Outcome Evaluation Report for Six Epicenters in Ghana

November 2015

ACKNOWLEDGEMENTS

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- Special thanks to The Hunger Project Global Office (New York, USA) and especially the Director of Monitoring and Evaluation, Megan Colnar and her team, for the leadership and technical role they provided.

We are hopeful the lessons learned and the findings and recommendations in the evaluation report will inform future planning and program implementation to address weaknesses and improve on our interventions and future evaluation studies.

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1.0. EXECUTIVE SUMMARY

The Hunger Project (THP) is an international NGO committed to the sustainable end of world hunger. The Hunger Project has offices in 22 countries around the world and has been working in Ghana since 1996 empowering partners to end their own hunger and poverty using the Epicenter Strategy, a multi-sectoral approach in which women and men from rural villages, called epicenters, are mobilized to create and manage their own programs to meet their basic needs. Currently, The Hunger Project has established 45 epicenters in Ghana.

This report focuses on the results of the The Hunger Project's work in six epicenters in Ghana: Akotekrom, Atuobikrom, Dome-Achiansa, Nkawanda, Nsuta-Aweregya, and Odumase-Wawase. The objective of the study, which was conducted in December 2014, is to assess the results achieved by the various interventions of THP-Ghana, comprised of eight program areas with a total of 44 indicators, in support of the national decentralized development agenda at the local level. These programs are community mobilization, women's empowerment, water and sanitation, literacy and education, food security, health and nutrition, and poverty reduction and microfinance. The evaluation consisted of 1,111 household surveys, 12 focus group discussions, and 41 key informant interviews. The results were compared to current secondary source data at the lowest administrative level available and baseline data, in order to provide a greater context for the results. After an average of eight years of implementation, the results show that these programs have shown the capability of contributing positively to local level development and therefore national development. This success is observed at the program component and epicenter levels.

The most impressive accomplishments include an average reduction of poverty by 44%, as well as the near elimination of severe hunger (to 1%), followed by improved healthcare through access to epicenter clinics, increased antenatal care, and a greater proportion of attended births. There were also impressive gains in access to improved water and sanitation, with increases of 55% and 323%, respectively. However, large gaps exist between men and women for epicenter participation rates, adult literacy, and confidence in one's ability to change the community. There has also been limited progress in HIV/AIDS and nutrition initiatives.

Community Mobilization

- Voting participation rates exceed 90 %, resulting in a 60%increase from baseline
- More than two-thirds of respondents have confidence in their ability to change their communities
- Approximately one-third of the population has participated in THP activities, though the results varied by epicenter. There was a gender gap favoring men's participation.

Empowerment of Women and Girls

- The Women's Empowerment Index (WEI) showed a strong performance of women, particularly in the areas of agency and leadership, but also revealed that women are still primarily responsible for household drudgery tasks such as collecting firewood and water
- Women are eating an average of 3.5 food groups per day, showing a limited dietary diversity
- Antenatal care coverage of four or more visits averaged 84%, and the proportion of births attended by licensed health care professionals averaged 90%, much higher than the rural average of 60%and an increase of 73%from baseline
- Gender parity ratio at school has been achieved in most of THP program areas

Access to Safe Water and Sanitation

- Diarrheal disease prevalence in children under five is 14% in THP epicenters
- Households using improved drinking water source averaged 87%, much higher than the average for rural forest communities (68.9%) and a 55%increase from baseline

- Access to improved sanitation facility across the six epicenters averaged 47% of households, which is significantly higher than the rural average of 8.5%and a 323% increase from baseline

Literacy & Education

- 84% of households have at least one literate member
- The average school attendance rates are above 86% for all epicenters, with an average of 90%. A comparison to baseline data shows increases in both primary and secondary school attendance.
- There is a gender gap in adult literacy, with women lagging behind men by approximately 32% points

Hunger and Malnutrition

- There is the near elimination of severe hunger, with only 1%of households experiencing hunger
- Household knowledge of exclusive breastfeeding is still low (36%), indicating a need for scaling up nutrition and 1000 days programming

Access to and Use of Health Resources

- The study revealed an improved access and the use of a health facility, averaging 78% across the six epicenters; qualitative interviews highlighted an appreciation for accessible, quality facilities
- Proportion of children under 5 sleeping under bed net was 69%, much better than the regional average of 51%and indicating a 362% since baseline
- The proportion of the population aware of their HIV status nearly quadrupled since baseline, with an average increase of 538%. But more than half of the population is still unaware of their status. The epicenter results are comparable to current rates in different regions of Ghana.
- Comprehensive correct knowledge of HIV/AIDS saw an average decline of 28% in the epicenters, but this indicator also decreased in the secondary source data, revealing an overall downward trend in HIV/AIDS knowledge

Poverty Reduction

- On average, 17%of households in the epicenters are below the international poverty line, representing a 44% decrease in poverty from baseline
- While 38% of rural households in Ghana fall below the national poverty line, an average of only 20% of epicenter households are below the national poverty line
- More than half of households have a non-farm business, which is above the rates for the Eastern Region (38%)
- More than one-third of adults have access to financial services, with more men than women having access

Land Productivity and Climate Resilience

- More than 77% of farming households are implementing improved agriculture techniques, with row planting being the most common improvement used
- There is a high proportion of households selling their produce, at 77%of farmers
- Qualitative results repeatedly reference increased crop yields due to training in improved practices as one of the major impacts of THP's programs

Based on the findings of this evaluation it thus may be recommended that:

i. Efforts are increased to improve women's participation in epicenter activities
ii. More activities focused on nutrition and 1000 days programming are implemented to improve dietary diversity and knowledge of optimal breastfeeding practices

iii. The literacy and education program area can offer more adult literacy classes, targeting women specifically
iv. Efforts should be increased for training and sensitization on HIV/AIDS
v. Given the varied performances at the program area, program component and epicenter levels the THP can benefit from the documentation of good practices, which may account for very successful performances which can be up scaled.
vi. THP program supports the national decentralized development agenda. It may be important to synchronize the THP program areas/components as well as indicators with programs at national and local levels for compatibility and comparability and hence contribution or attribution analyses. This has the added benefit of easily establishing baseline values as well comparator indicator values from nationally conducted censuses, surveys and studies at no cost to the THP program.

1.1. CONTEXT OF THE STUDY

1.1.1 The Hunger Project-Ghana: An Overview

The Hunger Project is an international non-governmental organization headquartered in New York City that's mission is to end hunger and poverty by pioneering sustainable, grassroots, women-centered strategies and advocating their widespread adoption in countries throughout the world. THP has offices in 22 countries around the world. In Africa, it operates in Ghana, Burkina Faso, Benin, Senegal, Uganda, Malawi and Ethiopia. Since its inception in Ghana in 1996, THP-Ghana has been involved in the capacity building of communities towards the sustainable end of hunger and poverty. y.

The vision of THP-Ghana is to empower communities in which women and men work together to eliminate hunger and poverty through self-initiated projects, using local resource and, where not available, having the confidence to access external resources to meet their felt needs. The program areas of THP-Ghana include education and capacity building, technical and economic empowerment, improved food production and security and community health improvement. The operational areas of THP covers 32 districts areas in five administrative regions in Ghana namely, Ashanti, Central, Eastern, Volta and Greater Accra regions respectively.

THP- Ghana utilizes the Epicenter Strategy mobilizes clusters of rural villages into "epicenters," which band together 5,000-15,000 people in a cluster of villages to create an "epicenter," or a dynamic center where communities are mobilized for action to meet their basic needs. There are currently 45 epicenters, which constitute between 5-15 communities within a 10km radius. These epicenters have become impactful units for grassroots mobilization for development, reaching a total of 322,613 people across 510 communities.

The Epicenter Strategy is based on three pillars: (i) Mobilizing communities for self-reliant action, (ii) Empowering women as key change agents, (iii) Fostering effective partnerships with local governments. These three pillars are supported by the following areas of intervention:

1. Community mobilization: training of community volunteers (animators) and leaders, construction of a multi-purpose building (epicenter)
2. Women's empowerment: training women in legal, civic and reproductive health rights; trainings in counseling and mediation services
3. Water, sanitation and hygiene: training and awareness of the importance of the consumption of drinking water, hygiene and environmental protection
4. Education and literacy: literacy classes for adults and the promotion of early childhood education through nursery schools

5. Nutrition and health: education activities, training in preventive health and nutrition
6. Microfinance and livelihoods: trainings, access to savings groups and credit through loans
7. Food security: facilitating access to agricultural inputs and planting materials, training agriculture extension volunteers in improved farming methods

These multisectoral program areas contribute to eight central goals of The Hunger Project:

1. Mobilize rural communities that continuously set and achieve their own development goals
2. Empower women and girls in rural communities
3. Improve access to safe drinking water and sanitation facilities in rural communities
4. Improve literacy and education in rural communities
5. Reduce prevalence of hunger and malnutrition in rural communities, especially for women and children
6. Improve access to and use of health resources in rural communities
7. Reduce incidence of poverty in rural communities
8. Improve land productivity and climate resilience of smallholder farmers

This Epicenter Strategy is designed to partner with communities over a period of about eight years to graduate to a phase of "sustainable self-reliance," which means that communities have demonstrated the confidence, capacity and skills to act as agents of their own development.

The Hunger Project defines self-reliance to be when community members are confident and have the capacity and skills to act as agents of their own development. The Hunger Project orients its work around reinforcing local knowledge and skills, such that communities and local governments take charge of their own development processes, and can therefore perpetuate, sustain and enhance the work begun in partnership with The Hunger Project. By stimulating community-led development, The Hunger Project fosters a culture of self-determination and economic viability in which the community itself is the driver of continued change.

When a community has achieved the targets set to demonstrate its self-reliance, The Hunger Project has activated its exit strategy, and it is anticipated that there will be no further financial inputs, with the exception of not-as-frequent staff visits and a post-evaluation three to five years later in a select number of epicenters.

Before this milestone is achieved, communities go through a transition period during which The Hunger Project has scaled down its program activities and the community solidifies its own leadership and management.

2.0 INTRODUCTION

2.1 Objectives of the Study

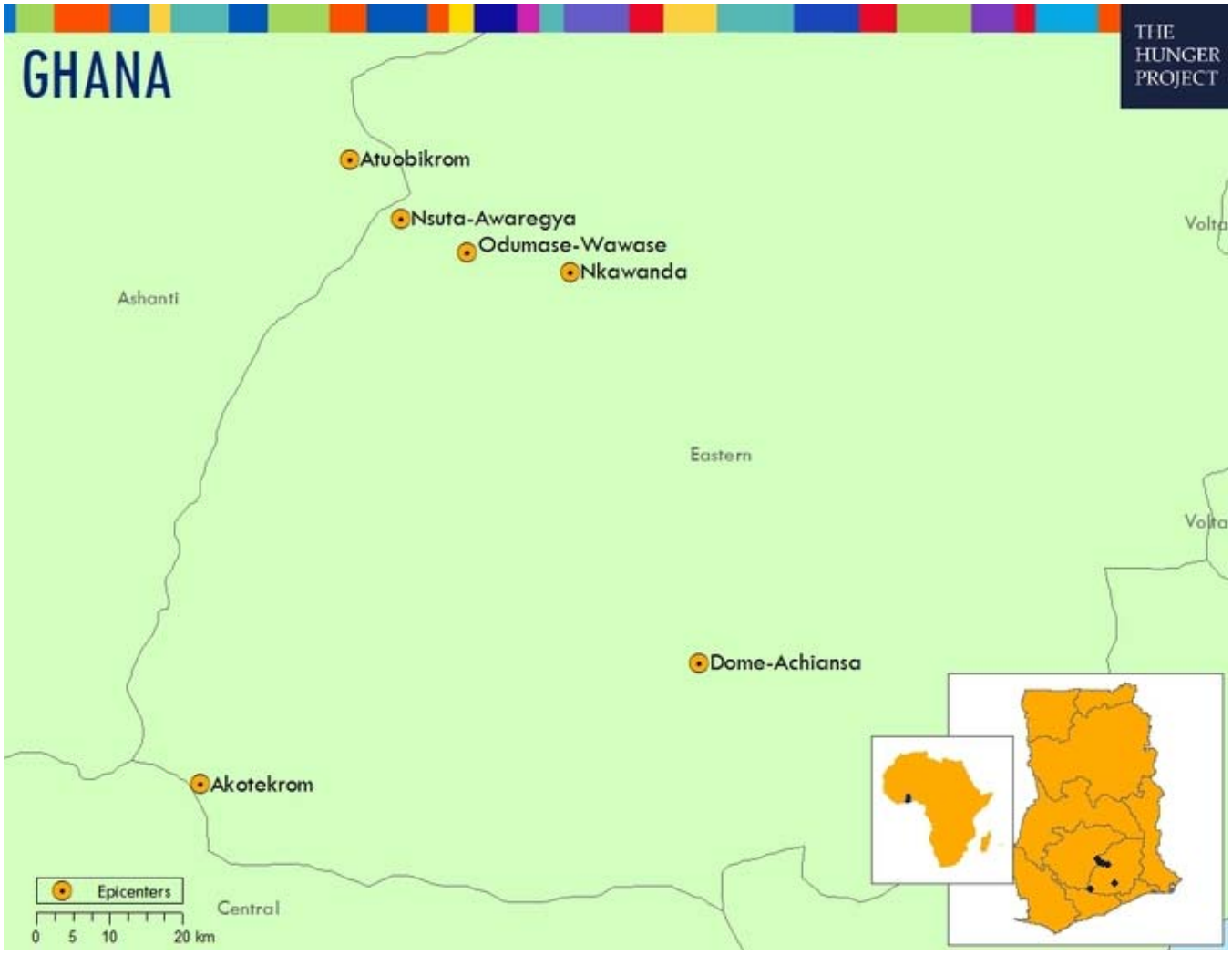
The overall objective of the December 2014 outcome evaluation study was to generate relevant knowledge that will aid efforts to attribute outcomes observed to the impact of The Hunger Project intervention program in Ghana. Specifically, the evaluation aimed:

- To identify what outcomes have been realized against the eight program goals
- To analyze the nature and extent of achievement of these outcomes in relation baseline indicators (where available) and national/regional comparable indicators.
- To draw lessons learnt with regard to implementation of project activities
- To derive recommendations and entry point for future project improvement

2.2 Epicenters Evaluated

The epicenters studied in this report are located in the Eastern Region of Ghana. They are:
Akotekrom, Atuobikrom, Domi-Achiansa, Nkawanda, Nsuta-Aweregya and Odumase-Wawase (as depicted in the political and epicenter maps below).

THP Ghana Epicenter Map: Akotekrom, Atuobikrom, Domi-Achiansa, Nkawanda, Nsuta-Aweregya and Odumase-Wawase



2.3 The Six Epicenters: An Overview

Climate and Vegetation

The six epicenters studied fall within the wet semi-equatorial climatic zone of Ghana that experiences substantial amount of precipitation/rainfall. Annual rainfall is between 150cm and 200cm reaching its maximum

during the two peak periods of May to June and September to October. This promotes intensive farming activities within these two periods, thus, May to June and September to October. There is relative humidity of about 56%in the dry season and 70% in the rainy season. The temperature ranges from 25.2˚C and 27.5˚C. The epicenter communities lie in the deciduous forest ecological zone of Ghana and therefore are classified essentially as rural forest communities.

Agriculture and Crop Production

About 85% of households in the epicenters are engaged in agriculture. Most households in the communities are involved in crop farming, tree crop farming and livestock rearing. The major food crops cultivated are cassava, plantain, maize and vegetables whilst oil palm, cocoa and kola nuts are cultivated as cash crops.

3.0 METHODOLOGY: SAMPLING STRATEGY

A mixed method approach was employed in this study including randomized household sampling, focus groups and key informant interviews to collect both qualitative and quantitative data points. Information was gathered using iPod Touch devices via iFormBuilder for the household surveys and using iTalk to record interviews and focus group discussions. The following section describes the statistical methods applied to identify household respondents.

3.1 Sampling Frame & Unit

The sampling frame consists of the communities and households that fall within THP's defined epicenter radius, or approximately 8,860 households in all six epicenters. 1111 households were sampled in proportion to the number of households in each epicenter, representing 12.54%of the sampling frame. Appendix 1.0 shows the proportions of households sampled per epicenter as well as communities within the epicenter.

