

Evaluation Report: FXB Village Model Income Generation Sustainability

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Introduction

FXB bases its approach to programming on a belief in the inextricable link between health and human rights. The FXB Village Model seeks to strengthen the capacity of families to respond to the needs of the children in their care in the context of HIV and AIDS and poverty. Central to this aim is the improvement in the earning potential of the family so that the resource needs of children can be met long after the intervention has been completed. This report endeavours to determine the extent to which former beneficiaries of the Village Model in Rwanda are able to provide for the resource needs of their families once they have left the programme.

Analysis of data collected by FXB on a sample of former beneficiaries provides an indication of family well-being. Unfortunately, there is no baseline data on these households and no control group. It is not possible, therefore, to determine to what extent the current situation of households in the sample is as a result of the intervention. The difficulty in attributing causality does not, however, negate the analysis. If former beneficiaries are found not to be able to meet their basic needs, this would suggest that the intervention failed in its goal of long-term sustainability. If basic needs are seen to be met, this does not prove the intervention worked but it does mean that this is possible. While this finding would only suggest a possibility of success it could be interpreted as a strong suggestion. FXB sought to identify the poorest and most vulnerable families in communities and, while poverty has been falling in Rwanda, it is unlikely that these families could have climbed out of poverty alone given their initial circumstances. Poverty rates remain high which means these most vulnerable households, if they are now out of poverty, would have had to leapfrog other less vulnerable households.

In order to determine if a household is in or out of poverty requires a definition of what constitutes poverty. This is a difficult and political issue. In the analysis presented here the Rwandan poverty line was used. This is favoured over international standards as it has been estimated with Rwandan conditions in mind and is the official measure. Details of the poverty line and how it compares to international standards will be discussed in the course of the report.

Using the Rwandan poverty line, the analysis implies that between 70 and 86% of former beneficiaries in the sample and their families were out of poverty at the time of the survey, in that they were above the poverty line. This result, however, masks a large urban/rural differential. Rural areas in Rwanda are much poorer than urban areas and the results of the survey conducted reflect this situation. The data suggest that almost all of former recipients from urban areas are now living out of poverty, while over a third of rural households remain below the poverty line. Given the context in which the rural households are operating this result is no surprise. Details of the factors which have likely lead to these differences are discussed in the report.

The results suggest that the intervention is linked with some significant success. It is not, however, enough for an intervention to be successful. It should be as successful as

possible given the resources devoted to its implementation. Data on the outcome of a comparable project were not available and so there was no possibility of direct comparison. An alternative, however, is to examine the conceptual framework on which the model is explicitly or implicitly based and discuss its validity and the possibility, or not, of a more efficient approach. The income generation component of the Village Model cannot be examined independently, as the intervention is an integrated response. It is necessary therefore to examine the intervention as a whole and the income generation component's part in it.

Such a conceptual framework is useful too in discussing the results of the data analysis. The report, will, therefore, begin with a description of the programme and the construction of a framework. The data will then be described, its problems discussed and results of its analysis outlined. Suggestions for future data collection will also be made. These discussions identify a number of key issues that will be drawn out and conclusions and recommendations made in relation to them.

Description of programme

The FXB Village Model aims to strengthen family responses to children living in extremely vulnerable circumstances using an HIV-sensitive approach. Rwanda is a poor country with GDP per capita below the sub-Saharan Africa average. Close to 60% of Rwanda's 9 million citizens live in poverty. Although the economy has started to recover from the genocide and civil war, the damage was such that poverty rates are still higher than pre-war levels. What's more the economic growth is uneven and inequality is rising. Even as the percentage in poverty declines, the number of poor increases as Rwanda's birth rate remains high. (UNDP, 2007)

The backdrop of high rates of poverty and high fertility rates places many children in difficult circumstances. The situation has been further exacerbated by the HIV and AIDS epidemic with adult prevalence in the region of 3% (UNAIDS, 2006). The country's violent past, HIV and AIDS and the high fertility rate have led to the creation of households with high dependency ratios where a few, or even one, adults care for a number of children. If the caregiver themselves is ill or unable to generate sufficient income, these children are particularly vulnerable. It is these vulnerable children that the FXB intervention aims to support.

The Village Model recognises that children live within families and those families are the preferred model of care. It may seem obvious to recognise that children live within families but often interveners do not appear to appreciate what this means. They see the family as an impediment to supporting the child and try to find ways to avoid the leakage of support intended for the child to the family. In its extreme form this leads to efforts to remove children from family environments. FXB seeks to keep children in the family environment and to build the capacity of the family to respond to children's needs rather than bypassing the family and trying to support the child directly.

The Village Model is a three-year programme with 80 families. The families are identified with the involvement of local leaders according to four criteria: poverty, responsibility for children, commitment to responding to the opportunity provided and integrity. In the first year of the programme educational costs of all children in the household are paid, all household members are provided with health insurance and, for between 9 and 12 months, the family is provided with nutritional support. These direct

forms of in kind support are gradually reduced over the three-year period. In order that this withdrawal of support does not result in a fall in family well-being, an income generation project is initiated in the first year. This involves the development of an individual income generation project and a group project.

The individual income generation support involves a series of training sessions, followed by the submission and joint revision of a project plan. The project then supports the individual with the necessary purchases to initiate the planned project. The group project is similarly supported and involves small groups working collectively.

