



Use of MAHFP to Track Vulnerability in Households of People Living with HIV (PLHIV) in Food Security Programs in Burkina Faso: A Focus on Food Security Status, Household Risk Factors, and Selected Nutritional Concerns Specific to PLHIV

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Objectives: This paper describes the results of a pilot study of how the level of household food security (based on the Months of Adequate Household Food Provisioning [MAHFP] indicator) relates to a number of socio-economic household characteristics and selected nutritional concerns specific to people living with the human immunodeficiency virus (PLHIV) in Africare/Burkina's Zondoma Food Security Initiative, Phase II (ZFSI II) intervention area. The intent was to examine the link between MAHFP and other household and nutritional factors that might contribute to household vulnerability for those affected by HIV/AIDS and to make recommendations for the types of data that should be collected through routine and specialized questionnaires and interventions that should be implemented to reduce vulnerability of households with PLHIV.^v This focus stems from the USAID Food for Peace (FFP) directive to target and address vulnerable populations (especially those affected by HIV/AIDS), including the use of adequate indicators in food security programming (USAID/FFP/DCHA 2003, 2005, and Hammink 2007).

Background:

Africare's Work on HIV/AIDS. One important objective^{vi} of Africare's Title II-funded Institutional Capacity Building (ICB) grant (FY2004-2008) is to conduct the applied research needed to better understand and

measure the types of local capacity building that: (a) reduce food insecurity in vulnerable households and communities (including those affected by HIV/AIDS) and (b) enhance community and household resilience to cyclical and episodic shocks (including HIV/AIDS). Given the magnitude of the destabilizing influence of HIV/AIDS and the call of USAID Food for Peace to specifically target those affected by HIV/AIDS (USAID 2005), the Africare ICB grant has also accorded special attention to developing new ways of improving food security in households of people living with HIV. To date, this has included implementing



Household of a PLWHA benefiting from ZFSI II direct distribution activities, Burkina Faso. Photo credit: Rosine CISSE

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direct distribution of food rations to individuals diagnosed with HIV or AIDS through HIV/AIDS support associations in both Rwanda^{vii} and Burkina Faso.^{viii} While there is anecdotal evidence that these two pilot projects of direct distribution to PLHIV are beneficial (Maslowsky et al. 2008), Africare has made a commitment to expand this work into exploring quantitative methods for assessing the impact of food security and nutrition interventions on individuals living with HIV and their households.^{ix} FANTA also recognizes the lack of quantitative methods for monitoring and evaluating food security activities in the context of HIV/AIDS and calls for field testing and refinement of appropriate indicators that take into consideration the unique situation of areas with high prevalence of HIV/AIDS, as well as capacity building for tracking these issues (FANTA and WFP 2007).^x

Africare's Use of MAHFP. Since 2007, the Food and Nutrition Technical Assistance (FANTA) project has required all Title II food security programs to include the MAHFP indicator as one of the core indicators for tracking project impact (Bilinsky and Swindale 2007:1). Africare has over a decade of experience using the MAHFP indicator to track food security impacts in all of its programs with both qualitative and quantitative methods.^{xi} Africare's experience with MAHFP in Burkina Faso has included exploring its utility in targeting the most vulnerable households^{xii} and linking this indicator with specific types of health and nutrition behaviors.^{xiii} However, to date no Africare program has a tool specifically geared for targeting support to HIV/AIDS-affected households. The pilot projects in Rwanda and Burkina Faso initially assumed that all HIV/AIDS-affected households would be food insecure. Better understanding and targeting of households affected by HIV/AIDS is needed. This follow-up pilot study in Burkina Faso aimed to describe the level of vulnerability of HIV/AIDS-affected households based on the Months of Adequate Household Food Provisioning (MAHFP) and how this related to (or didn't relate to) other household characteristics that may contribute to a better understanding of the vulnerability of households of PLHIV to food insecurity.

Selected Characteristics Relevant to Vulnerability of HIV/AIDS-Affected Households.

Given the far-reaching implications of

HIV/AIDS, a number of household characteristics are relevant when addressing vulnerability to food insecurity in the context of HIV. These factors fall under human, financial, physical, social, political, and natural capital (FANTA and WFP 2007). For example, HIV/AIDS negatively affects energy levels and capacity to engage in labor-intensive livelihood activities (hence the focus on labor-saving technologies for HIV/AIDS-affected households [FANTA and WFP 2007:167 and FAO, http://www.fao.org/hiv aids/responses/labour_en.htm]), which falls under human capital.

This pilot study explored the six following factors that are relevant to understanding the link between HIV/AIDS, livelihood activities, and vulnerability to food insecurity. Many of the factors that are relevant to food security in the context of HIV (of which these six are only a portion) have a bi-directional relationship with HIV; in other words, they affect risk associated with HIV and they are affected by HIV.

1. The level of education of the household head is thought to impact income-earning opportunities and livelihood potential in the context of HIV (as well as in areas with out high HIV prevalence). In addition, high HIV prevalence has a negative impact on formal and informal education.
2. The occupation or profession of the household head dictates the energy demands and cash input and resources needed to make a living, all of which are affected by the presence of HIV.
3. Participation in income generating activities (long-thought of as a way to decrease vulnerability to food insecurity^{xiv}) is an activity that often requires cash investment, which may be difficult to obtain for households that have had to liquidate their resources to pay for medical treatment for PLHIV and simply to pay for day-to-day expenses in the face of losing household labor due to an individual becoming infected with HIV (at least in the later stages of the disease).
4. Household composition factors, such as the number of household members and ratio of active workers to non-active household members, were explored due to interaction between HIV/AIDS and household composition and labor supply and demand.
5. The number of individuals in the

household living with HIV was compared to food security status to see if this was a major risk factor for food insecurity.

6. Time lapsed since diagnosis of HIV was also explored due to the negative impacts of disease progression on malnutrition, energy levels, and labor capacity of the PLHIV. Duration of the disease is long and therefore draws down resources in a long-term way. At the same time, there may be time during disease duration for households to develop long-term coping strategies. Therefore, these factors made it important to explore the relationship between duration of illness and vulnerability to food insecurity.^{xv}

Malnutrition and HIV/AIDS. HIV/AIDS attacks the immune system, weakens the body, and renders people vulnerable to infections and often unable to do labor-intensive activities. Malnutrition, which weakens the immune system of individuals with HIV, can accelerate the progression to AIDS (Piwoz and Preble 2000 and FANTA 2004). Therefore, proper nutrition is indispensable for helping people suffering from HIV to preserve both their health and their quality of life. To address this situation, the ZFSI II project has made nutrition an important sub-component of its global activities focused on people living with HIV or AIDS since 2005. These activities are being executed in collaboration with local community organizations and technical services related to the Ministry of Social and National Solidarity and the Health District. However, proper nutrition of a person living with HIV (PLHIV) is more complex than just providing enough food to the household (measured by MAHFP, which focuses mainly on cereals) or to the individual with HIV (presumably linked to, but not tracked entirely by MAHFP since it does not explore distribution of food portions between household members). HIV reduces the appetite of the infected person during certain stages of the disease, making it more difficult to ensure they eat enough of the right kinds of foods to receive proper nourishment. Furthermore, HIV and

AIDS reduce the capacity of the individual's body to absorb nutrients and actually increases the total calories they need to consume (FANTA 2004). FANTA's recommendations for nutritional intervention include eating a diverse diet that includes different sources of proteins (meats, fish, nuts, and legumes), fruit, vegetables, and starches/grains. In addition, to assist individuals with both nausea and loss of appetite that are common during certain stages of infection, FANTA recommends consumption of more frequent small meals throughout the day (FANTA 2004). In addition to the six household factors listed in the previous section, this pilot study responds to some of these recommendations by exploring three of the relevant nutritional factors:

1. Consumption of protein from meat and fish,
2. Consumption of fruit, and
3. The number of meals consumed on a daily basis in the household.

Methods: In January of 2008 a total of 55 households with at least one individual living with HIV or AIDS completed the questionnaire (Annex 1) that touched on food availability, health seeking behavior, employment, HIV/AIDS stage, education, and other household characteristics. Households were grouped into the three categories based on level of food insecurity (Table 1). These are the same categories used by ZFSI II. The details of the sample and sampling method and the distribution of sampled households based on age and sex of the head of household, occupation and education level of head of household, size of household, and number of active workers in the households are presented in Annex 2.

Results and Discussion: The data and discussion presented below are organized under the following three themes.

- Food security level of households of PLHIV compared to general ZFSI II household food security levels.

Table 1. Levels of Food Insecurity Based on MAHFP

Number of Months able to Satisfy Hunger of Household Members	Level of Food Insecurity
0 to 3 months	Most Food Insecure
4 to 11 months	Moderately Food Insecure
12 months	Least Food Insecure

- Household food security levels compared to specific household characteristics (education level, occupation, and participation in income generating activities [IGAs] of household head number of active workers in household; number of PLHIV in the household.; and time since HIV diagnosis was received).
- MAHFP compared to specific nutritional concerns relevant to people living with HIV or AIDS (consumption of fruit, consumption of meat and fish, and frequency of meals of PLHIV).

Food Security (based on MAHFP) of Households of PLHIV. To calculate the Months of Adequate Household Food Provisioning, the team used a variation of the standard quantitative method that Africare has used in its programs (Annex 1). For the entire sample of households with PLHIV, the average number of Months of Adequate Household Food Provisioning was 2.2 months. More than three-quarters (79%) of the households interviewed in this study were in the most food insecure category (0-3 months of adequate food provisioning), approximately 10 percent of households of PLHIV were classified as moderately food insecure (4-11 months of adequate food provisioning), and only five percent were classified as least food insecure (12 months of adequate food provisioning) (Table 2).

The average MAHFP for households of PLHIV (2.2 months) was substantially below the average MAHFP (6.8 months) for the ZFSI II project villages at baseline in 2005 (Konda and Nanema 2005:40-41) and even further below the mid-term figure of 7.3 months in 2007 (Adelski et al. 2007), confirming that on average households with at least one individual living with HIV are

at serious risk for food insecurity.^{xvi} A much higher percentage of the households of PLHIV were also in the most food insecure category than for the ZFSI II project area as a whole (Table 2). In fact, only three households in this sample were classified as having adequate food for 12 months (least food insecure category) and only six households were classified as having 4-11 months of adequate food provisioning (moderately food insecure). The severely skewed data in this pilot study made it difficult to conduct statistical analysis of the results. Therefore, a descriptive approach has been taken.