3.2 Sampling Approach

Multi-stage sampling approach was used to identifying the villages from which households were selected to participate in the survey. At the first stage, 50% of epicenter villages were sampled. The community in which the epicenter infrastructure is located was selected automatically because its proximity location would be expected to be the area of highest impact. The other sampled communities were selected at random through a lottery.

At the second stage, the sample size of each community was determined in proportion to the total number of households in the community. After determining the sample size of each village, households were randomly selected by lottery and informed of their inclusion in the survey. In cases where a particular household either did not want to take part in the survey or would not be available, they were replaced. This was done to ensure that the required number of households sampled would be met.

3.3 Sample size

The sample formula below was applied at each stage of the sample strategy. All sample sizes were selected to allow for a 95 percent confidence level (Z) and a confidence interval of +5 percent (d). The population (N) used was based on the 2010 national census figures.

Sample Formula

$$n = \frac{N \times Z^2 \times P(1-P)}{[d^2 \times (N-1)] + [Z^2 \times P(1-P)]}$$

Where
n is the sample size
N is the total population (xx villages; xx households)
d is the margin of error/ precision level (d = 5%)
Z is the desired confidence level (Z score of 1.96 or 95% confidence level)
P is the population proportion (P = 0.5)

This method was adopted to obtain a statistically reliable result. Using this method, the representative sample for each epicenter was calculated.

3.4 Qualitative Strategy

3.4.1 Focus Group Discussion (methodology)

Quota sampling was used to select 10-15 participants for both all-male and all-female focus group discussions (FGDs). The focus group discussion is a qualitative data collection method, which aimed at seek community/epicenter's views and assessment of The Hunger Project's intervention effects and impacts. This method is a suitable complement to the household survey which allows open discussions and an opportunity for community members to express themselves about which aspects of the interventions went well and which needs to be improved. The participants in the FGDs were purposely selected to include animators and leadership of each epicenter. There was a total of 12 focus groups conducted, two per epicenter, with 127 participants.

3.4.2 Key Informants Interview

Purposive sampling was used to select 41 community experts to share their views and opinions on six main thematic subject areas of (i). Health and Nutrition, (ii). Agriculture and Food Security, (iii). Livelihood and Microfinance, (iv). Community Mobilization (v). Gender Equality, and (vi) Literacy and Education. The selected key informants are community leaders who provided detailed information and unique perspective on particular issues based on their expert knowledge. These in-depth interviews are qualitative information that enhanced understanding of the quantitative data gathered about the results or outcomes of The Hunger Project's programs.

4.0 DATA COLLECTION PROCESS

4.1 Enumerator Training & Pre-testing of Questionnaire

A team of 16 research officers (8 males and 8 females) who are university graduates were selected and trained as enumerators for the study. About half of the research officers had previous experience when THP-Ghana conducted the Outcome Evaluation Pilot Survey using the iPod devices for the first time in 2012 and participated in the Matsekope evaluation study in July 2014. A three-day training including pre-testing (29th to 31st October, 2014) was organized for the enumerators to get them well-prepared and acquainted with THP's operations and

the interpretation of the questionnaires into the local language and the use of the iPod devices to carry out the assignment satisfactorily.

Among the topics covered were an introduction to THP and the epicenter strategy, survey instruments and data collection tools, selection of communities, sample size and methodology. There was also an orientation on iPod touch and iFormBuilder software, practice of household questionnaire and the use of i-talk software to record key informant and focus group discussion sessions and data collection techniques/skills, best practices and ethical considerations among others.

The Country Director and the two M&E Officers of THP-Ghana facilitated the training sessions.

4.2 Field Data Collection and Survey Submission

The survey covered an average of three days per epicenter and the entire survey covered about four weeks (2nd-25th Nov. 2014). Depending on the number of households to be surveyed per community, a team of two or more of the enumerators were assigned to conduct the survey. The enumerators were supervised by two M&E Officers and the Project Officers to ensure data collection was appropriately and professionally done and to ensure that any challenges faced by the enumerators were dealt with immediately.

With the guide of the community map and in some cases assistance from the community animators, the enumerators found it easy to locate the houses/households. Once a selected household is found, the enumerators introduced themselves and explained the purpose and the importance of the survey and also seek their consent (by signing or thump-printing the consent form) to participate in the evaluation exercise voluntarily. Enumerators spoke with the household's main decision maker(s) and, in cases where the primary respondent was not a female, the enumerators spoke with the head female of the household to answer questions related to gender equality and community mobilization. Enumerators also spoke with up to 3 females of reproductive ages (aged 15-49) living in the household to answer questions about dietary diversity. In households with more than 3 females qualifying, the enumerators used the "birthday rule" to select the 3 women with the closest birthdays to the day of the survey to avoid selection bias. The enumerator followed these survey procedures until they achieved the target number of households for each community.

At the end of each day, a debriefing session was held to discuss the day's activities, success stories, challenges and solutions proposed. A detailed itinerary for the following day was discussed, the data collected was synched, and the iPod devices and battery extenders were charged overnight to be used for the next day.

4.3 Quality Check, Data Entry, and Data Review

To ensure data completeness, data quality system checks were performed in the field by ensuring that information had been properly collected and recorded. Background information of respondents was appropriately recorded so that follow-ups could be made if needed. During data processing in the field, checks were undertaken to ensure completeness and internal consistency. In instances where there was an omission in data recorded or cases of incomplete data gathering of a particular household, the respondents were traced back and the information filled.

Quantitative data from the household survey was captured in Microsoft excel and exported to SPSS V20 for analysis. Descriptive statistics and tables were generated to describe the characteristics of the household survey. Recorded focus group discussions and key informant's interviews were transcribed and used as the basis of descriptive and inferential text that was used to explain opinions of participants on the issues explored. Qualitative data derived from the in-depth interviews and focus group discussions was also used to identify institutional arrangements, opportunities and constraints.

5.0 STUDY RESULTS

The outcome evaluation study aims to assess the progress of six epicenters in each of the eight program goals. The full results of all indicators can be found in Appendix 2.0. To assess the results of programs over time, the data were compared to baseline estimates.[1] However, given that the epicenters were constructed in different years and that baseline data is not available for all indicators, the results were also compared to current statistics[2] at the most local level available. The six epicenters lie in the Eastern Region and in the forest belt (rural forest communities), so these values are used when available as the best point of comparison. These secondary sources were used to put THP's results into context and gauge how THP communities faired when compared to national and local averages.

5.1 Epicenter Demographics

5.1.1 Number of Households

The study involved 1111 households from six epicenters: Akotekrom, Atuobikrom, Dome-Achiansa, Nkawanda, Nsuta-Aweregya and Odumase-Wawase. Table 1.0 shows the six epicenters and their contribution to total sampled households.

Table 1.0: Epicenter Households

Epicenter	No. of Households
Akotekrom	179
Atuobikrom	188
Dome-Achiansa	161
Nkawanda	221
Nsuta-Aweregya	197
Odumase-Wawase	165
Total	**1111**

5.1.2 Sex of Respondents

In all, more male respondents (53%) participated in the outcome evaluation exercise than female respondents (47%). Table 2.0 presents the sex distribution of the primary respondent in the six epicenters. For most epicenters, the gender of the primary respondent is balanced between men and women. However, more males participated in the study in two epicenters; Akotekrom (68%) and Dome-Achiansa (63%).

[1] Baseline data was gathered from reputable secondary sources at the year closest to construction of the epicenter building. As the six epicenters were constructed in different years, the year of baseline data varies depending on the epicenter. The most frequently used sources were Demographic and Health Surveys and World Bank Data. Baseline data is not available for every indicator, as The Hunger Project has many indicators that are specific to its projects.

[2] The main secondary source used was the Ghana 2014 Demographic and Health Survey, a nationwide household survey designed to generate information on health issues in the country. It includes analysis at the national, rural, and state level, which is the most comparable level to the six epicenters. Other data sources utilized included the 2014 Ghana Living Standards Survey 6 2014 report.

Table 2.0: Sex of Primary Respondent (%)

Epicenter	Sex of Primary Respondent (%)	
	Male	Female
Akotekrom	68	32
Atuobikrom	47	53
Dome-Achiansa	63	37
Nkawanda	46	54
Nsuta-Aweregya	46	54
Odumase-Wawase	50	50
Average (%)	**53**	**47**

5.1.3 Respondents' Civil Status

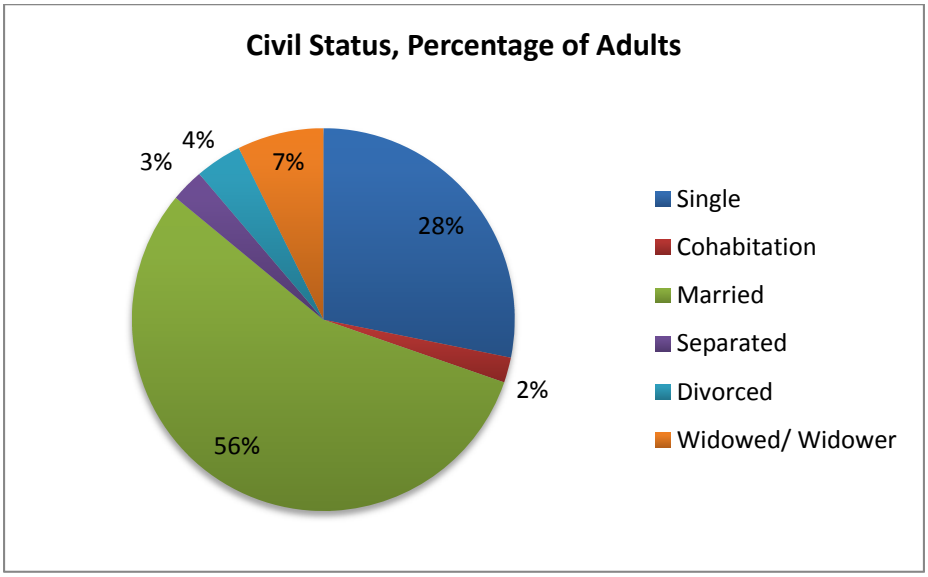
Table 3.0 and Figure 3.0 depict results of data analyzed for the civil status of adult household members (ages 18 and older) in proportions. On average, 58% percent of respondents are married (56%) or cohabiting (2%). About 28%are single. The rest are separated (3%), divorced (4%) or widows/widowers (7%).

Differences exist amongst the respondents from the six epicenters. Akotekrom Epicenter respondents record the highest proportion of married respondents (59%), while Nkawanda respondents have the highest proportion of single respondents (35%) followed closely by respondents from Odumase-Wawase Epicenter (30%).

Table 3.0: Civil Status, Percentage of Adults

Status	Akotekrom	Atuobikrom	Dome-Achiansa	Nkawanda	Nsuta-Aweregya	Odumase-Wawase	Average (%)
Married	59.46%	57.30%	58.82%	47.65%	57.1%	53.61%	55.66%
Single	29.11%	25.84%	27.54%	34.46%	22.2%	30.00%	28.20%
Widowed/ Widower	6.65%	6.74%	7.49%	6.97%	10.1%	5.83%	7.29%
Divorced	1.25%	4.94%	2.94%	5.08%	5.6%	3.89%	3.94%
Separated	1.04%	3.60%	1.60%	2.64%	3.7%	4.17%	2.79%
Cohabitation	2.49%	1.57%	1.60%	3.20%	1.3%	2.50%	2.12%

Fig. 3.0: Respondents' Civil Status



5.1.4 Age at First Marriage

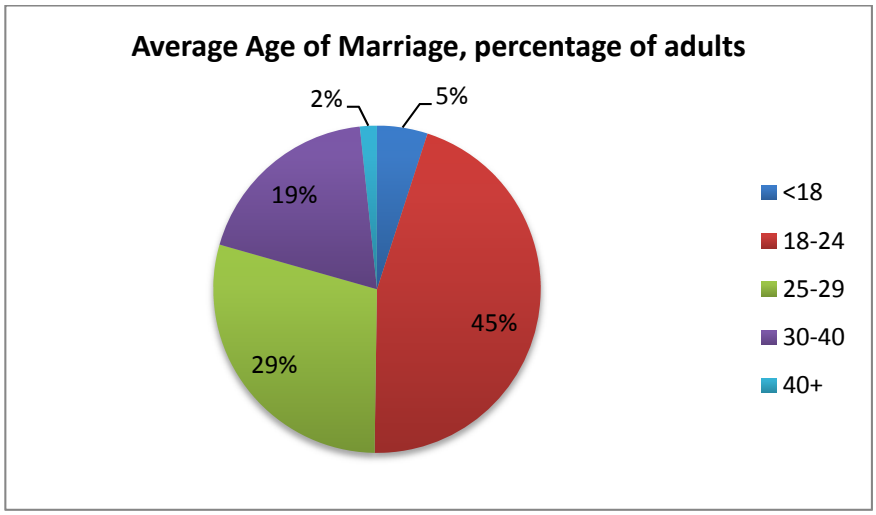
The study also investigated the age at first marriage of adult respondents. Table 4.0 and Figure 4.0 demonstrate the results of data analyzed. Overall, only 5% of respondents married under the age of 18. The majority of respondents were married between the ages of 18 and 14 (45%) and 79% of adults are married by the age of 30. There were no notable differences between epicenters, with all six following a similar trend in terms of age of first marriage.

Results also depict a clustering (more than 70%) of marriages between ages 15-34; with ages 15-19 (10.0%), 20-24 (27.0%), 25-29 (25.0%), 30-34 (14.0%). About one percent (1%) respondents also married in their early adolescent years whilst some others (7.0%) in the later years of year of life.

Table 4.0: Age Range of First Marriage, Percentage of Adults

Age- Group	Akotekrom	Atuobikrom	Dome-Achiansa	Nkawanda	Nsuta-Aweregya	Odumase-Wawase	Average
<18	5.87%	4.85%	4.80%	6.32%	3.40%	4.76%	5.00%
18-24	46.63%	42.42%	47.23%	46.84%	41.50%	46.83%	45.24%
25-29	27.86%	33.64%	25.83%	25.29%	30.95%	31.35%	29.15%
30-40	17.89%	16.97%	20.66%	20.11%	22.45%	15.48%	18.93%
40+	1.76%	2.12%	1.48%	1.44%	1.70%	1.59%	1.68%

Fig. 4.0: Respondents' Age at Marriage



5.1.5 Child Marriage

Child marriage is defined as a marriage occurring before the age of 18 in Ghana. The prevalence of child marriage was analyzed through the percentage of women ages 18-30 who were married before the age of 18.[3]

Akotekrom Epicenter has the highest prevalence of child marriage at almost 11%, while Dome-Achiansa had the lowest at 4.5%. The average prevalence of child marriage across the six epicenters is 6.76%.

Epicenter	Prevalence of child marriage
Akotekrom	10.84%
Atuobikrom	6.02%
Dome-Achiansa	4.48%
Nkawanda	5.22%
Nsuta-Aweregya	8.11%
Odumase-Wawase	5.88%

5.1.6 Dwelling Characteristics

Table 5.0 and Figure 5.0 show results of data analyzed on the characteristics of respondents' living quarters, particularly, the floor materials of the houses. These results are compared with the national level, rural level and rural forest communities' results of the Ghana GLSS Report. As a whole, the majority of households in the six

[3] This analysis is based on the indicator used by Girls Not Brides, which is the percentage of women 20-24 married or in a union before the age of 18. This narrow age range is used because many women are married by those ages, and it is the age range at which we would expect to see change reflected. THP widened the range from 18-30 because there were too few samples in the range of 20-24 to be significant.

epicenters have floors made of concrete, flagstone or cement (75%). The next most common floor type was earth or mud, reported by 22% of households surveyed. When looking at the epicenters individually, Atuobikrom has the highest percentage of households with a finished floor at 89%.

These results, when compared with similar indicators in the GLSS report, also show only Atuobikrom recording a higher proportion (89.2%) of respondent rooms with concrete/flagstone/cement floors the rural forest communities (81.8%), which is the most comparable indicator. With the exception of Atuobikrom, all the epicenters have higher proportions of earth/mud floors than the averages from the GLSS report.

