserts that observations made during the Semuto programs (2005 – 2007) led to an increased emphasis on ventilated cooking facilities in subsequent programs. This claim is backed up by recent data from rural FXB-Villages in Uganda that show the prevalence of ventilated cooking facilities had increased from approximately 20% at baseline to 97% by the end of the program.

DISCUSSION AND OVERALL CONCLUSIONS

Comparing FXB Households to Nearby Households in their Community

The mechanism for selecting FXB-Village participants has developed over the years, but has always maintained a focus on vulnerability. The anecdotal evidence from baseline suggests that the households who took part in the program were indeed among the poorest and most vulnerable in their communities at the start of each program.

Now, several years after each program has ended, FXB-Village households in all of the study settings are doing at least as well as other households nearby when it comes to water and sanitation (there are no statistically significant differences in the results between the two groups). In Gitarama and Semuto, FXB households are also doing as well as nearby households in terms of food security, however in Kigali, a higher proportion of FXB households reported spending at least half of their income on food, but very few said that going to bed without food was a regular occurrence.

For participating households in Kigali and Gitarama, all of whom had caregivers or other key household members living with HIV at baseline, the majority of caregivers (88% in Kigali, 80% in Gitarama) are still alive, suggesting that in the period since the end of the FXB-Village program, they have been able to successfully maintain their supply of ART medication and delay the onset of AIDS.

For the two study areas in Rwanda, FXB households are also doing as well as those nearby when it comes to child health. In Uganda, most of the child health data does not show statistically significant differences with the exception of coughs in children under five, which appear to be more prevalent in FXB households than those nearby. It is thought that this is most likely due to poor cooking ventilation which could actually be a result of greater financial wellbeing (and having the facility to cook in a 'kitchen' rather than outside).

For income, FXB households in Kigali and Gitarama are at a similar level to nearby households. In Uganda, FXB households appear to have incomes that are significantly higher than those of nearby households. In all settings, the past FXB-Village participants are more likely to own their home and therefore be able to live rent-free than those in nearby households.

As the economic components of the FXB-Village model have developed with each successive program, there has been a dramatic shift in the number of FXB households who have savings compared to other households nearby. Participants in the first FXB-Villages in Kigali are *less* likely to have savings than nearby households, but FXB participants in Gitarama are *more* likely to have savings, and those in Semuto, Uganda are *much more* likely to have savings. All of these results are statistically significant.

Table 32: Proportion of households with Savings

Study Group	***FXB-Village Program***		
	Kigali, Rwanda *(program dates Jul 2000 to Jun 2003)*	Gitarama, Rwanda *(program dates Jan 2003 to Dec 2005)*	Semuto, Uganda *(program dates Jan 2005 to Dec 2007)*
Past FXB-Village Participants	**10%**	**85%**	**71%**
Other nearby households	**34%**	**67%**	**17%**
Gap between FXB households and nearby households	*-24%*	*+18%*	*+54%*
p-value	*p=0.030***	*p=0.053**	*p=0.000***

** = statistically significant; ** = highly statistically significant*

Each subsequent program appears to show an increase in financial stability among the participants. However, to establish whether this is a genuine trend, it would be necessary to collect data from other FXB-Village programs that took place at different times. It may also be useful to revisit the programs targeted during this Tracer Study and collect additional data in order to reduce the statistical uncertainty caused by the small sample sizes.

In general, despite encountering a variety of hardships since the FXB-Village programs ended, the FXB households in all three study areas spoke positively about the support they had received during the program itself. Several households said that the combination of material support, psychosocial support and economic training had been very valuable to them. Respondents also discussed the fact that the FXB-Village program gave them renewed hope in their lives.

Other Comparisons across the Three Study Areas (Kigali, Gitarama, Semuto)

There were several indicators that did not show statistically significant differences between FXB households and nearby households in the same study areas. Differences were observed however between the study areas. The most prominent changes were found in child immunization and food security.

In Rwanda, the prevalence of up-to-date immunization cards for children under five was very high: 100% in Kigali, and 98% in Gitarama. In Uganda however, only 34% of children have up-to-date immunization cards, and the difference between the two countries is highly statistically significant (*p<0.0001*). This level of disparity is not unexpected. According to WHO and UNICEF data, the national immunization rate for measles in 2010 (among children aged 12-23 months) was 82% in Rwanda and 55% in Uganda (*p<0.0001,* highly statistically significant). These results are a testament to the Rwandan government's commitment to primary healthcare, while highlighting the difficulties faced by much of the Ugandan population when accessing primary healthcare, especially in more rural communities like Semuto. The difficulty with accessing primary healthcare in Uganda was a recurring theme in the qualitative data from Semuto.