Complicating the assessment of food provisioning is the increased appetite of individuals living with HIV at certain stages of the disease and the lack of appetite at others stages (FANTA 2004). These changes in appetite affect the perception of adequate food intake for that individual. Furthermore, individuals living with HIV or AIDS also need more calories, regardless of their change in appetite (from 10 to 30 percent more for adults and up to 100% more for children [FANTA 2004]). What is still unclear is whether these factors are incorporated into responses on adequate food provisioning when MAHFP survey questions are asked.

Household Characteristics and Food Insecurity.

Level of Education of Heads of Households of PLHIV Compared to Food Insecurity. The percentage of literate household heads is higher in households classified as least food insecure (67%) than in the households classified as moderately food insecure (33%) or most food insecure (33%) (Figure 1). These data support

Table 2. Food Security Level of HIV/AIDS-Affected Households Based on MAHFP

Food Security Category (based on MAHFP)	Number of Households of PLHIV	Percentage of Households of PLHIV	Percentage of Households in the ZFSI II Project Area**
Most Food Insecure	46	83.64	52.97
Moderately Food Insecure	6	10.90	33.91
Least Food Insecure	3	5.45	13.12
Total responding to this question	55*	100	100

*Not all of the 60 households responded to this question.

**Based on research conducted between June and July 2005 in conjunction with the project baseline evaluation.

investments in literacy programs for households affected by HIV/AIDS as a way to mitigate their vulnerability (particularly for the most food insecure households).

Occupation of Head of Households with PLHIV Compared to Food Insecurity. Data show that none of heads of the three households of PLHIV that are classified as least food insecure practice agriculture. In these households, two are merchants and one is a welder. In contrast, the majority of households classified as moderately food insecure or most food insecure listed agriculture as the occupation of the household head (100% and 89%, respectively—Figure 2). The household heads who responded as having no employment (2%) were all in the most food insecure category.

These data warrant further investigation of the role that livelihood types play in increasing or decreasing vulnerability of households with PLHIV. Due to the fact that HIV negatively impacts the labor capacity of the PLHIV, as well as other households members who spend time caring for this individual, many development efforts aimed at assisting HIV/AIDS-affected households focus on promoting agricultural labor-saving techniques (FAO, http://www.fao.org/hiv aids/responses/labour_en.htm). However, more focus may need to be on

exploring changes in livelihood strategies as a coping mechanism for HIV/AIDS-affected households. FANTA and WHO have listed “change in household income and sources of income, compared to previous year” as a potential human capital indicator to assess risk and vulnerability of HIV/AIDS-affected households (FANTA and WHO 2007: 48), which may need to be incorporated into M&E tracking systems in the future. While this could indicate vulnerability (due to the fact that they can no longer make a living the way they did previously) it may also represent a coping strategy and could offer practical, context-appropriate solutions for HIV/AIDS-affected households.

The data presented here cannot conclude this since it is now known whether the three households (who are most food secure and do not have a household head practicing agriculture) ever practiced agriculture, since questions were not asked on the history of occupation of the household head. Furthermore, the food security or welfare status of these households prior to an individual becoming infected with HIV was not explored, so it can not be ruled out that they are better off now simply because they were better off to begin with and had the resources to take

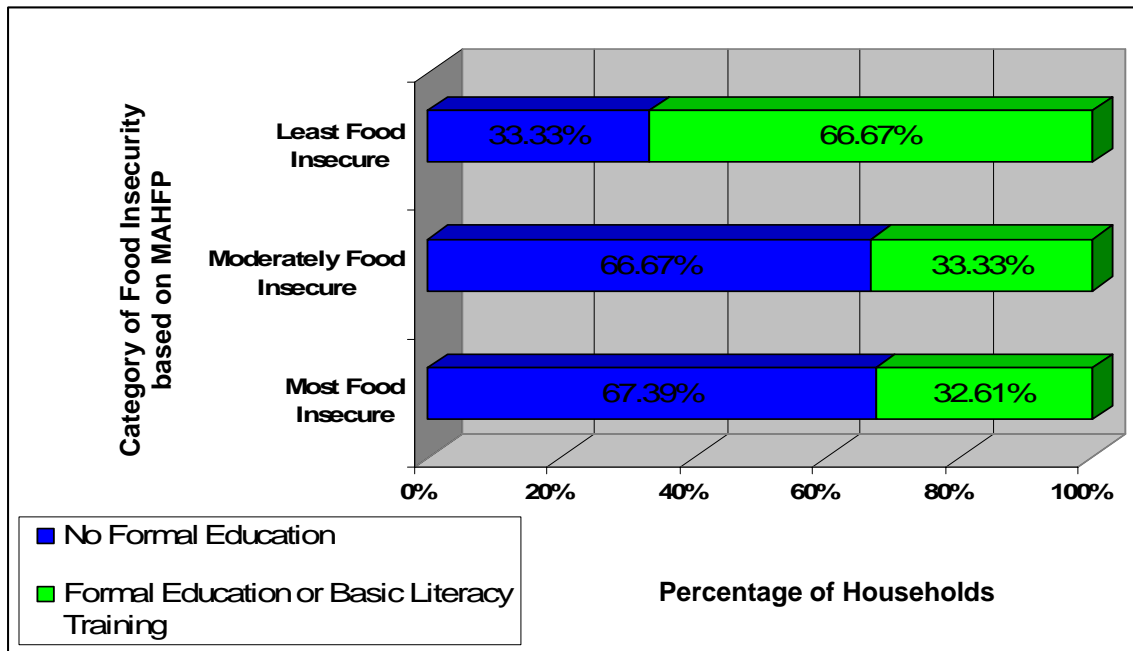


Figure 1. Literacy of Heads of Households of Compared to Food Insecurity Level based on MAHFP

better care of PLHIV. Furthermore, the gender of the household head was not recorded in this study and that may play a role in livelihoods and welfare outcomes for HIV/AIDS-affected households (as was found to be the case in Zambia [Wiegiers et al. 2006]). What these data do suggest is an additional line of research is needed to understand whether agriculture may be too labor-intensive for households with individuals living with HIV or AIDS and whether successful coping strategies include relying less on agriculture, and if so, which types of households would do better under this scenario. When this research is undertaken, another factor that should be explored is the impact that labor-saving techniques are having on the well-being of HIV/AIDS-affected households if any are promoted in the intervention area. Furthermore, since there are two other organizations in the intervention area that are promoting agricultural techniques, but do not specifically target or track participation of HIV/AIDS affected households, it would be useful for Africare to explore participation of

HIV/AIDS-affected households in general food security intervention strategies such as improved agricultural technique, micro-credit operations, and any other interventions that Africare is able to track.^{xvii} Additionally, the livelihood activities of other household members were not explored and may significantly impact food insecurity.

Income Generating Activities of Heads of Households of PLHIV Compared to Food Insecurity. In the most food insecure category, only 13 percent of household heads practice income generating activities (Table 3). In the households classified as moderately food insecure, 17 percent of household heads practice income generating activities, and in the least food insecure category, 100 percent (n=3) of the households practice an IGA.

FANTA identifies the time household members spend on income generating activities as one of the potential financial capital indicators to evaluate risk and vulnerability in HIV/AIDS-

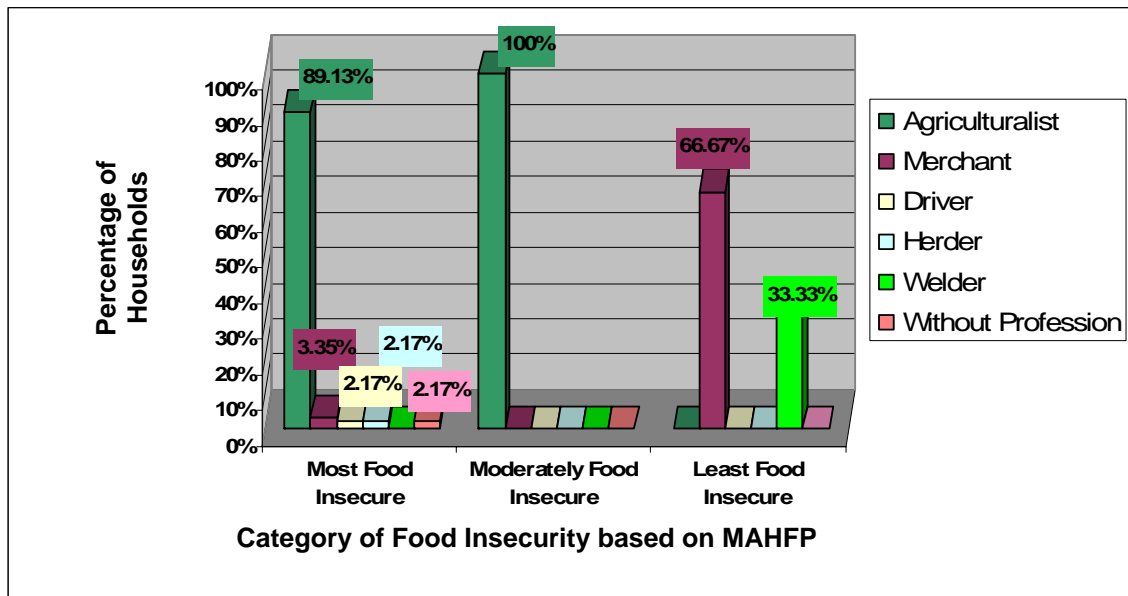


Figure 2. Profession of Heads of Households of PLHIV Compared to Food Insecurity Level based on MAHFP

Table 3. IGA of Household Heads Compared to Food Insecurity Level of Households of PLHIV

Food Insecurity Category (based on MAHFP)	Percentage of Households of PLHIV Practicing IGA
Most Food Insecure (n= 46)	13.04
Moderately Food Insecure (n=6)	16.66
Least Food Insecure (n=3)	100.00

affected households (FANTA and WFP 2007: 48). While income-generating activities may be a way to increase food security of HIV/AIDS households (as suggested by the data), it is important to note that only three households are food secure (least food insecure), indicating there may be other barriers for this type of occupation for HIV/AIDS households. Exploring the practicality of HIV/AIDS-affected households participating in IGAs should be a priority and should study access to start-up income, transportation to markets, timing, and schedule of occupational demands in relation to the nature of living with HIV.

