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The Success of the Hearth Model in Guinea

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Objectives: The new USAID Food for Peace Strategic Plan for 2006-2010 (USAID 2005) aims to improve USAID's position as a global leader in improving food insecurity (Intermediate Result 1) and improve the field-level impact of its Title II programs (Intermediate Result 2). In order to realize these aims, FFP calls for identification and documentation of credible success stories (USAID 2005: 54). This paper contributes to USAID's ability to document field-level impacts of Title II activities through success stories by describing an early impact of one of Africare's Title II success stories: the Hearth Model program in Guinea.[iv] It hones in specifically on USAID's aim to focus on, "the capability of individuals through improvements in health, nutrition, and education" (USAID 2005: 61).

Background: Africare was one of the first NGOs to introduce the Hearth Model program in its Title II programming in West Africa. Africare has implemented Hearth Model programs in eight Title II programs (Guinea, Malawi, Rwanda, Niger, Burkina Faso, Mozambique, Sierra Leone, and Mali). The Hearth Model program was introduced in Guinea in 2000, three years after growth monitoring promotion (GMP) activities began, in response to the need to provide care and support to children ages nine to 36 months that the growth monitoring program identified as moderately malnourished (Table 1, Annex). The Hearth Model provides care and support to these children through promotion of locally available, culturally appropriate, and affordable food products while simultaneously promoting behavior changes of their primary guardians related to caring practices, including hygiene, dietary practices, and health care. Each 12-day Hearth session is led by a "model mother" whose children were identified as well nourished by the growth monitoring program, despite exposure to the same difficult conditions that have lead to malnourishment in other households. In the case of Guinea, the impressive and immediate results of the Hearth program in the beneficiary districts facilitated swift buy-in of beneficiary communities. The Hearth Model requires active participation of community members and emphasizes the need for beneficiaries to have control over their own constraints through mobilization of local resources. The community members are implicated in every stage of the project and, as a result, the community becomes engaged in maintaining the nutritional status of its children.

Hearth was executed under the second phase of Africare/Guinea's Food Security Initiative (GnFSI) (FY01 through FY07) in the regions of Dinguiraye and Dabola under the name *Foyer d' Apprentissage et de Réhabilitation Nutritionnelle* (FARN), meaning Place of Learning and Rehabilitation of Malnourished Children.[v] Hearth has been implemented in 110 villages in Dinguriaye and 45 villages in Dabola in the second phase of GnFSI. Hearth complements other Africare and Ministry of Health (MOH) activities. A similar program has been implemented for pregnant women called Hearth-G or FARN-G.

Situational Context of Guinea Relevant to Implementing Hearth. Nationwide, the nutritional situation is particularly dismal in the regions of Dinguiraye and Dabola (see Table 1, Annex II for information on levels of household food security in these regions). There is minimal infrastructure and numerous villages are

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completely inaccessible via motorcycle or other vehicles. There are a number of local and international non-governmental organizations (NGOs) in Dabola; there are very few NGOs in Dinguiraye with the exception of the World Food Programme (who operates school feeding programs) and Peace Corps. These areas are considered the most isolated pockets of poverty and have the most elevated malnutrition rates in Guinea.[vi] The conditions of deteriorating malnutrition (Shekar et al. 2006), makes Hearth particularly essential.

Elements of Hearth. Each Hearth session consists of 12 days during which the model mother or *Mama Lumiere* (ML) (who is chosen by the volunteer community health agent due to her exemplary child caring and rearing practices regarding child nourishment and health) becomes a peer educator to lead other women in practices she has found to be successful in her own home setting. The fact that this individual resides in the same community as the other female participants, and has access to the same food products and items, makes it easier for women to relate to her. Her role is significant and she is involved in each stage of Hearth, from mobilizing ingredients and diffusing messages to participating in follow-up weighing sessions and holding culinary demonstrations.

Utilizing a workshop structure that relies on images, songs, and practice, key messages are diffused (usually one theme for each of the 12 days) including messages on health, hygiene, caring practices, pre-natal consultations, breast-feeding, Vitamin A rich-foods, and diet diversification. Women are taught in an environment that fosters learning and provides a hands-on experience during which women apply the new skills they have acquired. It serves as an impetus to learn and inspires them to continue these practices at home, while promoting behavior changes that can have an enormous effect on the health and wellbeing of the entire family. The community, the government and Africare all work together as partners to promote improved health and nutrition through Hearth and link this work to other health interventions.

Community Contribution and Participation. Community members are implicated in all stages of the Hearth program, from planning and organizing to actual implementation, to follow up. The community contributes the majority of the food needed to rehabilitate children identified as moderately malnourished by the GMP. In the case of Guinea, fathers of the children and local authorities were tasked with constructing a centrally-located pavilion for the Hearth sessions, as well as for future GMP activities. In addition, they were frequently responsible for bringing potable water from the pump and for bringing ingredients from their own fields, such as maize or rice. Both fathers and community leaders encourage women to attend and they themselves occasionally visited Hearth sessions.

The volunteer community health agents are key to the smooth functioning of the Hearth program in the villages. These volunteers are from the communities and are trained by Africare to identify malnourished children through the monthly weighing sessions in each individual village, give nutritional or health education talks, and distribute medications and micronutrients such as Vitamin A. They also have a reference sheet that is often completed following a home visit, to refer both ill children and adults to the closest health center and some agents even accompany these ill individuals (who include severely malnourished children) to the health center. There were 150 volunteer community health agents in Dinguiraye and 99 in Dabola; one male and one female per community who were chosen by their communities. The extent of their role can vary from village to village and depends on the individual's level of motivation, since these individuals are unpaid.