In contrast, food security in Uganda was much better than Rwanda. Not one of the households surveyed in Uganda said that someone had gone to bed hungry in the past three months. In Rwanda, 40% of the households in Kigali and 19% of the households in Gitarama said that someone had gone to bed hungry at least once. The differences between each study area are all highly statistically significant (*p=0.0115*** for Kigali and Gitarama; *p=0.0001*** for Semuto and Kigali; *p=0.0006*** for Semuto and Gitarama).

Differences in food security between Rwanda and Uganda can also be seen by looking at the proportion of income spent on food. In Kigali, approximately 70% of households said they spent

more than half of their income on food, compared to approximately 60% in Gitarama and just 10% in Semuto, Uganda (*p=0.383* for Kigali and Gitarama; *p<0.0001*** for Semuto and Kigali; *p<0.0001*** for Semuto and Gitarama).

Food prices in both Rwanda and Uganda have skyrocketed in recent years, which has had a disproportionate affect on households in urban communities as they cannot supplement food they buy with food they produce. However, the stark difference seen in this data between Rwanda and Uganda is most likely the result of an additional factor: land shortages.

Rwanda is the most densely populated country in Africa. Inconsistencies with land registration and inheritance traditions have lead to fragmentation of already small plots of land. In response, the Rwandan government has recently launched a number of programs to improve food security, including banning further land fragmentation, promoting planting cooperatives, supporting irrigation schemes and subsidizing fertilizer and improved seeds. In comparison, rural communities in Uganda do not suffer from land shortages as often.

Characteristics That Predict Positive or Negative Outcomes in Wellbeing

The qualitative data shows some themes that are common to all three study areas. Firstly, it seems that livestock or poultry ventures can be very useful as a starting point to raise quick capital and invest in more developed IGAs. However, it was observed that beneficiaries who rely on livestock or poultry ventures for extended periods often run into difficulties due to animal disease.

The most successful households were those who had diversified income sources and had either scaled-up the 'traditional' enterprises of animal husbandry or agriculture into a larger business or pursued more highly skilled occupations such as mechanic or hairdresser. For households who already had a business prior to the FXB-Village, the injection of money or in-kind support from FXB into this existing business appeared to be consistently successful.

The households who did the least well were those who depended on others for their work (laboring on other people's land or performing odd construction jobs when work was available). It was observed that, without being in charge of their own IGA, many of these households were unable to remain self-sufficient at the end of the FXB-Village.

The number of earners in a household also affected resilience to problems. When the entire household relied on one main earner, if that person fell ill the income supply was at risk. Households with more than one earner were generally more resilient to economic shocks, as were the households who received remittances from friends or relatives. The Tracer Study data shows that households who participated in an FXB-Village program received more remittances than nearby households. In many cases, this was attributed to educated children who left the household, found jobs and were then able to send money home to support their parents or grandparents, suggesting that child education support not only helps the children, but benefits the entire household.

Relevance to the Wider Debate about Poverty Alleviation in Africa

The results from this study suggest that FXB's holistic, community-based approach has had positive long-term impacts on the physical and psychosocial wellbeing of participants. Nonetheless, many households still face challenges in their daily life, underlining the importance of FXB's commitment to build on the experiences of each successive program. Partnerships with governments, donors and other NGOs are also crucial and the results of studies like this can help to promote local and national dialogue about policy and advocate for large scale change.

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Annex 1: Overview of current FXB-Village model

The FXB-Village is a community-driven model designed to strengthen social and economic capacities of families and communities caring for Orphans and Vulnerable Children (OVC) by improving well-being, lowering risk of acquiring HIV and empowering them to escape extreme poverty.

Developed over two decades of international fieldwork, the FXB-Village program is tailored to the diverse social, cultural, economic and political dimensions of each country and implemented on-site by locally recruited staff. It is low-cost, scalable and sustainable and aims to provide destitute families with a basic package of education, health, psychosocial support and income-generation activities (IGA) so they can achieve lasting self-sufficiency and stability.