Average Household Size and Number of Active Workers Compared to Food Insecurity. Agricultural scientists generally consider household size to be the best indicator of the food demands placed on a household and the ratio of “active” workers to total residents as one of the best indicators of a household’s capacity to engage in agricultural production.^{xviii} For the purposes of the study, an active worker was defined as, any person aged 15 to 60 years old living in the household, in full possession of their physical and mental capacities who participates in one or more production activities that contribute to the well being of the household.^{xix}

The affect of HIV on dependency ratios is not straight-forward given the other factors that also affect dependency ratios. Since HIV decreases the number of reproductive-age people (which often corresponds to working age), it tends to increase the dependency ratio; however, most countries are also experiencing decreased fertility, which decreases the dependency ratio. At the same time, one response to the HIV epidemic is for individuals who were previously not working (children and elderly) to take on the responsibility of working (i.e., age is not as relevant to dependency ratio data in the context of HIV).

In this study, a ratio of non-active household (HH) members to active workers (non-active members/active workers) was calculated for a total of 51 households for which there were complete data. Although the least food insecure households of PLHIV had the smallest number of active workers (an average of 1.3 and no more than 2 active workers per household [n=3] [Figure 3]), they also had the smallest average household size (under seven persons) (Figure 4)

and the lowest ratio of non-active members to workers at 1.5 (meaning there were 1.5 non-active HH members for every active worker, on average). The households classified as moderately food insecure and most food insecure had more active workers, but also larger households. The ratio of non-active HH members to active workers was 1.9 for moderately food insecure households and 2.6 for the most food insecure households. A substantial difference that indicates active workers in the most food insecure households must provide for more dependent individuals.

It is not clear whether AIDS orphans^{xx} or elderly (over 60 years of age) were counted as active workers. Wieggers et al. (2006) found that participation in livelihood activities of children under the age of 15 varied in households affected by HIV/AIDS based on the sex of the household head, whether the household had orphans or a PLHIV, whether it was an elderly-headed household, and based on the sex of the children. These factors need to be considered in the future.

Number of Infected Persons in Household Compared to Food Insecurity. Based on the sampling design of this study, all the households interviewed had at least one person living with HIV or AIDS. The analysis compared food security levels in households with one PLHIV to households with more than one PLHIV to explore if having additional household members with HIV or AIDS increases food insecurity. Approximately 50 percent (or three households) of the moderately food insecure households in the study had more than one person living with HIV or AIDS (Table 4). Only 29 percent of the most food insecure households had more than one individual living with HIV or AIDS. None of the three least food insecure households had more than one person living with HIV or AIDS.

The non-linear relationship between number of HIV-infected household members and food security status needs to be explored further. The relationship of households that are most food insecure having a lower percentage of more than one PLHIV compared to moderately food insecure households may be due to the timing of the infection (see data below that shows the least food insecure households have known about the HIV status for longer).^{xxi} It may be fruitful to include questions on history of household members and infection and mortality (though these are sensitive topics), as well as history of

economic status of households affected by HIV/AIDS.

Time Lapsed Since HIV Sero-Positive Diagnosis and Food Insecurity. All three households categorized as least food insecure reported finding out that the PLHIV was HIV sero-positive earlier (either 4 to 6 years ago or 7 to 10 years ago) compared to 33 percent of moderately food insecure households and 31 percent of most food insecure households who found out either 4 to 6 years ago or 7 and 10 years ago (Table 5). The majority of households in the most food insecure category (69%) were diagnosed between 0 and 3 years ago.

While this information is useful, neither the questionnaire design nor the sample size permit an in-depth exploration of why this pattern exists. The better food security situation of these households who also have known for a longer period of time may be due to the fact that compared to others who were diagnosed at the same time--these were the household that had been (and still are) in a better economic position. If the three least food insecure households just happen to represent households who were originally better off economically, this would have helped them be more food secure throughout (even before they were affected by HIV/AIDS) and enabled them to receive medical treatment and antiretroviral therapies, and (therefore) survive longer. Hypothetically,

individuals who were diagnosed at the same time (4 to 6 or 7 to 10 years ago), but who didn't have the same resources then (i.e., were worse off in terms of income, food security, assets) may have had less access to medical treatment and (therefore) may have been more likely to die sooner (before reaching the 4 to 6 year or 7 to 10 year marks after diagnosis). These hypothetical households would not have been picked up in this sample, which is only based on a person living with HIV. It is possible that the surviving members of some of these households merged with other households and increased the ratio of non-workers to workers and decreased food security. Furthermore, it may be that households who have only recently found out about the HIV status of a member (none of which are food secure), may not yet have had the opportunity to adapt and implement successful survival strategies. Follow up is needed with the 45 most food insecure households at the four to six year mark and again at the seven to 10 year mark to see how they have progressed. The picture of households over time changes in the context of HIV and better tracking is needed to understand the dynamic of change. One of the current arguments is that the household is not the best unit of analysis in the context of HIV since households affected by HIV/AIDS are often more likely to dissolve or merge than non-HIV/AIDS households (Gillespie and Kadiyala 2005).^{xxii}

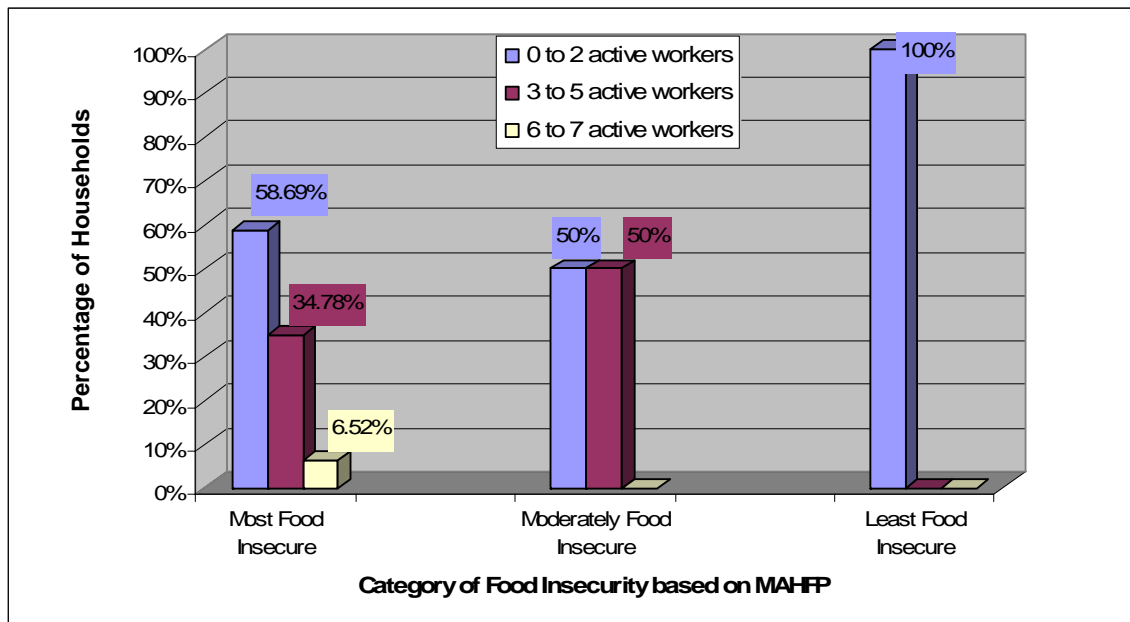


Figure 3. Number of Active Workers Compared to Food Insecurity Level of Households of PLHIV

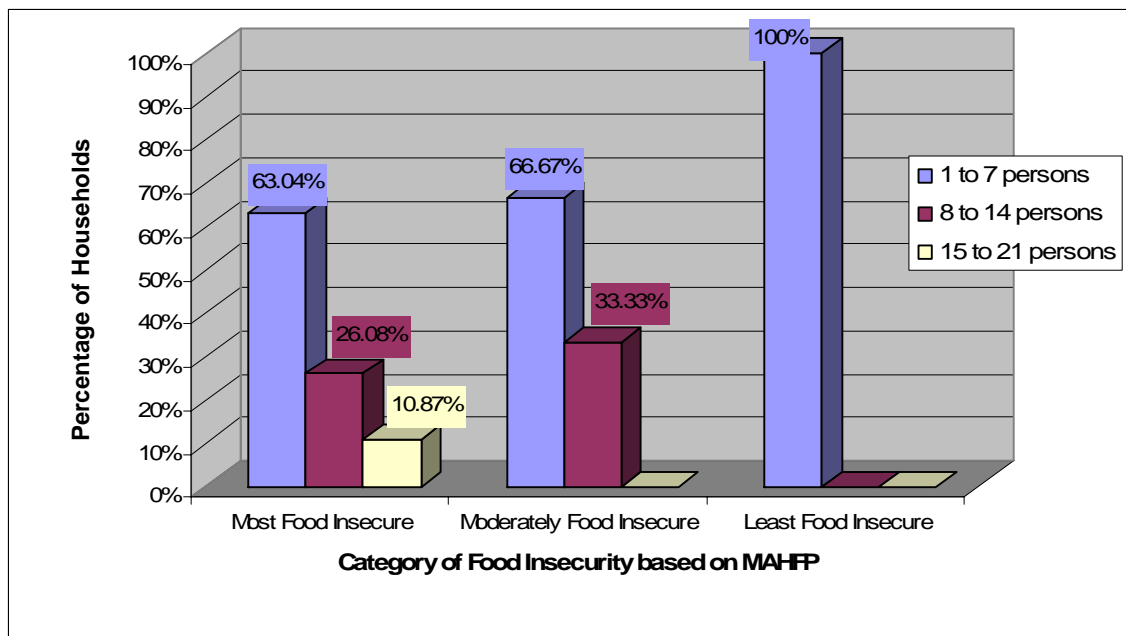


Figure 4. Household Size Compared to Food Insecurity Level based on MAHFP

Table 4. Number of HIV-Infected Persons Compared to Food Insecurity Level based on MAHFP

Level of Household Food Insecurity	Percentage of Households with 2 to 3 PLHIV
Most Food Insecure (n=46)	28.26
Moderately Food Insecure (n=6)	50
Least Food Insecure (n=3)	0

Table 5. Length of Time Aware of HIV Sero-Positive Status Compared to Food Insecurity Level

Level of Household Food Insecurity	Percentage of HIV/AIDS HH per Category of Length of Time Knowing Sero-positive Status		
	0-3 years ago	4-6 years ago	7-10 years ago
Most Food Insecure (n=45)	68.89	24.44	6.67
Moderately Food Insecure (n=6)	66.67	0	33.33
Least Food Insecure (n=3)	0	66.67	33.33

Nutritional Characteristics Compared to Food Insecurity. This study also focused on more qualitative nutritional characteristics in response to recommendations by Maslowsky et al. (2008) and FANTA (2004) that people living with HIV or AIDS need tailored nutritional counseling. The following data are intended to explore the nutritional context outside of the number of months during the year when households have enough food (mainly cereals) to satisfy their hunger. The nutritional data have been compared to MAHFP to see if MAHFP paints a picture that is consistent with other nutrition indicators that are important in the context of HIV/AIDS.