Fig. 5.0: Percentage of Households with Floor Types, Average of Six Epicenters

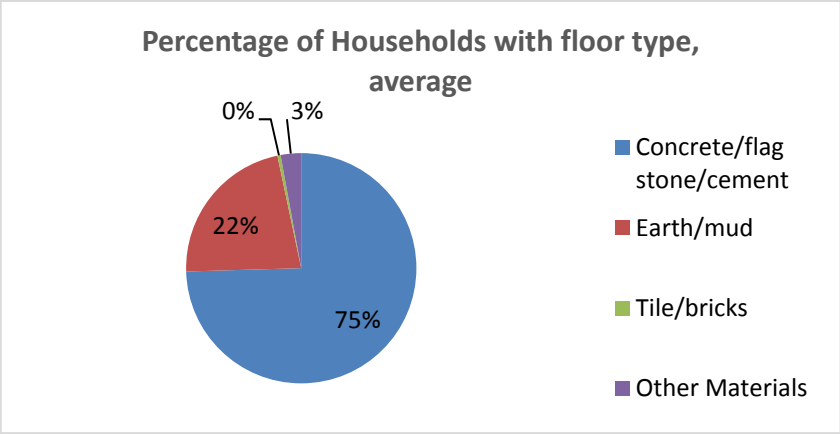


Table 5.0: Percentage of Households with Floor Type, by Epicenter

	Epicenter Outcome Survey Results						2014 GLSS Results (%)		
Floor Materials	**Akotekrom**	**Atuobikrom**	**Dome-Achiansa**	**Nkawanda**	**Nsuta-Aweregya**	**Odumase-Wawase**	**National Level**	**Rural Ghana**	**Rural Forest Communities**
Concrete/ Flagstone/ Cement	69.3	89.2	76	73.6	72.1	67.95	82.6	79.2	81.8
Earth/Mud	29.6	10.3	23	25	18.8	25.5	7.7	14.3	14.4
Tiles/Bricks	1.1	0.5	1	0	0	0	0.6	0.4	0
Other Materials	0	0	0	1.4	9.1	6.7	9.1	6.1	3.8
Total	**100**	**100**	**100**	**100**	**100**	**100.15**	**100**	**100**	**100**

5.2 Community Mobilization

The objectives of community mobilization component of The Hunger Project intervention program were to create awareness among residents of beneficiary epicenters to:

i. Believe in their ability to change their communities
ii. Accept the responsibility to do so, and in particular,
iii. Be able to express their opinion on the performance of their community leadership.

These results were analyzed through four indicators: i. the belief in one's ability to change community, ii. perceptions of the success of leadership, iii. exercise of civil responsibility of voting and iv. participation in epicenter activities. These indicators measure the responses by gender as well, as it is important to identify any possible gender gaps in community mobilization. As the majority of these indicators were developed for THP's programs, there is only baseline data available on voting and there are no current data points of comparison. While this limits the analysis, there is still some useful insights from examining the data by epicenter.

Table 6.0: Community Mobilization

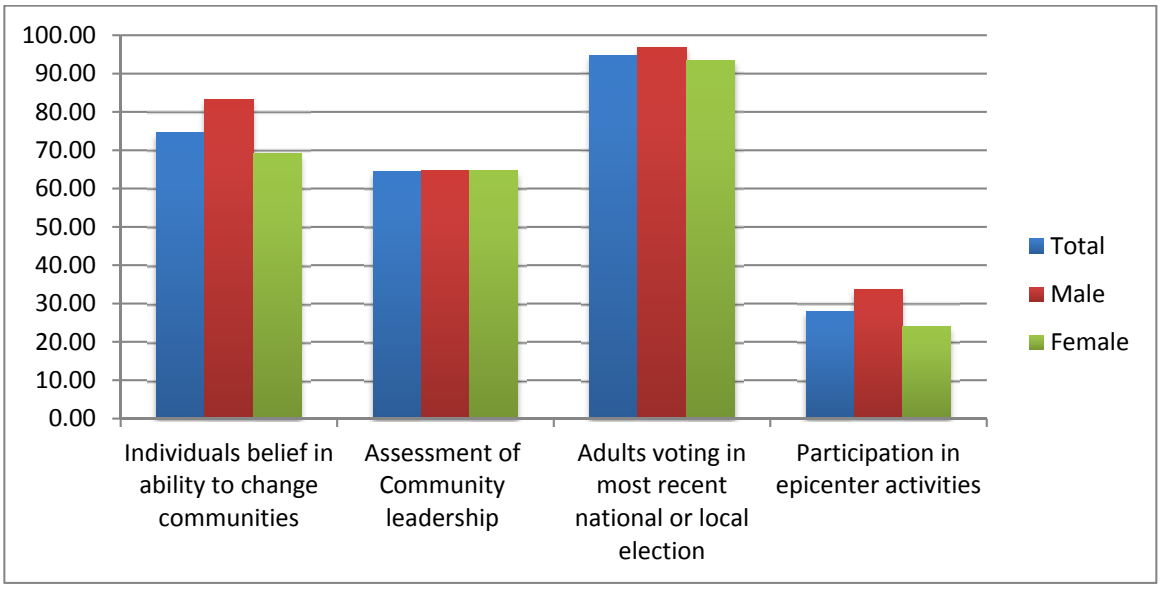
Indicators	Akotekrom	Atuobikrom	Dome-Achiansa	Nkawansa	Nsuta-Aweregya	Odumase-Wawase	Average
Individuals belief in ability to change communities	75.43	74.6	78.54	68.85	73.49	76.8	74.62
Men	*81.03*	83.53	*88.42*	*77.38*	*82.43*	*86.76*	*83.26*
Women	*69.83*	69.94	*70.00*	*64.77*	*68.79*	*71.43*	*69.13*
Assessment of Community leadership	64.22	71.26	69.27	61.54	63.26	57.22	64.46
Men	*62.07*	*71.76*	*66.32*	*60.71*	*65.75*	*61.76*	*64.73*
Women	*66.38*	*70.99*	*71.82*	*61.93*	*61.97*	*54.76*	*64.64*
Adults voting in most recent national or local election	95.69	97.17	96.1	94.57	93.98	91.19	94.78
Men	*99.14*	*100.00*	*95.79*	*95.24*	*95.95*	*95.52*	*96.94*
Women	*92.24*	*95.71*	*96.36*	*94.25*	*92.96*	*88.89*	*93.40*
Participation in epicenter activities	31.74	21.07	26.83	28.57	31.31	28.35	27.98
Men	*39.47*	*26.51*	*32.63*	*41.67*	*31.08*	*30.88*	*33.71*
Women	*24.14*	*18.24*	*21.82*	*22.29*	*31.43*	*26.98*	*24.15*

Table 6.0 portrays the results by epicenter. Dome-Achiansa showed the highest proportion of individuals who believe they can change their community (79%) while Nkawanda had the lowest (69%). Voting participation was similar in all six epicenters, between 91 and 97 percent. The highest participation rate was in Akotekrom (32%) with the lowest in Atuobikrom (21%).

When looking at the six epicenters together, more than 74% of respondents indicated belief in their ability to change their communities; 65% of respondents perceived leaders to be successful in addressing community concerns, and more than 90 percent (94.78%) reported voting in the most recent elections. On average, less than a third of respondents (28%) indicated participating in THP activities in their respective epicenters.

Examining the aggregate results by gender shows a general trend of stronger results for men than women. For example, the percentage of men who believe they can change their communities was, on average, 14 percentage points higher than women. The gender gap is also highlighted in participation in epicenter activities, where men's participation is approximately 10 percentage points higher than that of women.

Fig. 6.0: Community Mobilization Results, Percentage of Respondents



5.2.1 Achievement in Community Mobilization from Baseline

As most of the indicators in community mobilization are designed specifically for THP's programs, there is not a reliable source of baseline data available. However, baseline data is available for participation in voting in four of the epicenters. The results are in a chart below.

Table 6.0a: Achievement in Voting Participation from Baseline

Indicators	Akotekrom			Atuobikrom			Dome-Achiansa			Nkawanda			Nsuta Awaregya			Odumase -Wawase		
	Baseline (2008)	2014	% Change	Baseline (2003)	2014	% Change	Baseline (2008)	2014	% Change	Baseline (2003)	2014	% Change	Baseline (1998)	2014	% Change	Baseline (2003)	2014	% Change
Proportion of adults who voted in the most recent national or local election	66.59	95.69	43.70	85.12	97.17	14.15	66.59	96.10	44.31	68.20	94.57	38.67	64.55	93.98	45.59	33.45	91.19	172.62

When examining the other epicenters, a positive trend emerges. Voting participation increased from baseline in every epicenter, by an average of 60%. This trend indicates that increasingly more community members are voting in elections.

5.3 Empowerment of Women and Girls

Empowering women and girls and achieving gender equality are crucial to creating inclusive, open and prosperous societies. It is not only important for an equitable society, it is essential to building stronger economies, achieving internationally agreed-upon development goals, and improving the quality of life of women, men, families, and communities. The THP empowerment of women and girls program component was assessed using six indicators;

i. Women's Empowerment Index (WEI)
ii. Women's dietary diversity
iii. Proportion of female small business owners
iv. Antenatal care (ANC) coverage
v. Proportion of births attended by licensed professionals
vi. Gender parity ratio and

The results of the women's empowerment indicators can be seen in the table below. Some strong areas of performance were in female business ownership, with an average of 33% of women owning their own businesses in these epicenters, as compared with only 14% of men. Healthcare also highlights an achievement, with more than 92% of women receiving at least one antenatal care visit during her pregnancy and more than 75% of births attended by a licensed healthcare professional.

The 2014 Demographic and Health Survey Key Indicator Findings report offered a point of comparison for three of the indicators: antenatal care coverage, proportion of attended births, and the gender parity ratio. These results were disaggregated at the national, rural, and Eastern region. For women who received at least one ANC visit while pregnant, the majority of the epicenters performed above the average for the Eastern Region. Only two epicenters, Dome-Achiansa and Odumase-Wawase, were slightly below the Eastern Region average. When examining those who received four or more ANC visits, the epicenters overall compared favorably to the rural average – three epicenters were higher than average, and two scored two percentage points lower. Nkawanda had the lowest percentage of four or more visits (76%), which is notable because the epicenter had a 99% = result when counting one or more visits. This points to more women receiving antenatal visits, but far fewer receiving the recommended four.

Table 7.0 Empowerment of Women and Girls

	2014 Epicenter Program Evaluation Results						Secondary Sources[4]		
Indicators	**Akotekrom**	**Atuobikrom**	**Dome-Achiansa**	**Nkawansa**	**Nsuta Awaregya**	**Odumase -Wawase**	**National**	**Rural**	**Eastern Region**
Women's Empowerment Index	70.62	72.32	78.63	70.37	77.07	73.41			
Women's Dietary Diversity	3.6	3.36	3.62	3.5	3.53	3.32	-	-	-
Female small business owners (%)	30.86	31.18	32.38	43.22	30.77	30.84	-	-	-
Male small business owners (%)	7.92	15.34	16.13	12.50	16.07	14.72	-	-	-
Antenatal Care Coverage (%)	98.21	96.88	92.73	98.51	100	92.73	97.3	96.2	96.6
1 visit	*5.36*	*0.00*	*3.64*	*8.96*	*3.45*	*3.64*	1.1	1.5	-
2-3 visits	*12.50*	*6.25*	*1.82*	*9.24*	*6.90*	*7.28*	8.6	11.3	-
4+visits	*80.36*	*90.63*	*87.27*	*76.12*	*89.66*	*81.82*	*87.3*	*82.9*	-
Proportion of births attended by licensed health care professional (%)	89.29	95.31	74.55	89.55	98.28	92.73	73.7	60.2	67.2
Gender parity ratio[5]	1.01	1.01	1.06	0.94	0.96	1.04	1.00	1.00	0.92

With respect to proportions of births attended by licensed health workers' indicator, average performance is about 90%in all six epicenters, except Dome-Achiansa which scored 74.55%. In comparison with the average for the Eastern Region (67%), all THP epicenters perform quite favorably. This result is consistent even when examining the national average and should be considered an achievement of THP's epicenters.

The gender parity ratio compares the percentage of school-age girls to the percentage of school-age boys enrolled. A score of 1 signifies gender equality in enrollment. The THP epicenters with the greatest gender parity are Akotekrom and Atuobikrom, as their results are the closest to 1. Nkawanda and Nsuta-Aweregya are slightly below one, which shows a greater percentage of boys enrolled in primary school[6]. Conversely, Odumase-Wawase and Dome-Achiansa had a higher percentage of girls enrolled in primary school than boys.

The Hunger Project has long tradition of empowering women as a central component of its programs. To measure progress in advancing the multidimensional aspects of women's empowerment an index, the Women's Empowerment Index (WEI), was developed in-house by The Hunger Project M&E department. It is an outcome of extensive external research and internal testing. It allows for comprehensive benchmarking of progress towards empowering women which helps The Hunger Project strategically design and implement programs for empowering women in focus regions.

[4] 2014 Ghana Demographic and Health Survey, Key Indicators Report

[5] Percentage of girls to boys enrolled at primary school (ages 4-13)

[6] For example, a score of 0.94 indicates 94 girls enrolled for every 100 boys enrolled.

The Women's Empowerment Index (WEI) measures women's achievement and gender parity in five equally-weighted domains: agency, income, leadership, resources, and time. Each domain is determined by 2-3 indicators (full list in Appendix 3.0).

Fig. 7.0a: The Women's Empowerment Index

Domain	Indicator
Agency (20%)	Community Decision Making
	Household Decision Making
	Spousal Abuse is Unacceptable
Income (20%)	Owning and Operating Businesses
	Access to Financial Service
Leadership (20%)	Membership in Community Organization
	Speaking in Public
Resources (20%)	Literacy Rate
	Prenatal Care
Time (20%)	Time Spent on Gathering Cooking Fuel
	Division of Domestic Tasks

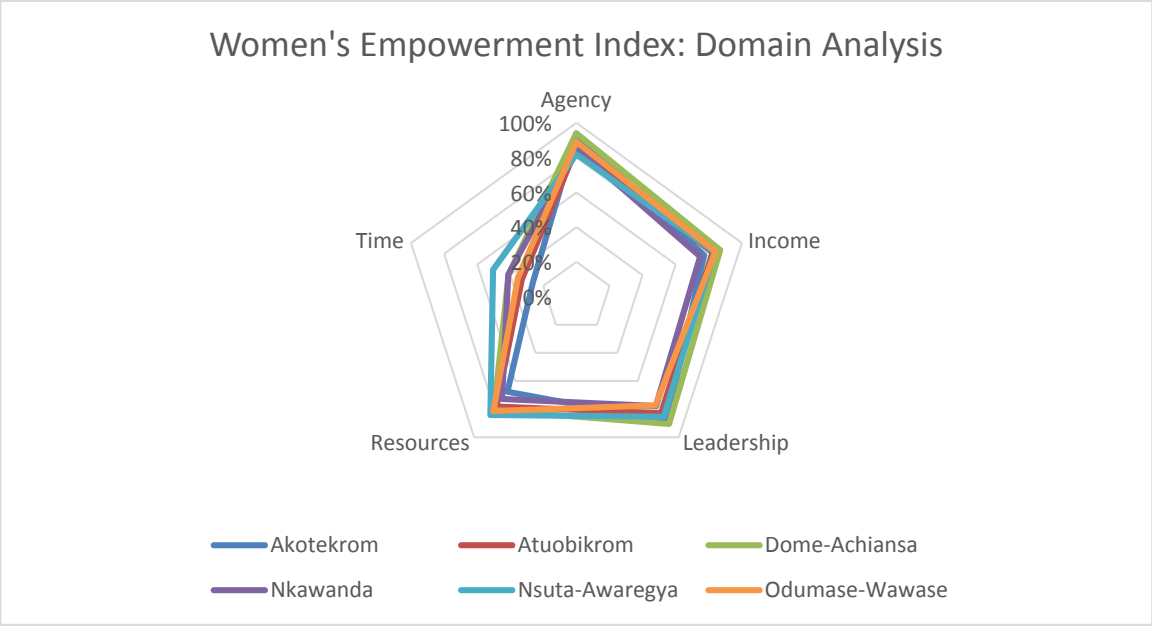
The index is calculated out of 100 possible points, and the higher the index, the greater the level of women's empowerment in a community.