"Each Hearth session consists of 12 days during which the model mother or Mama Lumiere (ML) becomes a peer educator to lead other women in practices she has found to be successful in her own home setting." Photo credit: GnFSI archive.

Government Contribution and Participation. The government community health agents work with the volunteer community health agents in the Hearth program, these government-paid agents were often involved in the opening and closing ceremonies and, when possible, gave speeches and highlighted the importance of women attending all 12 days of the Hearth program. Their involvement during the 12 days depended on their proximity to the Hearth site, as well as their work schedule and availability. Furthermore, the Hearth sessions in Guinea are used as an opportunity by the Ministry of Health to provide Vitamin A and vaccinations to children and mothers, free of charge.

A contributing factor to the success of the Hearth Model in Guinea was the smooth functioning, community-based health information system (CBIS); this is a national system instituted in 1992 by the Ministry of Health and UNICEF to address malnutrition throughout Guinea. It records, on a monthly basis, child and maternal health and nutrition data and activities and contains the names of all children (including newborns) residing in the community. This serves as the basis for nutritional information which includes the percentage of children weighed and their current nutritional status. This community data allowed volunteer community health agents to use the three-pronged approach of appraisal, analysis, and action to identify problems and determine what actions need to be taken. Hearth is frequently implemented in direct response to the growth monitoring results produced by the CBIS. The nutritional status of each of the children is presented to the parents and community using color indicators (green symbolizing well nourished, yellow mild to moderate malnourished, and red severe malnourished). This is communicated to the village through a community table, which is given to each community by Africare and is used as a visual aid during community meetings to chart the progress of both those who have attended Hearth and those who have attended GMP activities.

Africare Contribution and Participation. Africare works through the volunteer community health agents in every stage of Hearth. The agents identify the need for a Hearth, chose a Mama Lumiere, and work with Africare to complete her training. She then leads the Hearth, with the assistance of the volunteer community agents and Africare field staff. The volunteer community health agents, who are trained by Africare, are crucial in Hearth and also for guaranteeing the continuation of the program. Africare's intention is that these volunteer community health agents will be key in facilitating the continuation of Hearth activities when Africare is no longer present. Africare also helps backstop the program by assisting with de-worming, vaccination, and other complementary interventions that are not otherwise available in the communities.

Costs of Hearth. The total cost of Hearth is not substantial, especially considering that Africare has never been the sole funder of the project; instead the costs are shared by the project, government health centers, participants, and the community as a whole. During the grant period, Africare pays for direct costs such as materials, kitchen utensils, and ingredients such as red oil, palm oil, and peanut oil and fish that are frequently unobtainable in the village and are expensive. Other direct costs are shared by the community (such as the cost of the pavilion, soap, fuel, and in-kind items such as brooms, chairs, and community measures). The average cost of the meals per child for the 12 days is approximately 4,000 Guinean Francs (approximately 1 USD and this is provided by the family of each child participant). The indirect costs include the estimation of time spent by the actors of Hearth (mothers, community health agents, and leaders), which includes time spent away from the fields and household work, as well as Africare staff salaries and transportation costs). In Guinea, overall, 86 percent of the cost was paid by the community and 14 percent was paid by the project.

Methods: Assessment of the impact of the Hearth program in Guinea was mainly based on qualitative focus group discussions with people either directly or indirectly involved in the Hearth Model program. In addition, secondary quantitative data were used including two anthropometric indices (weight for age and weight for height) of each child who participated in Hearth. These data represented weights on the first day of the 12 day session, last day of the 12 day session, at the one month follow up, two month follow up, six month follow up, and finally, the twelve month follow up.

A qualitative study was conducted in a representative sample of villages that have implemented Hearth in Dinguiraye and Dabola.

The survey took place in rural communities and health centers in the prefectures of Dabola and Dinguiraye (see Table 2, Annex II for a list of the villages where the surveys were performed, as well as their characteristics).

Focus group discussions and individual interviews were carried out with a sample of the principal and secondary actors in Hearth. Key informants included women's associations (community based groups with a focus on projects such as income-generation or animal husbandry), female participants (those women whose children were participating in Hearth-either because their child was malnourished or because they voluntarily attended), community leaders (including village chiefs and religious leaders), *Mamas Lumiere*, and fathers of child participants (Table 3, Annex II). Formal and informal health educators and healthcare providers (including traditional birth attendants; community health agents [both volunteer and government]; and staff in hospitals, health centers, and post health centers) were also interviewed, as well as Africare staff.[vii]

The survey team consisted of Africare Guinea staff (GnFSI) and volunteers, and a Food for Development manager from Africare's headquarters in Washington DC (Table 1, Annex I). Structured field guides comprised of a fixed list of open-ended questions, were used to inquire about changes in the lives of all the participants in Hearth. The guides focused on changes on both the household and community levels that resulted from Hearth. These changes included behavioral changes, relationships with community members, and changes in the children who participated. The field guide questions focused on the level of involvement, transformation in both the participants and the community, and perceptions on the approach. In addition to the surveys, an actual Hearth session was observed in a village in Dabola.

Results:

GnFSI Project Results. All of GnFSI's activities in health, as well as the activities in agriculture, income generation, and water sanitation combined had a substantial positive impact on health and nutrition risks in terms of a reduction in malnutrition levels (McMillan et al. 2006: 33 and Africare 2006 [b]). This was a considerable accomplishment considering the global malnutrition indicators of Guinea where the reported rates of malnutrition increased, from 26 percent in 1999 to about 35 percent in 2005 (*Ministère de la Santé et Ministère du Plan* 2005*)*.