Underlying the aim to improve the nutrition of people living with HIV or AIDS is the hope that this will improve their ability to respond to new antiretroviral therapies.

Number of Daily Meals Consumed Compared to Food Insecurity. The survey responses indicated that all three households of PLHIV that are classified as least food insecure (based on the MAHFP) and 50 percent (or three) of those classified as moderately food insecure reportedly eat three meals a day. Most (87%) of the households with a PLHIV classified as most food insecure reported eating two meals a day

(Figure 5). FANTA’s recommendation for dietary responses to the symptoms of nausea and lack of appetite (which occur during different stages of the disease) for individuals with HIV include eating more frequent meals. Meaning that households who are able to offer meals more frequently are better able to help mitigate some of the negative side affects of HIV and, therefore, improve nutrition and caloric intake for PLHIV. It makes sense that those households that are most food insecure would be less able to serve more meals each day. Ways to divide what food is available for household members into more frequent meals (even if they are smaller) may assist PLHIV improve their intake and nutrition without an increase in food quantity. This could be incorporated into dietary and nutritional guidelines for PLHIV.

Consumption of Meat and Fish Compared to Food Insecurity. There are no data to suggest that individuals living with HIV need to consume more protein compared to those who are not living with HIV (FANTA 2004, FANTA 2007); however, FANTA (2004) warns that protein consumption should be a specific focus of PLWHA in Sub-Saharan Africa since it is likely the are already suffering from a micro or macro nutrient deficiencies and the consequence of nutritional deficiencies for these individuals with impaired immune systems is potentially devastating. Therefore, data were collected on the intake of meat and fish protein in particular to see if it correlated with MAHFP. This comparison of MAHFP and meat and fish

consumption is based on the assumption that food secure households will be more able to offer family members meat and fish during meals.

All three of the least food insecure households reported consuming meat or fish three to four days a week compared with only 17 percent of households with PLHIV classified as moderately food insecure and two percent of households with PLHIV classified as most food insecure (Figure 6). Interestingly, a seemingly larger percentage of households in the moderately food insecure category (67%) reported eating no meat or fish compared to the most food insecure category (57%). Furthermore, three (7%) of the most food insecure households reported eating meat or fish 5-7 days per week. Follow-up is needed to understand the reasons behind this. Unfortunately, there was very little specific dietary information collected in the survey about how consumption by PLHIV was adjusted (if at all) vis-à-vis the rest of the household members. It would also be useful to ask about intake of legumes and nuts as sources of protein, which are also recommended by FANTA for PLHIV.

Consumption of Fruit Compared to Food Insecurity. The nutritional guidelines supported by FANTA advocate the need for PLHIV to eat a diverse diet that includes orange and yellow fruits. Two of the three least food insecure households (67%) report eating fruit three or four days a week, while 17 percent of the moderately

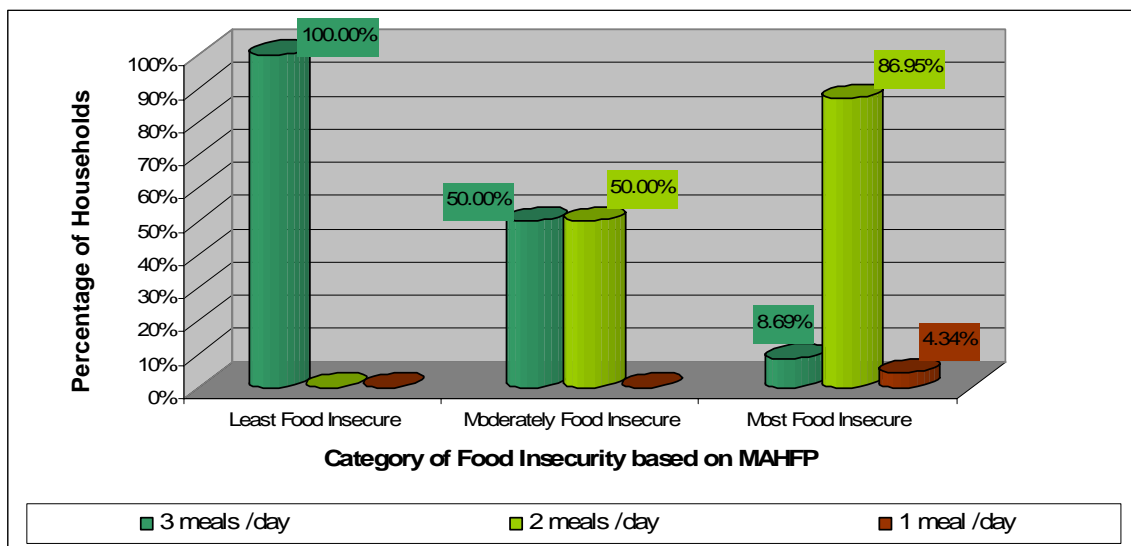


Figure 5. Number of Meals Consumed Daily Compared to Food Insecurity Level of Households of PLHIV

Food insecure households and none of the most food insecure households reported eating fruit three to four days per week (Figure 7). This trend of a higher percentage of more food secure households eating fruit more frequently was not mirrored by data for consumption of fruit one to two times per week nor for lack of consumption of fruit during the week. Approximately 33 percent of the most food insecure households reported eating fruit one to two days per week. However, none of the households classified as moderately food insecure reported eating fruit one to two times per week. Instead, the majority (83%) of these moderately food insecure

households reportedly eat no fruit at all, where (although still the majority) only 57 percent of the most food insecure households reported eating no fruit at all during the week.

Similar to the consumption of meat and fish, a higher percentage of the least food insecure household consume fruit more frequently. A higher percentage of moderately food insecure households report eating no fruit at all compared to the most food insecure households. These data seem to show that a higher percentage of the households that are moderately food insecure

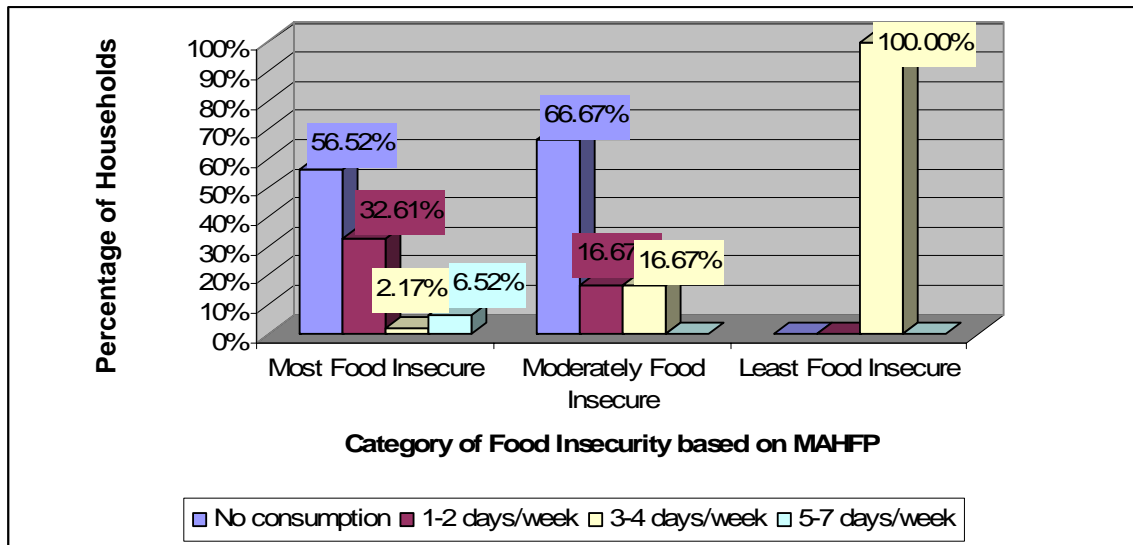


Figure 6. Number of Days per Week that Meat or Fish Consumed Compared to Food Insecurity Level of Households of PLHIV

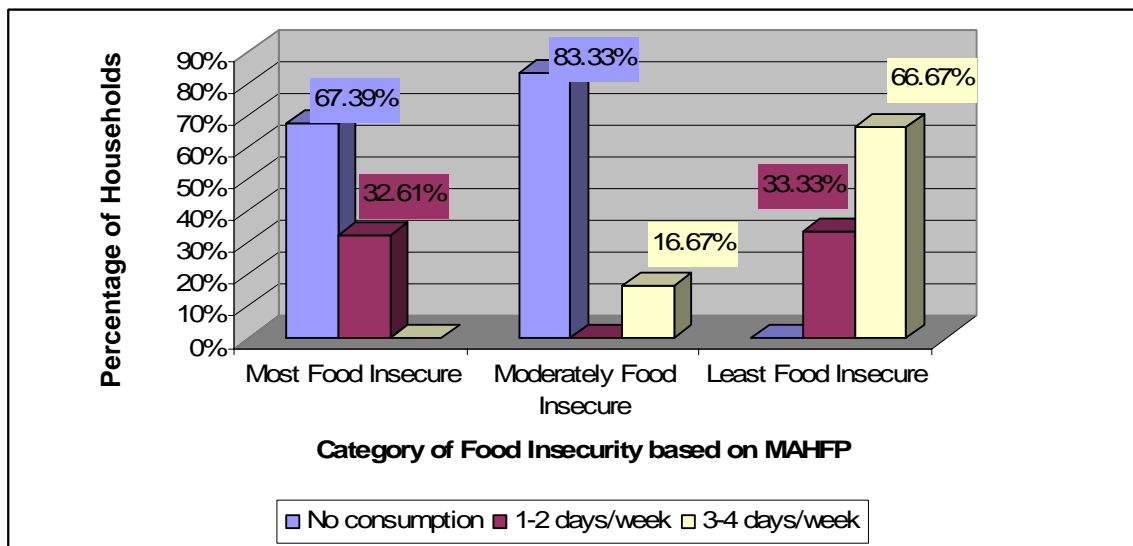


Figure 7. Frequency of Fruit Consumption Compared to Food Insecurity Level

(compared to those who are most food insecure) are more vulnerable to micro and macro nutrient deficiencies based on meat and fish protein and fruit. This result does not match MAHFP data used to determine vulnerability. It is worth exploring the reasons why a higher percentage of moderately food insecure households are more vulnerable than the most food insecure households in these specific areas (number of days per week that meat and fish and fruit are consumed).