As shown in Table 7.0, all epicenters have WEIs above 70%. Dome-Achiansa has the highest index (79%) and Nsuta-Aweregya ranks second with an index of 77%. Odumase-Wawase, Atuobikrom rank third and fourth respectively with 73% and 72%. Akotekrom ranked the least with nonetheless with a WEI of 71%.

For a better understanding, it is best to examine the scores within the domains. The achievement in each of the five domains is shown in Fig. 7.0b below. In general, the six epicenters have similar scores in each of the domains. The agency, income, leadership and resources domains achieved more than 70% of the possible

points in the domains. With respect to the time domain however, women in all six epicenters performed rather poorly; they scored about half or less of the 20% possible points to achieved. This result indicates that women are still primarily responsible for household drudgery tasks such as collecting fuel and water.

Fig. 7.0b: Domain Scores of Six Epicenters



In FGDs and KIIs, respondents from across the epicenters noted that THP trainings have allowed them to reconsider gender roles in decision-making. They reported greater decision-making power for women: "At first, the men dominated their spouses in decision making but with the education and knowledge that we have received from THP, about 90% of households in our various communities now share ideas in household decision making; spousal abuse has greatly reduced," commented men from Dome-Achiansa. The high agency score reflects that decision-making power is more equal between men and women.

The time domain consists of the time women spend gathering cooking fuel and water. The implicit assumption is that women are responsible for collecting firewood, so the more households that are able to purchase cooking fuel, the more time women save. The percentage of households that purchase cooking fuel varied from 31% in Odumase-Wawase to only 5% in Akotekrom. Women are responsible for collecting water in two-thirds of households, ranging from 66% in Dome-Achiansa and Nsuta-Aweregya to 76% in Atuobikrom. Over time, it is hoped that women and men will divide this task equally, and that there will be an increased presence of taps within households, both of which will reduce the women's burden of collecting water.

The qualitative results on time were inconclusive, as many respondents reported an increased share in chores, and that gender roles were sometimes reversed. It may be possible that this result is true for those who have attended THP's trainings on women's empowerment, but a larger cultural shift may not have reached the whole epicenter.

- "At first, while I was pregnant, when we went to the farm, I carried heavy loads to the house. On my arrival I was supposed to cook and do other household chores whiles my husband does nothing.

Now it is not so. We can boldly say that because of THP, it is not only partnership in decision making that has increased but also partnership in performing household chores." – Women's FGD, Atuobikrom Epicenter

- "Boys and girls in the household share responsibilities equally. Now the boys sweep, wash and fetch water whiles it used to be roles associated with the girls. At first, the boys used to study whiles the girls were always doing house chores. Now it is no more so. Chores are shared equally so that both of them could study in the evening when they all finished." – Women's FGD, Atuobikrom Epicenter

The Women's Dietary Diversity Score (WDDS) measures the nutritional adequacy of women of reproductive age (15-49) by determining the number of different food groups consumed during a 24-hour period. The epicenters all scored between an average of 3-4 food groups consumed. These scores are sub-optimal to the ideal nutritional intake, which is recommended above five food groups.

Fig. 7.0c: Women's Dietary Diversity

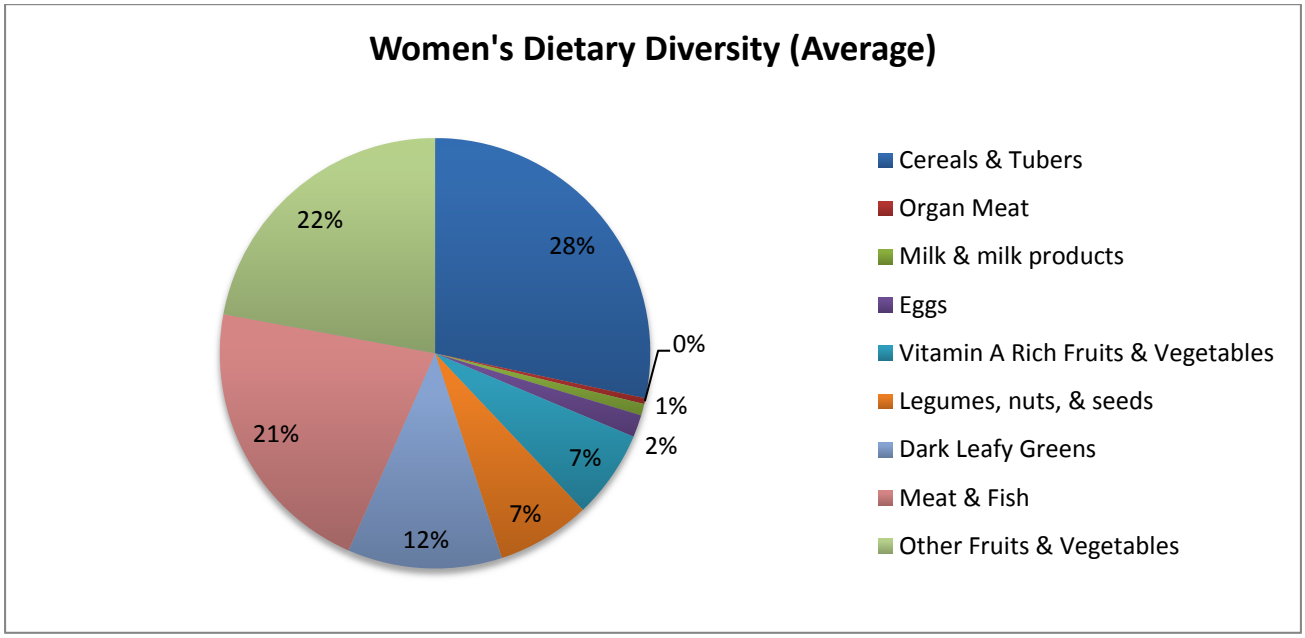
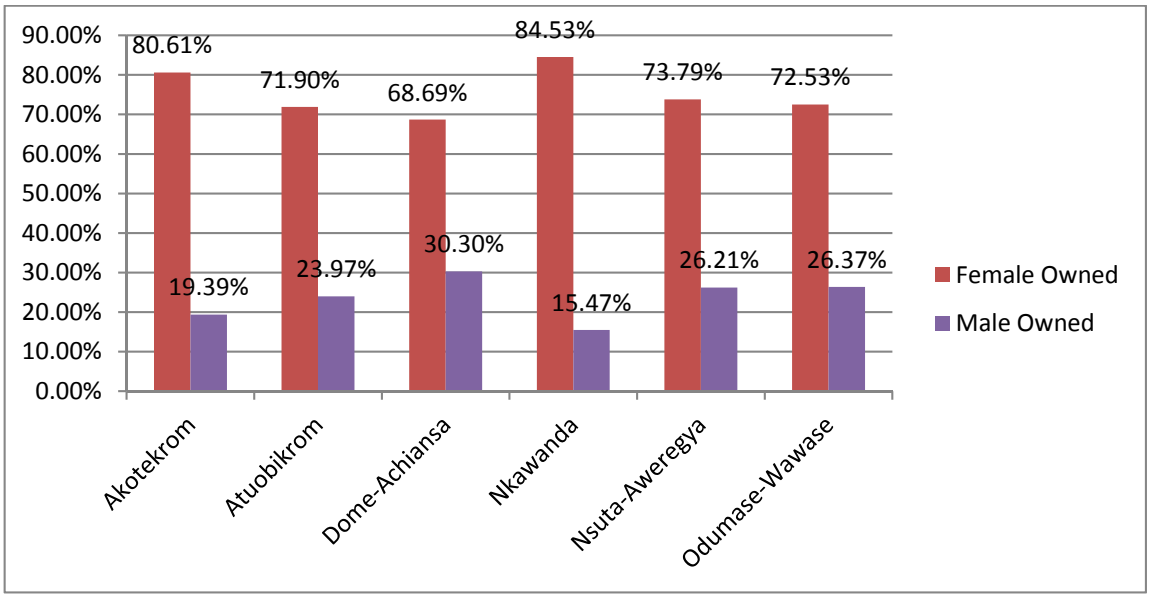


Figure 7.0c above shows the average dietary breakdown of nine essential food groups. In general, the average diet is balanced between cereals and tubers, fruits and vegetables, and meat and fish, each which comprise approximately a quarter of the diet. The other six groups comprise only a quarter of the diet, so while there is some balance between grains, protein, and vegetables, there is a much lower percentage of vitamin A-rich foods, dark leafy greens, and non-meat protein sources consumed.

It is important to consider not just the percentage of women who are business owners, but also the percentage of businesses that are owned by women. In the case of the six epicenters, the majority of the household businesses reported were female-owned. On average, 75%of the businesses were owned by

women. The largest gap can be seen in Nkawanda, where 85 % of businesses were owned by women as opposed to only 15% owned by men.

Fig. 7.0d: Women-Owned Business



5.4 Achievement in Women's Empowerment from Baseline

When examining the results of the women's empowerment indicators to the baseline values, the result is quite positive. The most staggering outcome was in the percentage of births attended by a licensed healthcare professional. The proportion of attended births increased from an average of 53% to an average of 90%, representing a 73% increase in attended births from baseline. In fact, the percentage of attended births increased in every epicenter, with the largest jump in Nsuta-Aweregya.

Fig. 7.0e: Proportion of Births Attended by a Licensed Health Care Professional

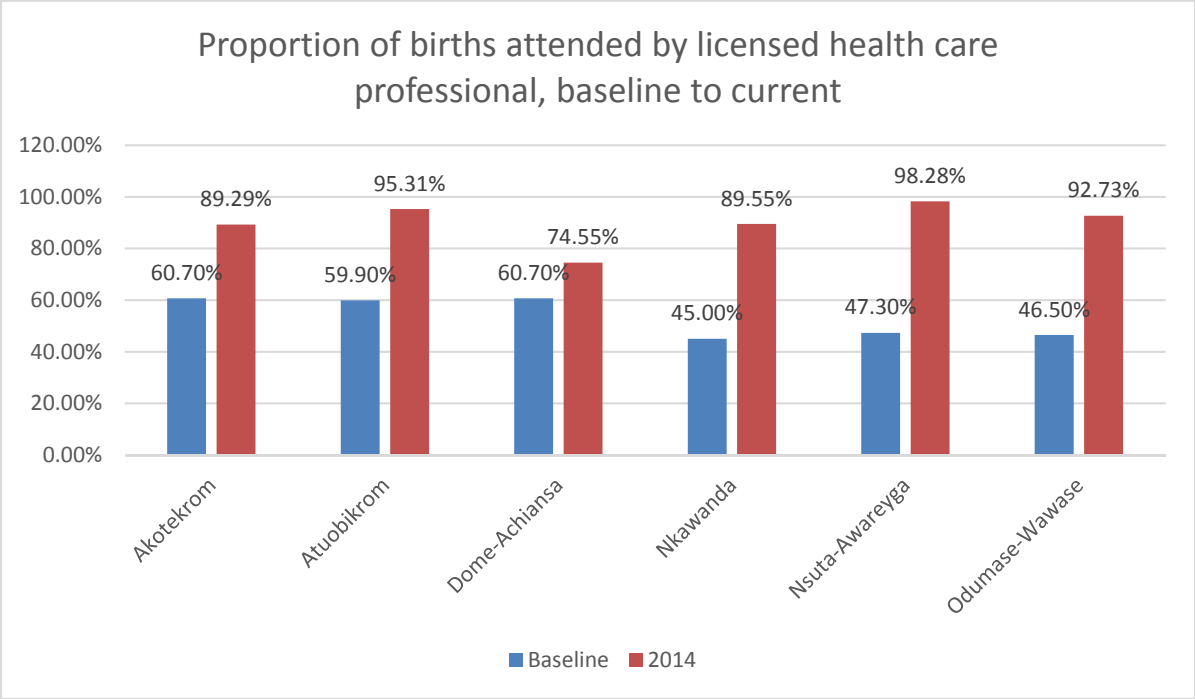


Table 8.0 on the following page shows the full results from baseline of the women's empowerment indicators. There are only three indicators for which there is baseline data, but they all point to an improvement. In particular, there was a strong performance in women's health. For example, the percentage of women receiving at least one ANC visit prior to birth increased an average of 8%, with the greatest improvement seen again in Nsuta-Aweregya Epicenter. The gender parity ratio for primary school also shows some promising results, though it is more mixed. A result of 1.0 shows balanced gender parity in primary school. Atuobikrom and Nkawanda were the only epicenters that moved slightly closer to 1, showing a slight decrease in the proportion of girls attending school when compared to boys. Akotekrom, Dome-Achiansa, and Odumase-Wawase increased the proportion of girls in school, while Nsuta-Aweregya was the only epicenter to show an increase in boys attending school.

Table 8.0 Achievement in Women's Empowerment from Baseline[7]

Indicators	Akotekrom			Atuobikrom			Dome-Achiansa			Nkawanda			Nsuta Awaregya			Odumase -Wawase		
	Baseline (2008)	2014	% Change	Baseline (2003)	2014	% Change	Baseline (2008)	2014	% Change	Baseline (2003)	2014	% Change	Baseline (1998)	2014	% Change	Baseline (2003)	2014	% Change
Antenatal Care Coverage (%)	60.70	89.29	47.09	59.90	95.31	59.12	60.70	74.55	22.81	45.00	89.55	99.00	47.30	98.28	107.77	46.50	92.73	99.41
Proportion of births attended by licensed health care professional (%)	93.00	98.21	5.61	87.60	96.88	10.59	93.00	92.73	-0.29	88.00	98.51	11.94	87.60	100.00	14.16	88.00	92.73	5.37
Gender parity ratio[8]	0.99	1.01	2.48%	1.05	1.01	-3.50%	0.99	1.06	7.68%	1.09	0.94	-13.84%	1.01	0.96	-4.61%	1.03	1.04	1.26%

In conclusion, the results of the women's empowerment are quite positive. The WEI scores of all epicenters are approaching the target of 80%, while in healthcare access to antenatal services and attended births is approaching 100% for most epicenters. There is also a much higher percentage of women owning businesses, and gender parity in primary school has been achieved. These results compare favorably with both current secondary source data as well as baseline data, pointing to a level of development above the regional average as well as substantial change over time.

[7] Baseline data comes from the most recent Demographic and Health Survey Report prior to the baseline year.

[8] Percentage of girls to boys enrolled at primary school (ages 4-13)

5.5 Water, Sanitation and Hygiene

Hygiene refers to conditions and behaviors that help to improve cleanliness and good health such as hand and face washing, and other practices that help prevent the spread of diseases. The provision and the availability of improved water and sanitation services and infrastructure in addition to behavior change programs is basic to good hygiene practice in any community. Improved water sources include piped water, harvested rainwater, borehole water and water from protected wells and springs. Unimproved water sources include unprotected rivers or streams, dams, ponds, lakes, unprotected wells, and water vendors[9]. Improved sanitation includes private facilities connected to main sewer, septic tank, cesspit, ventilated-improved pit (VIP) latrines and covered pit latrines.[10] The unsanitary ones include uncovered pit latrines, bucket latrines and those with no toilet, or facilities that are shared among many households.

The Hunger Project, in addition to supporting the provision of water and sanitation facilities at the epicenter site, also promotes the proper use of these through behavior change programming. The outcome of the program is assessed using three indicators;

i. Prevalence of diarrheal diseases in children under five years,
ii. Proportion of children households using an improved drinking water source and
iii. Proportion of households using improved sanitation facility

Table 8.0 and Figure 8.0 demonstrate results of these three indicators.