Linking the above aspects of the intervention together are a coordinator, a nurse counsellor and a social worker. This project staffs visit households on a regular basis assisting with health concerns, psychosocial support and advice on the income generation project. The project is estimated to cost in the region of US\$165 000 for 80 families over three years. The assumption is that, at the end of the three-year period, the income of the household will be sufficient to maintain the children's education and adequate access to food and health care for the family. The intervention as a whole has been evaluated by Paul Wilson and Alan Berkman from Columbia University. This report is concerned more specifically with the sustainability and efficiency of the income generation component.

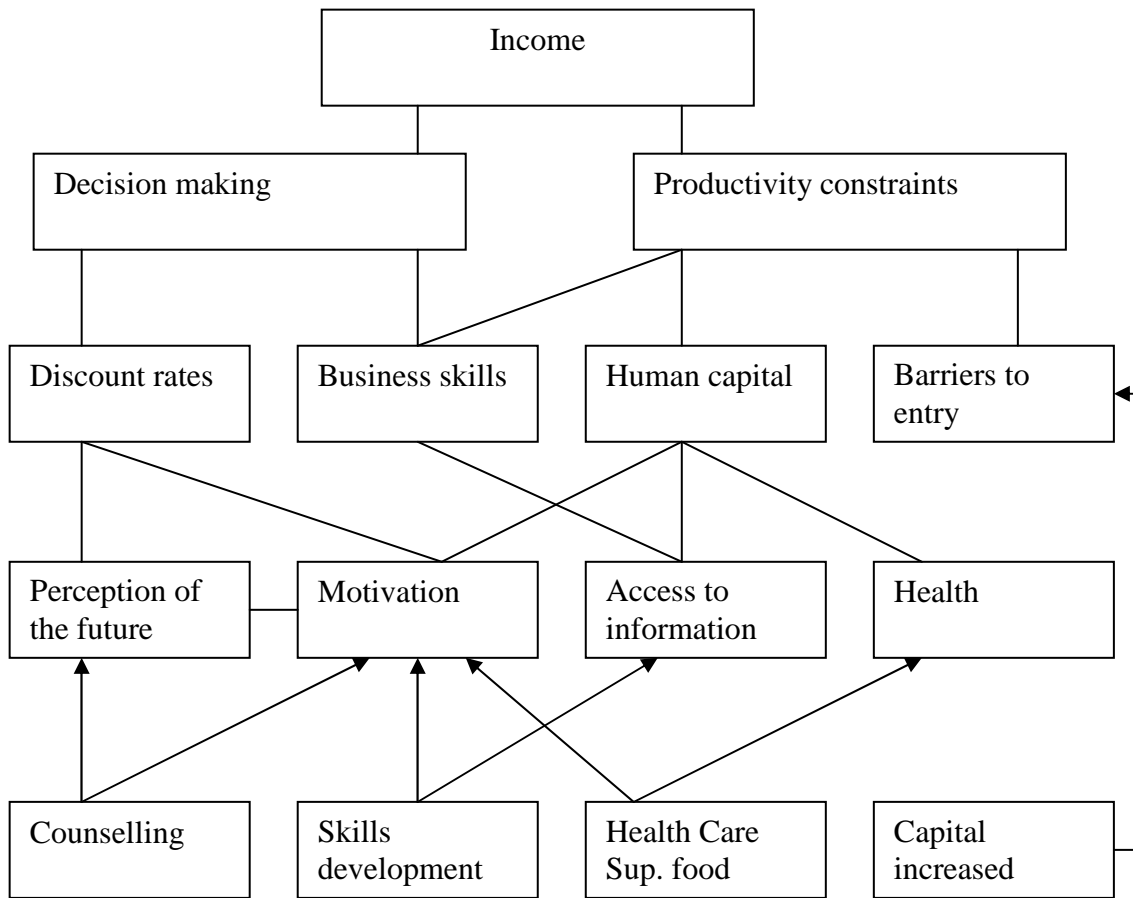
Conceptual Framework

It is important to understand the integrated nature of the intervention and the assumptions made in its design. Increasing the family's income is central to maintaining the benefits to children. The programme is designed so that the support to the family reduces as the earnings potential increases. The support in regard to income generation involves improving the productivity of the beneficiary, via training, capital injection and improved health.

The support to the family is provided in kind and not in the form of direct financial assistance. To be clear reference to in kind support refers to the provision of any good or service as opposed to cash assistance and therefore includes the food support, health insurance, payment of school fees, counselling etc. For the in kind approach to be justified, the assumption must have been made that the beneficiary would not spend the money in a way that would improve the well-being of the children in their care or their own productivity as efficiently as the in kind support. Unless the intentions of the beneficiary towards the well-being of their family are questioned this implies that they need assistance with their decision making. On the other hand, by the end of the three years they are expected to maintain the improved well-being, so the assumption is made that by this time their decision making will have improved. If these assumptions were not made, the programme should provide direct financial support for all goods and services available in the market, i.e. education, health care and food, as the overhead for cash is typically smaller than for kind. The programme would only provide those goods for which a market in these communities did not exist, such as psychosocial support and possibly skills development.

The following figure illustrates both the integration and the assumptions made in the model's design to facilitate a more detailed discussion than the above.