In terms of Hearth in particular, the GnFSI project collected data on the number of children served in Hearth between 1997 and 2007 (data were only available through March in 2007). Table 2 shows a clear pattern of an increased number of children weighed, monitored, and rehabilitated under Hearth, which is unquestionably a great success story for the project.[viii]

Data were also collected on the nutritional status and changes in weight before and after Hearth for children who participated in the program (Figures 1 and 2). These data clearly show that many children enjoyed improved nutrition and positive weight gain as a result of participating in Hearth. Furthermore, Figures 1 and 2 show that the behavioral and health changes that occurred due to participation in Hearth have been sustainable. Children continued to gain weight

Project data show a clear pattern of an increased number of children weighed, monitored, and rehabilitated under Hearth, which is unquestionably a great success story for the project. Photo credit: GnFSI archive.

and improve their nutritional status well after the 12-day session of Hearth was over.

In addition to these official survey data, the Guinea program found that one of the most obvious trends was that Hearth has generated considerable enthusiasm in Guinea since it was first implemented in 1998. For example, despite the fact that community health centers are often understaffed, most of the health agents interviewed said that they went to observe a Hearth every few days and were present for both the opening and closing ceremonies. Furthermore, almost half of the women surveyed in Dinguiraye, and 24 percent in Dabola, were familiar with the Hearth approach as of April 2006 (Africare 2006 [b]).

Hearth-G contributed enormously to a cooperative, nurturing community environment in addition to monitoring pregnant women. Attendance for prenatal consultations has increased. For example, in Dinguiraye, the percentage of women who had at least one prenatal consultation before the seventh month of pregnancy during their most recent pregnancy went from 51 percent in 2001 in the original project districts to 81 percent in 2006. The data show a positive trend in the new project districts as well with 44 percent attendaing a pre-natal consultation in 2001 compared to 68 percent in 2006. There were similar positive results in Dabola during this period as well.

The GnFSI Final Quantitative Evaluation (Africare 2006 [b]: 9) reported that, "The diffusion of the Hearth Model to non-project communities is an example of health practices that can be initiated with limited assistance from peers, and, therefore, should be sustainable." The Hearth approach is a sustainable one, primarily because the community has ownership over every stage of Hearth from its inception.

Focus Group and Qualitative Interview Data. In the focus group discussions many people verbalized their sincere feeling of responsibility to continue Hearth after Africare leaves, though this will depend greatly on the level of enthusiasm and motivation of each village and varies between individuals. The results presented from the final evaluation and the attitude of sustaining Hearth are exactly what projects want when implementing such health programs. Therefore, it was important to explore the reasons behind the success of the Hearth program in Guinea in order to understand which elements are essential to replicating this positive outcome.

Table 2. Percentage of Children in Project-Covered Districts Participating in Growth Monitoring and in Community Based FARN Rehabilitation Programs.

Yr	Dinguiraye				Dabola			
	Eligible Children	Weighed/ Monitored	% Eligible	# of Children Rehabili-tated in the Hearth Programs (FARN)	Eligible Children	Weighed/ Monitored	% Eligible	# Children Rehabili-tated in Hearth Programs (FARN)
1997	-	-	14	n/a	n/a	n/a	n/a	n/a
1998	3387	2292	67	n/a	n/a	n/a	n/a	n/a
1999	5656	3733	66	n/a	n/a	n/a	n/a	n/a
2000	6522	4962	76	65	n/a	n/a	n/a	n/a
2001	6213	4928	79	73	n/a	n/a	n/a	n/a
2002	7898[ix]	5828	74	190	n/a	n/a	n/a	n/a
2003	10189	8605	84.45	186	n/a	n/a	n/a	n/a
2004	10170	8753	86	152	2348	2021	86	99
2005	8400	6997	83	131	6719	5548	83	110
2006	6934	5856	84.45	173	6076	4850	79.82	225
2007*	5715*	4807*	84.11*	0*	5217*	4493*	85.29*	97*

*Data only for January through March 2007.
Source: GFSI program data, McMillan et al. 2006