The FXB-Village model has been recognized by both UNAIDS (2002) and UNICEF (2008) as a best practice. In 2010 alone, FXB-Villages directly served more than 42,000 children and their families, and indirectly served over 115,000 neighbors and other community members.

Underlying Philosophy

The FXB-Villages are founded on the belief that the best way to help OVC is to empower their families and communities to permanently escape extreme poverty. While poor communities often face very similar challenges, no two are the same. Therefore FXB works directly with individual households and key community members to help them find and follow their own specific route to empowerment.

This approach is in line with the economic paradigm of entitlement described by Economist and Nobel Prize Laureate Amartya Sen. Sen's theoretical framework of "removing unfreedoms" (Sen, 1999) parallels FXB's philosophy of enabling people to improve their own economic conditions through education, financial and logistical support.

The FXB-Village model aims to rebuild capabilities, rather than providing charity, so that vulnerable families can realize their own potential as well as help others in their community. Amartya Sen describes economic facility and social opportunities, including health and human rights, as the basic pillars his "Freedom Framework" (Sen, 1999).

Strategic Three Year Approach

Through a strategic three-year approach, the FXB-Village helps 80–100 vulnerable households within a community to break the cycle of extreme poverty with phased levels of empowerment, education and capacity building. A key feature of the strategic approach is its adaptability to individual households.

Each FXB-Village has three dedicated full-time staff members: a nurse counselor, a social worker and a logistician. FXB also employs specialists in issues such as child rights and HIV prevention who cover more than one FXB-Village. FXB staff visit participating households regularly throughout the three year program, providing a regimen of behavior change communication (BCC) that is carefully tailored to each household's specific needs. The human element, provided by this targeted approach, helps to cement the building blocks of wellbeing into a strong foundation for development.

Stage one of this foundation (the first year of the FXB-Village) addresses basic needs including shelter, nutrition, health, sanitation, hygiene and schooling while promoting behavioral change and ownership building. The second year builds on the skills, knowledge and abilities of the first year while focusing on the development of IGAs. The third year sees the gradual shift of program

participants towards full autonomy and stability. A recent study (Desmond 2007) demonstrated that after three years more than 85% of FXB participants achieve self-sufficiency.

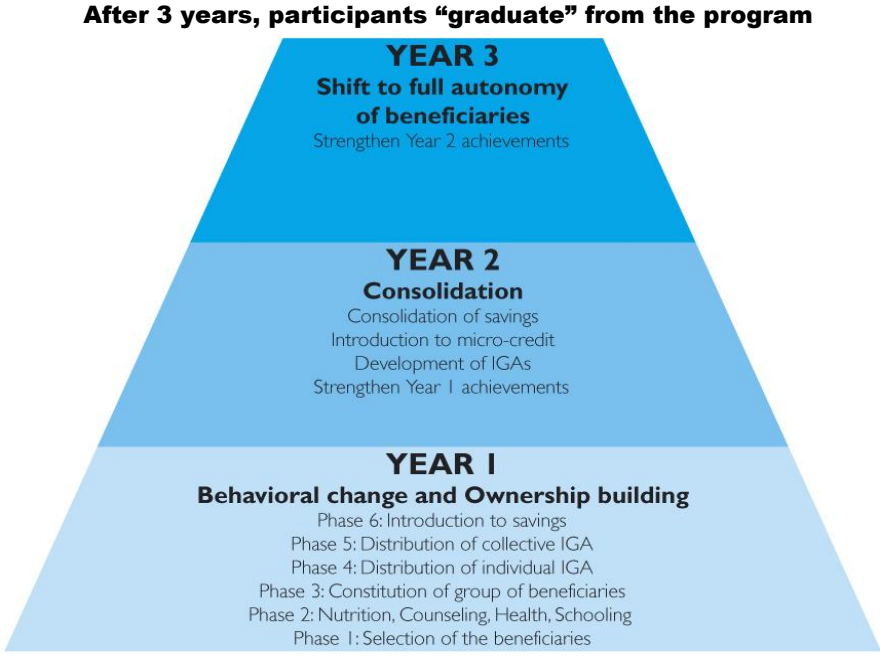

Figure 1: The FXB Village Network Model

During year one, participants receive full financial support to cover their nutritional, health care, and education needs, including children's school fees, uniforms and other school materials. FXB's financial input is scaled down each year as participants increasingly contribute to their families' school and medical costs, taking an active role in building lives of greater self-sufficiency as they gain a progressively stronger foothold each year with improved economic stability, food security, and health. In the second year, participants cover 25% of the household costs themselves, increasing to 50% in year three in preparation for the shift to full autonomy.