Table 8.0a: Access to Safe Drinking Water and Sanitation Facilities

	2014 Epicenter Program Evaluation Results						Secondary Data Sources [11]		
Indicators	Akotekrom	Atuobikrom	Dome-Achiansa	Nkawanda	Nsuta-Aweregya	Odumase-Wawase	National	Rural	Rural Forest Communities
Prevalence of Diarrheal Disease in Children Under 5yrs	15.52	12.39	4.95	18.46	13.33	21.43	-	-	-
% Households Using Improved Drinking Water Source	98.88	97.87	44.72	91.86	96.45	93.94	59.2	68.0	68.9
% Households Using Improved Sanitation Facility	49.72	51.06	57.76	36.82	43.88	40.00	13.6	8.5	

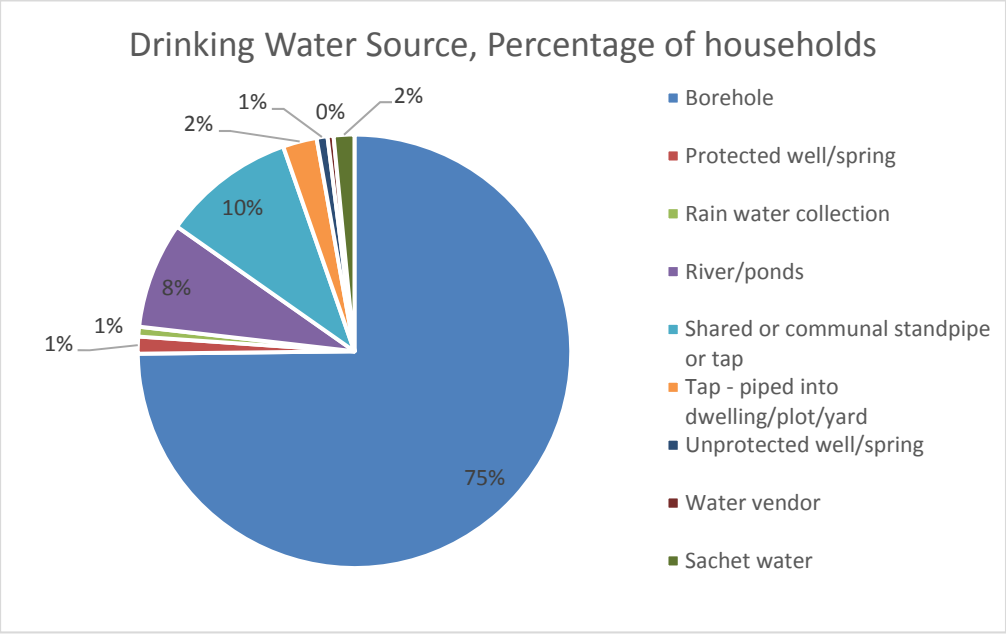
[9] Kenya National Bureau of Statistics and Society for International Development, 2013: Exploring Kenya's Inequality: Pulling Apart or Pooling Together. Website www.sidint.net
[10] Ibid.
[11] Improved drinking water indicator is compared to 2014 GLSS survey (DHS results were very similar). Improved sanitation compared to 2014 DHS results.

The prevalence of diarrheal disease was low overall, ranging from 5%in Dome-Achiansa to 21% in Odumase-Wawase. Access of households to improved water sources was on average 87%, though it is notable that in Dome-Achiansa it was only 45%. This result may have occurred because many boreholes in Dome-Achiansa epicenter at the time of the evaluation survey had broken down. This accounts for the low access to improved water sources observed in the data. These boreholes have since been repaired and are supplying improved water to the epicenter communities, so a better result is expected for the next evaluation. On average, 47% of households have access to an improved sanitation facility. Dome-Achiansa has the highest access (58%), while Nkawanda has the lowest (37%).

The results in the epicenters were compared with the available secondary source data. For improved drinking water, the epicenter results were compared with results observed for rural areas (68%) or rural forest communities (69%). With the exception of Dome-Achiansa, the proportion of households with improved drinking water is higher than the proportions observed for rural areas/rural forest communities and even the national average (59%). The data on proportion of households using improved sanitation facilities in comparison with the averages for rural area (8.5%) show that all epicenters are performing far above the rural area proportions.

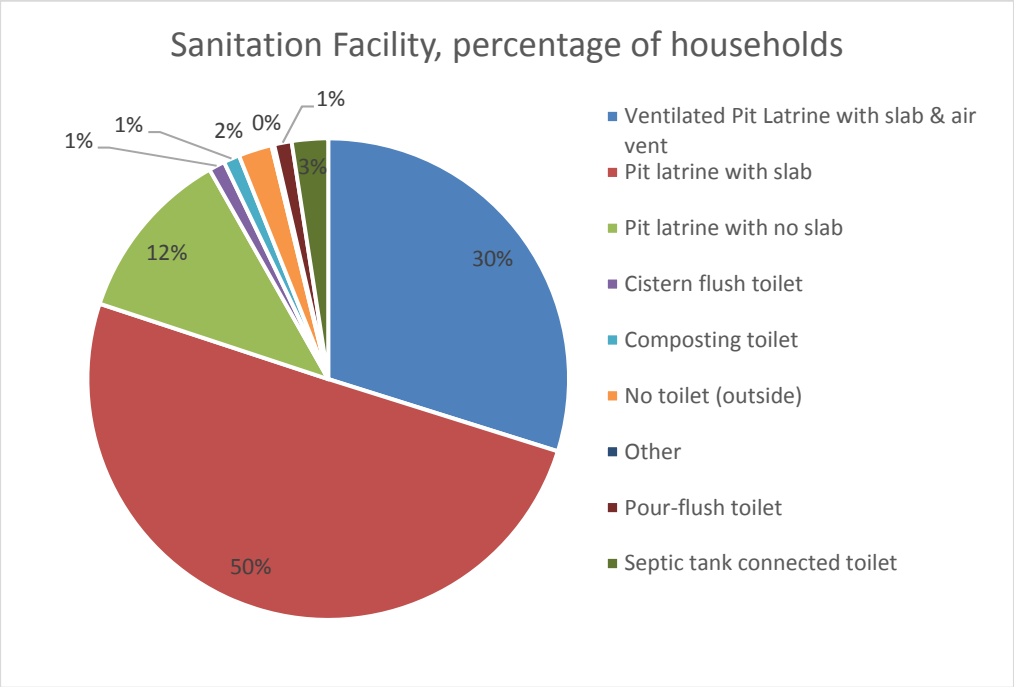
A comparison of data on all three indicators across all the six epicenters reveals an interesting pattern in the Dome-Achiansa Epicenter. The outcome indicator shows it has the lowest incidence of under-five diarrheal diseases (4.95%) yet access to improved water sources in this epicenter is the lowest (46.58%) amongst the six epicenters in this study. The low under-five diarrheal incidence could be explained by its use of improved sanitation facilities. In Table 8.0, this epicenter has the highest proportion of households using improved sanitation facilities. The data in Table 8.0 could be instructive on how the two outputs, access to improve water sources and use of improved sanitation facilities, could influence the impact of diarrheal disease. A good understanding of the interaction(s) between these outputs, through further analysis, may be of programming value in influencing the impact, incidence of diarrheal diseases in children under five years in the epicenters.

Figure 8.0: Drinking Water Source



A closer examination of the types of drinking water sources used shows that 75% of households have access to a borehole. The next most common water sources were a shared tap (10%) and rivers and ponds (8%).

Figure 8.0a: Sanitation Facility, Percentage of Households



The most common type of sanitation facility was a pit latrine with slab, used by half of all households. Ventilated pit latrines were also common (30%). These two sources are considered sanitary if they are private, but 47% of households are sharing their facility with one or more households. This result indicates a need for additional private sanitary facilities.

5.5.1 Achievement from Baseline in Water & Sanitation

The result of the water and sanitation indicators is quite positive when compared to baseline. While both improved water and sanitation increased from baseline, access to sanitation was certainly the greater achievement, with an average 323%increase. This indicates a doubling, or in some cases, tripling of access to improved sanitation facilities. The result was consistent across epicenters, though the greatest increase was seen in Dome-Achiansa, where access increased from 7%to 58%.

Figure 8.0b: Proportion of Households Using an Improved Sanitation Facility

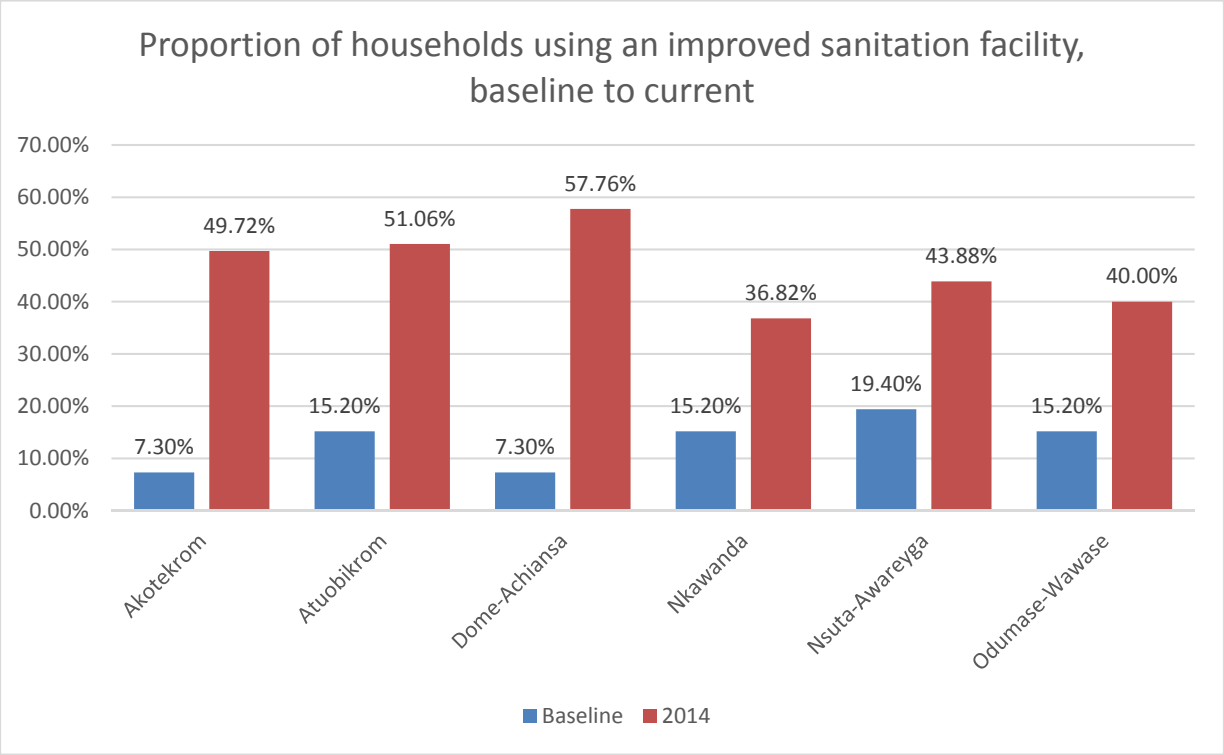


Table 9.0 on the following page shows the full results from baseline of the water and sanitation indicators. There is substantial progress on both water and sanitation from all epicenters. The only exception is Dome-Achiansa, which experienced a 40 percent decrease in access to improved drinking water. However, this decrease is likely due to the broken boreholes at the time of the survey and a more positive result is expected for the next evaluation.

The qualitative results also highlighted that access to improved water has increased, though some communities have seen more change than others. Others commented that "only a few of the communities have had access to safe water; nevertheless, [THP] has taught us how to clean, treat, and make our water safe for drinking" (Female FGD, Nsuta-Aweregya Epicenter). There is a general concern of trash being dumped near drinking water areas, so this is a potential area of focus for water and sanitation activities.

- "Since THP came, only a few of the communities have had access to safe water. Nevertheless, basic sanitation has really improved because of their teachings on health." – Women's FGD, Dome-Achiasna Epicenter

Table 9.0: Achievement in Water & Sanitation from Baseline[12]

	Akotekrom			Atuobikrom			Dome-Achiansa			Nkawanda			Nsuta-Awereyga			Odumase-Wawase		
	Baseline (2008)	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**	**Baseline (2008)**	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**	**Baseline (1998)**	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**
Proportion of households using an improved drinking-water source.	75.30	98.88	31.32	53.60	97.87	82.60%	75.30%	44.72 %	-40.61%	53.60%	91.86 %	71.37	45.30	96.45	112.91	53.60	93.94	75.26
Proportion of households using an improved sanitation facility	7.30%	49.72 %	581.11 %	15.20%	51.06 %	235.95 %	7.30%	57.76 %	691.29 %	15.20%	36.82	142.22	19.40	43.88	126.17	15.20	40.00	163.16

Overall, the high access to improved drinking water in the six epicenters should be viewed as an achievement. While access to improved sanitation still hovers around 47%, this number becomes more encouraging when analyzed in the context of current secondary source data and baseline data. This analysis, in fact, shows that the status of water and sanitation in the epicenters is far above the regional average and has increased greatly since baseline.

[12] Baseline data comes from the most recent Demographic and Health Survey Report prior to the baseline year.

5.6 Literacy and Education

Education is an important aspect of societal development. It is the process of acquiring knowledge, skills, values, and attitudes to fully develop individual capacities for societal well-being. Literacy is the ability to read or write a simple statement with understanding. The Hunger Project promoted education and literacy for both adults and youth in all six epicenters.

The result of the program is assessed using:

i. Proportion of households with at least one literate person and
ii. Proportion of children age 4-18[13] in the households, attending school

Data on the percent of children aged 4-18 attending school indicator is disaggregated by sex and level of education. Table 9.0 shows the results of data analyzed in comparison with the 2014 DHS report.

Table 9.0a Literacy and Education

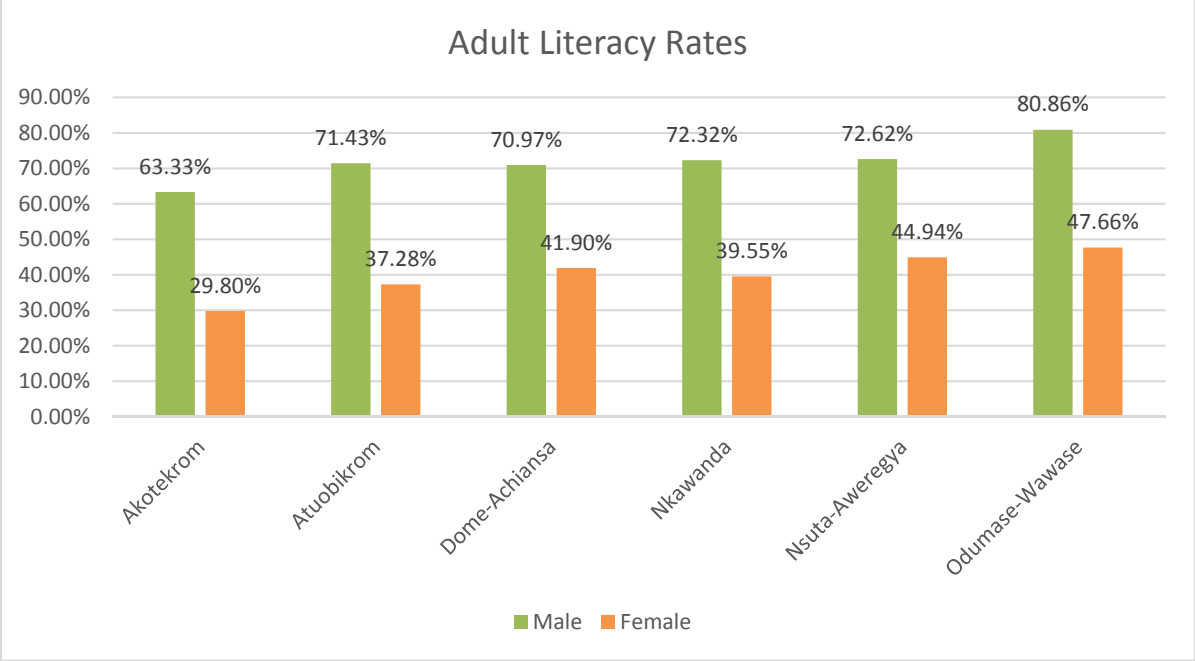
	2014 Epicenter Program Evaluation Results							Secondary Data Sources[14]		
Indicators	Akotekrom	Atuobikrom	Dome-Achiansa	Nkawansa	Nsuta-Aweregya	Odumase-Wawase		National	Rural	Eastern Region
% Households with at least one literate person	79.31	85.41	84.47	84.09	85.56	86.45		-	-	-
% Children aged 4-18 attending school	92.39	92.26	92.13	86.7	89.14	87.19		-	-	-
% girls	*93.01*	*90.53*	*93.57*	*85.15*	*84.67*	*87.94*		*-*	*-*	*-*
% boys	*91.83*	*94.01*	*90.81*	*88.13*	*92.81*	*86.43*		*-*	*-*	*-*
% primary	*93.50*	*96.34*	*95.47*	*93.45*	*94.01*	*96.04*		*69.6*	*65.8*	*68.0*
% secondary	*89.74*	*81.11*	*82.42*	*71.76*	*89.14*	*64.56*		*38.5*	*32.3*	*38.7*

On average 84%of households in the epicenter have at least one person who is literate. Net school attendance rates are also strong, ranging from 87% in Nkawanda to 92% in Akotekrom. This highlights a very positive trend in school attendance. Boys and girls are attending school at similar rates, with a slightly higher percentage of girls attending in Akotekrom, Dome-Achiansa and Odumase-Wawase. The largest gender gap can be seen in Nsuta-Aweregya, where almost 93%of boys are attending school as compared to 85% of girls, a gap of 8 percentage points. Results from data disaggregation by level of education show a dichotomy in the proportions of children in primary and secondary schools. In each of the epicenters there are fewer children at the secondary level than primary level, with an average enrollment of 80% in secondary as compared to 95% in primary. Odumase-Wawase has a comparably low secondary school attendance rate of 65%, which signifies a large dropout considering its high rate of primary attendance (96%).