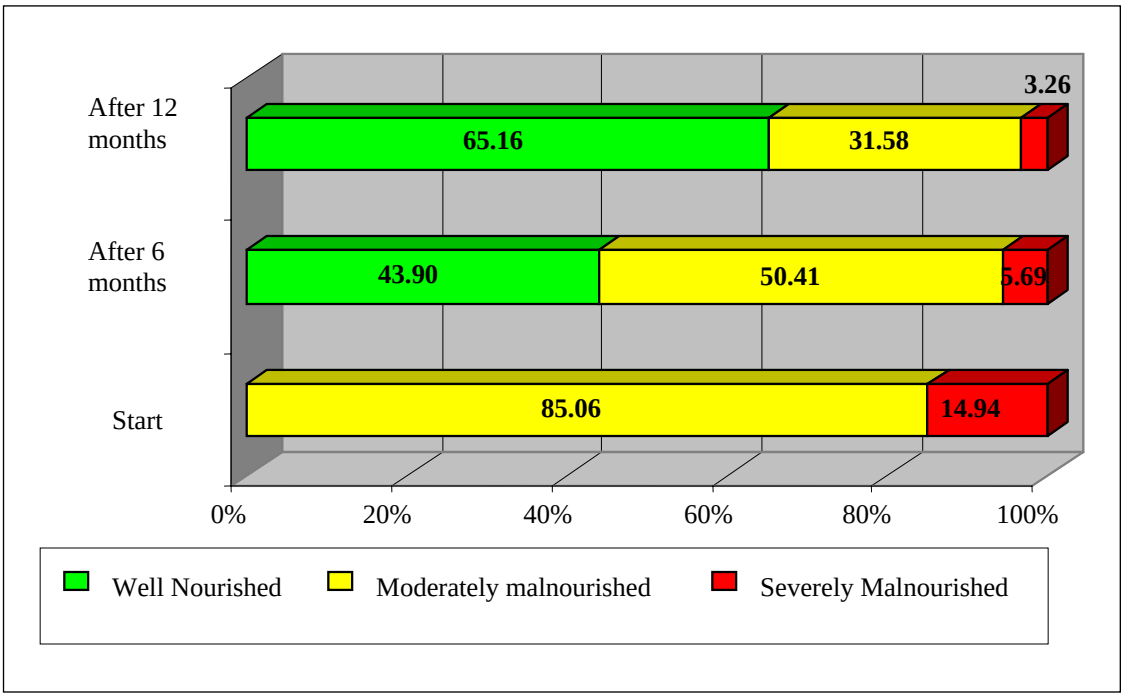

Figure 1. Nutritional Status of Children before, Six Months after, and 12 Months after Hearth.

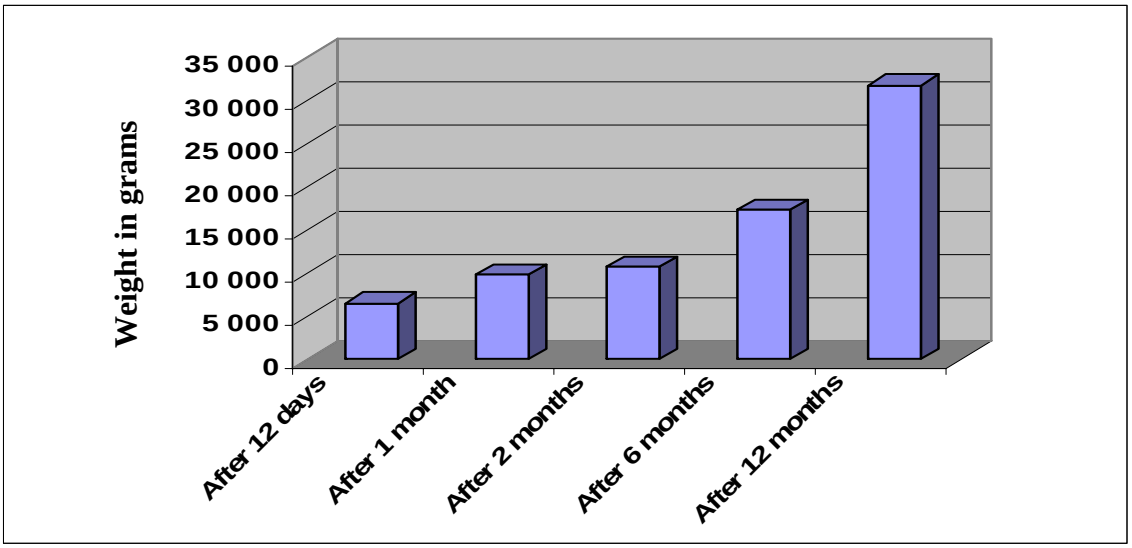

Figure 2. Evolution of Average Weight Gained (in grams) per Hearth child for all 13 Cycles in Dinguiraye (492 children weight after six months and 399 weighed after 12 months).

Change in Children Participating in Hearth. Regarding Hearth's impact on malnourished children, focus group participants demonstrated very little variation in their responses regardless of location (village or region) or the extent of poverty. Focus group participants reported numerous differences in the children that participated in the Hearth program. Typically children were described as weak, lacking energy, and lacking appetite prior to participating in the 12 day Hearth session. Respondents reported that after participating in Hearth children had gained weight, were more joyful and playful, ate a lot, and their level of activity had increased. Furthermore, it was thought by some respondents that participation in Hearth-G (for pregnant women) also improved child malnutrition before children were even born. As the district health center staff and one government community health agent reported

(Interview April 2007) "Hearth-G is starting to decrease the need for Hearth…children are being weighed, but we are not finding any children in the yellow category (moderately malnourished), thanks to Hearth-G."

Change in Mothers Participating in Hearth. All the interviewees in the focus groups were also asked how the Hearth mothers' perceptions and behaviors had changed. At the household level, the emphasis was on both improved home hygiene (e.g., cleaner living space, use of clean or boiled water, and washing with soap) and mothers' increased knowledge regarding child feeding and caring practices (Box 1).

Recognizing the Link between Improved Nutrition and Health Practices and Decreased Illness. A number of people reported that before Hearth they rarely sought medical treatment and would instead rely on traditional healers. The reasons varied from lack of money for services and transportation to feeling ashamed in front of other community members. Others reported that prior to Hearth they had not understood the importance of seeking care at the health center and that after Hearth they understood the importance of routine weighing, medical care, and vaccinating children. The perception that the prevalence of sickness had decreased as a result of Hearth was reported repeatedly.

The perception of one of the government community health agents (AC) was that measles had become rare because more people were vaccinated as a result of Hearth. One focus group collectively identified all the vaccinations that a child is required to have, which they reported to have learned from their spouses who attended the Hearth session. The agent reported that they are responsible for ensuring that the children attending Hearth receive all of their necessary vaccinations, demonstrating that there was ownership for ensuring vaccinations within the community itself.