Figure 1: Conceptual framework



One of the criteria on which beneficiaries are selected is their degree of poverty. As the communities from which they are drawn are so poor, it is safe to assume that they are very poor at the onset of the intervention. The idea is then to set them up in an income generating activity that will lift them out of poverty. This raises the question of why they would not have initiated such an activity before, assuming that they do not enjoy their poverty.

In the first instance, the design of the Village Model assumes that they face productivity constraints, such as barriers to entry to more lucrative activities. These are assumed to be related to the need for capital to meet start-up costs, such as purchase of live stock or goods to resell. It is also assumed that productivity is constrained by the lack of business skills; as results of lack of access to information, hence the need for training. The design also recognises that they may lack the necessary human capital as a result of poor health status, which is a critical aspect of the HIV-sensitive nature of the intervention.

If income is only constrained by productivity, the project could simply have identified poor households and provided them with cash payments over the course of the intervention and access to training if they felt they needed it. The beneficiaries could have used this income to access health care for themselves and their children and to overcome capital barriers to entry.

While not explicit about this, the design implicitly assumes that if cash were provided to beneficiaries they would not spend it in the optimal way to maximise the long-term welfare of the family. That is, the design assumes that the problem is not only with productivity but with decision making. As mentioned above, it is also assumed that this situation can be changed over the period of the programme.

At first take, this may seem a somewhat condescending assumption that the beneficiary does not know what is best for their family and needs directing. There are, however, a number of arguments that place the assumption in a more positive light. The extent to which the arguments are accepted is essentially the extent to which this programme is preferred over a cash transfer programme, although it should be noted that a combination of the two may be possible - but this will be discussed later.

Individuals may lack the business skills to identify the best investments and to appreciate the return on investments. Even if the returns on investments are appreciated they may not be valued. Investing in an income generation activity or education that involves a delay on returns is less attractive the more uncertain you are about the future. If you are ill and hungry, the present may be far more important to you than most. In economics this situation is referred to as having a high discount rate. People discount the future highly and place much more emphasis on present consumption.

The counselling and skills training is assumed to improve individual's awareness of the potential returns of alternative expenditures and investments. Perhaps more importantly, the counselling could be argued to improve people's perception of the future and their associated motivation to try for something better. It's hard to try for something better when you don't believe it's possible.

The question then remains how fast counselling and training take effect. If they are quick to improve decision making then the in kind transfers should be changed to direct financial support equally quickly. This combination of cash and kind, however, is a question of efficiency and is unimportant unless the intervention works, which is the topic of the next section.

Analysis of survey of past recipients

In order to try and obtain a better understanding of the economic situation of former recipients FXB conducted a survey of a sample of them. This section details the survey, the characteristics of the sample and the results.

Sampling

The survey was conducted among a sample of former beneficiaries of programmes in Muhanga and Kigali, reflecting a rural and urban setting respectively. A third of former beneficiaries were drawn randomly from completed groups in each area. Twice as many groups have been run in Kigali and the numbers included in the survey reflect this. A total of 55 former beneficiaries from the rural site were sampled and surveyed while 103 former beneficiaries were sampled from the urban site.

Survey instrument

The survey involved 41 questions covering a range of issues relating to the income and expenditure of the beneficiary and their household. The following topics were covered.

- Basic demographic information
- Individual income generation
- Group income generation
- Agricultural production and consumption
- Household ownership and rental
- Expenditure on food, education, health and social activities
- Savings
- Asset ownership

The data were collected between January and February 2007. The Kigali programmes ended in June 2003, while the Muhanga programmes ended in December 2005. At the time of administering the survey the respondents from Kigali had been out of the programme for 3½ years and those in Muhanga for just over a year.

Sample description

Former beneficiaries sampled were overwhelmingly women (92%) caring for children (99%). The majority of the respondents was widowed and was living as such, as can be seen in the following table.

Table 1: Family composition (%)

	Rural	Urban	Total
Complete family	24	22	23
Single parent	16	7	10
Widow	56	66	63
Orphan headed*	4	5	4

*Respondents may have been children at the time of the intervention but no longer are.

The composition of family structure was roughly similar in the urban and rural areas. The urban area had a slightly higher widow rate and a slightly lower single parent rate than the respondents from the rural area. The majority of families included only one adult care giver¹.

All but one household were caring for children; on average households were caring for 5. The average number of children masks considerable variation, as the number of children in the household ranged from 0 – 12. The number of children per household was similar in both settings. The age distribution of respondents is summarised in the following table.

¹ The survey unfortunately did not ask the number of adults present in the household. It was assumed that only complete families comprised more than one adult.

Table 2: Respondents age (%)

Years of age	Rural	Urban	Total
18 – 25	4	3	3
26 – 35	22	16	18
36 – 45	38	40	39
46 – 65	34	41	39
65+	2	0	1

The table suggests that respondents tended to be over 35 but under 65 years of age.

Income generation and household poverty

Despite having completed the programme, the vast majority (97%) of respondents reported that they were still involved in their individual income generation activity and close to 90% that they were still part of a functioning group. The nature of their activity varied depending on their context. The following table shows the individuals' activities pursued by context.