Conclusions:

Measure of Food Insecurity (based on MAHFP).

The data show that the majority (95%) of households with at least one person living with HIV or AIDS are food insecure based on MAHFP (either classified as moderately food insecure and able to satisfy hunger between 4 and 11 months of the year or most food insecure and able to satisfy hunger for zero to three months of the year). The substantially lower average MAHFP for households with individuals living with HIV or AIDS (2.2 months compared to 6.7 months for all ZFSI II households) confirms that the existence of at least one individual with HIV is a serious risk factor for household vulnerability to food insecurity. Africare's focus on a revised quantitative MAHFP indicator that will isolate the food security status of households from food aid may further illuminate both the devastating effects of HIV/AIDS on household food security and the impact that food aid to these households has on improving their food security.^{xxiii} Furthermore, collection of MAHFP data for HIV/AIDS-affected households has not been explored in the context of the increased caloric need of individual suffering from HIV/AIDS and whether this nutritional education message has been internalized by all members of households with individuals living with HIV. This topic should be a subject of future research on this indicator. If individuals living with HIV need more calories, then it is necessary to assess if they are actually receiving more. Data that reflect no change in MAHFP (even for food secure households with PLHIV) may actually indicate a worsening of the food security status compared to need (i.e., increased need that accompanies infection with HIV). Tracking project impact on HIV/AIDS-affected households must take this into consideration and it is essential for project staff to know whether

beneficiaries from HIV/AIDS-affected households know that PLHIV need more food.

Following the model of using an HIV lens that has been proposed by Loevinsohn and Gillespie (2003), Africare's routine use of MAHFP as an indicator of food security was examined in the context of HIV. Given MAHFP's focus on quantity of cereals consumed and that FANTA has different dietary recommendations for PLHIV and that data presented here comparing MAHFP to consumption patterns of fish and meat and fruit found that the trends are not identical with MAHFP means that Africare programs need to track food security and nutritional security of HIV/AIDS-affected households with additional indicators that address dietary diversity. One option is to use the Household Dietary Diversity Score (now required by FANTA for Title II programs regardless of HIV prevalence). In exploring the use of HDDS with an HIV lens it will be necessary to consider how appropriate measures of aggregate household consumption patterns are for nutrition of individuals living with HIV (i.e., distribution of food portions and diversity between household members). Furthermore, Africare may want to consider an alternative to household measures given the trend of household dissolution in high HIV prevalence areas and should also considering exploring assistance to orphans living on the streets (if this is a substantial portion of the population).

Household Characteristics Compared to Food Insecurity. One of the most interesting results of this study was that none of the household heads of the three least food insecure households



Mother of twins living with HIV and a beneficiary of ZFSI II direct distribution activities. Photo credit: Rosine CISSE

practice agriculture as their main occupation. The reason for this link is still unknown and due to the small number of households with PLHIV that are food secure in this sample (three), more data need to be collected. Further investigation should consider the history of occupation of the household head and other members of the household (i.e., whether they do or ever did practiced agriculture).

Reflecting the link with occupation, the data show that the practice of income generating activities (of any sort) was linked with higher household food security. However, it is not clear from this data how closely related the occupation of the household head as a merchant and participation in IGA activities were. Furthermore, nothing is known about the occupation or practice of IGAs by other members of the households. Indicators that explore changes in HIV/AIDS-affected household characteristics over time should be developed and tested. Investigation into changes in livelihood activities of HIV/AIDS-affected households may lead to discovery of replicable survival strategies that could turn into a program similar to that of the successful Hearth program for rehabilitation of malnourished children that is based on the successful strategies of a mother facing the same situation as households with malnourished children (see Maslowsky et al. [2008: AFSR No. 12] for review of successful elements of Hearth in Guinea).

Many studies (Wiegiers et al. 2006; Yamano and Jayne 2004; Urassa et al. 2001) on the impacts of HIV/AIDS have found that vulnerability of households and the response to mortality or morbidity depends on a number of factors including sex and age of the household head, whether or not the households has adopted orphans, and the age of OVC (UNICEF 2005).^{xxiv} One weakness of this pilot study was that it did not disaggregate data based on sex or age of household head or on the presence or age of orphans.

Not surprisingly, the ratio of non-active HH members to active workers in HIV/AIDS-affected households is linked to household food security status based on MAHFP. There was insufficient information on how “active workers” were defined and whether AIDS orphans were being counted as active workers. Given that individuals who are normally considered too young or old to work may need to work due to

the negative impacts on labor supplies in households affected by HIV/AIDS, this should be explored further, particularly how the different types of HIV/AIDS-affected households (i.e., female headed, male headed, PLHIV, orphans, elderly) cope with labor shortages.

Nutritional Characteristics Compared to Food Insecurity. Quantity and quality of food intake are important for PLHIV (FANTA 2004). While MAHFP often matches other variables that are linked with vulnerability, this study found that this was not true for meat and fish consumption and fruit consumption (for which a higher percentage of moderately food insecure compared to most food insecure households reported zero consumption). Other indicators (such as HDDS mentioned above) should be incorporated into tracking systems for households affected by HIV/AIDS. Furthermore, the actual intake patterns of the PLHIV should be linked with any HH level indicators selected. This study explored only a few of the factors that are relevant to diversified diets for PLHIV. Future research should include questions on other FANTA recommended food groups (FANTA 2004).

Households with PLHIV may not be able to offer as many meals each day as needed to prevent nausea and to improve appetite (and therefore nutrient and caloric intake) of PLHIV. Furthermore, more food insecure households are able to offer fewer meals per day. These factors can contribute to a weakened immune system and more rapid progression toward AIDS for PLHIV, which puts the household in a more vulnerable position for food insecurity because it drains financial, social, physical, and human resources.

One aspect of vulnerability to food insecurity in the context of HIV that has not been address here is that of prevention of infection with HIV in the first place. Since contracting HIV leads to a host of events that increase vulnerability to food insecurity, which includes increased pressure on surviving household members to engaged in high risk behaviors to mitigate the negative economic impacts of HIV/AIDS, this in turn puts them at risk for also contracting HIV and then suffering the consequences of poor nutrition and increasing vulnerability within their households. Stopping or mitigating the negative impacts of HIV will then prevent the situation where other household members find themselves more

susceptible to contracting HIV through engagement in high risk behaviors as the household situation worsens.

Recommendations: Based on the findings of this pilot study, the following are recommended to improve the food security status and tracking of households with individuals living with HIV in the ZFSI II project area.

- Indicators. Africare is in the process of developing a Critical Resource Information Brief that will propose a set of proxy indicators for PLHIV to be tested and validated and should consider adding proxy indicators for households with orphans or vulnerable children (OVC) and households that merged due to HIV/AIDS impacts.^{xxv} Food security status should always be tracked for these households. Africare may also want to consider use of developing separate indicators for individuals not living in households (homeless people or street children) affected by HIV since this population is not tracked by household indicators (if there are substantial numbers). Aside from identifying households with PLHIV, a set of appropriate indicators need to be established to measure food and nutrition security in households of PLHIV (both for the PLHIV and the other household members). HDDS is one of the indicators required by FANTA that would provide supplemental information about quality of food security that is so important for PLHIV. However, Africare should explore differential dietary diversity of PLHIV compared to the entire household to determine if HDDS is the best indicator to use and what might be lost in using a household level indicator.
- Literacy. Encourage participation of heads of households with individuals living with HIV in local literacy campaigns. These activities increase their capacity to execute income generating activities, which is linked with higher food security levels.
- Income Generating Activities. Given that rainfed agriculture in Zondoma Province is highly vulnerable to climatic events (e.g., floods and droughts) and that HIV/AIDS households may not have sufficient labor for agricultural activities, the ZFSI II project needs to explore first

the feasibility of participation in IGAs of households of PLHIV. If it is determined that this is a feasible livelihood strategy to help these households, then Africare should encourage participation in income generating activities for heads of households with individuals living with HIV or AIDS in order to help them diversify their household revenues from livestock, irrigated dry season crop production, and crafts.

- Livelihood Changes and Coping Strategies. Africare should continue to explore successful occupations for household affected by HIV/AIDS, including changes in occupation or livelihood activities. The sample size here for food secure households was too small to make major conclusions for appropriate livelihood strategies; however the fact that none of the three food secure household heads practiced agriculture suggests the need for further study of appropriate livelihoods for HIV/AIDS-affected households. Data should be collected from HIV/AIDS affected households (PLHIV, orphans, and household affected by the death of a household member from AIDS) on changes in livelihood strategies since diagnosis. Furthermore, since FAO^{xxvi} recommends labor saving techniques (and FANTA recommends indicators to track this) for HIV/AIDS households, the success of adoption and practice of these should be tracked to see if this is appropriate and for which types of HIV/AIDS-affected households. Opportunities to use households who have successfully coped with the impacts of HIV/AIDS as models for other households in the region should be noted (following a Hearth-type model).
- HIV/AIDS Lens to Program Activities. Given the fact that the vast majority of the HIV/AIDS-affected households targeted by this sub-component of the program are classified as highly food insecure, the ZFSI project needs to integrate the specific needs of HIV/AIDS-affected households into their activities (essentially adopting use of the HIV lens presented by Gillespie and Kadiyala [2005]). One part of this will be assessing the utility and changes needed in standard measurements (such as MAHFP and dependency ratios). This program needs to be strengthened by

a public awareness campaign to promote other behavior changes that HIV/AIDS-affected households will need in order to get the maximum use from any direct distribution of food assistance (such as more frequent daily meals). This communication program should include culinary demonstrations, as well as nutritional discussions (including those specific for HIV/AIDS) and messages about family planning. Another component of this objective will be to track the participation of HIV/AIDS-affected populations in all general Africare food security program activities to the extent possible.

- Nutrition Education Tailored to PLHIV. Africare should continue exploring the implications of using the MAHFP indicator in the context of HIV/AIDS-affected households. There is a need to verify whether individuals living with HIV and the other household members (in particular those answering the MAHFP survey) are incorporating the need for increased caloric intake for people living with HIV (based on increased energy needs). This has implications for adjusting the survey based on the presence of a HIV/AIDS nutritional education intervention in the regions where data are collected, setting targets for HIV/AIDS-affected households, and interviewing individuals living with HIV and AIDS, as well as food providers in the household. MAHFP has the potential (in that it addresses the household's perception of adequate food) to automatically incorporate the increased caloric needs of individual with HIV/AIDS; however, this needs to be tested and ground-truthed to be reliable and it depends on the individual with HIV/AIDS and the person answering the questions about MAHFP knowing of the increased caloric needs of individuals living with HIV—which in turn relies on nutritional education interventions that are tailored to the needs of PLHIV. This education component was also identified as a need by Maslowsky et al (2008) in Rwanda and Burkina Faso. The ground-truthing data on MAHFP in the context of HIV/AIDS and the data and follow up from this paper should be used to develop a draft guidance on MAHFP in areas of high prevalence of HIV/AIDS.