The perceived impact Hearth had on raising awareness in villages about the importance of weighing was notable. Prior to Hearth, many people thought that weighing was for food products only (such as meat and fruit), not for children; the whole concept of weighing children appeared foreign initially. The interviewees spoke of the importance that was placed on monthly growth monitoring promotion sessions that had not existed before. Fathers reported that through regular weighing of their children, they knew their weight and could prepare food for children using local food, which they reported as inexpensive because the food was there in the community. Fathers also observed increased knowledge amongst the women (Box 2). The government community health agents reported that since Hearth had been implemented, they had seen a decrease in morbidity, mortality, and malnutrition rates and that Hearth-G had increased vaccination levels and the number of women who attended pre-natal consultations.

Change in and Diversification of Diet. Respondents clearly illustrated a positive change in the diversification and nutrient content of diets among participants (Box 3). All interviewees spoke of the importance of local produce and the need to replicate recipes practiced during Hearth

Box 1. Responses during Focus Groups about Changes in Mothers Participating in Hearth

- Focus group participants frequently reported that women and children who participated in Hearth were cleaner, reportedly as a result of washing twice daily and washing hands after defecating. "Now the women use soap to wash hands or use a spoon while eating – the rules of hygiene are now well respected." Numerous interviewees said that no one used soap before Hearth.
- They also reported a noticeable change in the home environment, including use of clean water to prepare food and covering food to protect against contaminants. "Before, the utensils would be left out all day, but now she (female participant) washes them in the morning [after the morning meal]."
- The usual custom in Guinea is for everyone in the household to consume food from the same large platter. This means that children often eat the same meal as their parents and it is usually rice with a little sauce- not very diverse. Now, it is more common for mothers to make a special plate reserved for the children. They also supervise their children now, while they are consuming each meal. They use spoons instead of eating with their hands, as is custom in Guinea.

Source: Focus Group Discussion, April, 2007.

Box 2. Responses during Focus Groups about Increased Awareness of Malnutrition and its Link to Illness

- "Hearth has taught us that if a child is well nourished, medicine often becomes unnecessary." (Female participant)
- "At the opening, there was an epidemic of diarrhea, but now there is no diarrhea because of de-worming and because of new ways to prepare and conserve food. Before no one used soap, but now they do!" (Female participant)
- "They don't fall as sick as much since their nutritional level is better- they have re-gained their health!"
- "Hearth is an activity that teaches us and allows us to really understand the problem of our children. We have decreased the rate of malnutrition. Prevent certain illnesses tied to malnutrition or lack of hygiene." (Female participant)
- "Africare has helped the Ministry of Health." (Government community health agent who administers vaccinations)
- "Now it is the women who run to me to weigh their children; before they didn't do that; they didn't understand the importance…Now that the children are clean, they are protected from illness such as diarrhea and fever." (Volunteer community health agent)
- "If rice is left from the night before, the children will ask to reheat it, before the Hearth they were indifferent about what they ate." (Father)
- "The health center is located fifteen kilometers from here. We used to walk there, but now the AC comes to us. Pregnant women receive chloroquine against malaria and folic acid against anemia. As a result, there is less dizziness. Now, less nausea, vomiting, and swelling. The placenta now leaves quickly, but before some women would die because the placenta would stay. Colostrum stimulates the placenta to leave the mothers body and quickens the contractions. The placenta didn't leave because women didn't eat well because they were afraid that if the baby was too large, they would suffer during delivery. Nothing but breast milk is necessary for the first six months of a baby's life- including water, tea or cow milk. A diverse diet consisting of enriched porridge made with maize power, banana, manioc leaves, rice, maize, gumbo, soubmara, and moringa powder with rice. She didn't take care of herself before, but now she does. Now we eat foods rich in micronutrients like iron and vitamin A. Good food is a medicine. If you are well nourished, you won't have problems during delivery." (Traditional birth attendant who received training from Africare in 2003 and has assisted with 36 births)

Source: Focus Group Discussion, April, 2007.

Box 3. Responses during Focus Groups about how Diets have Changed and become more Diverse

- "Our association facilitates the Hearth and gives them ingredients that contain vitamins from our garden and thanks to the products in the garden, there is a change in the diet, as well." (Woman from the women's association)
- "The resources are here already! We can find everything here." (Female participant)
- "I thought good food came from Europe or America. I didn't know I could find it here!" (Female participant)
- Before Hearth one mother did not know that it is possible to mix rice and maize with peanut butter and serve that to her child. "Thanks to the project, we know we need to measure first." (Female participant)

Source: Focus Group Discussion, April, 2007.

in their individual households. Hearth recipes are designed to take utmost advantage of local foodstuffs to diversify diets and increase nutritional content. Many people reported that before Hearth they knew the food existed, but did not know how to incorporate it into their daily diets. Through the introduction of these recipes (practiced and tasted during Hearth) they reported they were able to prepare these foods. One person reported that before Hearth he/she did not know how to prepare cassava, but could boil and roast it, as well as use it to prepare pasta and couscous after the Hearth session. One community leader dispensed a lot of money on expensive imported cereal, until he learned the value of food found in his village. Hearth seems to have succeeded in changing perceptions about locally available food. For example, maize was previously thought of as solely for chickens and at least one respondent mentioned that they now believe it is valuable for the children as well.