Table 3: Individual Income Generation Activity Pursued (%)

	Rural	Urban	Total
None	4	3	3
Snack sales	2	5	4
Sale of food stuffs	13	52	39
Charcoal sales	4	10	8
Frippery	2	8	6
Restaurant management	7	2	4
Craft making	2	2	2
Embroidering /sewing	7	6	6
Animal rearing	20	0	7
Agriculture	38	2	15
Other	1	10	6

The difference between the settings, as would be expected, is related to farming activities. Agriculture and animal rearing are the most common activities in rural areas as opposed to sales in urban areas. The concentration in agricultural activities is even more pronounced in the group activities, with 85% of groups involved with livestock or crop growing in rural areas. In urban areas the most common activities for groups were charcoal sale (31%), craft making (20%) and, interestingly, animal rearing (18%).

The data would suggest that income generation activities have continued after the completion of the programme. The question then is to what extent these activities have supported beneficiaries and households in meeting their needs. The following section details the method of analysis used to respond to this question, after which the results will be presented.

Method

The method outlined in this section aimed to determine what percentage of respondents was living out of poverty at the time of the survey. In the first instance, this required the selection of a poverty line. There are a number of international lines that are commonly

used, such as US\$1 and US\$2 per day referring to extreme poverty and poverty respectively.

Poverty lines such the above refer to the income per day *per person* below which the person is considered poor or extremely poor. The per person measure is often considered inappropriate as it assumes that adults and children require the same level of resources. As a result, the lines are typically an amount per adult equivalent. Adult equivalency is determined by the weights attached to people of different ages. Take a household with four members comprising two adults and two children. If children are assumed to require half the resources of an adult the household is said to have 3 adult equivalents (2 adults + 0.5 * 2 children). This way, households that are the same size and have the same income are not considered equally well off if one has more adults than the other.

As individuals typically live in households with other members, it is important not only to adjust for the number of adult equivalents when determining resource needs, but also the economies of scale. Anyone who has lived alone knows that the addition of another person does not double household expenses. Larger households, therefore, require fewer resources per person than smaller households. In wealthy households there are strong economies of scale as so many of the costs are relatively fixed, such as the cost of the house and its furnishings. In poorer households there tend to be much smaller economies of scale as the bulk of costs are related to food, which increase with additional members.

The above points to the need to select three things in determining the poverty line: the value of resources required per adult equivalent, the relative weight attached to children to determine the number of adult equivalents in a household and finally the appropriate adjustment for economies of scale.

If the international lines of US\$1 and 2 were used as the appropriate lines they would first have to be adjusted to their 2007 value as they were set in 1985. There would then have to be an adjustment for the difference in purchasing power in Rwanda relative to the rest of the world. This would result in a poverty line for extreme poverty of Rwf120 (US\$0.22) and for poverty of Rwf240 (US\$0.44) per adult equivalent per day. Poverty lines incorporate a strong subjective element of what constitutes basic needs and as such they tend to be highly political. The application of what has often been accused of being a somewhat arbitrary line to a specific context is problematic. Rwanda fortunately has determined domestic poverty lines.

Rwanda's extreme poverty line, or what is referred to as food poor, is based on the estimated cost of a basket of food supplying 2 500 kcal a day per adult equivalent. Individuals below this line are considered extremely poor, lacking the resources for even basic nutrition. This line was set in 2001 at Rwf45 000 per year, adjusted to current prices this is Rwf63 500 per year which translates to Rwf174 per day (US\$0.32). The second line which considers the cost beyond those of basic food is in current prices Rwf90 000 per year or Rwf246 per day (US\$0.45) roughly equally to the US\$2 per day mark. (UNDP, 2007) The Rwandan poverty line is used in the analysis that follows.

The selection of appropriate weights to determine adult equivalency figures is a difficult task. It would be best to have empirically determined weights for children of all ages and

apply these to the profile of households in the sample. This, however, was not possible as the data were not readily available on the appropriate weights or the ages of the children in the household. In such situations a weight of 0.5 is often assumed. Given, the high costs of education, however, a higher figure of 0.7 was used. A sensitivity analysis was conducted using per capita measures i.e. a weight of 1 and the results of this are reported in the annex.

As mentioned above, it is unlikely that there are very significant economies of scale in extremely poor households. For this reason, a coefficient of economies of scale of 0.9 was used, where a coefficient of 1 indicates no economies of scale.

Once the above decisions were taken, it was possible to analyse the income data appropriately. The choice of income data was not, however, straightforward.

Income data were collected from beneficiaries in relation to their individual income generation activity and their group activity. In addition to this, the values of the consumption of own produce, where appropriate, was estimated and collected. These responses collectively provide an indication of income from project-related activities. They do not, however, indicate total household income, as beneficiaries or indeed other members of the household may well obtain earnings from other sources. These data were not, therefore, able to indicate the percentage of households living in or out of poverty. The analysis of these data is reported as they do show the extent to which earnings from the project activities alone are capable of lifting the family out of poverty.

Before analysing the above data a number of adjustments were necessary. All data were collected as ranges. The mid-point of the range was used as an estimate of income for individuals reporting in that range. The data on income from the individual activity were reported per working day. Six working days were assumed and the figure adjusted to a daily average. The group income was reported per month and was adjusted to a daily amount, similarly the consumption of own production was adjusted from a quarterly to a daily average. The own consumption data was complicated by the high proportion of respondents reporting consumption in the top open-ended range. To obtain a point value for these respondents, the same pattern of responses across categories up to the open band was assumed to continue. Following the above it was possible to estimate a daily income from these activities.