[13] Because promoting nursery school is a primary component of THP's work in literacy and education, ages 4-18 are included in the analysis.
[14] 2014 DHS

When compared with primary and secondary enrollment data at the national, rural, and regional level, the epicenter results are quite positive. For primary school, all epicenters boast enrollment rates that are far above the national average of 70%. For secondary school, the national rate is only 38.5%, far below even the lowest epicenter results. Qualitative data revealed that one of the most significant changes in the epicenters was increased enrollment of students, possibly due to THP's education campaigns.

Figure 9.0: Adult Literacy Rates



Adult literacy classes are a key program component. In the six epicenters, there is a substantial literacy gap between adult men and women. On average, 72% of adult men are literate as compared to 40% of adult women, a gap of 32 percentage points. This gap persists for all epicenters – it is still present in Odumase-Wawase, which had the highest overall literacy rates for both genders. The gap signals a continued need for adult literacy work.

5.6.1 Achievement from Baseline in Literacy & Education

The literacy and education results compare favorably to the baseline results. There was an increase in school attendance at both the primary and secondary level. The rates of secondary education approximately doubled (102% change average), while the rates of primary education also increased by 35%. The results were consistent across epicenters, though the greatest increases were in Nkawanda for primary school attendance and Nsuta-Aweregya for secondary school.

The qualitative data was mostly positive regarding access to education, particularly that of girls: "Girl child education was very poor years back. Now the girls also go to school and they compete greatly with the boys," said a woman in a FGD in Dome-Achiansa. In fact, this was consistently listed as one of the most

important changes since THP began its work. There were also many comments around improved quality of education, though these results were mixed and men tended to be more critical than women.

Table 9.0b: Achievement in Literacy & Education from Baseline[15]

	Akotekrom			Atuobikrom			Dome-Achiansa			Nkawanda			Nsuta-Awereyga			Odumase-Wawase		
	Baseline (2008)	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**	**Baseline (2008)**	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**	**Baseline (1998)**	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**
Proportion of children attending primary school	75.40	93.50	24.01	67.50	96.34	42.73	75.40	95.47	26.62	63.50	93.45	47.16	86.30	94.01	8.93	59.80	96.04	60.60
Proportion of children attending secondary school	42.80	89.74	109.68	40.90	81.11	98.32	42.80	82.42	92.50	35.80	71.76	100.43	37.90	89.14	135.21	36.80	64.56	75.43

- 'It is really hard for a village boy to get aggregate 10 or 11. I can boldly say that my son had aggregate 10' and this is because of the improved standards of education'. - Women's FGD, Nkawanda Epicenter

- "Kwahu Oda; girls are now force to go to school / further their education than learning a trade/ apprenticeship after JHS due to the education given them. Now we parents are very particular about our children's education because of THP training given to us. We now know the benefits of education and support our children to go further." → Women's FGD Nsuta-Aweregya Epicenter

The consistent increase in access to education is a very positive result and will contribute to improved literacy rates in the epicenters. There is an increase in attendance rates from baseline, and the epicenters have much higher attendance rates than the Eastern Region average. With high rates of school attendance for both girls and boys, it is expected that the literacy gap may disappear in the next generation.

[15] Baseline data comes from the most recent Demographic and Health Survey Report prior to the baseline year.

5.7 Hunger and Malnutrition

Hunger, as defined by the World Food Program (WFP), is not having enough to eat to meet the body's energy requirements.[16] Malnutrition is, on the other hand, a condition resulting when a person's diet does not provide adequate nutrients for growth and maintenance or when a person's body is unable to adequately utilize the food consumed due to illness.[17] Hunger can lead to malnutrition, but absence of hunger does not imply absence of malnutrition. Hunger is caused by food insecurity, which results from poverty.[18]

THP's intervention in the six epicenters was a contribution to achieving the global agenda of halving hunger in Ghana by 2015. Households were targeted to increase food security, promote good nutrition practices, and ensure hunger and malnutrition particularly among young children, was reduced. Nursing mothers were, therefore, a point of focus for exclusive breast feeding sensitization. Two indicators, shown in Table 10.0, were used to assess the results of the intervention.

i. Knowledge of exclusive breastfeeding practices and
ii. Prevalence of hunger in households (moderate and severe)

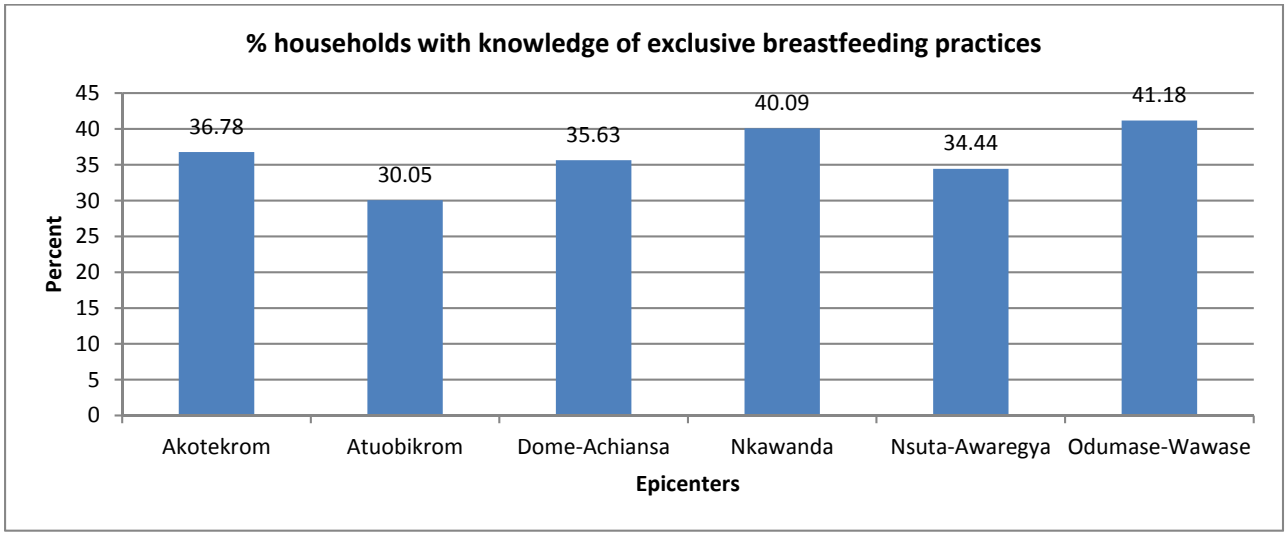
Table 10.0: Reduction in Prevalence of Hunger and Malnutrition

Indicators	2014 Epicenter Program Evaluation Results					
	Akotekrom	Atuobikrom	Dome-Achiansa	Nkawansa	Nsuta-Aweregya	Odumase-Wawase
% Knowledge of exclusive breastfeeding practices	36.78	30.05	35.63	40.09	34.44	41.18
Prevalence of hunger in households	17.88	14.44	10.56	20.55	*9.14*	*18.79*
Moderate Hunger	15.64	*13.90*	*9.94*	*19.18*	*8.12*	*18.18*
Severe Hunger	2.23	*0.53*	*0.62*	*1.37*	*1.02*	*0.61*

The outcomes and impacts of the hunger and malnutrition program are shown in the table above. On average, 36% of households are able to state the correct length of exclusive breastfeeding as a minimum of six months. Whereas 41% of households in Odumase-Wawase Epicenter exhibited knowledge of exclusive breastfeeding, 40% of nursing mothers in Nkawanda Epicenter did so. The other four epicenters recorded even lower proportions; Akotekrom (36.78%), Dome-Achiansa (35.63%), Nsuta-Aweregya (34%) and Atuobikrom (30%). This suggests the impact of the exclusive breastfeeding aspect of the programming to reduce hunger and malnutrition is yet to be felt in the epicenters.

[16] www.wfp.org/hunger/glossary
[17] Ibid.
[18] WFP Ghana 2012 Comprehensive Food Security and Vulnerability Analysis Report

Fig 10.0a: Knowledge of Breast Feeding Practices



THP measures the prevalence of households with moderate or severe hunger by the household's ability to provide its members with an adequate number of meals during all 12 months of the year. In order to measure food security, the Household Hunger Scale was used. Tabulating the answers to three questions determines a final score on this scale:

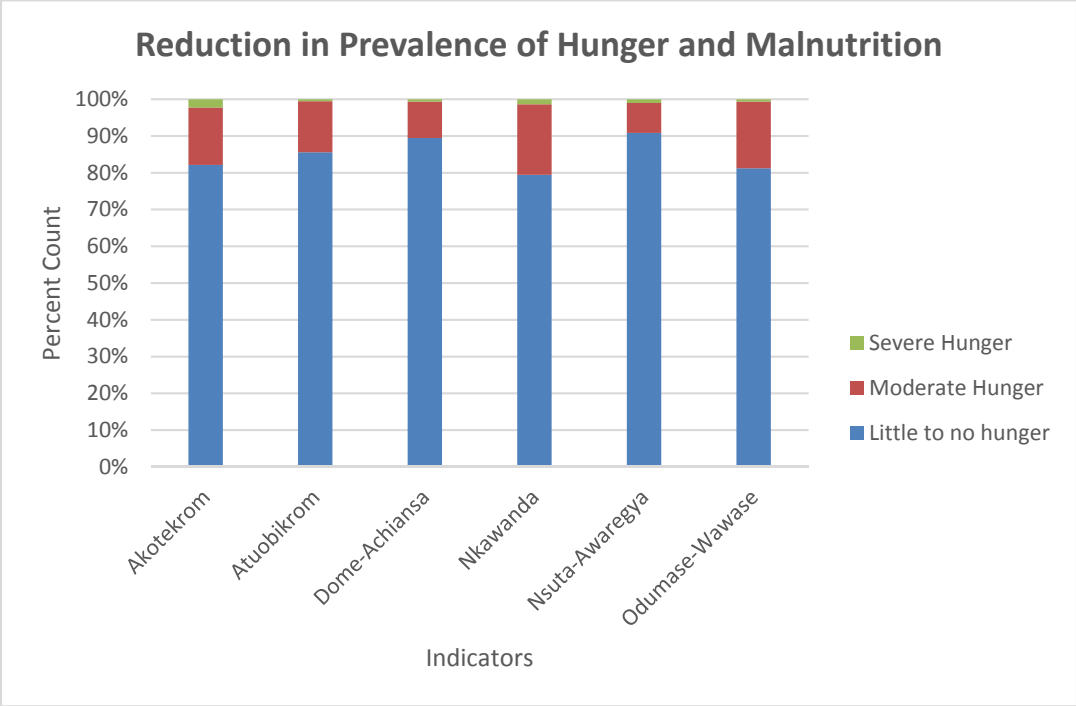
i. During the preceding four weeks, was there a lack of food to eat in your house because of a lack of resources to get the food?

ii. In the course of the preceding weeks, did you or a member of your household go to bed at night hungry (without eating) because there was not enough food?

iii. In the course of the preceding four weeks, did you or a member of your household spend an entire day and night without eating something because there is not enough food?

The answers to the above questions were used to calculate the Household Hunger Score for the four weeks preceding the investigation. The results are displayed in the figure below.

Fig.10.0b: Prevalence of Hunger and Malnutrition



The majority of households (85%) experienced little to no hunger at the time of the survey, but 15% of households did report either moderate or severe hunger. There were some variations in hunger prevalence between epicenters. Nsuta-Aweregya had the lowest prevalence of hunger at 9%; on the other end of the spectrum, Nkawanda had the highest prevalence of hunger with 21%. Overall, the prevalence of severe hunger was less than 3% for all epicenters. Akotekrom had the highest rate of severe hunger at 2.2%, while Atuobikrom had the lowest rate at 0.5%.

There is not comparable secondary source data available for the hunger and malnutrition indicators, which makes it challenging to interpret these results in the wider context of Ghana. Similarly, there is not baseline data available for these indicators. Overall, it is clear that hunger prevalence is low in the six epicenters, though there is still some work to be done eliminating moderate and severe hunger, as well as increasing knowledge of exclusive breastfeeding practices.

5.8 Access to and Use of Health Resources

Access to and use of health resources improves health outcomes. The THP program of intervention had as part of the overall objective, improvement in the health seeking behavior of households in the six epicenters. The results of the intervention were assessed by four main indicators;

i. Proportion of population aware of their HIV status
ii. Percent use of health facilities/clinics when ill
iii. Proportion of children sleeping under a bed net
iv. Proportion of population over 15 years old with comprehensive correct knowledge of HIV/AIDS

Table 11.0 shows results of data analyzed.

Table 11.0: Access to and Use of Health Resources

	2014 Epicenter Program Evaluation Results						Secondary Source Results[19]		
Indicators	Akotekrom	Atuobikrom	Dome-Achiansa	Nkawanda	Nsuta-Aweregya	Odumase-Wawase	National	Rural	Eastern Region
Proportion of Population Aware of HIV Status	27.17	36.31	31.45	41.59	41.04	49.67	36.2	28.5	37.0
% Use of Clinics/Health Workers During Illness	76.23	84.85	76.58	77.39	79.1	71.1	-	-	-
Proportion of Children Under 5yrs Sleeping Under a Bed Net	67.35	82.89	67.44	65.74	64.04	65.22	47.8	56.6	51.2
Population 15+yrs with Comprehensive Correct Knowledge of HIV/AIDS	15.52	19.43	20.38	19.72	19.77	28.48	21.5	17.0	19.1

An average of 38% of respondents are aware of their HIV status, which indicates that 62% are unaware. Akotekrom had the lowest proportion of respondents who know their status at only 27%, while Odumase-Wawase had the highest proportion at 50%. The results for comprehensive knowledge of HIV/AIDS were also low, at only 21%. Similarly, respondents from Akotekrom showed the lowest knowledge while those from Odumase-Wawase had the highest.

On average, 78% of households visited a clinic or health worker when sick in the previous six months. While the Atuobikrom Epicenter populace has the highest proportion (.85%), the population at Odumase-Wawase Epicenter have the least (71%). The proportions of children sleeping under a bed net is on average 69%. Notably, Atuobikrom again has the highest proportion (83%) of children under 5 sleeping under bed nets, which was 15 percentage points higher than the other epicenters. Nsuta-Aweregya recorded the lowest proportion (64.%). The six epicenters performed well on bed net usage when compared to secondary source averages at the national, rural, and regional level. The epicenter with the lowest proportion of children under 5 sleeping under bed nets, Nsuta-Aweregya, still scored 16 percentage points higher than the national average and 13 percentage points higher than the regional average.