Impact of Hearth on Community Cohesion. Communities had good buy-in of the Hearth program, which was apparent not only from its success in specific project-measured health

indicators, but also from reports during focus groups of information sharing between community members (not just as a result of Africare staff talking to the community about Hearth). Specifically, participant mothers and the *Mamas Lumiere* reported increased sharing of advice with others (including their spouses and other mothers in the community who did not participate in Hearth). Many of the interviewees reported that mutual respect developed between the ML and mother participants and confidence was instilled in the ML. The ML was motivated by the change she saw in the children. She transferred this competence and engaged in awareness-raising. Furthermore, a majority of the *Mamas Lumiere* said they would be capable of replicating Hearth, without Africare's help. They reported that "love" had developed between the ML and the female participants. A majority of the women said that the ML frequently visited their homes, some as often as once a week, to reinforce the messages diffused during Hearth, to determine whether or not they were replicating the recipes themselves in their daily routine, and to inquire about how the children were doing. Most of the women said that some sort of relationship existed with the woman who is the ML before Hearth, but after Hearth there was a sense of cohesion amongst all of them. When asked about the role of the ML, they said that one of the lessons learned was about her role and the need to respect her. Also, they meet two times each month for culinary demonstrations and to reunite the women.

Part of the buy-in was related to the community itself developing incentives for participation in Hearth. For example, certain women in the Women's Associations reported that they created interior rules and sanctioned those who didn't attend (approximately 3000 Guinean Francs--75 US cents). One woman reported that her husband wasn't thought of well in the community if his family wasn't in good health, implying that social status and reputation became linked to health as a result of Hearth. The communities also developed other mechanisms to manage Hearth participation. One woman reported that she suggested a "bank" be created that could be managed by the ML so that on the days someone lacked the means to contribute to the Hearth session, the money could be obtained from the bank. Furthermore, according to focus group participants, this networking within the community regarding a program that improved the lives of children and adults and gave individuals confidence in having accurate knowledge and the power to improve the health of their children had increased the degree of cohesion between the female participants and the *Mama Lumiere* and had made the community more cohesive. The associations included the mothers and grandmothers of some of the female participants, as well as those who had family members who attended. They all knew about Hearth and felt that it "reinforced the capacity of the association."

Further support for community initiative was provided by the active participation of the government health professionals. Africare had collaborated with the district health centers in Dinguiraye and Dabola from the beginning of Hearth, thereby increasing the potential for sustainability after Africare's departure and also increasing the chance that Hearth would be duplicated elsewhere. Many ACs implemented Hearth without assistance from Africare, or any other NGO. The ACs are implicated in every stage of Hearth and were just as enthusiastic about the approach as the participants. ACs received requests from community members and administrators all over (including non-Africare villages) for them to implement Hearth. The district health centers held monthly meetings and integrated Hearth into the bi-annual action plans. Since government health workers saw the activities of Hearth as complementary to their own goals of weighing and vaccinating children the work of Hearth coincided with their regular work, which will help them sustain the activities after Africare has pulled out. The administrator in Dinguiraye had already contacted the World Food Programme and UNICEF to inquire about obtaining materials and ingredients so that they can continue Hearth after Africare leaves.

Through focus group discussions, it was apparent that many volunteer community health agent felt a moral obligation to serve as volunteers in their communities. Many of them reported that they were forced to walk to Hearth because the bikes that Africare supplied them with at the beginning of the project were in need of repair. The key in maintaining their level of motivation would be ensuring that the community assists them with their own manual labor, leaving them ample time to perform their responsibilities as AC. This resonated throughout the focus group discussions, as numerous people stated that they helped the AC in their fields and with household chores, so they had enough time

to continue their work as an AC. It appears that the *Mamas Lumiere* shared this sense of obligation, as illustrated by the fact that many of them reported that they didn't want to see the children fall sick again and would continue to encourage the women to practice what they learned during Hearth.

Discussion:

Key Elements that Contributed to the Success of Hearth in Guinea. The focus group discussions provide the overall perception of a grandly successful Hearth program in Guinea. There were several key factors that contributed to the overwhelming success of this intervention. These included the following.

- *Low and Shared Cost of Program.* For the impoverished households targeted by Hearth, this program allowed them to fully participate, but without requiring large amounts of financial investment. The low cost allowed for increased targeting. Cost-sharing by the entire community also increases the potential for sustainability of Hearth activities.
- *The Workshop/Participatory Approach to Education.* Traditionally, nutrition education in developing countries has focused primarily on a non-participatory, dictated types of learning that do not encourage active participation and feedback from participants. Hearth is different in that the leader is in the peer group, which fosters learning. Overall the hands-on approach has a great chance of being understood, adopted, and internalized (Ndure and Sy 1999).
- *Practical Recipes Proven within Communities' Constraints.* The fact that the recipes had been created and prepared in their village by the ML, gave the women confidence that they too could replicate these recipes in their own homes and integrate them into their traditional diet.
- *Community Ownership of Management of Hearth.* Often, development projects that target one specific group (in this case vulnerable households with malnourished children) occur in isolation; not involving or allowing participation by other community members. Hearth is different, since even though the entire community is not directly targeted by Hearth, they are indirectly implicated since they serve as the support system for the women who participate.
- *Participation by Men and Women in Hearth*. The participation of both men and women (through fostering community ownership of Hearth) is particularly important, considering the effect that gender inequality can have on a community and adoption of NGO-initiated techniques. Since every community member was directly or indirectly involved in Hearth, it served as a way for fathers to become engaged in what is typically seen as a women's job. The encouragement and appreciation that men received for participating broke down the typical and restrictive gender roles and allowed men to participate fully, free of stigma and ridicule. Their participation in Hearth reinforced the legitimacy of women's participation in Hearth, adding to the success of adoption.
- *Lateral Social Networking Cultivated as a Result of Hearth Participation.* The communal societies that exist in many areas of Africa serve as an ideal foundation in which to conduct a Hearth, since cooperation and cohesion usually exist already and Hearth relies upon and strengthens networking. The significance of this can not be ignored, as women are able to rely on one another to continue exchanging ideas and to learn from one another. A forum exists for the exchange of ideas and problem solving, as the connections are facilitated and strengthened between mothers and a support system is created between female participants, volunteers, and the *Mama Lumiere*. Considering the fact that community-based social safety nets are vital to household survival strategies in poor countries with few government or private safety nets, the way that Hearth builds on and reinforces these community associations bodes well for its own sustainability.
- *Use of Local Foods.* The recipes introduced in Hearth are the catalyst in promoting changes in dietary habits. The recipes are determined based upon what foods the *Mama Lumiere* has used to prepare food for her own children. They must be food products that are available, affordable, and rich in micronutrients and vitamins. This is the primary reason the