Another element of nutrition education that should be incorporated is that an increase in the number of meals offered (even without an increase in the quantity of food) may improve outcomes for PLHIV.

- Incorporate FANTA's Food Assistance Programming in the Context of HIV Guide. A complete review of FANTA's Food Assistance Programming Guide in the Context of HIV/AIDS (FANTA 2004) should be conducted with the intent of focusing on testing a set of practical (FANTA recommends that HIV/AIDS specific M&E elements be incorporated as much as possible into existing M&E systems) indicators based on Africare's experiences in their pilot projects in Rwanda and Burkina Faso. This is a new and budding area of research and Africare could contribute in a grand way if they do it quickly.^{xxvii}
- Future Studies. More comprehensive future studies on household food security status for HIV/AIDS-affected households should consider including data that disaggregate by sex of household head, whether there is a chronically ill individual in the household, and whether the household is caring for orphans (in line with recommendations of FANTA [2004:169]); data on relevant characteristics for ALL household members (e.g., occupation, IGA participation, frequency of meals); questions on changes in livelihood activities in the past, interviews with both PLHIV and the food preparer in the household (e.g., regarding how much is consumed by PLHIV and by others and knowledge of dietary recommendations for PLHIV); ages and livelihood work of all individuals in the household; and exploration of other coping strategies developed by households affected by HIV/AIDS.
- Changes in HIV/AIDS-Affected Households Over Time. Africare's attempt to look at the time lapse since diagnosis of HIV and how this related to food security status opened the door to research on time series data related to HIV. Africare should continue down this road by designing a study that will follow specific HIV/AIDS-affected households (disaggregated as recommended here) for a period of years

(at least 7-10 years). Ideally households would be initially interviewed shortly after feeling the impact of HIV or shortly after diagnosis in order to obtain recall data on livelihood and food security questions from before HIV-diagnosis or impact. This type of study could address barriers to IGA's and livelihood strategies currently recommended, successful coping strategies, as well as household composition changes and prevalence of merging and dissolving households and, therefore, utility of the household as the sole unit of analysis when addressing HIV/AIDS-affected populations.

To address some of the issues and recommendations above, Africare-Burkina should consider using a revised version of the questionnaire (Annex 3) during the final project survey.^{xxviii} Ideally the household information should be collected using one of the standard forms and guides developed by FANTA for the Household Dietary Diversity Score (HDDS). To facilitate the comparison of the nutritional status of the HIV/AIDS-affected households and the population at large (and to comply with FANTA and USAID requirements) Africare/Burkina should measure the HDDS (using one of the standard forms recommended by FANTA—which has been incorporated into the recommended revised questionnaire in Annex 3) in its final project survey for all households.

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Annex 1:
Original ZFSI II Questionnaire for HIV/AIDS Infected Individuals and Affected Households
On Household Food

Department of: _____/____/

Village of: _____/____/____/

Quartier: _____

Identification number: _____

Date of interview: /__/__/ __/__/ __/__/

We hope to exchange with you in order to better understand our household and the results of your last agricultural campaign.

1. General Information

1.1. What is the age of the household head? _____years Profession: _____

1.2. What is the level of education of the household head? (Write the number corresponding to the response)

- | | | |
|----|-----------------------------------|----------------------|
| 1. | Primary School/Franco Arab school | |
| 2. | Secondary or greater | <input type="text"/> |
| 3. | None | |
| 4. | Basic literacy courses | |

1.3. How many persons are in your household? /__/__/

1.4. How many persons in your household actually work?

1.5. Number of economically active persons in your household that have emigrated (<= in the last six months):

2. Food Security Management

2.1. How many times a day does your family actually eat?

2.2. Is your family able to eat as much as they want without needing food assistance?

- | | |
|--------|----------------------|
| 1. Yes | |
| 2. No | <input type="text"/> |

If yes, since the last harvests in October, how many months has your family eaten as much as they wanted?

If no, since the last harvests in October, how many months has your family eaten as much as they wanted?

3. HIV/AIDS-Nutrition

3.1. How long have you known you were seropositive? _____

3.2. Are there other seropositive persons living in our household?

- 1. Yes
- 2. No

If yes, how many? _____

3.3. Is your health care being monitored by a health agent?

- 1. Yes
- 2. No

If no, why?

- 1. Too far from health center.....
- 2. Doctor (nurse) absent.....
- 3. I don't have money
- 4. Don't know

If yes, for how long?

3.4. Did he (she) prescribe a special diet for you?

- 1. Yes
- 2. No

(If no, go to 3.5)

If yes, are you able to follow the special diet?

- 1. Yes
- 2. No

If no, why not?

- 1. Food not available
- 2. Don't have resources (money) to purchase food
- 3. Don't know where to find certain foods
- 4. Other (explain)

3.5 When you were not seropositive, how much did you eat?

- 1. More than now
- 2. Like now
- 3. Less than now
- 4. Don't know

3.6. How many times do you eat each day?

- 1. 1 time
- 2. 2 times
- 3. 3 times
- 4. More than 3 times
- 5. Don't know

3.7. During the past week, how many days have you eaten meat or fish?

- | | | |
|----|----------------|--------------------------|
| 1. | Have not eaten | <input type="checkbox"/> |
| 2. | 1 -2 days | <input type="checkbox"/> |
| 3. | 3 -4 days | <input type="checkbox"/> |
| 4. | 5 -6 days | <input type="checkbox"/> |
| 5. | 7 days | <input type="checkbox"/> |
| 6. | Don't know | <input type="checkbox"/> |

3.8. During the past week, how many days have you eaten fruit?

- | | | |
|----|----------------|--------------------------|
| 1. | Have not eaten | <input type="checkbox"/> |
| 2. | 1 -2 days | <input type="checkbox"/> |
| 3. | 3 -4 days | <input type="checkbox"/> |
| 4. | 5 -6 days | <input type="checkbox"/> |
| 5. | 7 days | <input type="checkbox"/> |
| 6. | Don't know | <input type="checkbox"/> |

3.9. Are you able to carryout activities that earn you money (income generating activities)?

- | | |
|--------|--------------------------|
| 1. Yes | <input type="checkbox"/> |
| 2. No | <input type="checkbox"/> |

If no, since when?

- | | |
|---------------------|--------------------------|
| 1. 3 months | <input type="checkbox"/> |
| 2. 6 months | <input type="checkbox"/> |
| 3. 1 year | <input type="checkbox"/> |
| 4. More than a year | <input type="checkbox"/> |

Thank-you for your collaboration

Annex 2: Methods and Household Characteristics for Sample

Method Details

The study took place over a 10-day period between January 19 and 31, 2008 in the town of Gourch. It was executed by five enumerators--two members of a local associations working with HIV/AIDS and three agents from the ZFSI II project. Rosine CISSE,^{xxix} and Issa Bassika SAVADOGO^{xxx} supervised the enumerators.

At the time of the study, there were 120 registered persons living with HIV or AIDS in the ZFSI II project area who received food rations from Africare through two associations that provide to support to people living with HIV/AIDS. The list of these 120 households was the population from which the study sample was taken. Furthermore, within each sampled household with more than one individual living with HIV or AIDS one randomly selected infected person per household was interviewed. A total of 60 individuals (households) were selected randomly to be interviewed. Three households were not able to participate, reducing the sample size to 57 households and only 55 households completed the MAHFP portion of the survey.

The analysis was done using the MS Access 2003 software. The data was first subjected to a descriptive analysis (single variable) based on the characteristics of the sample and the level of food security of the affected households (e.g., percentage of households at each level of food security according to age, profession, and level of formal education of the household head). The bivariant analysis was done to examine relationships between certain variables.

Several difficulties were encountered in the process of executing the study, including:

- (1) The complexity of certain questionnaires, combined with the amount of information to collect, resulted in more the time needed for data collection than expected and often resulted in errors during completion of the forms by enumerators that supervisors discovered in the field,
- (2) The unexpected absence of enumerators the day of the study that did not permit enumerators to interview the respondents anticipated in sample, and
- (3) Resistance of certain respondents to respond to questions related to their HIV sero-positive status.

Socio-demographic characteristics of the sample households

A total of 58 household heads were scheduled to be interviewed—57 percent were female headed and 43 percent here headed by men. The majority of the households (60%) were from 20 to 40 years of age (Table A).

Table A. Age Distribution of Household Heads

Age Group (years)	Number of Households	% of Households in this Category
20 – 40	35	60.34
41 – 60	21	36.21
61 – 80	2	3.45

Reflecting the national profile, the majority of the household heads of the families in which the HIV positive people lived were agriculturalists. Seven percent were merchants and drivers, herders, welders, and those without a profession represented two percent each (Figure A).

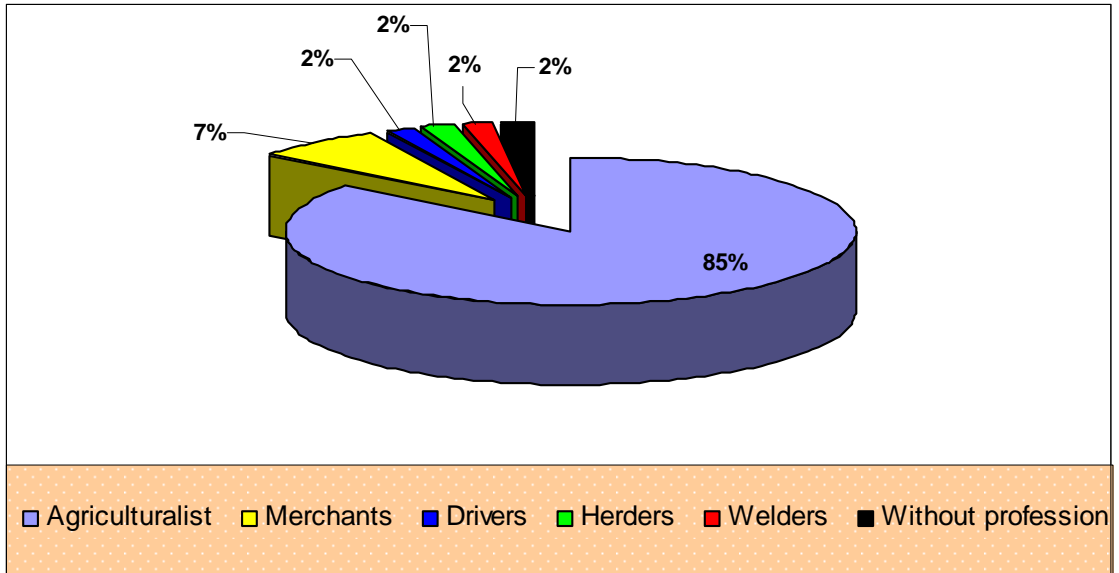


Figure A. Profession of Heads of Households of PLHIV

Two thirds of the household heads (68%) were reportedly able to read or write and 32 percent reported having attended school or basic literacy programs (Figure B).