Health Promotion and HIV Services

Counseling and education to facilitate health-promoting behaviors, including appropriate hygiene and sanitation, the use of insecticide-treated mosquito nets, treating drinking water and adequate kitchen ventilation are among the many services that FXB staff provide to participating families. Training and material support to access and maintain clean water and sanitation facilities are also provided as well as assistance with improving the housing conditions and living environments.

The FXB-Village program facilitates access to basic medications and ARTs, as well as the necessary support and referrals to improve treatment adherence. Nurse Counselors facilitate group and individual sessions to provide psychosocial support – a vital part of all FXB interventions. This helps to reduce feelings of isolation and the fear of being stigmatized due to poverty and/or HIV status. HIV testing and risk reduction are promoted during regular household visits and community awareness-raising sessions, as well as through referrals to services provided by government and private sector providers.

Food Security

To address malnutrition and food insecurity FXB provides food to all participating households for the first nine months of the program and continues to monitor the nutritional status of program participants, especially children and PLHIV, throughout the program. The food provided is generally

flour and/or cornmeal, sugar, beans, dried fish, and vegetable oil. Households with PLHIV and child-headed households receive additional food support, usually dairy products and fruit to promote good health. Nurse Counselors provide nutrition education for all enrolled families, including cooking tips and advice on providing a balanced diet to all household members.

FXB provides households with raw materials and sufficient training to start small kitchen gardens, as a complementary source of food for the household and potential income once FXB's direct food assistance ends. Gardens generally consist of local produce such as tomatoes, cabbage, eggplant, carrots, other root vegetables, as well as fruit. FXB staff conduct bi-weekly home visits to deliver targeted family health advice and to track malnutrition, stunting, growth and development among children using the Child Status Index tool (developed by MEASURE Evaluation), mid-upper arm circumference and weight-for-age measures.

The intensive and holistic household-tailored approach to the delivery of support and services during year one is designed to give extremely impoverished, vulnerable families a foothold on overall household security, and to prepare them for subsequent phases of the FXB-Village. By alleviating malnutrition, illness and immediate financial needs at the start of the program, the acute vulnerability of the family is reduced and they are empowered to move to the second phase of the program: skills development and increased economic stability.

Economic Security

By the start of the second year of the program, participants are expected to have started an IGA and to take responsibility for 25% of their household expenses. An intensive, week-long training session helps participant households to propose and develop a business plan for their IGA, specifically suited to the local market, their skills, abilities, interests and any previous experience.

The project is reviewed by FXB and peer program participants for its viability and suitability to local conditions. Social Workers and Logisticians then support participants through the specific design, preparation, and implementation of their chosen project.

To help them start the business, FXB provides participating households with in-kind livelihood support of approximately $135 in value. Depending on the chosen IGA, this in-kind support can include anything from livestock to tools and equipment. FXB trains households in skills specific to their IGA, as well as banking and savings, establishing responsible credit, and basic financial literacy and management. Households are also assisted to open a bank account and begin saving money. FXB staff monitor families' progress through bi-weekly home visits, tracking income levels, children's health status, and other key indicators, with further targeted assistance offered to participants where necessary.

As the program reaches to the third and final year, FXB further reduces its financial support to participating households as they take responsibility for 50% of their household, schooling and medical costs. FXB home visits continue to provide targeted support and encouragement.

Program Completion

At the end of year three, families complete the program and "graduate". A 2007 study documented that over 85% of the FXB families who graduate from the program live sustainably above the poverty line (Desmond, 2007).

FXB believes that part of the reason for this success is the responsiveness of the program to the specific needs of individual households. While there are many standard components in the model, FXB strives to avoid a "cookie cutter" approach, preferring instead to adapt to the unique situation

of each community and household with carefully targeted BCC. Appropriately tailored support from dedicated Nurse Counselors and Social Workers (in collaboration with relevant specialists) helps the individual interventions to flourish and strengthens the opportunities for empowerment.