approach was successful; the community had access to the necessary ingredients and did not have to depend on external assistance to provide proper nourishment for their children.

- *Involvement of Government Bodies.* One way to ensure sustainability of Hearth is to emphasis the need for strong collaboration by involving district health personnel, all primary and secondary actors, and possibly the MOH. Of particular importance is the facilitation of the relationship and partnership between the AC and AS, who need to replace Africare field staff once Africare phases out. The fact that numerous people are familiar with the approach and comprehend its importance make it more likely to continue. Even more encouraging is that ACs (and *Mamas Lumiere*) developed a moral obligation to the Hearth activities, which contributed to their ability to overcome many obstacles and ensure the continuation of Hearth activities. This dedication was rewarded by community members providing assistance to ACs (helping them in their own fields) in order to ensure they could continue their participation in Hearth.

Factors that Need to be Addressed. The primary problem was the lack of ability for everyone to contribute (either ingredients or money) during the Hearth program. In every village there inevitably will be people who have different financial circumstances and may have particular financial constraints; this was especially relevant in villages with severe and extreme poverty. Differences in the ability of people to contribute to Hearth may cause suspicion between the women and create problems with cooperation.

Another issue that needs to be addressed in order for Hearth to continue without Africare is the source of resources that Africare purchased for Hearth (e.g., fish and oil). One option suggested by participants is to create a community collection to purchase such ingredients. This may need to be decided on a case by case basis, but Africare can suggest community members develop their own sources for these items.

Recommendations: In addition to replicating the main factors that contributed to the success of the Hearth program in Guinea that are outlined in the discussion section (accounting for the societal context in which Hearth is to be introduced) there are three additional recommendations.

1. The first recommendation is to include Hearth as a session in future Title II workshops as a forum to discuss lessons learned and best practices, recommendations, and replications with potential NGOs who can continue this activity after Africare phases out its implementation activities related to Hearth in various regions/country programs.
2. Provide literacy classes for female participants, *Mamas Lumiere,* and ACs to reinforce their capacity and give them the skill set necessary to read and write.
3. Community funding will be needed to sustain Hearth activities. Hearth has the potential to serve as a catalyst in implementing income generating projects that could provide such funding. As a result of Hearth/Hearth-G, numerous villages created these types of activities frequently in collaboration with women's associations.[x] These and other types of funding will need to be identified to sustain activities.

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Annex I:
Africare Staff – Interviewers

Dabola:
Sekou II Conde
Alpha Amadou Barry
Aye Bobo Doumbouya
Nounke Diakite
Nanfadima Conde
Mariame Sacko
Kerfalla Fofana
Nene Oumou Diallo
Kile Sow
Gnale Conde
Bangaly Kaba
Nanetnin Cherif
Abdoulaye Keita
Denise Ndgano

Dinguiraye:
Mamadou Conte
Balde Aabass
Bah Mamadou Alimou
Mme Barry Aissatou
Sow Mamadou Bailo
Barry Mamadou Lamine
Sidibe Ousmane
Soumah Lansana Kanke
Baila Bocoum
Fatou Barry
Fatoumata Diawara
Sekou Wann Diallo
Morcire Toure
Jean Pepe Toupou
Zackaria Diallo
Mohamed Nassir Fofana
Abdourahmane Bah
Koumba Mansare
Aly Bali
Prosper Pogba Theoro
Bonaventure Traoré

Annex II:
Information about Interviews and Focus Groups, and Village Characteristics

Table 1. Levels of Household Food Insecurity in Project Area in 2006.

Vulnerability Level	Dinguiraye (All Districts)			Dabola (All Districts)		
	Percent of HHs	Adequate HH Food Supplies		Percent of HHs	Adequate HH Food Supplies	
		Number of Months	% of year		Number of Months	% of year
Category I	28	9.6	80	22	8.9	74
Category II	32	6.4	53	31	5.6	47
Category III	40	3.8	32	48	3.0	25

Category I: Least vulnerable, Category III: Most vulnerable
Source: GnFSI Final Quantitative Evaluation (Africare 2006 [b])

Table 2. Dates and Major Characteristics of Villages Visited.

Date of visit (2007)	Community Characteristics	
Dinguiraye		
April 12	Kebaly	New district, HEARTH-G, replicated HEARTH post Africare
April 13	Hafia	Original district
April 14	Santanfara	New district, implemented HEARTH without Africare's financial support.
April 15	Sobhoudou	Original district, severe poverty
April 16	Mossoko	Original district, HEARTH-G
April 17	Dar-Es-Salam	Original district, severe poverty
Dabola		
April 20	Diabakania	Extreme poverty
April 21	Nafaya	Average poverty, Replicated HEARTH post Africare
April 22	Damdakara	Extreme poverty
April 23	Nafadji	Average poverty

Table 3. Individuals and Groups Interviewed in Focus Groups.