The HIV/AIDS components, however, had mixed results. When examining the Eastern Region, three epicenters displayed a higher proportion of respondents aware of their HIV status than the average (Nkawanda, Nsuta-Aweregya, and Odumase-Wawase). Atuobikrom showed results very similar to the regional average, and Akotekrom and Dome-Achiansa had results lower than average. In fact, the results in Akotekrom were slightly lower than the rural average across Ghana, indicating a need for more HIV testing in this epicenter. The epicenters did not fare much better on comprehensive correct knowledge of HIV: Three epicenters scored the same as the regional average (19%), while Akotekrom lagged at only 16%. The strongest performance by far was in Odumase-Wawase Epicenter, which was 9 percentage points higher

[19] Secondary source data is from the 2014 DHS results.

than the regional average. Based on these results, there is still a need for sensitization and workshops on HIV/AIDS.

5.8.1 Achievement in Health from Baseline

Baseline results in the health sector are somewhat limited. Only the newest epicenters have baseline data for three of the health indicators, and because Nsuta-Aweregya is the oldest of the epicenters, there is no baseline for any of these indicators. However, the baseline data that is available provides some important insights.

The proportion of the population aware of HIV/AIDS nearly quadrupled since baseline in all epicenters (an average of 538%). This results highlights that the gains in this area have kept pace with and even exceeded the regional average. Similarly, the percentage of children under 5 sleeping under a bed net increased an average of 362 %, with the most notable gains in Atuobikrom and Odumase-Wawase.

There is only data on the proportion of the population with comprehensive knowledge of HIV/AIDS for the two newest epicenters, Akotekrom and Dome-Achiansa. However, the baseline rate of 29%is higher than the current rate in the Eastern Region (19%). So while both these epicenters decreased in this indicator since baseline, this trend was seen throughout the Eastern Region as overall results dropped by 10 percentage points. Therefore, results of THP's epicenters are consistent with regional trends.

Participants in FGDs and KIIs noted that due to the construction of health clinics at the epicenters, they had greatly increased their access to healthcare. They discussed positive impacts in infant mortality, access to antenatal care, and safer birth delivery. As one woman in Dome-Achiansa noted, "Infant mortality was very high but now because of the Epicenter health clinic, it has reduced drastically." Many commented that the quality of available healthcare had also increased. These qualitative results are consistent with the quantitative results, especially when comparing them to baseline data.

Table 11.0a: Achievement in Health from Baseline

	Akotekrom			Atuobikrom			Dome-Achiansa			Nkawanda			Odumase-Wawase		
	Baseline (2008)	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**	**Baseline (2008)**	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**
Proportion of population aware of their HIV status	-	27.17	-	9.67	36.3	275.45	-	31.45	-	4.61	41.59	802.14	7.80	49.67	536.84
Proportion of children under 5 who sleep under a bednet	39.70	67.35	69.64	8.10	82.89	923.39	39.70	67.44	69.88	43.70	65.74	50.44	8.20	65.22	695.33
Proportion of population over 15 years old with comprehensive correct knowledge of HIV/AIDS	24.80	15.52	-37.40	-	19.43	-	24.80	20.38	-17.77	-	19.72	-	-	28.47	-

There has been clear success in promoting the use of bednets in the epicenters, with large gains since baseline and results higher than the regional average. The HIV/AIDS results seem consistent with regional trends, but do not reflect results beyond the average for many epicenters. The one outlier is Odumase-Wawase, so programs in this epicenter could be examined for key insights. More work could be done in this sector to promote correct knowledge of HIV/AIDS and encourage testing.

5.9 Poverty Reduction

Poverty is one of the three major factors that undermine development. These factors, poverty, food insecurity and malnutrition are self-reinforcing and establish a vicious cycle that impeded development and cause disparities in societies to be entrenched.[20] Poverty, seen as the progenitor of food insecurity and malnutrition, is therefore the target of most programs, as it is seen as the precursor to breaking the cycle for the take-off of development.[21].The UN system underscored this by naming poverty reduction as the first of the nine goals of the 2000-2015 Millennium Development agenda to be tackled.[22] The global community, including Ghana, worked assiduously towards meeting the global target of halving extreme poverty and proportion of people suffering hunger in half by end of 2015. Ghana is reputed to be among countries which achieved Goal 1 five years ahead of time.

Table 12.0 demonstrates the results of the poverty reduction program in all six epicenters. The assessment used three indicators;

i. Progress out of Poverty Index: proportion of households below the poverty line
ii. Proportion of households with non-farm businesses and
iii. Proportion of households accessing financial services

Table 12.0: Incidence of Poverty

	2014 Epicenter Program Evaluation Results							Secondary Source Data[23]		
Indicators	Akotekrom	Atuobikrom	Dome-Achiansa	Nkawanda	Nsuta-Aweregya	Odumase-Wawase		National	Rural	Rural Forest Communities
Proportion of Households Below International Poverty Line[24]	25.83	14.88	14.89	15.52	13.04	16.2		-	-	-
Proportion of Households Below National Poverty Line	30.00	17.85	18.18	18.79	15.97	19.53		24.2	37.9	
Proportion of Rural Households with Non-Farm Businesses	51.4	56.38	51.55	68.78	46.19	47.88		44.3	36.8	38.2
Proportion of Adults Accessing Financial Services	32.04	32.44	36.24	29.17	32.33	38.27		-	-	-
women	*29.37*	*30.11*	*39.00*	*26.76*	*30.29*	*33.98*		-	-	-
men	*34.87*	*35.91*	*33.15*	*33.17*	*35.44*	*44.08*		-	-	-

[20] Ghana 2012 Comprehensive Food Security and Vulnerability Analysis
[21] Ibid
[22] Ghana 2014 Millennium Development Goal Report
[23] Poverty data comes from the World Bank (http://data.worldbank.org/indicator/SI.POV.RUHC). Data on non-farm businesses comes from GLSS6.
[24] Defined as $1.25/day 2005 PPP

The Hunger Project uses the Progress out of Poverty Index (PPI) for a rapid assessment of the likelihood an individual household is below the national or international poverty lines. The PPI asks 10 simple questions which have been rigorously tested in Ghana and uses the responses to provide a score which represents the *likelihood* that this particular household is below the poverty line. A higher score indicates less probability of being below the poverty line and a lower score indicates that the household is more likely to be poor.

The average score of all households provides The Hunger Project with the percentage of households below the international and national poverty line. On average, 17% of household are below the international poverty line. Nsuta-Aweregya has the lowest poverty rate at 13%, with the other epicenters displaying similar rates. Akotekrom was an outlier, with the highest poverty rate of 26%. When examining the national trend, the average poverty rate was 20%, with Akotekrom having 30% of households below this line.

The agricultural sector is a significant contributor to the economy of Ghana and it overshadows the contribution of household non-farm activities. However, households that are predominantly farmers are just not the poorest in Ghana, but they also contribute the most to Ghana's p12overty.[25] Households which have members employed or self-employed in non-farm sectors are less likely to be poor than those engaged in the agricultural sector.[26] In this regard, THP also programed the training of individuals in households to take up non-farm businesses as a sole business or in addition to farming. On average, 54% of households in the epicenters have a non-farm business, with Nkawanda having the highest percentage (69 %) and Nsuta-Aweregya the lowest (46%).

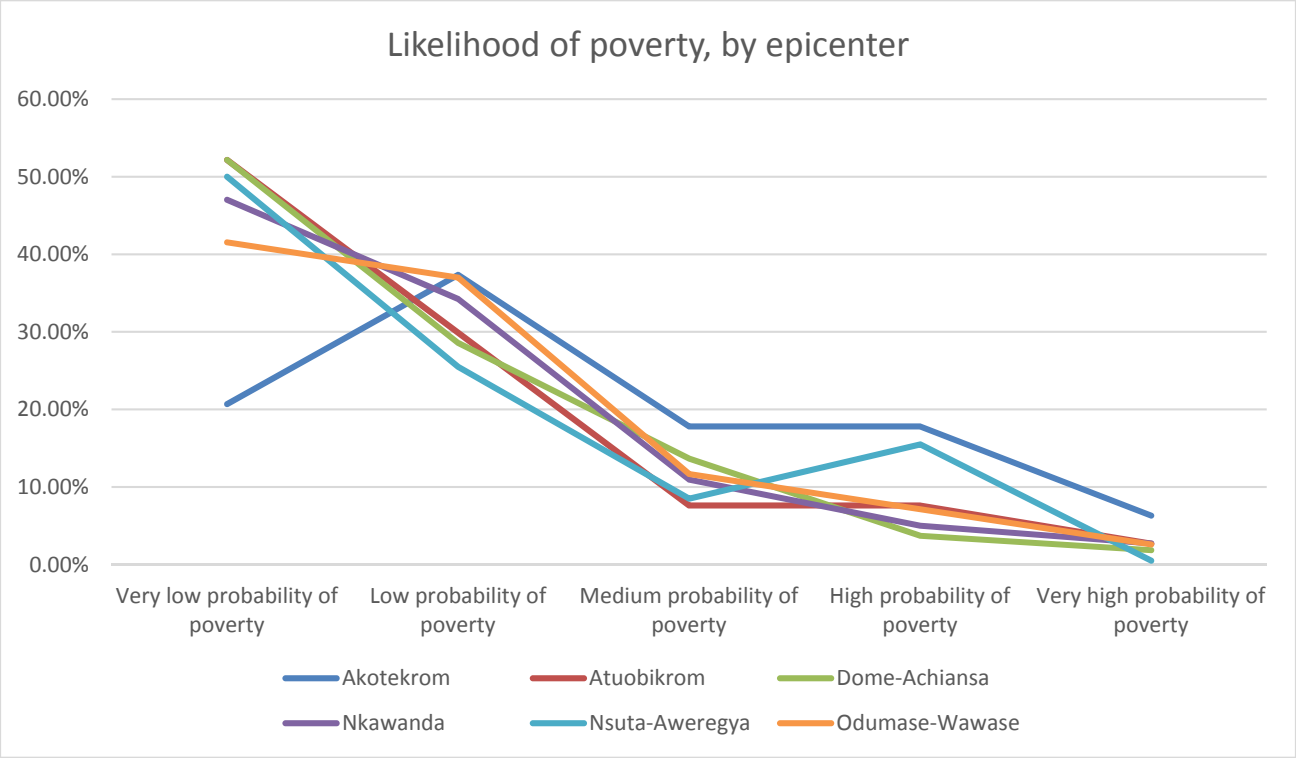
Access to financial services also plays a large role in the epicenter strategy. On average, 33%of adults have access to at least one financial service, defined as a bank account, loans, formal or informal savings group, and insurance. This result was consistent between epicenters, with no noticeable outliers. There was a small gender gap, with 36% of men accessing financial services compared to 32% of women, and in fact all the communities except Dome-Achiansa had more men than women accessing finances. Odumase-Wawase had the greatest difference between men and women, at 10 percentage points.

There is a curious relationship between the outcomes, non-farm business and adult access to financial services, and the impact of poverty incidence at the household level. Two epicenters, Akotekrom and Nsuta-Aweregya, are highlighted for the purpose of this discussion. The two epicenters have similar proportions of access to financial services, about 32%, and a different non-farm business proportions (51%for Akotekrom and 46%for Nsuta-Aweregya). However, the poverty level in the two epicenters are very different; Akotekrom has about twice (about 26%) the level in Nsuta-Aweregya (13%). This needs further investigation.

When comparing the results to secondary source data, THP's epicenters perform well. There is no recent data on Ghana's status concerning the international poverty line, but all of the epicenters had poverty rates below the rural poverty line within Ghana, and only Akotekrom had poverty rates greater than the national average. The proportion of households owning non-farm businesses was also higher than the rural forest communities' average for all epicenters.

[25] 2014 GLSS6: Poverty Profile in Ghana Report
[26] Ibid

Fig.11.0: Likelihood of Poverty by Epicenter



The above chart considers the frequency of households in five different categories of poverty[27] probability – very low (less than 10% probability), low (10-25%), medium (26-40%), high (41-60%), and very high (higher than 60%). The ideal result is a negatively sloped trend line, or that the frequency of households experiencing each of the five categories declines as you move right on the graph. In general, this is the present trend in the six epicenters – more households have a very low probability of poverty while few have a very high probability of poverty. There are a few outliers – Akotekrom shows a greater concentration of households with a low probability of poverty than very low, and has more households than the other epicenters with medium, high, and very high probabilities. Nsuta-Aweregya also shows a spike in households with a high probability of poverty. However, the general trend is positive with more households with a low probability rather than a high probability.

5.9.1 Achievement in Poverty Reduction from Baseline

There is only baseline data available for poverty rates, but this provides a relevant context for interpreting the results. When compared to poverty rates at baseline, the epicenters have seen an average 44 percent decrease in poverty. In fact, every epicenter except Akotekrom decreased poverty rates from baseline. Akotekrom saw a slight increase in poverty from baseline.

[27] This analysis is based on the international poverty line of $1.25/day 2005 PPP.

The qualitative results highlight that access to microfinance was a substantial change in the epicenters. It has improved the lives of the participants in several key ways: increased agricultural inputs leading to increased yields, supplemental income for women, promotion of savings, and allowing women to participate in income-generating activities.

Table 12.0a: Achievement in Poverty Reduction from Baseline

	Akotekrom			Atuobikrom			Dome-Achiansa			Nkawanda			Nsuta-Awereyga			Odumase-Wawase		
	Baseline (2008)	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**	**Baseline (2008)**	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**	**Baseline (1998)**	**2014**	**% Change**	**Baseline (2003)**	**2014**	**% Change**
PPI: Proportion of households below the poverty line[28]	25.20	25.83	2.49	33.90	14.88	-56.09	25.20	14.89	-40.90	33.90	15.52	-54.22	33.90	13.04	-61.52	33.90	16.20	-52.23

The current and historical data show overall positive trends in poverty reduction, creation of non-farm businesses, and access to financial services. Current poverty rates show that the epicenters have less poverty than the national average, and most epicenters have greatly reduced poverty from baseline. Akotekrom is an outlier in this sector, as poverty is still comparably high in that epicenter despite a strong performance in non-farm businesses and access to financial services.

[28] In 2016, the World Bank updated the poverty lines to $1.90/day 2011 PPP. The new poverty line was considered for this analysis.

5.10 Improvement in Land Productivity and Climate Resilience

Climate change has had serious consequences globally resulting in increasing temperatures with an impact on agriculture. Ghana's climate is tropical and strongly influenced by the West African monsoon winds. The climate is generally warm with variable temperature masked by seasons and elevations. Recent models have confirmed that temperature in Ghana has increased by 1.0^0C since 1960, at an average rate of 0.21^0C per decade.[29] Crop yields, particularly high humidity dependent crops, e.g. cocoa and other tree/food crops, and yields of staples like cassava, plantains/bananas, have been affected. This has been compounded by an increasing population. The average temperature in Ghana is projected to increase by 1.0-3.0^0C by 2060, and 1.5-5.2^0C by 2090. Rainfall is also expected be uncertain and difficult to predict.[30] With an annual growth rate of 2.4% Ghana's population is projected to reach 49 million by 2040. These, coupled with governments' agenda of forest resource exploitation, could exacerbate the impact of climate in agriculture and other sectors.

Various intervention programs have been established to build local capacity for resilience in all sectors. This includes a 'climate smart' agricultural program aimed at improving land productivity and climate resilience among smallholder farmers, among others. THP's climate resilience interventions at Akotekrom Epicenter therefore was meant to augment the national program of climate smart agriculture.