To supplement the above, the data on expenditure were also examined. The average expenditure on food alone, including consumption of own production, was higher than the income estimate described above. The expenditure figures were for the household as a whole. The higher food expenditure, therefore, suggests that households have income from other sources in addition to the income from project-related activities. In addition to average daily food expenditure, data were collected on average daily savings (assumed savings per working days) and quarterly expenditure on health care, education and social events. Counting all of this expenditure would have lead to double counting, as quarterly expenditures are likely financed out of daily savings. The expenditure estimate was, therefore, based on the daily value of food consumption plus savings.

The analysis of income and expenditure data provides an estimation of the levels of poverty among respondents and their family. The project, however, aimed not only to

increase earnings but to direct it towards health and education expenditure. The reported expenditure on these items is, therefore, also reported to provide an indication in this regard.

Results

The method outlined above allowed for the examination of poverty rates and the contribution to its alleviation of the income from project-related activities. The table below provides the estimates from the survey of income from project-related activities, reported food expenditure and the total of food expenditure plus daily savings. It is important to recall that the income is only from activities reported on and not necessarily the total income of the former beneficiary or the household.

Table 4: Total Reported Individual Income and Household Expenditure

Total	Rural	Urban	Total
Income			
Mean	748	2348	1791
Standard Deviation	714	1204	1305
Range	50 – 3908	0 – 4990	0 – 4990
Food Expenditure			
Mean	1491	2979	2461
Standard Deviation	1414	1246	1484
Range	253 – 5577	327 – 5577	253 – 5577
Total expenditure			
Mean	1719	3996	3203
Standard Deviation	1487	1591	1895
Range	253 – 6852	750 – 8252	253 – 8253

In terms of all three measures of household well-being, the urban households fared far better. This difference is not surprising for a number of reasons, all relating to the high overall poverty levels in rural areas of Rwanda. Poverty levels are estimated to be over 60% in rural areas but closer to 20% in urban areas (UNDP, 2007). Given the nature of the selection process, it is likely that all former beneficiaries were poor prior to the start of the intervention. Given the scale of poverty in rural areas, it would be reasonable to suggest that the depth of poverty is also greater and that, as a result, the beneficiaries selected in the rural areas started from a lower base. Arguably more important than the starting point is the absence of market demand in rural areas. As rural areas are so poor, the demand for goods and services is low. In such situations, even when individuals start producing goods or offering services, there is little demand for them, which reduces the earning potential of the activity. This maybe what has prompted the pursuit of agricultural activities where production can be consumed and a market for the goods exists. It would appear, however, that the returns on investments in agricultural activities are lower than the returns on investments in sales in urban areas.

It is also important to note that the means conceal the wide variation in the sample as suggested by the standard deviations and the ranges. It is clear that some beneficiaries in both rural and urban areas are doing far better than the average and some far worse.

The above table shows that the average level of food expenditure exceeds the average income from project activities and this is true for close to 80% of responses; as mentioned above, this suggests that the income from the project activities is not the only source of income. The point is even clearer when the total expenditure is examined. While other sources of income may not be directly from project activities, this does not mean that they are not related to the project. For example, as part of the project, beneficiaries were often encouraged to improve their homes; some now rent parts of their home out and the income from this was not collected in the survey. They were also encouraged to diversify and they may well have done so: having income creates the possibility of investing in new activities. The data were collected at least four years after the project started. Children in the household at the time the project started may now be earning.

Using the above measures it is possible to adjust them for household composition. The following table presents the estimates of income and expenditure per adult equivalent and adjusted for economies of scale.

Table 5: Per Adult Equivalent Individual Income and Household Expenditure

Per adult equivalent	Rural	Urban	Total
Income			
Mean	189	596	454
Standard Deviation	181	347	357
Range	0 – 1749	0 – 1749	0 – 1749
Food Expenditure			
Mean	367	738	609
Standard Deviation	335	346	384
Range	49 – 1593	84 – 1592	49 – 1593
Total expenditure			
Mean	425	999	799
Standard Deviation	341	452	498
Range	49 – 2172	121 – 2172	48 – 2172

As household composition between the urban and rural areas did not differ greatly, the above reflects the pattern evident in the previous table and again the means mask wide variation. What the above adjustment allows is the comparison of these figures to the Rwanda poverty lines. The table below displays, for each measure, the percentage of beneficiary households who are below the extreme poverty line, between the extreme poverty and poverty line and above the poverty line. The table must be interpreted carefully. The percentage of households in each category for the income section reflects the poverty rates that would result if the only source of household income were from

project activities. The food expenditure section reflects the rates if the only expenditure were on food. The final section presents the poverty rates based on total expenditure. The first two sections are included for comparison purposes; the final section presents the estimates of actual poverty rates.