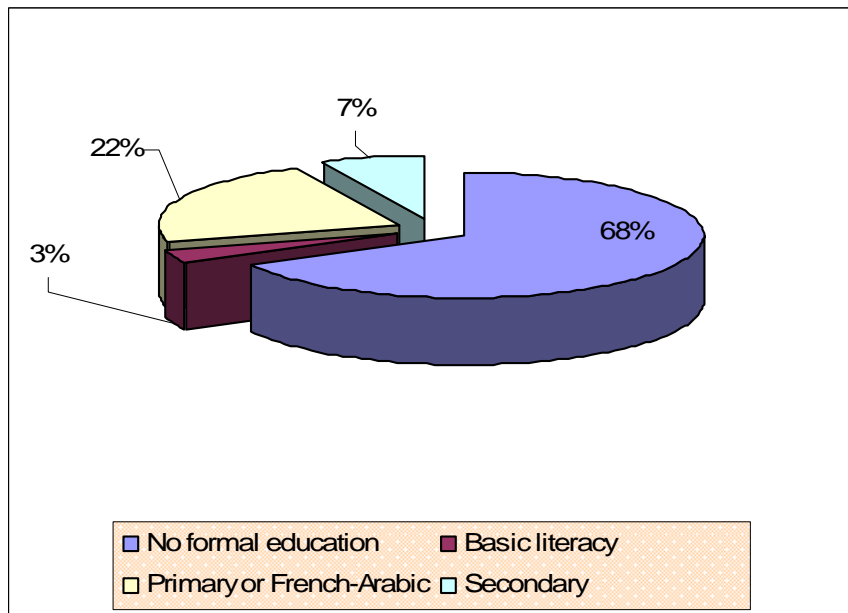


Figure B. Educational Level of Heads of Households of PLHIV

Approximately 65 percent of households of PLHIV had between one and seven household members, 14 households (25.45%) had between 8 and 14 members, and five households (9.9%) had between 15 and 21 household members. The average (weighted) number of persons per household was seven (Figure C).

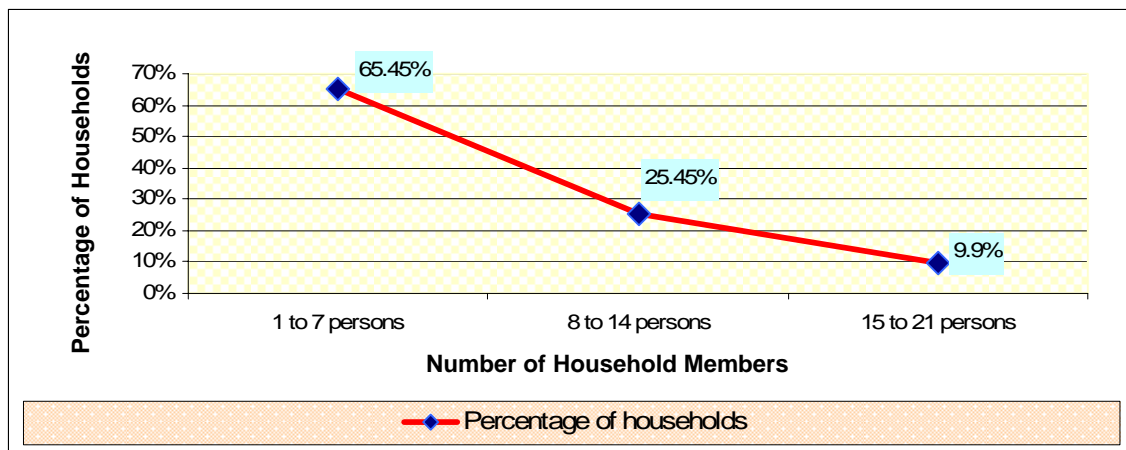


Figure C. Size of Households of PLHIV

Approximately 60 percent of the households of PLHIV had two or fewer active workers, 34 percent had between three and five active workers and five percent had between six and seven active workers (Table B). On average the number of active workers per affected household was only two.

Table B. Number of Active Workers per Household of PLHIV

Number of Active Workers	Number of Households	Percentage of Total Households
0- 2	35	60.34%
3 – 5	20	34.48%
6 – 7	3	5.18%
Total	58	100%

Annex 3:
Proposed Revision of ZSFI II Questionnaire for HIV/AIDS Infected
Individuals and Affected Households

On Household Food

Department of: _____/____/_____

Village of: _____/____/____/_____

Quartier: _____

Identification number: _____

Date of interview: /__/__/ __/__/ __/__/

We hope to exchange with you in order to better understand our household and the results of your last agricultural campaign.

1. General Information

1.1.a. What is the age of the household head? _____ years

1.1.b. Profession/Occupation of household head: _____

1.1.c. What is the sex of the head of household?

Male
Female

1.2. What is the level of education of the household head? (*Write the number corresponding to the response*)

- | | | |
|----|-----------------------------------|--------------------------|
| 1. | Primary School/Franco Arab school | <input type="checkbox"/> |
| 2. | Secondary or greater | <input type="checkbox"/> |
| 3. | None | <input type="checkbox"/> |
| 4. | Basic literacy courses | <input type="checkbox"/> |

1.3.a. How many people are in your household? _____/____/____

1.3.b. How many people in your household are under age 15?

1.3.c. How many people in your household are over age 60 years old?

1.3.d. How many people in your household are orphans?

List ages of all orphans: _____

1.4.a. How many persons in your household actually work?

1.4.b. How many people who work are under 15 years old?

1.4.c. How many people who work are over 60 years old?

1.4.d. How many people who work are orphans?

List ages of all orphans who work: _____

1.5. Number of economically active persons in your household that have emigrated (<= in the last six months):

1.6. What are the three main livelihoods supporting the household?

1. _____ Who does this? _____
2. _____ Who does this? _____
3. _____ Who does this? _____

1.7. Have the three main livelihoods supporting the household changed since diagnosis of HIV?

1. Yes
2. No

If yes, what did they change from and why?

From: _____ **To:** _____
How long after diagnosis: _____ **Why did it change:** _____

2. Food Security Management

These questions are modified to cross reference to the revised Africare MAHFP Guidance (see Konda et al. 2008, AFSR No. 17), which aligns with USAID’s new reporting requirements for MAHFP.^{xxxi}

2.1. How many times a day does your family actually eat?

2.2. Is your family able to eat as much as they want without needing food assistance?

1. Yes
2. No

Since the last harvests in October, how many months has your family eaten as much as they wanted?

Africare MAHFP and Food Aid Questions

2.3. Question #1: Now I would like to ask you about your HH’s food supply during different months of the year. When responding to these questions, please think back over the last 12 months. In the past 12 months, were there months in which you did not have enough food to meet your family’s needs (**not enough food from all sources**)?

(Enumerator: Do NOT list the months for respondents, let them tell you which months they did not have enough food [Bilinsky and Swindale 2007]).

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Response Code (0 or 1)*												

*1=yes response and 0=no response.

2.4 Question #2: List months (in past 12 months) during which you did not have enough food from your agricultural and livestock production, remittances, or generated income to meet your family’s needs (**not enough food not including food aid**).

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Response Code (0 or 1)*												

*1=yes response and 0=no response.

2.5 Question #3: List months (in past 12 months), during which you had to satisfy food requirements of your family by using direct food aid including food for work, direct distribution food, or food for education (**when food aid made you food secure**).

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Response Code (0 or 1)*												

*1=yes response and 0=no response.

2.6 Question #4: List months (in past 12 months), during which your household received direct food aid including food for work, direct distribution food, or food for education (**regardless of need**).

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Response Code (0 or 1)*												

*1=yes response and 0=no response.

2.7 Question #5: List months (in past 12 months), during which your household received direct food aid including food for work, direct distribution food, or food for education when your household did not need food aid (**when you would have been food secure without food aid**).

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Response Code (0 or 1)*												

*1=yes response and 0=no response.

3. HIV/AIDS-Nutrition (ask PLHIV)

3.1. How long have you known you were seropositive? _____

3.2. Are there other seropositive persons living in our household?

- 1. Yes
- 2. No

If yes, how many? _____

3.3. Is your health care being monitored by a health agent?

- 1. Yes
- 2. No

If no, why?

- 1. Too far from health center.....
- 2. Doctor (nurse) absent.....
- 3. I don't have money
- 4. Don't know

If yes, for how long?

3.4. Did he (she) prescribe a special diet for you?

- 1. Yes
- 2. No

(If no, go to 3.5)

If yes, are you able to follow the special diet?

- 1. Yes
- 2. No

If no, why not?

- 1. Food not available
- 2. Don't have resources (money) to purchase food
- 3. Don't know where to find certain foods
- 4. Other (explain)

3.5 When you were not seropositive, how much did you eat?

1.	More than now	<input type="text"/>	
2.	Like now	<input type="text"/>	
3.	Less than now	<input type="text"/>	
4.	Don't know	<input type="text"/>	<input type="text"/>

3.6 How many times do you eat each day?

1.	1 time	<input type="text"/>	
2.	2 times	<input type="text"/>	
3.	3 times	<input type="text"/>	
4.	More than 3 times	<input type="text"/>	<input type="text"/>
5.	Don't know	<input type="text"/>	

3.7.a During the past week, how many days have you eaten meat or fish?

1.	Have not eaten	<input type="text"/>	
2.	1 -2 days	<input type="text"/>	
3.	3 -4 days	<input type="text"/>	
4.	5 -6 days	<input type="text"/>	
5.	7 days	<input type="text"/>	
6.	Don't know	<input type="text"/>	

3.7.b During the past week, how many days have you eaten items made from nuts or legumes?