Location	Women's Groups	Female Participants	Community Leaders	*Mama Lumiere*	Fathers/ Spouses	Community Agents	Health Agents
Dinguiraye	53	97	31	10	40	22	8
Dabola	90	42	78	5	40	13	7
Total	143	139	109	15	80	35	15

Annex III:
Summary of Hearth Participation and Results for Africare Title II Country Programs

Chad

Ouaddai Food Security Initiative Phase II

	FY04	FY06	FY07
Villages	1	38	23
Hearth sessions	1	57	47
Children identified	41	638	692
Children evaluated	31	598	491
Children who gained weight	25	568	459
Children with unchanged weight	4	20	15
Children who lost weight	2	10	17

Source: Chad/Africare country program.

Malawi

Improving Livelihoods through Increasing Food Security Program (I-LIFE) (2007)

	Number of children
Children participating in Hearth	853
Number of children who have been rehabilitated	708

Source: Malawi/Africare country program.

Rwanda

Gikongoro Food Security-HIV/AIDS Initiative (2007)

Cycle	# of children who have participated in FARN	# of children rehabilitated with FARN	% of children who were rehabilitated after 12 days
Cycle 1	109	98	89.90
Cycle 2	401	279	69.6
Total	*510*	*377*	*73.92*

Source: Rwanda/Africare country program.

Niger

Agadez and Tillaberi Food Security Initiative Phase II (2007)

# villages	# of hearth sessions	# of malnourished children aged 6-36 months who participated	% of children who gained 100g to 3.5 kg	% kids who lost weight	% of kids whose weight stayed the same
60	110	1012	84	10	7

Source: Niger/Africare country program.

Burkina Faso

Zondoma Food Security Initiative – Phase II

Year	# of villages with Hearth	# of hearth sessions	# of malnourished children participated	# of children rehabilitated
2003-2004	10	13	127 (99 moderate, 28 severe)	84
2004-2007	46	54	559	318

Source: Burkina Faso/Africare country program.

Mozambique

Manica Expanded Food Security Initiative

	2003	2004	2005	2006	2007	Total
Participated	1,566	987	582	648	512	**4,295**
Rehabilitated	684	231	299	386	345	**1,945**

Source: Mozambique/Africare country program.

Sierra Leone

The Consortium for Rehabilitation and Development (CORAD)
Livelihood Expansion and Asset Development (LEAD) Program (2007)

# of children participated in Hearth	# of children rehabilitated
103	68

Source: Sierra Leone/Africare country program.

Mali

Goundam/Diré circles of Mali (Goundam Food Security Initiative – GFSI II) Phase II

Period evaluated	Category of malnutrition severity	2004 (10 villages)	2005 (7 villages)	2006 (9 villages)	2007 (15 villages)
# of children entered Hearth	Yellow	201	74	49	318
	Red	57	35	28	69
# of children who exited (after the 12 day session)	Green	72	40	19	77
	Yellow	152	46	42	225
	Red	34	23	16	24
# of children after 1 month	Green	83	28	3	91
	Yellow	132	60	58	157
	Red	43	21	16	15
# of children after 6 months	Green	147	41	19	46
	Yellow	90	48	39	100
	Red	21	20	19	13

Red=severely malnourished, yellow=moderately malnourished, and green=well nourished.
Results:
# of children who were admitted to Hearth/FARN: **812**
# of children who were rehabilitated after 6 months: **253**

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[iii] Bonaventure B. Traoré, Doctorate Agricultural Economics, University of Toulouse, France, is the former country representative of Africare/Guinea and now serves as country representative in Senegal.
[iv] Dr. Sidikiba Sidibé, Africare/Guinea, designed and implemented the Hearth program in Guinea and supplied the quantitative data for paper.
[v] The two major components of the GnFSI project include the nutritional and health status of women and children under five and increasing agricultural productivity.
[vi] The underweight prevalence in Dinguiraye is 17.2 percent and the stunting rate is 22.3 percent; Dabola's underweight prevalence is 18.5 percent and the stunting rate is 23.8 percent (Africare 2006 [a], internal document) for the GnFSI districts. The actual rates in the Prefecture of Dinguiraye and Dabola are higher according to the DHS study; stunting and underweight in the Upper Guinea region, to which Dinguiraye and Dabola belong, were 40 and 30 percent, respectively, in 2005 (Direction *Nationale de la Statistique/ORC MACRO, Enquête Démographique et de Santé, Guinée* 2005, page 170-173, *Ministère du Plan* 2006).
[vii] It is necessary to note the bias that can exist with this type of data collection, as it is impossible to assess the actual practices that were occurring in their individual households.
[viii] See Annex III for Hearth data for other Title II Africare countries programs.
[ix] Thanks to community growth surveillance, an important and harsh variation was noticed in 2002 with regards to the number of children weighed. This increase was not proportional with the integration of the new districts, but rather with the placement of children from displaced families into the growth monitoring program. During this same period, the deterioration of livelihoods due to the massive number of displaced persons justified the multiplication of the number of FARNs for the rehabilitation of a record number of children (190) during the course of only one year.
[x] Examples of such activities included community gardens, micro-credit projects, small animal farms, and the transformation of local products such as soy and peanuts. This latter activity was especially crucial during food deficit periods (lean periods). These projects were a solution to the lack of disposable income cited above and provided families with the means necessary to purchase the more expensive ingredients that were used in the recipes. These associations adopted farming techniques and cultivated protein rich items such as soy, which have the potential to be an invaluable resource to complement Hearth.