Table 6: Poverty rates (%)

	Rural	Urban	Total
Income only			
Below extreme line	58	12	28
Between lines	25	4	11
Above poverty line	16	84	61
Food Expenditure only			
Below extreme line	24	7	13
Between lines	34	9	18
Above poverty line	42	84	70
Total expenditure			
Below extreme line	15	2	6
Between lines	18	2	8
Above poverty line	67	96	86

The results suggest that, in urban areas, even if the project income were the only source of income it would be high enough to keep the household above the poverty line in 84% of the cases and above the extreme poverty line in 88% of cases. This means that even before considering income from other sources it can be concluded that these households are living out of poverty. In rural areas, however, the income from project related activities is much lower and if it were the only source of income for the household than 58% of households would be below the extreme poverty line and 83% below the poverty line. These poverty rates are mentioned for illustrative purposes as it would appear that households have other sources of income. Just on the basis of food expenditure alone, the poverty rate in rural areas is estimated at 42% rather than 17% above the poverty line. This suggests that in some cases households are spending more on food than they are earning from project related activities, evidence that other sources of income are being earned. To measure poverty levels then requires a consideration of these other income flows.

The total expenditure section suggests that, in the sample as a whole, 86% of households were living above the poverty line at the time of the survey. In urban areas the percentage was high at 96% and in rural areas lower at 67%. In the rural sample 15% of households were below the extreme poverty line.

The above results would suggest that the majority of households of former beneficiaries are no longer living below the poverty line. In a country like Rwanda, where close to 60% of people live below the line, this is impressive. The situation is, however, very different between urban and rural areas but for the reasons outlined above this is not surprising.

Increasing income and expenditure levels was a goal of the project; it was however intended not only for its own sake but as a driver for other aspects of well-being. The table below examines reported expenditure on education. The N value is the number of households that reported having children in the eligible age range.

Table 7: Expenditure per Quarter on Education (%)

	Rural	Urban	Total
Primary			
N	49 (89%)	94 (91%)	143 (91%)
0 – 1000	39	0	13
1001 – 3000	43	11	22
3001 – 5000	10	7	8
5000+	8	82	57
Secondary			
N	19 (34%)	72 (70%)	91 (58%)
0 – 5000	0	1	1
5001 – 10000	0	1	1
10001 – 20000	16	1	4
20000+	84	97	94
Vocational			
N	14 (25%)	15 (15%)	29 (18%)
0 – 5000	36	0	17
5001 – 10000	43	7	24
10001 – 20000	14	20	17
20000+	7	73	41

The above table does provide evidence that households are spending on education. What's more it provides evidence particularly of high spending for secondary school. Unfortunately, a household listing of children, their age and if they were in school was not collected. This means that, while the above does provide an indication of spending, it does not say a great deal about enrolment. According to the latest Demographic and Health Survey (DHS), net enrolment in primary school in Rwanda is 77% across the country, with some rural/urban variation (74% rural and 81% urban). Secondary enrolment is much lower at 4% across the country, 3% in rural areas and 12% in urban areas. That 35% and 70% of rural and urban households in the survey were reporting spending on secondary education is encouraging. They may of course have more than one child at the secondary level and not be sending them all, as the data were not disaggregated by child. This problem aside, reported spending in the top bracket suggests that a number of households are investing in secondary education for their children at a significant level. Another positive example of spending was that 97% of beneficiaries reported that they had continued their registration with the health insurance scheme.

Finally, income and expenditure are measures of current flow variables; it is also informative to examine stocks: that is, wealth rather than income. The survey asked about ownership of a number of assets, including radios. Radios are currently provided free to beneficiaries but this is a new initiative with the Free Play Foundation and was not in place at the time that these beneficiaries in the survey were part of the programme. Radio ownership is an often-recorded asset in surveys as a measure of wealth. In the DHS, radio ownership in urban areas was recorded at 65% and in rural areas at 42%. In the sample, 83% of urban respondents and 60% of rural respondents reported that they owned a radio, which is above the average in both settings. This suggests that households are similarly above the average in wealth. Only 3% of those surveyed reported that they had a TV, which is much the same as the national average.

Causality and future data collection

The data presented in the previous section suggest that a high percentage of the households sampled are living above the poverty line, particularly those in rural areas. This, however, cannot be interpreted as proof that the project is responsible for this, although it is a very encouraging sign and may well be a result of the project.

The problem is that no baseline data were collected and so there is no way to compare where beneficiaries are now to where they were before intervention. What's more there is no way to compare them to other households that were in a similar position at the time they entered into the project. Poverty rates in Rwanda have fallen since these recipients started and treatment for HIV and AIDS has improved both of which may have improved household circumstances independently of the intervention.

In terms of the first problem of there being no baseline data, while this problem should certainly be remedied in the future if monitoring is a priority, it is not as serious as the second problem of having no control group. The selection of beneficiaries is such that, working in poor communities, project staff seek to find the highly vulnerable groups. Anecdotal evidence suggests that when beneficiaries are identified to be part of the programme they are typically living in very difficult situations. This would imply that they were poorer than the average for their communities. As noted above, poverty rates remain high in Rwanda and so for a household that was relatively even poorer than the average of a poor community to now be living out of poverty suggests that they have now risen above their community's average. It would seem safe to assume that they have therefore improved faster than other members of their community.