1.	Have not eaten	<input type="text"/>	
2.	1 -2 days	<input type="text"/>	
3.	3 -4 days	<input type="text"/>	
4.	5 -6 days	<input type="text"/>	
5.	7 days	<input type="text"/>	
6.	Don't know	<input type="text"/>	

3.8 During the past week, how many days have you eaten fruit?

1.	Have not eaten	<input type="text"/>	
2.	1 -2 days	<input type="text"/>	
3.	3 -4 days	<input type="text"/>	
4.	5 -6 days	<input type="text"/>	
5.	7 days	<input type="text"/>	
6.	Don't know	<input type="text"/>	

3.9 Are you able to carryout activities that earn you money (income generating activities)?

1. Yes

2. No

If no, since when?

1. 3 months

2. 6 months

3. 1 year

4. More than a year

4. Household Dietary Diversity Score (HDDS)

This is the HDDS questionnaire format from FANTA guidance on HDDS (Bilinsky and Swindale 2006). Consult that guide for more information on tabulation of data, setting targets, adding local food and project-specific dietary interventions, and child appropriate HDDS.

“When using the 24-hour recall method, the interviewer should first determine whether the previous 24 hour period was "usual" or "normal" for the household. If it was a special occasion, such as a funeral or feast, or if most household members were absent, another day should be selected for the interview. If this is not possible, it is recommended that another household be selected, rather than conduct the interview using an earlier day in the week” (Bilinsky and Swindale 2006:3). In order to collect household dietary diversity data, the following questions should be added to the baseline and final surveys. As appropriate, locally available foods should be added into the food groups.

Household Dietary Diversity Score (from Bilinsky and Swindale 2006).

No	Questions and Filter	Coding Categories
1	Now I would like to ask you about the types of foods that you or anyone else in your household ate yesterday during the day and at night. READ THE LIST OF FOODS. PLACE A <i>ONE</i> IN THE BOX IF ANYONE IN THE HOUSEHOLD ATE THE FOOD IN QUESTION, PLACE A <i>ZERO</i> IN THE BOX IF NO ONE IN THE HOUSEHOLD ATE THE FOOD.	
A	Any [INSERT ANY LOCAL FOODS, E.G. UGALI, NSHIMA], bread, rice noodles, biscuits, or any other foods made from millet, sorghum, maize, rice, wheat, or [INSERT ANY OTHER LOCALLY AVAILABLE GRAIN]?	A..... __
B	Any potatoes, yams, manioc, cassava or any other foods made from roots or tubers?	B..... __
C	Any vegetables?	C..... __
D	Any fruits?	D..... __
E	Any beef, pork, lamb, goat, rabbit wild game, chicken, duck, or other birds, liver, kidney, heart, or other organ meats?	E __
F	Any eggs?	F..... __
G	Any fresh or dried fish or shellfish?	G..... __
H	Any foods made from beans, peas, lentils, or nuts?	H..... __
I	Any cheese, yogurt, milk or other milk products?	I __

J	Any foods made with oil, fat, or butter?	J __
K	Any sugar or honey?	K..... __
L	Any other foods, such as condiments, coffee, tea?	L __

Thank-you for your collaboration

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^v This study focused only on households of people living with HIV and not on other types of HIV/AIDS-affected households.

^{vi} Africare ICB Strategic Objective One: Title II field level impact increased by developing better methodologies for enhancing local capacity to identify and reduce food insecurity in vulnerable groups including HIV/AIDS affected households.

^{vii} The Africare, USAID Titled II-funded Rwanda program, implemented under a sub-grant from ACDI/VOCA, operates in Nyamagabe Province and is called the Gikongoro Food Security Initiative (FY05-FY09). For more background on the specifics of the HIV/AIDS activities see Maslowsky et al. 2008.

^{viii} The Africare, USAID Title II-funded Burkina Faso program operates in Zondoma Province and is called the Zondoma Food Security Initiative (FY05-FY09). For more background on the specifics of the HIV/AIDS activities see Maslowsky et al. 2008.

^{ix} Africare has also developed brief documents to be used to select and field test additional indicators recommended by FANTA for both nutrition education of PLHIV and food assistance programming for PLHIV (Africare Health, Nutrition, and HIV/AIDS Working Group In Press, AFSR No. 20 and Africare Health, Nutrition, and HIV/AIDS Working Group In Press, AFSR No. 25) as well as a concise summary of the FANTA and WFP (2007) guide on Food Assistance Programming in the Context of HIV (Africare Health, Nutrition, and HIV/AIDS Working Group In Press, AFSR No. 21) and is in the process of developing a brief on proxy indicators to identify PLHIV and their households (Africare Health, Nutrition, and HIV/AIDS Working Group In Press, AFSR No. 22).

^x Two Critical Resource Information Briefs are in press in this series that address possible FANTA recommended indicators to assess impact of nutritional education and counseling activities on PLHIV (Africare Health, Nutrition, and HIV/AIDS Working Group In Press, AFSR No. 20) and to assess the impacts of food assistance programming in the context of HIV (Africare Health, Nutrition, and HIV/AIDS Working Group In Press, AFSR No. 25).

^{xi} For qualitative method see Africare (2007, AFSR No. 1), Guidance: How to Measure the Number of Months of Adequate Household Food Provisioning (MAHFP Based on Participatory Rural Appraisals in Food Security Interventions) and for quantitative method see Konda et al. (2008, AFSR No. 17), Guidance: How to Measure the Number of Months of Adequate Household Food Provisioning (MAHFP) Based on Quantitative Methodologies.

^{xii} See Nanama and Souli (2007, AFSR No. 5).

^{xiii} See Nanéma et al. (2008, AFSR No. 9).

^{xiv} The 1990 Farm Bill resulted in changes to PL 480 programs that "...opened the way to increased sales of food (monetization) under the Title II program, increasing the minimum that needed to be monetized to 10 percent of the total value of non-emergency commodities and expanding the uses of the proceeds to include income generation, health, nutrition and agricultural activities" (USAID/FFP/DCHA, 2003: 3). Also see USAID/FFP/DCHA (2003:16-20)

and USAID/FFP/DCHA (2005: 19-24) for an overview of the expanded framework for addressing food security and vulnerability that includes livelihood diversification.

^{xv} This line of study relates to commonly-cited erosion of assets (which often include human, capital, and/or social assets). Weigers et al. (2006: 2) report that studies have shown that a household's ability to cope with HIV or AIDS is linked (in part) to their available assets. The FANTA and WFP guide, Food Assistance Programming in the Context of HIV, specifically addresses erosion of assets and vulnerability to the impacts of HIV by incorporating a number of indicators focused on six categories of assets (human, physical, financial, social, political and natural assets) (2007: 48).

^{xvi} The two data sets (HIV/AIDS-affected household MAHFP and ZFSI II project villages household MAHFP) were collected at different times under different circumstances and it is recognized that there may be other factors (aside from having an individual living with HIV), that may be contributing to these results. Furthermore, the general ZFSI II household data did not exclude households affected by HIV/AIDS.

^{xvii} Africare will not be able to fully report on the activities of other NGOs in the area; however, they can begin to understand participation of HIV/AIDS-affected households that are beneficiaries of Africare's interventions by asking about participation in any food security interventions of other NGOs in the area. Other NGOs doing food security work in Zondoma Province include the British ONG Christian AID organization that supports Méthode Accélérée de Recherche Participative (MARP), the Italian NGO Comunità Impegno Servizio Volontariato (CISV) that collaborates with Comité Inter-Etat de Lutte contre la Sécheresse dans le Sahel (CILSS) on desertification initiatives, and the Burkinabe NGO Se Servir de la Saison Sèche en Savane et au Sahel (SIX S), as well as a state program Programme de Développement Rural Durable (PDRD). None of these specifically target people living with HIV.

^{xviii} For this reason, many development projects use the ratio of workers to residents to determine the amount of land a household is entitled to register or farm.

^{xix} « *Toute personne âgée de 15 à 60 ans vivant dans le ménage, jouissant de toutes ses facultés physiques et mentales et qui mène une ou plusieurs activités de production en vue de contribuer au bien être du ménage.* »

^{xx} For the survey, an AIDS orphan was defined as a person less than 15 years of age that had lost at least one parent because of AIDS.

^{xxi} The distribution of the sample resulted in only six households in the moderately food insecure category.

^{xxii} Furthermore, exploring households gives no information on orphans who are living on the streets, who are also vulnerable to food insecurity.

^{xxiii} Africare is in production of a guidance on a quantitative MAHFP that addresses these issues. The guidance is expected to be published in mid 2008 in this AFSR series (Konda et al. In Press, AFSR No. 17).

^{xxiv} For a comprehensive review of recent research on the impact of HIV on households see Gillespie and Kadiyala (2005).

^{xxv} According to UNICEF (2005:68), in Sub-Saharan Africa approximately 1200 households would have to be surveyed in a random sample from the population in order to include approximately 320 AIDS orphans (OVC). This is based on an estimate of 4.37 percent OVC living in households of the total population. Therefore, given the small sample size used for this pilot study—it is likely that none or very few of the households interviewed for this study have OVC as household members.

An orphan is a child below the age of 18 who has lost one or both parents.

A child made vulnerable by HIV/AIDS is below the age of 18 and:

- (i) has lost one or both parents, or
- (ii) has a chronically ill parent (regardless of whether the parent lives in the same household as the child), or
- (iii) lives in a household where in the past 12 months at least one adult died and was sick for 3 of the 12 months before he/she died, or
- (iv) lives in a household where at least one adult was seriously ill for at least 3 months in the past 12 months, or
- (v) lives outside of family care (i.e. lives in an institution or on the streets)

^{xxvi} http://www.fao.org/hivaids/responses/labour_en.htm

^{xxvii} See Africare Health, Nutrition, and HIV/AIDS Working Group (In Press, AFSR No. 21) for an overview of the FANTA and WFP guide on Food Assistance Programming in the Context of HIV.

^{xxviii} If survey is conducted as part of the final evaluation it will be less than a year from the pilot; therefore expectations, analysis of data, and any resulting targets should consider the time period between surveys.

^{xxix} Rose Cisse is an HIV/AIDS assistant on the ZFSI II Project.

^{xxx} Issa Bassika Savadogo is an HIV/AIDS assistant on the ZFSI II Project.

^{xxxi} Despite modification of this food security section of the questionnaire to harmonize with the new Africare MAHFP guidance (Konda et al. In Press, AFSR No. 17) question format, questions 2.1 and 2.2 have been preserved in the revised questionnaire for the sake of comparison of data generated from the revised questionnaire to the original question for the Burkina follow up study. Other programs that field test the revised questionnaire may eliminate questions 2.1 and 2.2 from the survey if deemed necessary.