Table 13.0 demonstrates the results of the land productivity and climate resilience program in all six epicenters. The assessment uses four indicators:

i. Percent of households implementing risk-reducing practices/actions to improve resilience to climate change
ii. Proportion of smallholders applying improved management practices and technologies on farms
iii. Percent of smallholders selling farm produce

[29] 2014 Ghana's Third National Communication Report to the UNFCC
[30] Ibid

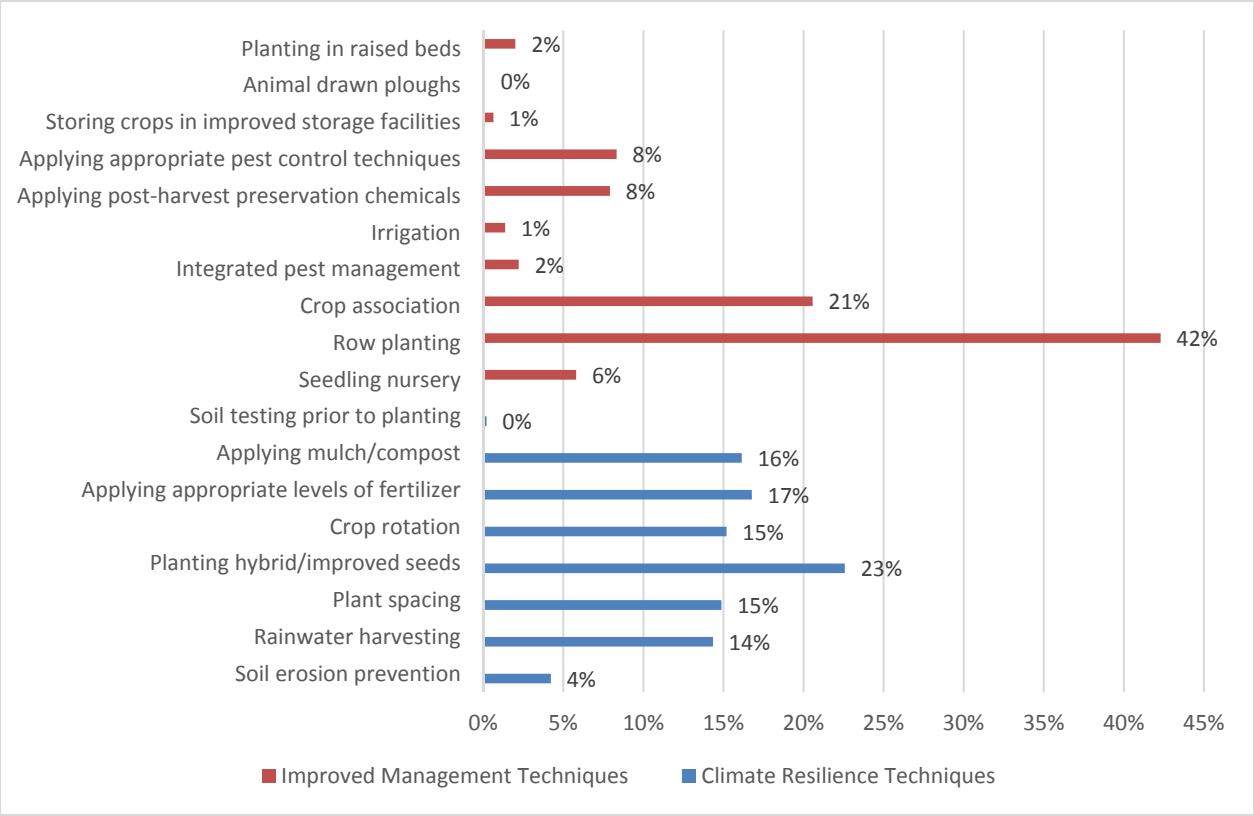
Table 13.0: Productivity and Climate Change

	2014 Epicenter Program Evaluation Results					
Indicators	Akotekrom	Atuobikrom	Dome-Achiansa	Nkawansa	Nsuta-Aweregya	Odumase-Wawase
% households implementing climate change risk-reducing practices	70.48	55.95	55.86	55.03	63.31	66.41
% smallholders applying improved management practices and technologies on farms	84.34	80.95	81.38	77.51	85.21	83.21
% smallholders selling farm produce	85.53	74.83	85.31	68.48	67.79	77.59

THP's program measures proportions of households implementing risk-reducing practices/actions to improve resilience to climate change, proportions of households applying improved management practices and technologies on farms, and proportions of households selling farm produce.

The majority of farming households are implementing at least one improved management practice, and more than 55% of farming households are implementing a climate mitigation practice. More than two-thirds of farming households are selling their crops, which indicates a use beyond household consumption. In Akotekrom and Dome-Achiansa, more than 85% of farming households sold their crops.

Fig. 13.0: Percentage of Farming Households Implementing Improved Practices



The above chart displays which types of improved management and climate resilience techniques are the most commonly used by farming households in the epicenters. The most common improved practice is row planting, practiced by 42% of farmers. The most common climate resilience strategy is planting hybrid or improved seeds, an approach that has been adapted by 23% of households. In general, the implementation of a variety of climate resilience techniques is more prevalent than other management practices, with the exception of crop association and row planting.

Though the quantitative data on increased crop yields was inconclusive, the qualitative results on this topic were quite strong. Nearly every participant in the FGDs and KIIs commented on improved crop yields as a critical result of THP's work. Many participants pointed to the improved techniques discussed above, such as hybrid seeds, food storage techniques, applying appropriate chemicals at the right time, and row planting as the reasons for their increased yields. The agriculture results were also closely tied to the availability of microfinance, which has allowed farmers to increase the amount of land and/or purchase improved inputs. The results of increased yields were many: "Because of improved yields on the farm, farmers get more revenue which helps to support children's education and improve the home" (female FGD in Akotekrom).

"Before, THP we only cultivated in small scales, but now THP has taught us how to farm on large scale, how to store food like maize to use in the lean season and the correct practices to adopt to yield much." –Female FGD, Nsuta Epicenter

There is not comparable secondary source data available for the land productivity and climate resilience indicators, which makes it challenging to interpret these results in the wider context of Ghana. Similarly,

there is not baseline data available for these indicators. Overall, it is clear that the majority of households are implementing at least one improved farming technique, and that many smallholders are selling their crops.

6.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The overall goal of the study was to assess the effects and impacts of THP-Ghana's interventions in six epicenters. Overall, the epicenters demonstrated progress in every goal, an improvement from baseline on the majority of indicators, and positive results when compared to contextual data from secondary sources. The most impressive accomplishments include an average reduction of poverty by 44%, and the near elimination of severe hunger (1%). A high proportion of households (54%) own businesses with women owning and operating a significant proportion of these businesses (75%). Improved water and sanitation saw dramatic improvements at 55% and 323% increases respectively. Household agriculture practices, school enrollment, and health-seeking behaviors also show very positive trends. Given the limited intervention of THP education after nursery school, the 102% increase in secondary school enrollment is quite surprising, but could be contributed to education campaigns mentioned in the qualitative interviews. Further investigation needed to confirm the extent to which THP contributed to improved enrollment, but a great success nonetheless.

Despite these successes, several areas for concern also emerged. Large gaps still exist between men and women in community participation and self-confidence. Without baseline data, it is difficult to interpret the success of the intervention in moving women forward. Epicenters also exhibit low rates of access to financial services (33%), though men and women are accessing at fairly equal rates (36 and 32%, respectively). There is also a large gender gap in adult literacy, with women trailing men by 32 percentage points. Although communities show an improvement in HIV testing, a decline occurred in the correct identification of causes and prevention of HIV/AIDS, though this appears to be a general trend throughout Ghana based on a similar decline in secondary source data. Finally, the limited interventions in nutrition and 1,000 Days mean communities have shown very little progress in advancing knowledge on nutrition security practices or behaviors, indicating that malnutrition, especially for women, is likely still an issue.

Making the data particularly difficult to interpret is the fact that epicenters vary substantially in age (start dates in 1998, 2003, and 2008), but do not show substantially different progress or end results. This could be because of the tremendous shift in the epicenter strategy in recent years, so older epicenters had to "catch up" to evolved strategy. Even still, this requires further analysis into the epicenter strategy timeline.

Limitations

These successes not withstanding has some limitations. Baseline indicator values were not available for some of the program component indicators, which restricted before and after intervention analysis at the epicenter levels. Similarly, comparator values were also not available for some of the program component indicators, which make it difficult to place the results into the larger context of Ghana. The secondary source data should be interpreted cautiously, as it originated from the lowest administrative level possible but is not directly from the epicenters.

Finally, while it is clear that great progress has been made, these advancements cannot necessarily be attributed to The Hunger Project. It is possible that general economic growth or interventions by government or other agencies in the same regions may have also contributed to these improvements. However, the trend is quite positive, with THP epicenters having stronger results than secondary source data at the regional level

6.4 Recommendations

The Ghana THP program though successful, may be said to have differential effect on the six epicenters. This may be seen in the different levels of success seen in the program areas and the in the epicenters. This point some nuances, other factors that may have contributed to the varying results. It thus may be recommended that:

i. Efforts should be increased to encourage women to participate in epicenter activities
ii. There should be increased activities in 1000 days and nutrition programming to increase dietary diversity and knowledge of exclusive breastfeeding practices
iii. Attention should be paid to fixing and maintaining the improved water source in Dome-Achiansa Epicenter
iv. The literacy and education program area can offer more adult literacy classes, targeting women specifically
v. Efforts should be increased on training and sensitization on HIV/AIDS, as many households showed limited knowledge of HIV/AIDS or did not know their status
vi. Given the varied performances at the program area, program component and epicenter levels, THP can benefit from the documentation of good practices, which may account for very successful performances that can be up scaled.
vii. THP program supports the national decentralized development agenda. It may be important to synchronize the THP program areas/components as well as indicators with programs at national and local levels for compatibility and comparability and hence contribution/attribution analyses. This has the added benefit of easily establishing baseline values as well as comparator indicator values from nationally conducted censuses, surveys and studies at no cost to the THP program.

7.0 APPENDICES

Appendix 1.0 Number of Households Sampled by Epicenter and Village

Epicenter	Total Households	Name of Villages	No. of HH Surveyed	Total HH Surveyed
Akotekrom	1,115	Abigyan	8	179
		Akotekrom	56	
		Mensakrom	16	
		Ningo Adwenase	31	
		Ningo Sunkwenya	24	
		Oforikrom	23	
		Ofosukrom	15	
		Yaw Sawuru	6	
Atuobikrom	1,519	Ahodwo	6	188
		Atuobikrom	59	
		Formanso	20	
		Muramuru	51	
		Sukwa	36	
		Yirenkyikrom	16	
Dome-Achiansa	687	Abobiri	24	161
		Achiansa	58	
		Domi	35	
		Kuano	25	
		Minimade	19	
Nkawanda	2,822	Jejeti	54	221
		Nkawanda I	50	
		Nkawanda II	19	
		Nsabaa	48	
		Ohene Akura	50	
Nsuta-Aweregya	1,476	Atwedie	19	197
		Aweregya	128	
		Kwahu Daa	50	
Odumase-Wawase	1,242	Besease	20	165
		Odumase	57	
		Wawase	36	
		Wisiwisi	52	
Total	**8,860**		**1111**	**1111**

Appendix 2.0: Program Component Indicators

	Akotekrom	Atuobikrom	Dome-Achiansa	Nkawanda	Nsuta-Awereyga	Odumase-Wawase
GOAL: Mobilize rural communities that continuously set and achieve their own development goals						
Percent increase in individuals reporting the ability to change their communities	75.43%	74.60%	78.54%	68.85%	73.49%	76.80%
men	81.03%	83.53%	88.42%	77.38%	82.43%	86.76%
women	69.83%	69.94%	70.00%	64.77%	68.79%	71.43%
Proportion of community members who perceive leaders to be successful in addressing community concerns	64.22%	71.26%	69.27%	61.54%	63.26%	57.22%
men	62.07%	71.76%	66.32%	60.71%	65.75%	61.76%
women	66.38%	70.99%	71.82%	61.93%	61.97%	54.76%
Proportion of adults who voted in the most recent national or local election	95.69%	97.17%	96.10%	94.57%	93.98%	91.19%
men	99.14%	100.00%	95.79%	95.24%	95.95%	95.52%
women	92.24%	95.71%	96.36%	94.25%	92.96%	88.89%
Proportion of population participating in epicenter activities, committees, workshops, and meetings	31.74%	21.07%	26.83%	28.57%	31.31%	28.35%
men	39.47%	26.51%	32.63%	41.67%	31.08%	30.88%
women	24.14%	18.24%	21.82%	22.29%	31.43%	26.98%
GOAL: Empower women and girls in rural communities						
Women's Empowerment Impact Score	70.62	72.32	78.63	70.37	77.07	73.41
Women's Dietary Diversity: Mean number	3.60	3.36	3.62	3.50	3.53	3.32

of food groups consumed by women of reproductive age						
Proportion of female small business owners	30.86%	31.18%	32.38%	43.22%	30.77%	30.84%
Proportion of male small business owners	7.92%	15.34%	16.13%	12.50%	16.07%	14.72%
Percent change in use of clinics/health workers during pregnancy	98.21%	96.88%	92.73%	98.51%	100.00%	92.73%
1 visit	5.36%	0.00%	3.64%	8.96%	3.45%	3.64%
2 visits	5.36%	1.56%	1.82%	5.97%	3.45%	3.64%
3 visits	7.14%	4.69%	0.00%	7.46%	3.45%	3.64%
4 or more visits	80.36%	90.63%	87.27%	76.12%	89.66%	81.82%
Proportion of births attended by licensed health care professional	89.29%	95.31%	74.55%	89.55%	98.28%	92.73%
Gender parity ratio: Percentage of girls to boys enrolled at primary school	1.01	1.01	1.06	0.94	0.96	1.04
GOAL: Improve access to safe drinking water and sanitation facilities in rural communities						
Prevalence of diarrheal disease in children under 5	15.52%	12.39%	4.95%	18.46%	13.33%	21.43%
Proportion of households using an improved drinking-water source.	98.88%	97.87%	44.72%	91.86%	96.45%	93.94%
Proportion of households using an improved sanitation facility	49.72%	51.06%	57.76%	36.82%	43.88%	40.00%
GOAL: Improve literacy and education in rural communities						
Proportion of households with at least	79.31%	85.41%	84.47%	84.09%	85.56%	86.45%

one literate person						
Proportion of children age 4-18 attending school	92.39%	92.26%	92.13%	86.70%	89.14%	87.19%
% girls	93.01%	90.53%	93.57%	85.15%	84.67%	87.94%
% boys	91.83%	94.01%	90.81%	88.13%	92.81%	86.43%
% primary	93.50%	96.34%	95.47%	93.45%	94.01%	96.04%
% secondary	89.74%	81.11%	82.42%	71.76%	89.14%	64.56%
GOAL: Reduce prevalence of hunger and malnutrition in rural communities, especially for women and children						
Prevalence of households with moderate or severe hunger	17.88%	14.44%	10.56%	20.55%	9.14%	18.79%
moderate	15.64%	13.90%	9.94%	19.18%	8.12%	18.18%
severe	2.23%	0.53%	0.62%	1.37%	1.02%	0.61%
Percent change in knowledge of exclusive breastfeeding practices	36.78%	30.05%	35.63%	40.09%	34.44%	41.18%
GOAL: Improve access to and use of health resources in rural communities						
Proportion of population aware of their HIV status	27.17%	36.31%	31.45%	41.59%	41.04%	49.67%
Percent change in use of clinics/health workers during illness	76.23%	84.85%	76.58%	77.39%	79.10%	72.35%
Proportion of children under 5 who sleep under a bednet	67.35%	82.89%	67.44%	65.74%	64.04%	65.22%
Proportion of population over 15 years old with comprehensive correct knowledge of HIV/AIDS	15.52%	19.43%	20.38%	19.72%	19.77%	28.48%
GOAL: Reduce incidence of poverty in rural communities						

PPI: Proportion of households below the poverty line	25.83%	14.88%	14.89%	15.52%	13.04%	16.20%
Proportion of rural households with non-farm businesses	51.40%	56.38%	51.55%	68.78%	46.19%	47.88%
Proportion of adults accessing financial services	32.04%	32.44%	36.24%	29.17%	32.33%	38.27%
women	29.37%	30.11%	39.00%	26.76%	30.29%	33.98%
men	34.87%	35.91%	33.15%	33.17%	35.44%	44.08%
GOAL: Improve land productivity and climate resilience of smallholder farmers						
Percent of households implementing risk-reducing practices/actions to improve resilience to climate change	70.48%	55.95%	55.86%	55.03%	63.31%	66.41%
Proportion of smallholders applying improved management practices and technologies on farms	84.34%	80.95%	81.38%	77.51%	85.21%	83.21%
Percent change in number of smallholders selling farm produce	85.53%	74.83%	85.31%	68.48%	67.79%	77.59%

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