That they have likely improved does not mean that they did so as a result of the project, although this might have been the case. When these beneficiaries were enrolled in the programme, HIV status was one of the main criteria for inclusion. Since then ARVs have become widely available in the country. Accessing this medication would have greatly improved the earning potential of beneficiaries and may be part of the reason for the improvement in well-being. Arguably, the impact of the project and the provision of medication interacted, with the one magnifying the impact of the other and this may be the basis of the improvement. Unfortunately, with no control group there is no way to prove this.

Future data collection should, at the very minimum, involve the collection of baseline, beneficiary and household data. The same data should be collected at follow up. The following areas for data collection are suggested:

- Basic household socio-demographic characteristics
 - Listing of all household members
 - Relationship of household members to head of household
 - Age and educational level of all household members
 - Attendance at school for children
 - Employment status for adults
 - Adult literacy
 - Adult and child self-reported health
 - Incidence of hunger
 - Household characteristics
 - Number of rooms
 - Floor type
 - Roof type and condition
 - Access to services
 - Asset ownership
- Income and expenditure
 - Income from all sources for all members
 - Level of agricultural production
 - For self-employed
 - Turnover per day/week/month
 - Employment-related expenses per day/week/month
 - Expenditure (common time period)
 - Food
 - Clothing
 - Housing
 - Transport
 - Education
 - Other
 - Savings
 - Total

For comparison purposes it would be best not to develop original questions but to use available surveys and to select appropriate questions from them. Selecting a control group and repeating the same questions and then following up with them is ethically difficult. It provides the best data for measuring the interventions impact but questioning households that are not helped can be difficult to justify.

Two options exist to address this situation. The best option would be to randomise communities into one of two arms of a research study and provide the Village Model to one arm and an alternative intervention costing a similar amount to another. Such an approach would be highly informative but complex to organise and monitor. It would be advisable to partner with a research organisation if this approach were followed.

The second option is to collect data only on programme recipients and compare the data with similar households captured in national surveys. If a selection of the same questions were used as are used in the DHS, the households in the programme could

be compared to households in the DHS. The problem with this approach is that the matching of households in the intervention with like households in the DHS would be complex and, secondly, the DHS is typically run only every five years.

Even without a control group collecting baseline and follow-up data does allow for a monitoring of change even if causation cannot be easily assigned.

Summary and conclusions

The data collected by FXB, although limited in some respects, allowed for the examination of the current situation of a randomly selected group of beneficiaries from urban and rural settings. The analysis suggests that poverty rates among these beneficiaries are lower than the national average. Considering that the most vulnerable households were selected, this suggests a very positive improvement in well-being among this group.

Poverty rates have been slowly declining and ARVs have become available; this complicates the attribution of causality for the apparent improvement in well-being. It would be hard to argue that there was something about these households that led them to benefit much more than others from the general decline in poverty. Given, however, that many were HIV positive the provision of ARVs may have played a major role. It could, however, be argued that the provision of ARVs assisted the success of the intervention by improving the productivity of recipients and that the additional income from the programme improved the impact of the ARVs by allowing higher levels of food consumption. To test the validity of this argument would require more detailed data collection, as has been discussed above.

On balance, there would appear to be evidence of the programme's success, although proof is not possible. The impact has, however, apparently been very different in urban and rural areas. This difference is most likely a result of the difference in the availability of markets that income generation activities can exploit. In rural areas, returns on investments are lower. Larger capital investments may therefore be required in these difficult circumstances and possibly assistance with gaining access to markets although this can increase the cost of the intervention dramatically.

The FXB model seeks to address a range of factors that inhibit households in improving their situation. It is HIV sensitive in the sense that it emphasises the importance of health improvements if income generation is to be pursued. As outlined in the report, it is also built on the assumption that the beneficiaries require decision-making support and that they would mispend resources if provided in cash rather than kind, but that the programme will rectify this situation and that by the end they will be better equipped to make their own allocation choices. This is always a sensitive issue, as no one wants to appear to be telling poor people that they don't know what's best for them. When people are facing very difficult circumstances and have little access to education they may well miscalculate returns on investments. They may also have such a dim view of the future, given their past experiences, that delaying consumption does not seem worth it. There are, therefore, possible reasons why decision-making support may be appropriate. It is not clear that in kind support is appropriate for the full three years, as decisions may improve faster than that and the support could be changed to cash after an appropriate period. The provision of cash is often difficult to fund raise for. Funders

do not typically trust the poor and so the change would be hard to sell, but may be worth considering as they could improve the efficiency of the intervention.

There are some beneficiaries who, for a variety of reasons, will never be able to provide for themselves - perhaps because of continued poor health or old age. These households may need ongoing support, particularly in rural areas where earnings are low. This may not be FXB's role; if it is not, referral links should be established, as these may be the most vulnerable households.

The projects nature makes expansion difficult within the same community. There are a limited number of income generation activities that beneficiaries can pursue and FXB does not want to expand supply to the point that prices fall. It will be important for FXB to consider this in the selection of sites. The model appears to be appropriate to support the most vulnerable members of the community; it is not a general poverty alleviation tool as the markets do not exist to sustain such an increase in supply of a small range of goods and services. While it may not be appropriate to expand the intervention too far within a single community expanding to other communities could have an important impact on the most vulnerable.

The principles of the FXB model, placing the child within the family and seeing the need to address the range of constraints that families face, should be commended. Too many service providers see themselves as the child's provider and the FXB Village Model provides a strong counter to this. The data analysed here is insufficient to prove success but the results are certainly suggestive of it. There are some difficult questions relating to the relative efficiencies of providing support in cash or kind which should be addressed but the approach does appear to provide many with sustainable increases in income.

References

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Annex 1
Sensitivity analysis

Table A1: Poverty rates based on per capita income and expenditure with no economies of scale assumed.

	Rural	Urban	Total
Income only			
Below extreme line	84	16	39
Between lines	7	16	12
Above poverty line	9	68	48
Food Expenditure only			
Below extreme line	66	16	33
Between lines	5	6	6
Above poverty line	29	78	61
Total expenditure			
Below extreme line	47	5	20
Between lines	14	9	11
Above poverty line	38	86	69

Annex 2

Summary of key findings

The following annex summaries the key findings regarding the current well being of survey respondents. Table A2.1 presents the results relating to income from project related activities.

Table A2.1: Poverty rates based on income alone (All values per day)

	Rural	Urban	Total
Reported income	707	2337	1770
Value of own consumption	41	11	21
Total reported income	748	2348	1791
Average household size	6.4	6.5	6.5
Poverty rates (per capita)			
Income per person	125	391	298
Between poverty line	91	32	52
Above poverty line	9	68	48
Poverty rates (adult equivalent)			
Ave. no. adult equivalents	4.1	4.2	4.2
Income per adult equivalent	189	596	454
Below poverty line	84	16	39
Above poverty line	16	84	61

The first line of the table reports the average cash income reported by former beneficiaries from individual and group activities. This is however an underestimate of income as it does not include the value of their own production which they consume themselves. The estimate of the value of own consumption is reported in the second line and the sum of these two is the total reported income from project activities. This is not the total income of the household but only income from these sources. As a matter of interest the rates of poverty that would result if this were the only source of income can be examined.

To examine poverty rate requires the consideration of household size. If a two person household was earning the same as a 5 person household they cannot be said to be in the same situation. The poverty line is, therefore, set per person not per household. If the daily income is simply divided by the number of people in the household the result will provide an estimate of income per person which can be compared to the poverty line. This is done and the estimates of average income per person and of the associated poverty rates are reported.

Adjusting only for the number of household members is, however, insufficient. Children are likely to need less than adults and large households are more efficient than small. Adjusting for the number of children and the economies of scale generates an estimate of the number of adult equivalents in the household. The average number of adult equivalents per household is reported above. The number is smaller than the household size as the households contain children and are larger than one person. This estimate

of adult equivalents was then used to estimate the income per adult equivalent which could be compared again to the poverty line. The results of this process are similarly reported in the above table. Because the income is divided across a smaller number the income per adult equivalent is higher than the income per capita, and as a result the poverty rates are lower. This adjustment is appropriate so the final two lines of the table should be read as the estimated poverty rates if the households only source of income were from project related activities.

Many households obviously have other sources of income and if the actual poverty rates are to be examined these earnings should be added to the income estimates before adjusting for household composition. Unfortunately data were not collected on income from other sources. Data were however collected on expenditure. Expenditure data is often used as a replacement for income data when income data is poor or incomplete. If households are spending more than the poverty line it is assumed that they are not poor. The table below repeats the above calculations but this time using expenditure rather than income as the expenditure data will reflect the spending of project and non project income.

Table A2.1: Poverty rates based on income alone (All values per day)

	Rural	Urban	Total
Food expenditure	1450	2968	2440
Value of own consumption	41	11	21
Value of savings	228	1017	742
Total expenditure	1719	3996	3203
Average household size	6.4	6.5	6.5
Poverty rates (per capita)			
Expenditure per person	282	654	525
Between poverty line	62	14	31
Above poverty line	38	86	69
Poverty rates (adult equivalent)			
Ave. no. adult equivalents	4.1	4.2	4.2
Expenditure per adult equivalent	425	999	799
Below poverty line	33	4	14
Above poverty line	67	96	86

The survey collected a range of expenditure data. Unfortunately the data were not all for common time periods. Some expenditure was reported as a daily figure other data as a quarterly figure. The daily expenditure data included food and savings. If it is assumed that quarterly expenditures are funded by daily savings than the sum of food expenditure and daily savings provides an estimate of total expenditure.

This estimate of total expenditure can, as with the income data above, be divided by the number of people in the household to estimate the per capita expenditure which can similarly be compared to the poverty line. Again this approach fails to consider the composition of the household. Adjusting the estimate to the expenditure per adult equivalent is a more meaningful approach and the most appropriate figure to compare

to the poverty line. The results of this comparison are reported in the final two lines of the above table.

Reading the above two tables together suggests that if the income from project related activities were the only source of income for the household then the poverty rates in the rural sample would be 84% and in the urban 16%. These figures are not suggested to be the actual situation but rather what it would be if this were the only income. As there are clearly other sources of income the poverty rates based on expenditure should be read as the actual situation. The results therefore suggest that the actual poverty rate among rural respondents was 33% compared to 4% among urban respondents. Further analysis suggests that income from project activities comprises 65% of expenditure suggesting it to be the main source of income. The conclusion is therefore that income from project related activities alone is enough for many in the urban areas and some in the rural areas to lift themselves out of poverty. While for a number of others it is a major contributor to earnings which in total are able to lift the households out of poverty.